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FINAL PROGRAM AND ABSTRACTS

WEDNESDAY 20 JUNE 1990
THURSDAY 21 JUNE 1990

SIXTH INTERNATIONAL CONFERENCE ON AIDS

AIDS IN THE NINETIES: FROM SCIENCE TO POLICY

SAN FRANCISCO CALIFORNIA, USA

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WELCOMING MESSAGES

JULIUS R. KREVANS, MD
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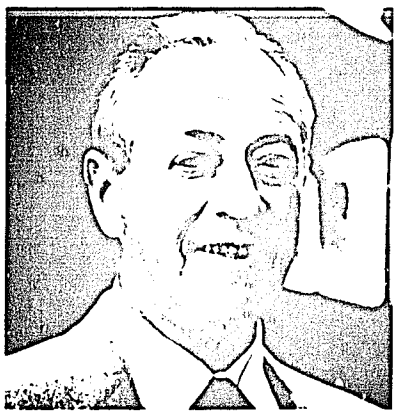

On behalf of the University of California San Francisco, I welcome you to the Sixth International Conference on AIDS. I remember making rounds on the medical wards at the San Francisco General Hospital back in 1981 and puzzling over the case of a young man with Kaposi's sarcoma. This patient was one of the harbingers of the AIDS epidemic that would eventually encircle the globe. The epidemic now enters its second decade. As we look back on our progress thus far, we become acutely aware of both the power and the limitations of scientific research.

Progress over the past 10 years has been truly astonishing. The human immunodeficiency virus was discovered, an effective antiviral compound was approved, experimental vaccines were produced, and major prevention programs were put in place around the world. We must remember that much of the infrastructure necessary to enable such dramatic progress, such as knowledge of the immune system and tools of molecular biology, was already in place. Further, the contribution of research on AIDS to our understanding of other diseases cannot be underestimated.

Despite these scientific milestones, much remains to be done. There is as yet no cure. There is no effective vaccine. Many social and political policies remain discriminatory. And the epidemic is spreading. We need a plan to cope with the economic impact of the disease, both in the developed and developing worlds.

This annual Conference provides a critical venue to examine where we are and where we are going. Its theme this year, "From Science to Policy," emphasizes the primacy of new scientific knowledge in the formulation of rational public policy. There is little doubt that this Conference will provide a quantum leap forward in our understanding of HIV disease. Moreover, the Conference will facilitate the worldwide partnerships and collaborations needed to stop the epidemic. I welcome you to San Francisco and wish you well in your deliberations.

JOHN L. ZIEGLER, MD, &
PAUL A. VOLBERDING, MD
Co-Chairs
Sixth International Conference on AIDS

Since it was first convened in 1985, the International AIDS Conference has facilitated the dissemination of new knowledge to control the AIDS epidemic. As the Sixth International Conference on AIDS opens, we will consider these major challenges posed by AIDS in the next decade:

- how to increase understanding of the pathogenesis of HIV disease;
- how to expedite the development of effective new drugs and vaccines;
- how to identify global strategies that strengthen the response of developing nations to increased AIDS caseloads;
- how to improve global access to quality health care;
- how to eliminate social, political, and economic barriers to effective prevention strategies;
- how to eliminate discrimination against those impacted by the epidemic.

Fear, bigotry, and indifference must give way to science and logic in the development of global policies and programs responsive to the scope of the epidemic and the needs of those it impacts.

The Sixth International Conference on AIDS has become a living symbol of its theme: "AIDS in the Nineties: From Science to Policy." Restrictions on entry of HIV-infected individuals to the United States represent an example of a policy that ignores scientific understanding about transmission of HIV, disregards sound public health strategies, and inhibits the dissemination of information needed to fight AIDS. The Conference has led a worldwide effort to change this policy, enlisting the support of leading AIDS scientists, service organizations, and AIDS activists. All have united in arguing that solutions to this epidemic cannot be identified across borders closed to HIV-infected persons.

We look forward to the opening of the Sixth International Conference on AIDS. We are confident that the needs of a diverse group of delegates will be met in all aspects of logistics and program design. We are also proud to host the Conference in a city that is a world leader in the public and private response to the epidemic.

San Francisco is identified by the bridge that serves as its gateway, the Golden Gate Bridge. The Bridge symbolizes the goals of the Conference—to link scientific colleagues, care-givers, and HIV-infected persons in an international partnership, and to close the gap between ignorance and knowledge about HIV.

We welcome you to the Sixth International Conference on AIDS.

LEON MCKUSICK, PHD, &
SHIRLEY GROSS
Co-Chairs
Community Task Force
Sixth International
Conference on AIDS

The Fifth International Conference on AIDS was marked by disruption at the opening ceremonies. Those who took the stage wanted their voices to be heard, and they were. At the Sixth International Conference, those voices are being heard officially from the podium. HIV-infected persons and their advocates have been encouraged by Conference organizers to participate in all facets of the program.

The Community Task Force of the Sixth International Conference on AIDS was formed in the fall of 1989 to assure that perspectives of racial and ethnic minorities, women, gay men and lesbians, community-based organizations, and the developing world were all represented, from the ground up, in the planning of the Conference. The Task Force is composed of HIV-infected persons and service providers drawn from all risk groups in the epidemic. Representatives of the Task Force were installed on all Conference decision-making committees.

Based on our work with the Conference, community inclusion is visible in the following ways:

- HIV-infected individuals are participating in many plenaries and scientific sessions;
- 375 HIV-infected individuals who would otherwise have been unable to attend the Conference have had their registration fees waived;
- the Conference has given low-cost exhibit space and waived registration fees for community-based AIDS organizations; and
- the Conference program addresses the issues of greatest concern to HIV-infected persons, community-based service providers, activist groups, and groups underserved in the response to AIDS.

The outreach efforts of the Community Task Force have been frustrated by US policy regarding entry of HIV-infected persons from other countries. The Conference has worked closely with us in an effort to change this policy. We are hopeful that future policy decisions can be shaped by the facts presented at the Conference, and not by ignorance and prejudice.

The interaction between the Task Force and Conference organizers has not been without disagreement. We have agreed on the need for free badges for HIV-infected persons, but disagreed about the number of those badges. We agree on the need for activism in the face of the epidemic, but disagree about the extent to which AIDS scientists and the Conference itself must be politically active.

The deliberations of the Task Force reflect, then, the dynamics of the Conference. Now, people from diverse disciplines are confronting differences in opinions and approaches to the issues before us. We believe that those who are involved in the work against AIDS—be they activist or scientist, American or African—have much more in common than they realize. After we sit together for a week and share one another's perspectives, we hope all will leave the Conference with increased awareness, agreement, and strength for our efforts to move forward in the fight against AIDS.

ROBERT M. WACHTER, MD
Program Director
Sixth International Conference on AIDS

Planning the program of the Sixth International Conference on AIDS is a remarkable challenge and an unprecedented opportunity. The challenge is to balance the interests and needs of the many diverse groups—scientific, community, and political—that are working together to understand, control, and eradicate the pandemic. The Conference provides the premier opportunity to draw from the extraordinary multidisciplinary and international resources available to present the latest and most important information related to HIV infection.

The Scientific Program Committee had four major goals as it developed the program. The first was to adhere to the Conference theme, "From Science to Policy." Whenever possible, the program presents new scientific knowledge and demonstrates how such knowledge should be used to drive policy decisions. The second was to embrace new perspectives. Both in the plenaries and elsewhere in the program, we have given voice to many of the individuals, groups, and regions previously underrepresented in the Conference. The third goal was to present a program of the highest scientific quality. Only half of the 4,900 submitted abstracts were accepted for presentation at the Conference. Those that were accepted, we believe, add significantly to our understanding of basic science, clinical, epidemiologic, and policy issues related to HIV infection. The final goal was to create a "user-friendly" program. Our objective was to facilitate the exchange of information and make the Conference as accessible as possible to our participants.

There are only four thematic tracks and sixteen oral sessions per day. Each track's oral sessions will always be in the same rooms. The Conference publications are designed for easy reference before, during, and after the Conference. A daily newspaper and television report will help disseminate each day's presentations.

The nearly 500 local, national, and international members of the Scientific Program Committee join me in welcoming you to San Francisco. We hope that your participation in the Conference will leave you enriched and better able to make your important contribution to the fight against AIDS.

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LOCAL PROGRAM OFFICE

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Lucy Felicissimo, Assistant Program Director
Benjamin Junge, Program Assistant
Erik Jacobson, Program Assistant
Sharon Klein, Travel Manager
Judith Weber, Poster Coordinator
Matthew Harris, Computer Consultant
Rick Stryker, Editoral Assistant
Amy Markowitz, Editorial Assistant
Susan Robbins, Production Assistant

RAPPORTEURS' ASSISTANTS

Track A:
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Jay Nelson
Nancy Haigwood
Haynes Sheppard

Track B:
David Chernoff
Lori Panther
Jack Colford

Track C:
Nancy Hessol
Susan Buchbinder
Patrick Moore
Krysia Lindan
Renata Kieffer
Joseph Guydish

Track D:
Norm Nickens
Ben Schatz

OPERATIONS

William O'Connor, Conference Manager
Dorothy Burdine, Operations and Exhibits Manager
Pamela Wool, Operations Coordinator
Gustavus M. Supé III, Operations Assistant
David Bracker, Volunteer Coordinator
Bruce Flynn, Disability Services Coordinator
Michelle Aldrich, Housing Manager
Adam Whitney, Operations Assistant
Yannick Verle, Operations Assistant

COMMUNITY RELATIONS

Dana Van Gorder, Assistant Director for Press and Community Relations
Steve Tigerman, Community Relations Assistant

BUSINESS AND FINANCE OFFICE

Barbara Woodruff, Administrative Director
Alice Gruber, Business and Finance Manager
Emilie O'Shea, Accountant
Deborah Wool, Executive Secretary
Elaine Mercer, Registration Manager
Roger Jennings, Computer Consultant
David Weisberg, Special Delegates Coordinator

CONSULTANTS

Bunn Communications International
Canadian Broadcasting Corporation
Cannon Press
Cappa and Graham
Carlson Travel Group, Inc.
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FM Productions
Greyhound Exposition Services
Kanner Language Systems
Krebs Convention Management Services
McCune Audio Visual
Professional Programs, Inc.
Security Training Institute
TEC Message Center
University of California San Francisco Publications

The Conference organizers gratefully acknowledge the help and assistance of:

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Jane Powers (UCSF Accounting)
Harry Cordon (UCSF Audit Services)
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Naheed Bashir, Carol Kummer, Jeanne Duell (UCSF Publications)
Layne Ethington (UCSF AIDS Clinical Research Center)
Curt Denham, Cathryn Roseberry (AIDS Program)
Linda Valleroy (US Agency for International Development)
Kathleen Kay (Global Programme on AIDS)
Tom Netter (World Health Organization, Communications)
Len Schlosser, David Perlman, Charles Petit (Communications)
Charles Keegan (Ask Mr. Foster Travel)
Rick Pierce (Editing)
Organizers of the V International Conference on AIDS, Montreal, Canada
Staff of the AIDS Program, San Francisco General Hospital

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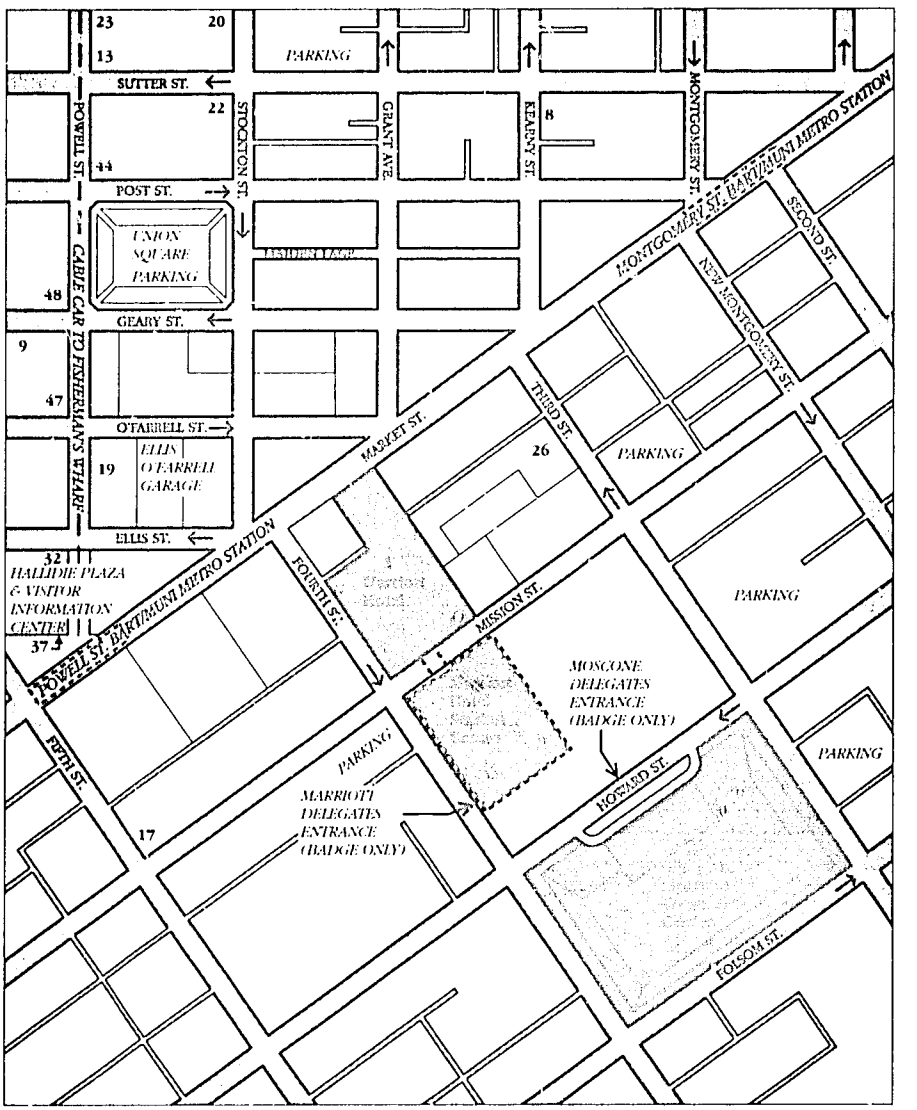
CONFERENCE SITES

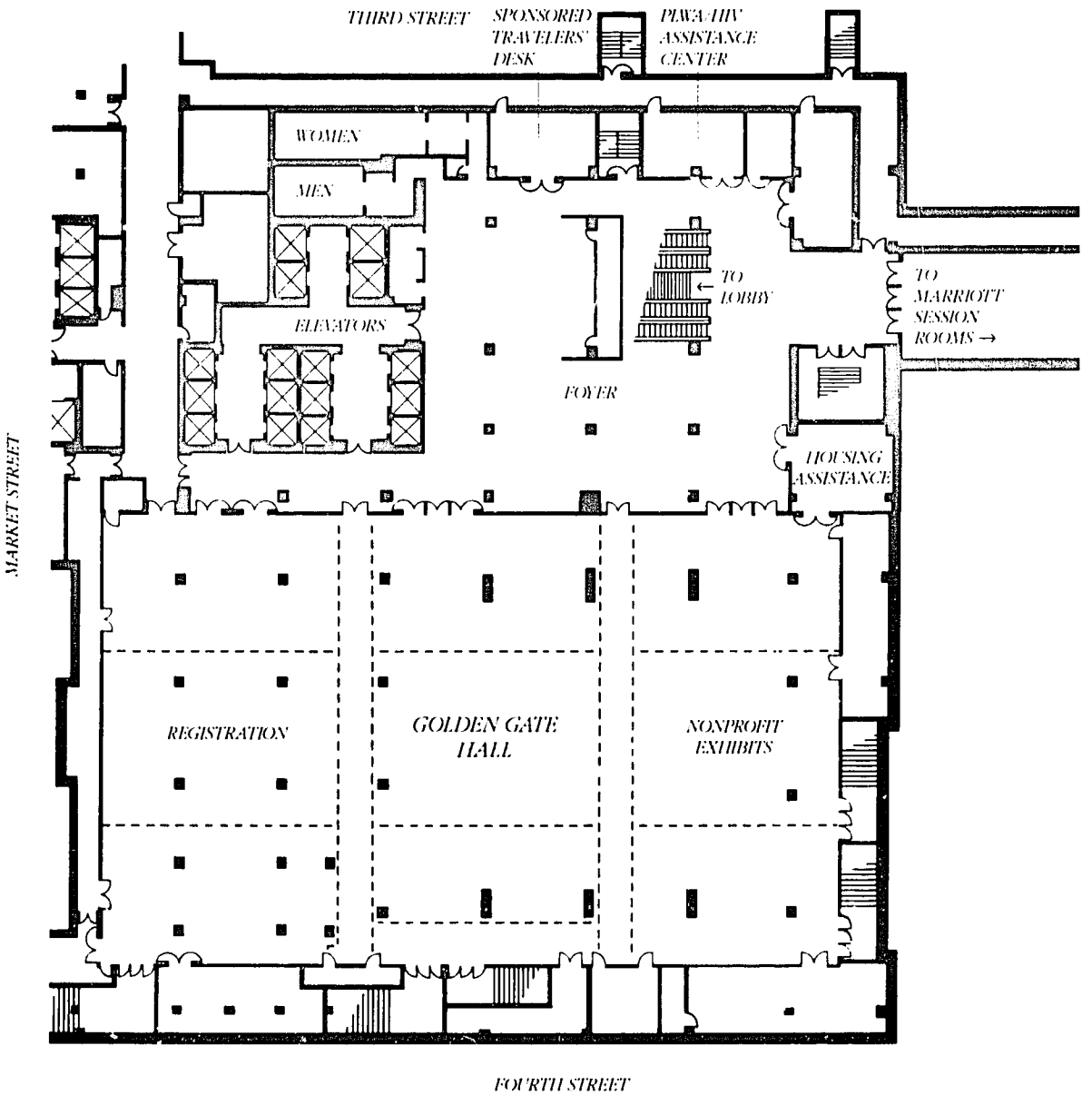
The Sixth International Conference on AIDS venues, the Moscone Convention Center, 747 Howard Street, and the San Francisco Marriott Hotel, 777 Market Street, are separated by one city block. Both are easily accessible by auto and the Bay Area Rapid Transit (BART) and SF Municipal Railway (MUNI) systems, and both are within walking distance of the majority of the Conference hotels. A free shuttle bus service operates between key hotels and both Conference sites.

CONFERENCE SITES



Numbers on this map correspond to key numbers on Conference Housing map.

SF MARRIOTT CONFERENCE REGISTRATION AND NONPROFIT EXHIBITS GOLDEN GATE HALL



REGISTRATION HOURS

Tuesday, 19 June, 3:00 pm–8:00 pm
Wednesday, 20 June, 7:00 am–9:00 pm
Thursday, 21 June–Saturday, 23 June, 7:00 am–6:00 pm
Sunday, 24 June, 8:00 am–Noon

STUDENT REGISTRATION REMINDER

If you have registered for the student fee, you must present proof of enrollment as a full-time student at a degree-granting university or college at the time of registration. A photocopy of a current registration card or a letter from your department's administration will suffice. This fee category applies to residents (house officers) and postdoctoral fellows as well as undergraduate and graduate students.

PAYMENT

Payment of registration fees may be made by the following:
1) US dollars;
2) US-dollar-denominated personal checks drawn on a US bank;
3) US travelers checks;
4) credit cards: MasterCard or VISA only.

Foreign checks, currency, and bank drafts will not be accepted. Foreign exchange services are available on-site through Bank of America:
Tuesday, 19 June, Noon–4:00 pm
Wednesday, 20 June, 9:00 am–4:00 pm
Thursday, 21 June, 9:00 am–4:00 pm

REGISTRATION FEE REFUND POLICY

An administrative charge of $50 (US) applies to cancellations made until 11 May 1990. *No refunds will be made for cancellations received after 11 May 1990. No refunds will be made on optional fees, including those for C.M.E. credits.*

ADMISSION TO SESSIONS AND CONFERENCE FUNCTIONS

Official Conference badges are required for admission to all Conference functions, scientific sessions, social events, and the Moscone Center Exhibit Hall. These badges are the tickets for Conference admission. A $50 fee will be charged for replacement.

POSSIBLE LIMITATION ON THE NUMBER OF PARTICIPANTS

The organizers must limit the number of participants to avoid overcrowding. Should a limit on registrants be necessary, applications for registration received after the close of registration (including those made on-site) will be denied.

LOCATION OF CONFERENCE SERVICES

Abstract Sales	Marriott Golden Gate Hall
Audio Cassette Sales	Marriott Grand Assembly
Broadcast Center	Moscone East Lower Lobby
Business/Photocopying Services	Moscone Lower Lobby
Continuing Medical Education Accreditation	Marriott Golden Gate Hall
Earphones for Simultaneous Interpretation	Moscone East Lower Lobby
Employment Opportunity Center	Marriott Grand Assembly
Exhibits	
Commerical, Large Agencies	Moscone Exhibit Hall
Nonprofit Organizations	Marriott Golden Gate Hall
First Aid	Marriott and Moscone
Foreign Exchange	Marriott Hotel
Housing Desk	Marriott Willow Room
Information Desks	Moscone Main Lobby Marriott Golden Gate Hall and Grand Assembly
Local Tours Desk	Marriott Grand Assembly
Lost and Found	Moscone Lower Lobby Marriott Front Desk
Message Centers	Moscone Main Lobby, Marriott Grand Assembly
Poster Area	Moscone Exhibit Hall
PLWA/HIV Assistance Centers	Moscone West Mezzanine Marriott Redwood Room
Press Center	Moscone East Mezzanine
Reflection and Meditation Center	Marriott Sierra Suite K, 5th floor
Registration Desk	Marriott Golden Gate Hall
Simultaneous Interpretation	Moscone East Lower Lobby
Speakers' Center/Slide Preview	Moscone West Mezzanine

AIRPORT INFORMATION

AIRLINE AND TRAVEL ASSISTANCE

The official travel agent of the Conference is ***Ask Mr. Foster Travel Service.***

For the most favorable travel rates, please contact the official agent directly:

Ask Mr. Foster Travel Service
1183 Bordeaux Drive, Suite 37
Sunnyvale, CA 94086
attn: AIDS Conference Travel Bureau

International Reservations
call collect:
408-1734-0620
or telefax:
408-744-0971

Domestic Reservations
call free:
800-666-8889
or telefax:
408-744-0971

Special arrangements for substantially discounted rates are available on *United, Delta,* and *TWA airlines.* Delegates and travel companions are eligible for discounted airfares on domestic, Canadian, and international flights and certain connecting flights with these airlines. Restrictions may apply on some discounted fares. Frequent flyer credits may be accrued on most flights. If you plan to rent an automobile in San Francisco, reserving the auto as part of your flight reservation may also bring you additional savings. These discounts can be obtained only *if reservations and ticketing are done through Ask Mr. Foster Travel Service,* located in the Marriott Grand Assembly.

AIRPORTS

San Francisco International Airport is the entry point for most individuals attending the Sixth International Conference on AIDS. Clearly identified staff members from *Ask Mr. Foster Travel Service* are available in the international arrival area and at the domestic terminals of United and TWA Airlines. They will assist all Conference delegates with travel services and information. Assistance with particular needs of HIV-infected persons will be provided.

The AT&T Communications Center (upper level, international terminal, San Francisco International Airport) provides services including multilingual attendants, phone units allowing callers to pay in cash, and a conference room for six with teleconferencing capabilities.

In addition to San Francisco International Airport, Oakland Airport is located 20 miles from downtown San Francisco and provides another entry point.

Ground transportation to and from San Francisco International Airport:

San Francisco International Airport is a 30-minute drive from downtown San Francisco. Taxicabs may be ordered quickly by telephone and are available on a stand-by basis at the lower level of all terminals. The one-way cost is $20–$30. Voluntary ride-sharing for two or more persons to a maximum of three destinations is permitted. A flat fare of $24 is divided equally among the passengers.

Mini-van service is available to and from the upper level at all terminals of San Francisco International Airport and all downtown hotels. No reservation is required for travel to San Francisco. Advance reservation is required for travel to the airport. Allow one and one-half to two hours between pick-up time and arrival at destination. The cost is $7–$12 one way.
Airport Connection (folding wheelchairs accepted): 885-2666 or 800-AIR-PORT
California Minibus: 775-5121
Good Neighbors Airport Shuttle: 777-4899
Supershuttle (wheelchair service available--call in advance to reserve): 558-8500
Yellow Airport Shuttle: 282-7433

The SFO Airporter (495-8404) offers frequent nonstop motorcoach service between San Francisco International Airport (lower level) and Union Square, San Francisco. No reservations are required. Service in both directions leaves every 20 minutes from 5:00 am to midnight. The fare is $5 one way; $2 for children ages 2–12; and free for children under 2.

CONFERENCE INFORMATION

ABSTRACTS

The abstract volumes of the Sixth International Conference on AIDS are organized by Conference day, and contain each day's final program and abstracts.

AUDIO CASSETTE SALES

Conference sessions taped in English on audio cassettes will be available for sale in the Marriott Grand Assembly.

BUSINESS AND PHOTOCOPYING SERVICE CENTER

A Business Service Center located in the lower lobby of the Moscone Center will be available to Conference delegates. Costs incurred are the responsibility of users.

CHILD CARE

Most Conference hotels will arrange child care upon request.

CONFERENCE NEWS SERVICES: NEWSPAPER

A daily newspaper, *The AIDS Conference Bulletin*, will provide delegates with a written review of presentations. It will cover a variety of sessions from each thematic track. All program changes will be listed in the daily newspaper, which will be available each morning free of charge.

TELEVISION

A nightly one-hour television program, the "Daily Conference Report," will review various presentations made each day during the Conference. The program will also update Conference activities and include expert analysis of presentations in each programmatic area. The program will air each evening of the Conference at 8 pm, 9 pm, 10 pm, and 11 pm. It can be seen in most Conference hotels on a designated channel for in-room television. It will also be broadcast via satellite to a worldwide audience.

In addition to the "Daily Conference Report," the opening and closing ceremonies as well as all plenary sessions will be broadcast to most Conference hotels. Please inquire upon check-in for availability and times.

CONTINUING MEDICAL EDUCATION UNITS ACCREDITATION

The Continuing Medical Education (C.M.E.) Unit of the University of California San Francisco is fully accredited by the Accreditation Council for Continuing Medical Education (A.C.C.M.E.) of the United States and is authorized by this body to offer programs in continuing medical education.

Extended Programs in Medical Education of the University of California School of Medicine at San Francisco designates the Conference as a continuing medical education activity for 29 credit hours in Category 1 of the Physicians' Recognition Award of the American Medical Association and the Certificate Program of the California Medical Association. Attendance verification forms will be available at the C.M.E. booth

located in the Marriott Golden Gate Hall during registration hours. The California Board of Registered Nurses also accepts Category 1 C.M.E. credits.

An administrative fee of $25 (US) applies to all requests for C.M.E. units. Interested parties must report to the C.M.E. Desk in the Marriott Golden Gate Hall.

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EMPLOYMENT OPPORTUNITY CENTER

An Employment Opportunity Center Area is located in the Marriott Grand Assembly. Delegates may feel free to use this area for informal networking for job placement services. A bulletin board is available for notices and flyers relating to jobs, fellowships, and other positions.

EXHIBITS

There are two exhibit areas at the Conference. Exhibits by commercial concerns and large agencies and organizations are located in the Moscone Center Exhibit Hall. Community service and nonprofit organizations are sponsoring exhibit booths in the Marriott Golden Gate Hall. Delegates are encouraged to visit these exhibits and see the latest equipment, products, and publications relating to AIDS and HIV infection, and to learn more about the work of AIDS service organizations and advocacy groups. (See "Conference Exhibitors" List.)

Exhibits will be open during the following hours:

Moscone	Wednesday, 20 June	6:00 pm–8:00 pm
	Thursday, 21 June–Saturday, 23 June	8:00 am–5:00 pm
Marriott (nonprofit)	Wednesday, 20 June–Saturday, 23 June	8:00 am–5:00 pm

FIRST AID

Nursing stations are located in the Marriott Hotel and the Moscone Center. These emergency care facilities are available to all Conference delegates. Their emphasis is on the requirements of HIV-infected persons. In the event of an emergency, please inform a staff member or volunteer.

FOREIGN EXCHANGE AND BANKING FACILITIES

Exchange of foreign currency at prevailing rates is available at San Francisco International Airport, at several banks and money changers within walking distance of the Conference sites, and at the Marriott Hotel. Exchange of foreign currencies can be made at the following locations:

Deak International
100 Grant Avenue (downtown SF), 362-3452
Monday–Friday, 9:00 am–5:00 pm
International Terminal, departure level, San Francisco International Airport, 583-4029, 7:00 am–11:00 pm daily
Foreign Exchange Ltd.
415 Stockton Street (downtown SF), 397-4700
Monday–Friday, 8:30 am–5:00 pm, Saturday, 9:00 am–1:30 pm
Bank of America (near the Marriott Hotel)
One Powell St., 622-4097
Monday–Thursday, 9:00 am–4:00 pm,
Friday, 9:00 am–6:00 pm, Saturday, 10:00 am–2:00 pm

HOUSING DESK

The Conference Housing Desk is located in the Marriott Willow Room. Last-minute housing assistance is available during registration hours. Housing is managed by the San Francisco Convention and Visitors Bureau.

INFORMATION DESKS

Information about the city, restaurants, shopping, houses of worship, public transportation, theaters, and sporting activities are available in the Marriott Golden Gate Hall and Grand Assembly and the main lobby of the Moscone Center.

INSURANCE

The Sixth International Conference on AIDS cannot accept liability for injuries or losses arising from accidents or other situations during or arising from the Conference.

LOST AND FOUND

Available in the Moscone lower lobby and at the Marriott front desk.

MEALS

Meals are not included in the registration fee. Many eating facilities are to be found in and around the Conference sites. Brochures and restaurant listings are available at the Information Desk.

MESSAGE CENTERS

The Conference Message Centers are located in the Moscone Center main lobby and in the Marriott Grand Assembly area. The telephone number for messages for Conference delegates is (415) 978-3560. The Conference's message system is a fully integrated computerized unit that allows messages to be left and retrieved at both venues.

Simply call in or leave your written message at one of the counters and it will be entered into the system. The last name and first initial of the addressee will appear on video screens located in both facilities. For example, messages left at the Marriott can be retrieved at the Moscone Message Center. If a message is left for you, your name will be displayed on all screens in both venues. You will be able to collect printouts of your messages from the message counters in either venue.

NO-SMOKING POLICY

The Conference adheres to a strict no-smoking policy within Conference areas at the Moscone Center and the Marriott Hotel.

PLWA/HIV ASSISTANCE CENTERS

PLWA/HIV Assistance Centers are located in the Moscone Center West Mezzanine and near the Marriott Golden Gate Hall, adjacent to the non-profit exhibits. The centers will be open 8:00 am–6:00 pm. Space is provided to rest, relax, and receive medical care if needed. Videos of plenary sessions of the Conference may be viewed in the Moscone Assistance Center. Volunteers from *New Friends* are helping with information, referrals, and respite care.

POST-CONFERENCE INQUIRIES

Any post-Conference inquiries may be addressed to:

Sixth International Conference on AIDS
University of California San Francisco
Box 1505
San Francisco, CA 94143-1505
USA

POST OFFICE

The closest US post office is located at 150 Sutter St., between Kearny and Montgomery Sts. The hours are Monday–Friday, 8:30 am–5:00 pm.

REFLECTION AND MEDITATION CENTER

This center will be open to all delegates regardless of faith, 21 June to 23 June, 8:00 am–5:00 pm. Located in the Marriott Hotel, 5th Floor, Sierra Suite K, the center is staffed by volunteers from the San Francisco Interreligious Coalition on AIDS.

SECURITY

The Conference takes seriously its goal of ensuring the exchange of information so vital to the control of the AIDS epidemic. Just as the Conference has been outraged by the threat to this critical exchange of information posed by travel restrictions on HIV-infected persons, the organizers are committed to preventing any threat to the free exchange of information resulting from disruption of its sessions.

The organizers of the Sixth International Conference on AIDS have worked diligently to ensure access for all those involved in the global effort to control AIDS, and through its program to give expression to the spectrum of social and political concerns of *all* its delegates. Additionally, the Conference has worked closely with local law enforcement agencies to ensure that all groups wishing to demonstrate their political views will be able to do so freely on public property beyond the walls of the Conference.

Security is in place at the Conference to assure uninterrupted access to information for all delegates in all sessions. The Conference will not tolerate disruptions intended to impede or prevent the flow of information to Conference delegates. Conference security will exercise all available remedies to ensure the orderly conduct of the proceedings, including ejection of disruptive delegates from Conference sites and confiscation of Conference badges. Violation of local laws will subject offenders to arrest and prosecution.

SERVICES FOR PERSONS WITH DISABILITIES

Efforts will be made to accommodate the special needs of persons with disabilities. Conference sites are fully accessible, and access information is available on-site regarding transportation, public facilities, and restaurants in the area. Signed interpreters' services are provided for the opening, closing, and plenary sessions. Special seating near the stage has been made available for individuals with visual, auditory, and mobility impairments. Some Conference materials are available in Braille.

A Disabled/Special Needs booth will be open during registration hours to provide assistance to persons with disabilities. It has a listing of community resources, as well as site maps, Braille materials, and volunteer guide services.

SIMULTANEOUS INTERPRETATION

The official language of the Conference is English. Simultaneous interpretation of the opening and closing ceremonies and plenary sessions is provided from English to French and to Spanish, courtesy of the World Health Organization. Earphones for simultaneous interpretation are available at the Moscone Center east lower lobby.

TELEPHONES

Public telephones are located throughout the Moscone Center and the Marriott Hotel. To make a local call, deposit 20 cents and dial number. Approved telephone credit cards may also be used to charge calls. Some important phone numbers are:

Emergency: Dial 911 to get immediate help in any emergency situation
Operator: Dial 0
General Information: Dial 411

Area Code: Unless otherwise noted, all phone listings are within the 415 area

Telephone Resources:
Alcoholics Anonymous: 661-1828
Ambulance: 931-3900
The Better Business Bureau of San Francisco: 243-9999
California Road Conditions: 557-3755
California State Automobile Association (AAA): 565-2012
Fire Department: Dial 911
Narcotics Anonymous: 621-8600
Poison Control Center: 476-6600
Police: Dial 911 (emergencies only)
PWA Switchboard: 861-7309
San Francisco AIDS Foundation Hotline: 863-2437
San Francisco Bar Association Lawyer Referral: 764-1616
San Francisco Dental Society: 421-1435
San Francisco General Hospital: 842-8111 (emergencies only)
San Francisco Medical Society: 567-6230
Senior Citizens' Information: 626-1033
Shanti Project–PWA Services: 777-2273
Suicide Prevention: 221-1424
Travelers Aid Society: 255-2252

TRANSPORTATION

Local

From Hotels to Conference Site

Shuttle service is provided from key boarding points at or near all Conference hotels to the Marriott Hotel and Moscone Center. Service begins on Wednesday, 20 June, and continues through the afternoon on Sunday, 24 June. Check at the front desk of your hotel for service times and boarding points.

Return service is available until 6:00 pm each day.

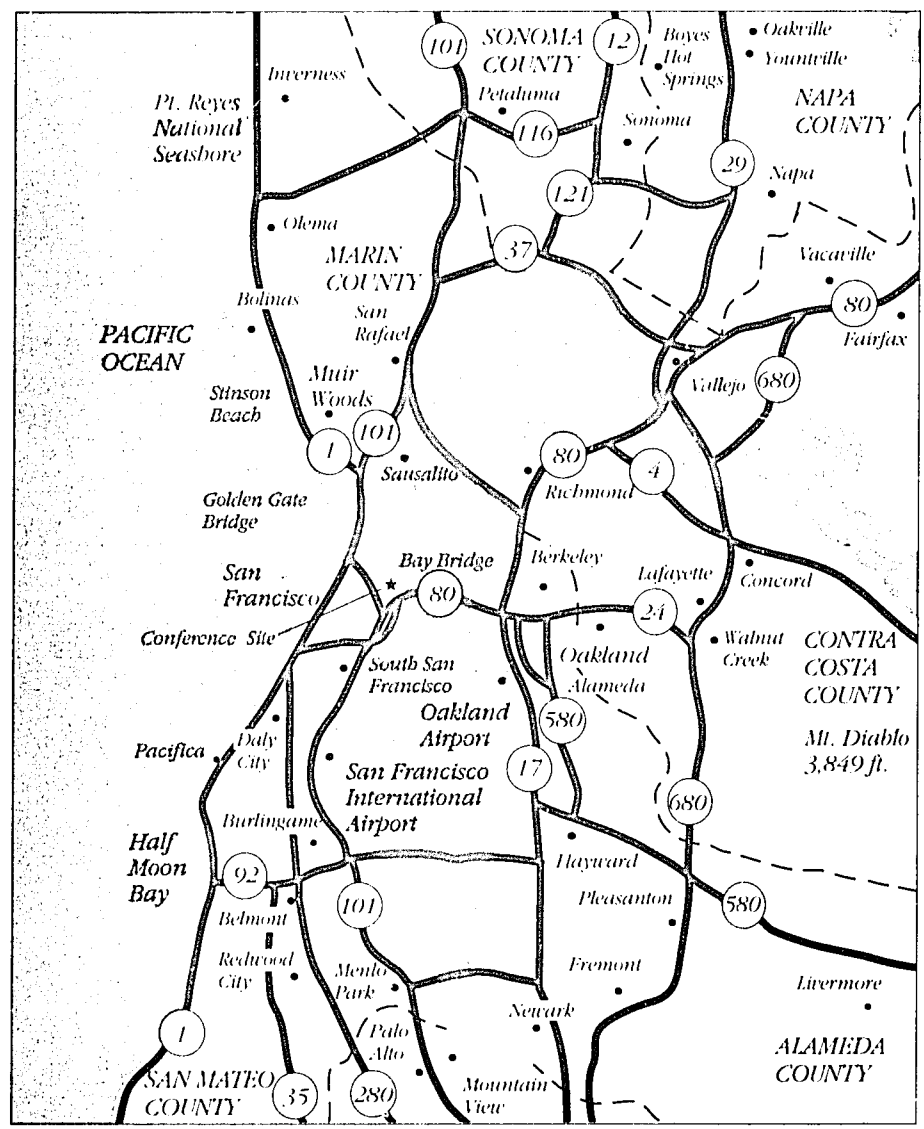
From UC Berkeley to Conference Site

Individuals staying in Berkeley may use the fast and inexpensive Bay Area Rapid Transit (BART) trains from the East Bay. The university residence hall is within walking distance of the downtown Berkeley BART station. Transportation time to the Conference is 25 minutes and costs $1.80 each way. It is a short walk from the Powell Station to the Conference sites. Tickets are available at the BART station using US currency only. No credit cards or travelers check are accepted at the stations. For detailed information about which lines to use, call BART at 788-2278.

Within San Francisco

In addition to the Conference's hotel shuttle service, the San Francisco Municipal Railway system (including cable cars) provides extensive

BAY AREA



access to all of San Francisco. Standard fare is 85 cents per trip with two transfers allowed.

For more information about public transportation in San Francisco, contact San Francisco Municipal Railway, 673-6864.

To Other Bay Area Destinations

Rail Service to the East Bay (e.g., Oakland, Berkeley):
Bay Area Rapid Transit (BART), 788-2278.

Bus Service to the East Bay:
AC Transit, Transbay Terminal, First and Mission Streets, 839-2882.

Service to Marin County (and access to points north):
Golden Gate Transit, Transbay Terminal, First and Mission Streets, 332-6600.
Service to San Mateo County (and access to points south):
Samtrans, Transbay Terminal, First and Mission Streets, 761-7000.

Ferry Service:
Golden Gate Ferries, Ferry Building, bottom of Market Street, 332-6600.

Red and White Fleet, Pier 41, Fisherman's Wharf, 546-2896 or 800-445-8880 within California.

TRAVEL AND TOURIST INFORMATION

CREDIT CARDS

Major credit cards (VISA, MasterCard, Diners' Club, American Express) are honored in all hotels as well as in most restaurants and stores. Additional identification may be required. Any official document bearing your name and photograph will usually suffice.

DRIVING AND TRAFFIC REGULATIONS

Curbing Wheels: It is the law in San Francisco that on hills you must park your car with wheels curbed. Turn the tires toward the street when facing uphill, and toward the curb when facing downhill, to use the curb as an effective block.

Curb Colors: Colored curbings indicate reserved parking zones. *Red*: no stopping or parking. *Yellow and Black*: (open to all on Sunday) half-hour loading limit for trucks with *commercial* plates only. *Blue*: reserved for vehicles marked with a California-issued *disabled* placard or plate. *Green*: ten-minute limit for all vehicles. *White*: five-minute limit, effective during the adjacent business' hours of operation.

Towaway Zones: The San Francisco Police Department is strict about parking regulations. Any improper parking spot can become a towaway zone. Do not park in bus stops or near fire hydrants. Obey street cleaning signs and signs that indicate parking lanes opened for traffic. A violation may cost up to $20, plus $100 for towing and storage fees each day. To reclaim your towed car, you must get a release from the nearest district police department, and pay cash in US dollars, then pick up the car at the towing company.

LOCAL TOURS DESK

You may wish to take advantage of special rates for tours available through the official Conference travel agent, *Ask Mr. Foster.*

The *Ask Mr. Foster* tour desk in the Marriott Hotel can provide information on the many sightseeing, sports, and recreational activities offered in and around the city, including museum and winery tours, golf, jogging, tennis, bicycling, hiking.

SHOPPING

San Francisco is known for its many shopping opportunities. You may inquire about shopping at your hotel or at the Information Desks at the Conference.

TIPPING

It is customary to add a 15% gratuity for services in restaurants and taxicabs, and to offer a small gratuity to bellmen and chambermaids in hotels.

VISA REQUIREMENTS

Passports and/or visas may be required for travel to the United States. Please consult a United States Embassy or Consulate for specific information.

VISA REQUIREMENTS FOR HIV-INFECTED DELEGATES

United States immigration laws require all travelers to disclose the presence of certain conditions appearing on its list of "dangerous and contagious diseases." As of 13 April 1990, the United States no longer requires Conference delegates *who will be in the country for 10 days or less* to declare their HIV status. However, HIV-infected delegates who will be in the United States for *more than 10 days* are still required to disclose their HIV status but may obtain a special waiver from US officials prior to traveling to the United States. *These delegates must obtain an HIV waiver even if they are from countries whose residents do not normally require a visa to travel to the United States or are eligible for expedited waivers under the Visa Waiver Pilot Program.*

The Conference believes that US policy restricting entry of HIV-infected individuals is discriminatory, unjustified by medical knowledge regarding transmission of HIV, and counterproductive to the goal of identifying solutions to the AIDS pandemic. HIV-infected persons have important contributions to make to the success of the Sixth International Conference on AIDS. Accordingly, the Conference has established many programs to encourage the participation of HIV-infected individuals in all aspects of its program.

The Conference has worked extensively with the US government in an effort to eliminate all restrictions on travel by HIV-infected individuals. The Conference has helped to achieve significant improvements in US policy assuring greater confidentiality for individuals requesting HIV waivers. On 3 April 1990, legislation was introduced in the US Congress that could lead to a revision of US regulations that restrict entry of HIV-infected individuals. The Conference will continue to take steps to accomplish the goal of eliminating these travel restrictions.

VISITING SAN FRANCISCO AIDS AGENCIES

Many delegates will be interested in learning about San Francisco's many AIDS service agencies. Many of these agencies are represented in the nonprofit exhibit area in the Marriott Golden Gate Hall. Delegates and media representatives may sign up for a limited program of site visits to these agencies at the AIDS Agency Site Visit table in the nonprofit exhibit area beginning on Wednesday, 20 June, at 8:00 am. Please note the Introductory Seminar on Wednesday, 20 June, which provides additional information about the "San Francisco Model."

VISITOR GUIDES

The *San Francisco Visitors' Guide* and *Key This Week San Francisco* is available at the Information Desks.

WEATHER

San Francisco has a temperate marine climate and enjoys mild weather year-round. Temperatures seldom rise above 70°F (21°C) or fall below 40°F (5°C). Morning and evening fog rolls in during the summer months, but rarely persists. Women are most comfortable with a light jacket or coat, or a suit. Men generally require only light- to medium-weight suits or sports clothes. An all-weather coat will take the chill off cool evenings. Lightweight summer clothes are seldom practical in San Francisco.

SOCIAL ACTIVITIES

OPENING RECEPTION
WEDNESDAY, 20 JUNE,
6:00–8:00 PM
MOSCONE CONVENTION CENTER

The Opening Ceremony will be followed by a reception for all registered delegates. The reception will be held in the Exhibit Hall and the lower and main lobbies of the Moscone Center.

Admission is included in the registration fee. Tickets for your guests may be purchased at $20 (US) each.

MUSICARE EVENINGS:
THURSDAY, 21 JUNE,
8:00–10:00 PM
FRIDAY, 22 JUNE,
8:00–10:00 PM

The Church of St. Ignatius, 650 Parker Ave. at Fulton, San Francisco

MusiCare is an annual San Francisco fund-raising event that benefits AIDS/ARC service organizations. As a welcome from the community to Conference delegates and their guests, a special program featuring selections from concert and operatic repertoires will be presented. The concert evenings are scheduled at The Church of St. Ignatius, a prominent San Francisco landmark.

Donation: $20 per ticket.

ASK MR. FOSTER LOCAL TOURS

Ask Mr. Foster Travel Service Local Tours is located in the Marriott Hotel Grand Assembly. Reservations for tours and more information may be requested there.

SIGHTS OF SAN FRANCISCO

TIME: Wednesday, 20 June, 11:30am–3:30pm
Thursday & Friday, 21 & 22 June, 9:00am–1:00pm and 1:00pm–4:30pm
PRICE: $22.00 Tour will operate with a minimum of 30 participants

Come along as you explore this world famous cosmopolitan city. Learn what makes San Francisco unique. You travel through the many and varied ethnic communities—from the Spanish settlements in the Mission to Chinatown, one of the largest Asian communities outside of the Orient. View the luxury of Nob Hill, through the financial district before continuing to the serene beauty of Golden Gate Park, a 1000 acre man made wonderland of trees, flowers, lakes and beautiful meadows.

MAGNIFICENT MONTEREY

TIME: Thursday, 21 June, 8:00am–6:00pm (10 hours)
PRICE: $62.00 Tour will operate with a minimum of 30 participants

Enjoy a relaxing ride in your motorcoach through California's lush coastal mountains en-route to Santa Cruz and Monterey. Your drive takes you along the rugged Pacific with its white sandy beaches, pounding surf and on into Monterey. Enjoy a leisurely stroll through quaint seaside Monterey, with time for lunch on your own at one of the area's varied oceanfront restaurants.

The wonders of a hidden world will be yours at the internationally acclaimed Monterey Bay Aquarium. Nearly one hundred innovation habitat galleries and exhibits plunge you into Monterey Bay. You will be eye-to-eye with more than 6000 strange and colorful creatures that call Monterey Bay home, from playful sea otters to menacing sharks, elusive octopus and fierce wolf-eels.

Experiencing this magical mystery of the sea is the perfect ending to a glorious day before your scenic return to San Francisco.

SAUSALITO—"THE RIVIERA BY THE BAY"

TIME: Thursday & Friday, 21 & 22 June, 1:30pm–5:30pm
PRICE: $28.00 Tour will operate with a minimum of 30 participants

Drive over the Golden Gate Bridge to Sausalito, where the Mediterranean ambiance beckons you to this old fishing village and quaint artist's colony. Perched on the edge of San Francisco Bay, Sausalito is famous for its waterside shops and unique houses. Walking around this quaint town, you will encounter many small specialty shops and galleries housed in refurbished, colorfully painted buildings.

After exploring Sausalito, your return to San Francisco will be aboard a ferry which provides magnificent views of the City's skyline, the Golden Gate Bridge and Alcatraz.

FILOLI HOUSE AND GARDENS AND THE ALLIED ARTS GUILD

TIME: Friday, 22 June, 8:30am–3:00pm
PRICE: $54.00 Tour will operate with a minimum of 30 participants

Filoli, a 728 acre country estate was built in 1916. The house is an outstanding example of country house architecture in the U.S.A., and is one of the few in California that remains intact in its original setting.

The second portion of the day is spent at the Allied Arts Guild. The Guild stands on a small portion of land, that in the early 1800's was part of the vast Rancho de las Pulgas. Enjoy a leisurely stroll through the Guild's charming gardens. Handcrafted gifts, pottery and candle shops, gourmet cookware and custom jewelry design are just a few of the varied traditional crafts you will enjoy amidst a traditional colonial Spanish design. Lunch on your own.

WINES & VINES

TIME: Saturday, 23 June, 8:30am–4:30pm (8 hours)
PRICE: $56.00 Tour will operate with a minimum of 30 participants

Your deluxe motorcoach will travel over the brilliant waters of San Francisco, Bay, through the lush rolling hills to the world renowned California Wine Country. The lure of the land is its temptation to all the senses, particularly taste and smell. The plants strippling the picturesque fields are grapes, and the product is wine—fine vintage which rival even those of France.

Whether you are a connoisseur of the grape or an enthusiastic beginner, this wine tour offers you the opportunity to increase your knowledge and enjoyment of wine, and acquaint you with some of the finest wineries in the world.

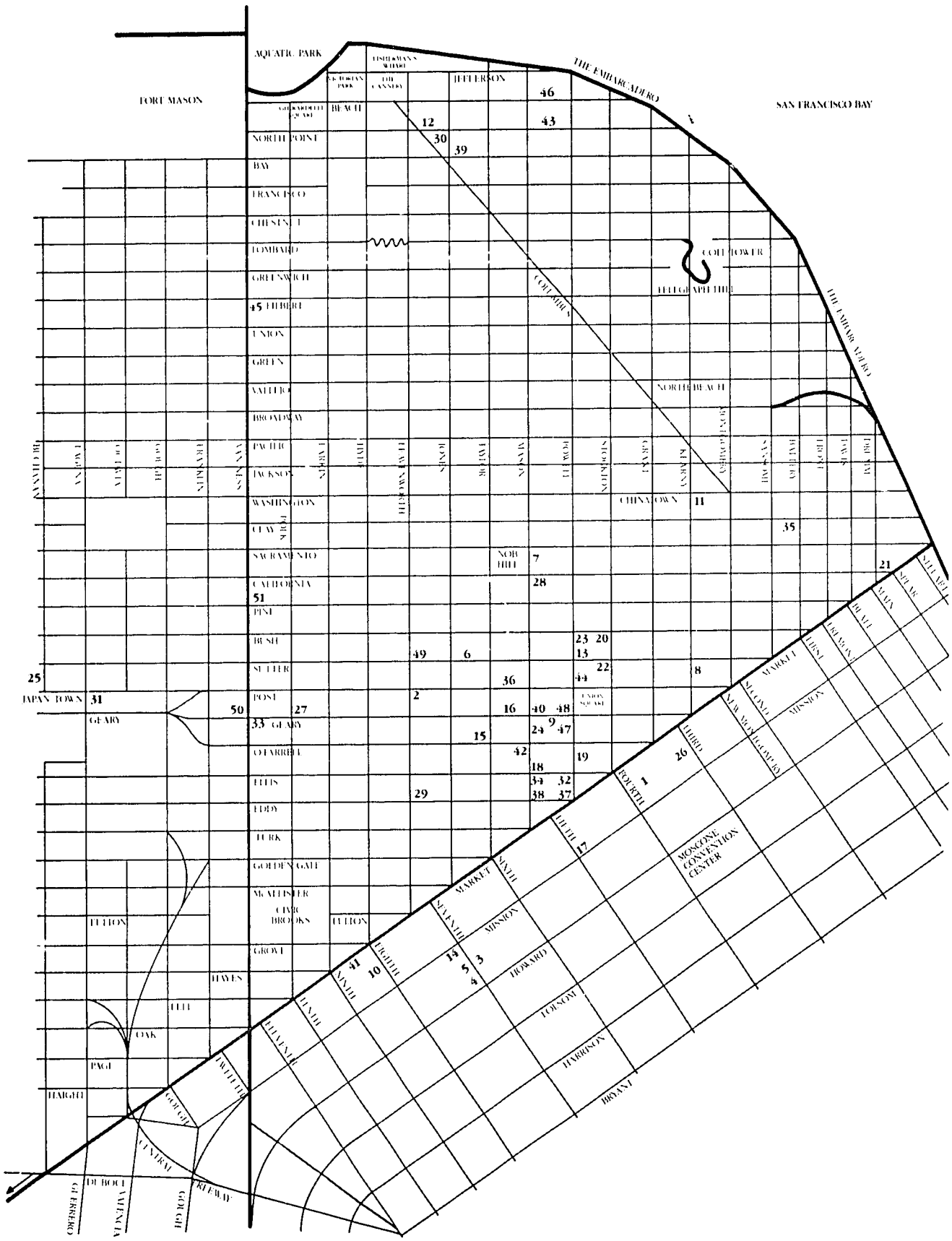
A midday stop at one of California's wine country villages will give you time to sample one of the interesting restaurants for lunch on your own.

TWILIGHT ON THE BAY

TIME: Saturday, 23 June, 7:00pm–10:00pm June 23
PRICE: $92.00 Tour will operate with a minimum of 75 participants.
Price includes: Transportation to/from boat, open bar, buffet dinner, gratuities, taxes & deejay.

Depart your pick up point for the short drive to the pier, where you board a privately chartered vessel. An exciting evening awaits you as you set sail for a 3-hour party cruise. Enjoy sunset on the water and watch the evening skyline light up as you sail under the Bay Bridge. Relax in a casual atmosphere while you sip beverages of your choice and feast on a tasty buffet. Bring a jacket to stroll the deck or kick off your shoes and cut loose to the deejay's lively music. At the end of the evening you will have experienced the perfect way to see the "City by the Bay."

CONFERENCE HOUSING



CONFERENCE HOTELS IN SAN FRANCISCO

The San Francisco Marriott, located next to the Moscone Convention Center, is the official headquarters hotel of the Sixth International Conference on AIDS.

Listed below are hotels offering special rates to Conference delegates. Transportation to and from the Conference site will be available.

Map Key	*Hotel*	*Address*	*Phone*
1	San Francisco Marriott (Headquarters Hotel)	777 Market Street, San Francisco	896-1600
2	Bedford Hotel	761 Post Street, San Francisco	673-6040
3	Best Western Americania	121 Seventh Street, San Francisco	626-0200
4	Best Western Carriage Inn	140 Seventh Street, San Francisco	552-8600
5	Best Western Flamingo Motor Inn	114 Seventh Street, San Francisco	621-0701
6	Canterbury Hotel	750 Sutter Street, San Francisco	474-6464
7	Fairmont Hotel	Atop Nob Hill, San Francisco	772-5000
8	Galleria Park	191 Sutter Street, San Francisco	781-3060
9	Handlery Union Square	351 Geary Street, San Francisco	781-7800
10	Holiday Inn–Civic Center	50 Eighth Street, San Francisco	626-6103
11	Holiday Inn–Financial District	750 Kearny Street, San Francisco	433-6600
12	Holiday Inn–Fisherman's Wharf	1300 Columbus Ave., San Francisco	771-9000
13	Holiday Inn–Union Square	480 Sutter Street, San Francisco	398-8900
14	Hotel Britton	121 Seventh Street, San Francisco	621-7001
15	Hotel Californian	405 Taylor Street, San Francisco	885-2500
16	Hotel Diva	440 Geary Street, San Francisco	885-0200
17	Pickwick Hotel	85 Fifth Street, San Francisco	421-7500
18	Hotel Nikko	222 Mason Street, San Francisco	394-1111
19	Hotel Union Square	114 Powell Street, San Francisco	397-3000
20	Hotel Vintage Court	650 Bush Street, San Francisco	392-4666
21	Hyatt Regency–Embarcadero	5 Embarcadero Center, San Francisco	788-1234
22	Grand Hyatt	345 Stockton Street, San Francisco	398-1234
23	Juliana Hotel	590 Bush Street, San Francisco	392-2540
24	King George Hotel	334 Mason Street, San Francisco	781-5050
25	Kyoto Inn	1800 Sutter, San Francisco	921-4000
26	Le Meridien	50 Third Street, San Francisco	974-6400
27	Lombard Hotel	1015 Geary, San Francisco	673-5232
28	Mark Hopkins Inter-Continental	Number One Nob Hill, San Francisco	392-3434
29	Atherton	685 Ellis Street, San Francisco	474-5720
30	Marriott–Fisherman's Wharf	1250 Columbus Ave., San Francisco	775-7555
31	Miyako Hotel	1625 Post Street, San Francisco	922-3200
32	Monticello Hotel	80 Cyril Magnin Street, San Francisco	392-8800
33	Hotel Richelieu	1050 Van Ness Ave., San Francisco	673-4711
34	Parc Fifty-Five	55 Cyril Magnin Street, San Francisco	392-8000
35	Park Hyatt	333 Battery Street, San Francisco	392-1234
36	Portman	500 Post Street, San Francisco	771-8600
37	Powell Hotel	28 Cyril Magnin Street, San Francisco	398-3200
38	Powell West Hotel	111 Mason Street, San Francisco	771-7185
39	Ramada Fisherman's Wharf	590 Bay Street, San Francisco	885-4700
40	Raphael	386 Geary Street, San Francisco	986-2000
41	San Franciscan Hotel	1231 Market Street, San Francisco	626-8000
42	San Francisco Hilton and Towers	333 O'Farrell Street, San Francisco	771-1400
43	Sheraton at Fisherman's Wharf	2500 Mason Street, San Francisco	362-5500
44	Sir Francis Drake	450 Powell Street, San Francisco	392-7755
45	Vagabond Inn	2550 Van Ness Ave., San Francisco	776-7500
46	Travelodge at Fisherman's Wharf	250 Beach Street, San Francisco	392-6700
47	Villa Florence	225 Powell Street, San Francisco	397-7700
48	Westin St. Francis	335 Powell Street, San Francisco	397-7000
49	York Hotel	940 Sutter Street, San Francisco	885-6800
50	Cathedral Hill Hotel	1101 Van Ness Ave., San Francisco	776-8200
51	Holiday Inn Golden Gateway	1500 Van Ness Ave., San Francisco	441-4000
	University of California, Berkeley	2400 Durant Ave., Berkeley	642-5925

SATELLITE MEETINGS

This listing is provided as a service to our delegates. Unless otherwise indicated, the Sixth International Conference on AIDS is not a co-sponsor of these meetings.

MEETING NAME	DATE/ TIME	LOCATION	SPONSOR	CONTACT INFORMATION
Of Special Note: International AIDS Society General Meeting	June 23, 1990 5:45–7:30 pm	San Francisco Marriott Sea Cliff Ballroom	International AIDS Society	Dr. Friedrich Deinhardt Max v Pettenkofer Institute Pettenkoferstr. 9a D-8000 München 2, FRG Phone: 89/5160 5200-5202 Fax: 89/5380584 Telex: 5215796
Community Outreach Sessions of The Sixth International Conference on AIDS	June 20–22, 1990 7:00–10:00 pm June 23, 1990 2:00–5:00 pm	Herbst Theatre War Memorial Building Van Ness between Grove and McAllister Streets San Francisco	Sixth International Conference on AIDS San Francisco AIDS Foundation Bayview Hunters Point Foundation Project Inform Mano-a-Mano Mobilization Against AIDS Women's AIDS Network 18th Street Services Levi Strauss Co., Inc. UCSF AIDS Clinical Research Center Center for AIDS Prevention Sciences American Physicians for Human Rights	Mr. Mike Shriver 18th Street Services 217 Church Street San Francisco, CA 94114, USA Phone: 415-861-4898
AIDS '90: The Social Work Response—The Second International Conference on Social Work and AIDS	June 16–19, 1990 9:30 am–6:00 pm	San Jose State University San Jose, CA	Boston College Graduate School of Social Work in collaboration with: San Jose State University School of Social Work Tulane University School of Social Work	Dr. Vincent Lynch AIDS '90 Program Committee Boston College Graduate School of Social Work McGuinn Hall Room 109 Chestnut Hill, MA 02167, USA Phone: 617-552-4095 Fax: 617-552-3199
Neurological & Neuropsychological Complications of HIV Infection	June 16–19, 1990	Monterey, CA	National Institutes of Health World Health Organization	Dr. Joseph Berger Dr. Robert Levy University of Miami Medical School P.O. Box 016960 (D-91) Miami, FL 33101, USA Phone: 305-547-6732
2nd Annual AMA HIV Conference: Counseling, Testing, and Early Care	June 18, 1990 1:30–5:00 pm June 19, 1990 8:00 am–5:00 pm	Westin St. Francis, San Francisco	American Medical Association	Dr. John Henning Director, Office of HIV/AIDS American Medical Association 535 North Dearborn St. Chicago, IL 60610, USA Phone: 312-645-4566

MEETING NAME	*DATE/ TIME*	*LOCATION*	*SPONSOR*	*CONTACT INFORMATION*
Oral AIDS Research: Clinical and Laboratory Skill (by invitation only)	June 18–19, 1990 8:00 am–6:00 pm	UCSF (Parnassus)	UCSF Oral AIDS Center NIH-Fogarty & NIDR WHO Collaborating Center for Oral Manifestations of AIDS (Copenhagen) School of Public Health, UC Berkeley	Ms. Carol Neuman School of Dentistry, Oral AIDS Center UC San Francisco Box 0512 HSW 604 San Francisco, CA 94143, USA Phone: 415-476-2169
AIDS/HIV Nursing: Learning from the Past... Envisioning the Future	June 19, 1990 9:00 am–5:30 pm	UCSF: Cole Hall	California Nurses Association (CNA), University of California San Francisco, Association of Nurses in AIDS Care (ANAC)–SF/Bay Area Chapter	Ms. Angie Lewis, RN, MS UCSF School of Nursing Box 0610 San Francisco, CA 94143, USA Phone: 415-476-4455
Collaborative Clinical Studies on AIDS and HIV Infection	June 19, 1990 9:00 am–6:00 pm	San Francisco Marriott	Division of AIDS, National Institute of Allergy and Infectious Diseases, National Institutes of Health European Network for Treatment of AIDS	Dr. John Mills San Francisco General Hospital 995 Potrero Avenue Building 80, Ward 84 San Francisco, CA 94110, USA Phone: 415-821-8666 Fax: 415-821-5981
Community-Based Clinical Trial Network (CBCTN) Meeting	June 19, 1990 8:30 am–10:00 pm	Parc Fifty Five Hotel 55 Cyril Magnin Street Market at Fifth San Francisco, CA 94102-2865	American Foundation for AIDS Research (AmFAR)	Mr. Ron Goldberg Community-Based Clinical Trials Program AmFAR 1515 Broadway Suite 3601 New York, NY 10036, USA Phone: 212-719-0033 Fax: 212-719-0712
Current Therapies and Future Strategies in the Management of HIV-Related CMV Infections	June 19, 1990 3:00–7:05 pm, to be followed by a reception	San Francisco Marriott Yerba Buena Ballroom	Syntex Laboratories, Inc.	Ms. Edna Faulk Pro Health Communications One Lombard San Francisco, CA 94111, USA Phone: 415-788-2464 (within California) Phone: 1-800-635-8158 (outside California)
Searching Online for AIDS Information	June 20, 1990 9:00 am–Noon	VA Medical Center, San Francisco	National Library of Medicine (NIH) VA Medical Center, San Francisco	Ms. Ginny DuPont Medlars Management Section National Library of Medicine 8600 Rockville Pike Bethesda, MD 20894, USA Phone: 301-496-6193
The Challenge of Combination Antiviral Therapy	June 20, 1990 12:30 pm Registration 1:30 pm Program	Masonic Auditorium 1111 California Street Atop Nob Hill	Roche Laboratories	Ms. Deborah Rachlin Triclinica Communications 425 West 59th Street New York, NY 10019, USA Phone: 212-698-4084
A Celebration of Life Worship Service and Networking/Fellowship Reception	June 21, 1990 8:00 pm Service Reception to follow	Grace Cathedral, California & Taylor Streets Reception in Gresham Hall at Grace Cathedral	Interreligious Coalition on AIDS Episcopal Diocesan Commissionon AIDS Integrity San Francisco Bay Area	Mr. Bob Elkins 415-861-5690 Mr. Bob Nelson 415-864-7400 Mr. Tim Greene 415-821-8500
Display of the AIDS Memorial Quilt	June 21, 1990 7:00–10:00 pm June 22-23, 1990 Noon–10:00 pm June 24, 1990 Noon–6:00 pm	Fort Mason Center Festival Pavilion	The NAMES Project Foundation	The NAMES Project 2362 Market Street San Francisco, CA, USA Phone: 415-863-5511

MEETING NAME	*DATE/ TIME*	*LOCATION*	*SPONSOR*	*CONTACT INFORMATION*
Fluconazole: Management of Fungal Infections in People with HIV Disease Chairman: Merle A. Sande, MD, Prof. & Vice-Chairman of Medicine, UCSF School of Medicine	June 22, 1990 6:00 pm Registration 7:00 pm Scientific Session 9:00 pm Reception	San Francisco Marriott Buena Vista Ballroom (Scientific Session) Sea Cliff Ballroom (Reception)	Roerig, a division of Pfizer Pharmaceuticals	Ms. Ellen Kash World Health Communications 41 Madison Avenue New York, NY 10010, USA Phone: 212-679-6200 (within NY State) Phone: 1-800-433-4584 (outside NY State)
Gospel Artists Against AIDS	June 23–24, 1990 8:00 pm	Henry J. Kaiser Arena 550 Tenth Street Oakland, CA	Bill Graham Presents/ In Concert Against AIDS	Rev. Yvette Flunder An Ark of Love 3814 MacArthur Blvd. Oakland, CA 94619, USA Phone: 415-482-1288
AIDS & Ethics, The First International Conference	June 24, 1990 6:00–8:00 pm June 25–26, 1990 8:30 am–9:30 pm June 27, 1990 8:30 am–2:30 pm	San Francisco Marriott	Bioethics Consultation Group, Berkeley, CA International Institute of Bioethics, Luxemborg Kaiser Permanente Medical Care Program, Oakland, CA Park Ridge Center of the Study of Health, Faith, and Ethics, Chicago, IL The Healthcare Forum, San Francisco, CA	Conference Coordinator Bioethics Consultation Group P.O. Box 10145 Berkeley, CA 94709, USA Phone: 415-486-0626 Registration Krebs Convention Management Services 555 De Haro Street, #200 San Francisco, CA 94107-2348 Phone: 415-255-1297
First International Invitational Conference on AIDS and Homeless Youth: An Agenda for the Future (by invitation only)	June 25, 1990 8:00 am–8:00 pm	University of California San Francisco/ Laurel Heights Auditorium	CHILDHOPE Mount Zion Hospital and Medical Center National Institute of Child Health and Human Development National Institute of Mental Health National Network for Runaway and Homeless Youth Services Society for Adolescent Medicine Street Kids International University of California AIDS Task Force UNICEF World Health Organization	Limited to 200 participants. Interested professionals attending the Sixth International Conference on AIDS, who work with street youth outside of North America, should forward a letter of interest and resume to: Ms. G. Cajetan Luna Conference Chairman Mount Zion Hospital and Medical Center 1600 Divisadero Street San Francisco, CA 94120 USA Phone: 415-885-7533
Interactive Global Teleconference—San Francisco–June 1990	June 1990		Interactive Events Ltd.	Mr. Johan Almquist Interactive Events Ltd. Sweden Fax: 46-171-70545
Exhibit on AIDS at the EXPLORATORIUM Description: Illustrated panels describing the AIDS retrovirus, its life cycle, and its impact on the immune system. Diagrams and photographs will illustrate how the retrovirus infects individuals and becomes incorporated into host's cells. Approach leads into discussion of drug development.	June–August 1990	EXPLORATORIUM 3601 Lyon Street San Francisco, CA	EXPLORATORIUM University of California San Francisco	Deborah D. Raphael, AIDS Project Coordinator Charles Carlson, Project Coordinator

COMMERCIAL EXHIBITORS
MOSCONE CONVENTION CENTER, EXHIBIT HALL C

Abbott Laboratories — *Booths 430, 432, 434, 436, 438*

Diagnostics Division
1 Abbott Park Road
Abbott Park, IL 60064-3500, USA
800-323-9100

Abbott Diagnostics is a worldwide leader in the manufacture and distribution of Human Retrovirus Diagnostic Assays and Instrumentation. Please visit Abbott's booth to learn more about their novel HIV-1, HIV-1/HIV-2, HTLV-I and Semi-quantitative p24 Antibody Assays, FDA-approved HIV-1 p24 Antigen, Retrocell HIV-1 PHA, Testpack Rapid HIV, Matrix HIV-1/HIV-2 Supplemental Antibody Test, and HIV Research Monoclonal Antibodies.

ALZA Corporation — *Booth 532*

950 Page Mill Road
P.O. Box 10950
Palo Alto, CA 94303-0802, USA
415-496-8138

Alzet® Osmotic Pumps deliver solutions continuously from 3 days to 4 weeks in animals as small as mice without the need for external connections or frequent handling. These implantable infusion pumps have been successfully used in over 4,000 studies on the effects of continuous administration of a wide range of experimental agents including peptides, growth factors, cytokines, cancer chemotherapeutic drugs, addictive drugs, hormones, steroids, and antibiotics. Stop by our exhibit to see the most recent additions to our product line: the three- and seven-day micro-osmotic pumps.

American Bio-Technologies, Inc. — *Booth 725*

359 Allston Street
Cambridge, MA 02139, USA
617-547-5535

American Bio-Technologies, Inc. provides products and services to basic and applied biotechnology laboratories engaged in AIDS research. ABT's services include DNA sequencing and custom hybridoma and monoclonal antibody production. ABT's current products include recombinant HIV-1 and HIV-2 envelope protein, soluble CD4, p24 antigen, anti HIV-1 gp120 monoclonal antibody, and anti-nef antibody. Proteins can be shipped within twenty-four hours in most cases.

American Foundation for AIDS Research (AmFAR) — *Booths 301, 303, 305*

1515 Broadway, Suite 3601
New York, NY 10036, USA
212-719-0033

The American Foundation for AIDS Research (AmFAR) will be displaying its publications, *AIDS/HIV Experimental Treatment Directory; Learning AIDS: An Information Resource Directory; AIDS & the Primary Care Provider; AIDS Clinical Care; and AIDS Targeted Information (ATIN).* The AmFAR representatives will also answer questions regarding AmFAR's various grant programs.

American Medical Association — *Booth 201*

535 N. Dearborn Street
Chicago, IL 60610, USA
312-645-4542

Products will include: *HIV Infection and Disease: Monographs for Physicians and Other Health Care Workers; HIV Blood Counseling: AMA Physician Guidelines; HIV Blood Test Counseling Video; Youth HIV Education Project; and HIV Policy for the 90s.*

American Progressive Products Corporation — *Booth 127*

216 East Eucalyptus Street
Ojai, CA 93023-2707, USA
805-646-8763

PROTECTOR™ Safety Syringe Needle Cap. The new hypodermic needle cover that offers full time protection—before, during and after the injection. Automatically re-caps and re-locks itself after the injection. Specifically designed for I.M. and subcutaneous (bevel up indicator) injections. Fits on all standard syringe components.

American Red Cross — *Booth 632*

National Headquarters
Office of HIV/AIDS Education
1709 New York Avenue, NW , Suite 208
Washington, DC 20006, USA
202-639-3223

Offers HIV/AIDS education on national and local levels through the following products: video containing general HIV/AIDS information; 13 brochures on individual topics; educational and training programs targeting workplace, youth, including Hispanic and African-American youth, families, and the general public. Local Red Cross chapters should be contacted for detailed information.

Angewandte Computer Software GmbH — *Booth 311*

Landsberger Strasse 439
D-8000 Munchen 60
West Germany
49-89-883-091

Computer Software for AIDS Research: ASSP™ AIDS-Spread Simulations and Projections: Simulations and Projections based on deterministic compartment models. Delphi™: Survey analysis, evaluation and presentation.

Applied bioTechnology, Inc. — *Booth 839*

80 Rogers Street
Cambridge, MA 02142, USA
617-492-7289

The purpose of Applied bioTechnology, Inc.'s exhibit is to provide information about the company's Insite™ product line and various HIV-1 tests and detection kits.

Australian Department of Community Services & Health — *Booth 101*

AIDS Branch
GPO Box 9848
Canberra, ACT 2601
Australia
616-06289-1555

The AIDS Branch of the Australian Department of Community Services and Health manages the Australian Federal Government's AIDS program, the objectives of which are to eliminate transmission of the human immunodeficiency virus (HIV) and to minimize the personal and social impact of HIV infection.

Becton Dickinson Immunocytometry Systems — *Booths 233, 235*
2350 Qume Drive — 408-954-2153
San Jose, CA 95131-1807, USA

Exhibiting FACScan™, the five-parameter flow cytometer that combines high performance features with a compact design and easy-to-use computer workstation, FACSPrep™ the automatic improvement in slow cytometric sample preparation and the industry's largest selection of monoclonal antibodies to human leucocyte antigens, complement receptors, human immunoglobulins and mouse leucocyte antigens. Featured monoclonal reagents include SimulTEST™ reagents for two color analysis and CycleTEST™ DNA Reagent System, the first comprehensive system for DNA Analysis.

Bioject, Inc. — *Booth 135*
7620 SW Bridgeport Road — 503-639-7221
Portland, Oregon 97224

The Biojector® Jet Injection System is a needleless injection device developed to eliminate the risk of cross-contamination and the spread of infections associated with the use of the needle-syringe. The Biojector® system employs a plastic, single-shot, sterile medication ampule which is easily discarded after use. Medication is quickly and comfortably propelled into the patient's skin without the traditional needle puncture.

Bio-Rad Laboratories — *Booth 212*
1000 Alfred Nobel Drive — 415-724-7000
Hercules, CA 94547, USA

The Bio-Rad Novapath™ HIV-1 Immunoblot provides reliable testing in less than 3 hours for detection of specific antibodies to the Human Immunodeficiency Virus (HIV-1). This sensitive, confirmatory test incorporates Western Blot technology for consistent, accurate results. Convenient kit packaging includes all reagents and standardized, pre-blotted nitrocellulose strips. Contact Bio-Rad for full details.

Biotech Research Laboratories, Inc. — *Booth 631*
1600 East Gude Drive — 301-251-0800
Rockville, MD 20850, USA

Biotech is a leading biotechnology company specializing in human viral diagnostics and detection technologies. The company produces over 30 monoclonal antibodies as well as HIV and HTLV-I ELISA and Western Blot kits. Biotech produces a family of Western Blot kits that are the standard for detection of antibodies to HIV and HTLV-I.

Boston Biomedica, Inc. — *Booth 129*
375 West Street — 508-580-1900
West Bridgewater, MA 02379, USA

Boston Biomedica, Inc. is an independent, diagnostic manufacturer and a leading supplier of serologic research products to a growing worldwide infectious disease diagnostic research market. Our BBI PERFORMANCE panels are widely recognized as "Gold Standards" by which the quality of infectious disease test kits is measured. BBI also maintains a well respected technical support laboratory which is an ideal site for clinical trials, performance evaluations and other product development activities.

Calypte Biomedical Corporation — *Booth 113*
1440 Fourth Street — 415-526-2541
Berkeley, CA 94710, USA

Calypte Biomedical Corporation offers Urine and Blood tests for HIV-1 Antibody in microplate and single use formats for research use only. A new diagnostic market test for monitoring HIV-1 disease progression is offered as a service for medical researchers. Calypte also develops and produces monoclonal antibodies by contract.

Cambridge BioScience Corporation — *Booth 105*
365 Plantation Street — 508-797-5777
Worcester, MA 01605, USA

A simple, highly accurate five-minute latex agglutination test for the detection of HIV-1 antibody. Sample can be whole blood from finger-stick sample, serum or plasma. This test can be used by properly trained personnel as a screening test in hospital laboratories, medical clinics, physicians' offices, and emergency care situations, and in blood banks or other settings where enzyme immunoassays are not practicable or available.

Caremark Inc. — *Booths 307, 309*
455 Knightsbridge Parkway — 708-215-3551
Lincolnshire, IL 60069, USA

Nationwide, Caremark has provided home and outpatient healthcare for over 6,000 AIDS patients since 1982 and currently treats over 1,000 patients. Caremark combines its extensive resources with those of Baxter Healthcare, its parent company, to provide: IV and Aerosol Therapies, Enteral Nutrition (with Nestles), Investigational Therapy Support, Information Management (with IBM), and Hemophilia Therapies.

CarePlus, Inc. — *Booth 732*
6700 North Andrews Avenue, Suite 700 — 305-493-6464
Fort Lauderdale, FL 33309, USA

CarePlus is a national home infusion therapy company, with 18 offices serving patients in 25 states. In addition to its comprehensive clinical services, CarePlus offers the AIMPLUS (AIDS Individualized Management with a PLUS) program to AIDS patients. Social service coordinators help patients deal with their psychological, social, and special needs.

Carter-Wallace Inc. — *Booths 638, 640*
767 5th Avenue — 212-758-4500
New York, NY 10153, USA

Trojan Condoms, which are marketed by Carter-Wallace, Inc. are the number one brand in the U.S., with over 50 percent of the market. Carter-Wallace is a New York based marketer and manufacturer of toiletries, pharmaceuticals, diagnostic specialties, and proprietary drugs.

Channing L. Bete Company, Inc. — *Booth 240*
200 State Road — 413-665-7611
South Deerfield, MA 01373-0200, USA

Scriptographic Booklets—What You Should Know Videos. AIDS education at its best! Our easy-to-read style is designed to reach readers of all backgrounds. Each booklet is carefully researched and written, reviewed by experts and updated regularly. Our "What You Should Know" videos are innovative, attention-getting presentations in a unique format.

Clinical Homecare/NMSA — *Booth 636*
655 Sutter Street, Suite 400 — 415-563-4222
San Francisco, CA 94108, USA

Clinical Homecare/NMSA through its JCAHO accredited pharmacy and nursing protocols provides medically driven, "high tech" home infusion therapy of the highest quality. Therapies range from Triple Mix Hyperalimentation including a lipid research protocol, to intravenous antibiotics. Ganciclovir, aerosolized and I.V. Pentamidine and IvGG have been utilized extensively, with improved quality of life for PWAs.

Clinical Laboratory International — *Booth 529*
c/o Pan European Publishing Company — 322-242-2992
216 Rue Verte
Brussels, B 1210
Belgium

Clinical Laboratory International reviews in its May edition the latest products made available to the international market for AIDS diagnostics. The magazine has a worldwide circulation of over 30,000 and reaches clinical biologists, medical lab technologists and laboratory management. The circulation is 100 percent qualified and personally requested (BPA audit).

Clonatec–BioSoft — *Booth 231*
60 rue de Wattignies — 1-43-42-38-30
Paris Cedex 12 75580
France

CLONATEC: Clonatec is specialized in the development of infectious disease diagnostic kits, including Rapid HIV-1/HIV-2 kits for screening and typing and Microtiter plates kits: total HIV 1+2 and HIV-2.
BIOSOFT: Immunodeficiency opportunistic diseases diagnostic. Our Monoclonal antibodies (CMV, Herpes, Candida...), antigens, Synthetic peptides HIV-1—Our products put you in the Foremost rank of Technology.

Colortrieve Record Systems, Inc. — *Booth 738*
Saxonville Industrial Park — 508-877-6404
One Watson Place
Framingham, MA 01701, USA

Colortrieve specializes in patient record folders for long-term, continuous care patients. We have a full line of in-stock and custom designed patient medical record folders and filing supplies, and we act as consultants to help your department fill its unique record keeping needs.

Coulter — *Booths 119, 121, 123*
601 West 20th Street — 800-885-0131
Hialeah, FL 33010, USA

Coulter is exhibiting a series of new products including assays to detect HIV 1/2 Antibodies (single well combination test), HTLV I/II Antigens (single well combination test), SIV (p27) Antigen, HIV p24 Antibody and HIV p24 Antigen. New microplate equipment and software are demonstrated. In addition, the EPICS® Elite Flow Cytometry and complete line of unique cell surface markers (T4, T8, B, etc.), are displayed.

Curaflex Infusion Services, Inc. — *Booth 635*
9087 Arrow Route, Suite 280 — 800-444-2872
P.O. Box 1267
Rancho Cucamonga, CA 91730, USA

Curaflex Infusion Services, a national provider of home infusion therapy, was founded with a single-minded purpose of providing hospital quality health care in the home. Curaflex provides in-home infusion services by focusing on disease specific programs. The infusion therapy programs include, but are not limited to: TPN, antibiotic, chemotherapy, hydration and aerosolized pentamidine.

Current Science — *Booth 629*
20 North Third Street — 215-574-2266
Philadelphia, PA 19106, USA

Current Science publishes the leading journal in this field, AIDS. Featuring a rapid peer-review and publication procedure, *AIDS* presents the latest new developments in research and clinical treatment. *AIDS* also contains a bibliography of current world literature and the latest CDC/WHO statistics. Other publications include a review journal, *Current Opinion in Infectious Diseases*, an annual update titled *AIDS '90* and bibliographic databases for PCs.

Department of Veterans Affairs — *Booth 533*
VA Central Office — 202-233-3631
AIDS Program Office (10B/AIDS)
810 Vermont Avenue, NW
Washington, DC 20420, USA

The Department of Veterans Affairs cares for approximately 7 percent of all the AIDS patients in the United States. This exhibit will show how the VA has responded to the HIV challenge by highlighting an array of clinical services, research activities and education initiatives.

DeVilbiss Health Care, Inc. — *Booth 204*
P.O. Box 635 — 814-443-4881
Somerset, PA 15501, USA

DeVilbiss' exhibit hopes to bring to the attention of the medical community an ultrasonic nebulizer to aerosolize drugs for *Pneumocystis carinii* pneumonia. The product is a portable ultrasonic nebulizer commonly referred to as the "Porta-Sonic." It has the ability to aerosolize drugs to a particle size of less than 2 microns.

Disease Detection International, Inc. — *Booth 229*
17935 Skypark Circle, Suite D — 714-261-7267
Irvine, CA 92714, USA

Disease Detection International (Irvine, CA) offers the Fluoroslide test kit for Pneumocystis carinii which is an IFA stain, as well as the Serocard HIV-1 diagnostic 10 minute solid phase membrane ELISA test which allows the use of whole blood, serum, or plasma as the sample.

Du Pont Company — *Booths 226, 228, 325, 327*
P.O. Box 80024 — 617-482-9595
Wilmington, DE 19880-0016, USA

Du Pont will display a full array of virus research products, including antigen and antibody assays, monoclonal antibodies, proteins, immunocytochemical kits, and nucleic acid hybridization probes for HIV-1, HIV-2 and HTLV-I. The HIV-1 p24 core profile ELISA will also be featured.

Elsevier Science Publishers-Excerpta Medica — *Booth 230*
North American Database Department — 212-633-3971
655 Avenue of the Americas, 5th Floor
New York, NY 10010, USA

Elsevier Science Publishers, the world's largest biomedical publisher, unveils its newest CD-ROM product, the Excerpta Medica *Immunology & AIDS CD-ROM*. The *Immunology & AIDS CD-ROM*—quarterly subscription—contains 10 years of citations and abstracts to the international AIDS literature. This exciting new product will be available for demonstration and ordering, along with the monthly abstract journal, *AIDS: Current Awareness Abstracts from Excerpta Medica*.

Federal Republic of Germany — *Booths 729, 731, 733*
Federal Republic of Germany — 228-59-3660
Federal Ministry of Research and Technology
Codesberger Allee 185-189
D-5300 Bonn
West Germany

Providing information on the purpose and structure of the Research Program on AIDS of the Federal Republic of Germany, the German funding program for biomedical and social sciences in AIDS; lists and abstracts of projects, project leaders and research centers; meeting point to contact German scientists working in the program.

Federal Republic of Germany — 228-3080
Federal Ministry of Youth, Family Affairs, Women and Health
Kennedy Allee 105-107
D 5300 Bonn 2
West Germany

Governmental Program on AIDS (information, education, counselling, care, research) in cooperation with the Federal Center for Health Education, Cologne, and the AIDS-Center, Berlin.

Federal Republic of Germany — 228-53-5804
German Federal Ministry for Economic Cooperation
Referat 221, Karl-Marx-Strasse 4-6
5300 Bonn 1
West Germany

The German Federal Ministry for Economic Cooperation is responsible for developing policy measures for the German Federal Government. It commissions GTZ GmbH (German Agency for Technical Cooperation) by implementing official German bilateral Technical Cooperation, and finances "Funds-in-Trust" Projects of WHO. AIDS control programs in 26 countries are coordinated with GPA/WHO.

Fisons Pharmaceuticals — *Booth 329*
Critical Care Division — 716-475-9000
P.O. Box 1766
Rochester, NY 14603, USA

Fisons Pharmaceuticals Critical Care Division invites you to stop at our booth to receive the latest information about IMFERON®, the only available injectable iron dextran. Information on FISONEB®, our Ultrasonic Nebulizer will also be available. Fisons helpful administrative guides for IMFERON will be available.

Fujirebio America, Inc. — *Booths 116, 118, 215, 217*
30 Two Bridges Road , Suite 250 — 201-227-8888
Fairfield, NJ 07006, USA

Fujirebio manufactures and distributes diagnostic reagents worldwide, including Serodia-HIV and Serodia-HTLV-I for the detection of antibodies to HIV-1 and HTLV-I. These microplate assays, based on Particle Agglutination, are highly sensitive and specific and require no washing procedures. The company's Fastec-901 Automated Pattern Reader uses a CCD camera to read agglutination patterns.

Gen-Probe Incorporated — *Booth 531*
9880 Campus Point Drive — 619-546-8000
San Diego, CA 92121, USA

Gen-Probe Incorporated will be featuring its HIV Research Probe product—AccuSearch Chemiluminescent DNA Probe and Detection System. Also on display will be the Mycoplasma T.C. Rapid Detection System and clinical diagnostic tests for Mycobacterium tuberculosis, avium/intracellulare and gordonae in culture.

Genetic Systems — *Booths 540, 639*
3005 First Avenue — 206-728-5190
Seattle, WA 98121, USA

Genetic Systems will display a complete line of AIDS Diagnostic test kits including HIV-1, HIV-2, HIV Ag, HIV-1/2, HIV-1 and HIV-2 Peptides in an EIA microplate format. We will introduce our GENIE HIV-1 and HIV-1/2 rapid test kits. The confirmatory Pageblot (Western blot) system for HIV-1, HIV-2, and HTLV-I will be demonstrated.

Health Care Financing Administration — *Booths 534, 536*
Department of Health and Human Services — 301-966-3000
6325 Security Boulevard
Baltimore, MD 21207, USA

The Health Care Financing Administration (HCFA) plays a major role in financing health care services for persons with AIDS. HCFA's booth will provide information to conference attendees about the Medicaid and Medicare programs and their interaction with other government and private agency programs to provide medical assistance to AIDS patients.

HMSS, Inc. — *Booth 238*
12450 Greenspoint Drive, Suite 1100 — 713-873-4677
Houston, TX 77060, USA

HMSS, Inc., Houston, TX, provides home infusion therapies and related support services for administration of antibiotics, chemotherapy, parenteral and enteral nutrition, analgesics, fluids, and other treatments. Our 32 locations throughout the U.S. provide 24-hour, 7-days-per-week IV nursing and pharmacy services; patient acceptance, education, and compliance monitoring; communication with physician; reimbursement management; and supply services.

Hoffmann-La Roche Inc. — *Booths 526, 528, 625, 627*
340 Kingsland Street — 201-235-5000
Nutley, NJ 07110, USA

We at Hoffmann-La Roche are dedicated to helping people with AIDS and their families by providing prescription medicines for AIDS-related diseases, anonymous HIV testing services, home infusion therapy and support for public education and community programs. The international Roche organization continues to research and develop new diagnostics and treatments.

Homedco Infusion — *Booth 537*
Corporate Office — 714-755-5600
17650 Newhope Street
Fountain Valley, CA 92708, USA

Homedco Infusion, part of Homedco, Inc. is one of the top ten home infusion therapy providers nationwide. Homedco was the first national home infusion provider to receive JCAHO accreditation. Infusion therapy services are provided at 65 locations nationwide.

IAF BioChem International, Inc. — *Booth 740*
10,900 Hamon Street — 514-335-9922
Montreal, Quebec H3M 3A2
Canada

The purpose of BioChem's exhibit is to exchange information with delegates about the latest advances in AIDS testing. The product to be displayed is BioChem's Enzyme Immunoassay for the Detection of Antibodies to HIV-1 and HIV-2. This is a synthetic peptide-based diagnostic test for the detection of antibodies to both types of the AIDS virus. The test is presented in microtiter plate format.

IIT Research Institute — *Booth 114*
10 West 35th Street — 312-567-4000
Chicago, IL 60638, USA

IIT Research Institute is a not-for-profit organization that performs applied research and development for industrial and governmental clients in the physical and biological sciences on a contract basis. The life sciences staff offers expertise in virology, microbiology, immunotoxicology, generalized toxicology, and cytokine biology.

Immunodiagnostic/Laboratories — *Booth 237*
488 McCormick Street — 800-888-1113
San Leandro, CA 94577, USA

IDL is a medical testing firm specializing in immunology, with a concentration in HIV disease. The company offers HIV by ELISA, Western Blot, p24 Antibody and Antigen, Beta-2-Microglobulin, Neopterin, and T and B Cell studies to practitioners in the United States and Canada. IDL maintains ongoing research in HIV markers.

IMRÉ Corporation — *Booth 232*
130 Fifth Avenue North — 206-448-1000
Seattle, WA 98109-4933, USA

The PROSORBA® immunoadsorption treatment column is for therapeutic removal of circulating immune complexes (CIC) and immunoglobulin G (IgG) from the plasma of patients with idiopathic thrombocytopenic purpura (ITP). The device utilizes protein A immobilized on a silica matrix.

Innogenetics N.V. — *Booths 331, 333*
Kronenburgstraat 45 — 00-32-3-216-48-20
Antwerp 2000
Belgium

Innogenetics, your partner in biotechnology. Our HIV diagnostics include: Innotest HIV Antigen plus Confirmatory (neutralizing) Reagents and Standard Solutions; INNO-LIA HIV-1/HIV-2 Ab (Single Strip Line Immuno-Assay) for differential detection of antibodies to multiple HIV-1 and HIV-2 antigens (recombinant and synthetic peptides); INNOTEST HIV-1/HIV-2 Ab. The INNO-KINE RANGE is a full range of cytokines and antibodies.

Intravenous Home Care — *Booth 633*
1660 South Stemmons — 214-420-8882
Lewisville, TX 75067, USA

Intravenous Home Care, a national home infusion company, provides pharmacy and nursing services for parenteral/enteral nutrition, antibiotics, pain management, chemotherapy, hydration, aerosolized pentamidine. The company also manages clinical drug trials for AIDS-related therapies, antibiotics, etc. Branch operations in Houston, Chicago, Philadelphia, Oklahoma City, Tulsa, and Merrillville, Indiana.

J.H. Emerson Company — *Booth 339*
22 Cottage Park Avenue — 617-864-1414
Cambridge, MA 02140, USA

On display is the new Emerson 7-AT Treatment Chamber, designed to protect hospital personnel from exposure to harmful aerosolized drugs and airborn infectious disease (such as Tuberculosis) during the administration of Pentamidine or during sputum induction procedures.

Labsystems Oy — *Booth 730*
Pulttitie 8 — 358-0-75821
00880 Helsinki
Finland

Labsystems offers a complete set of 3rd generation EIA tests for screening and typing of HIV-1 and HIV-2 infections. In addition, we have a wide range of instruments and liquid handling devices for manual and automated enzyme immunological assays.

London International Group plc — *Booths 214, 216, 218, 313, 315, 317*
North Circular Road — 44-81-527-2377
London, England E4 8QA
UK

The world's leading manufacturer of high quality condoms (meeting national and international standards) and latex surgical gloves, with factories in the USA, the UK, Spain, Italy, India and Malaysia. Brands include Ramses, Sheik, Durex, Hatu Personal, and Koh-i-Noor. The unique starch-free surgeons' glove is known as Regent Biogel.

Lyphomed, Inc. *Booths 426, 428, 525, 527*
10401 West Touhy Avenue 708-390-6500
Rosemont, IL 60018, USA

Lyphomed, Inc., Rosemont, IL, the "New Force in Critical Care Pharmaceuticals" is also the exclusive U.S. manufacturer and marketer of Pentam® 300 (Sterile Pentamidine Isethionate) for the treatment of *Pneumocystis carinii* pneumonia. NebuPent™ (Pentamidine Isethionate) for inhalation solution—for use in prophylaxis in HIV infected individuals considered at high risk for *Pneumocystis carinii* pneumonia.

M.D. Personal Products, Inc. *Booth 535*
2536 Barrington Court 415-732-9953
Hayward, CA 94545, USA

Women's Choice Female Condomme: The first natural latex rubber condom worn by the woman providing disease protection and birth control. It features the ease of tampon-like insertion. Clinical studies indicate that its unique design allows it to remain in place comfortably and promises to be highly effective and acceptable.

Marcel Dekker, Inc. *Booth 835*
270 Madison Avenue 212-696-9000
New York, NY 10016, USA

Marcel Dekker, Inc. will feature recent titles including: *AIDS Clinical Review 1990* (Volberding/Jacobson), *AIDS Vaccine Basic and Clinical Research* (Putney/Bolognesi), *Opportunistic Infections in Patients with the Acquired Immunodeficiency Syndrome* (Leoung/Mills), *AIDS* (Levy), *HIV Detection by Genetic Engineering* (Luciw/Steimer), and *Kaposi's Sarcoma* (Ziegler/Dorfman). Discount order forms will be available.

Marquest Medical Products, Inc. *Booth 837*
11039 E. Lansing Circle 303-790-4835
Englewood, CO 80112, USA

Marquest Medical Products, Inc. is an innovator and provider of disposable specialty products for respiratory care, anesthesia and blood gas analysis. Marquest, a manufacturer of over 1,000 different products, introduces their sixth pneumatic nebulizer, the Respirgard II Nebulizer system—another specialty product for the treatment of *Pneumocystis carinii* pneumonia in AIDS.

Mary Ann Liebert Inc. *Booth 335*
1651 Third Avenue 212-289-2300
New York, NY 10128, USA

Mary Ann Liebert, Inc., a leading medical and scientific publisher, will exhibit peer-reviewed journals such as *AIDS Research and Human Retroviruses* (the oldest peer-reviewed publication in this field), *AIDS Patient Care, Viral Immunology, Interferon Research, Hybridoma, DNA and Cell Biology, Pediatric AIDS and HIV Infection: Fetus to Adolescent, Aging: Immunology & Infectious Disease*, and much more.

Maryland Medical Laboratory Inc. *Booth 109*
1901 Sulphur Spring Road 301-247-9100
Baltimore, MD 21227, USA

Maryland Medical Laboratory, Inc. is a "certified" AIDS Clinical Treatment Group (ACTG) facility in both Immunology and Virology. The Virology Department has one of the largest privately funded Biosafety Level 3 laboratories in the nation and has performed over 5400 HIV-1 co-cultures in the last 3 years. The Virology Department offers *in vitro* evaluation of candidate antiviral agents using primary and continuous human lymphocytes as the target cell.

Medical Interviews *Booth 236*
Division of Hospital Research Association 201-575-3650
383 Route 46 West
Fairfield, NJ 07004, USA

Medical Interviews, a division of Hospital Research Associates: our team of experienced interviewers will be distributing carefully developed questionnaires. We will be gathering the answers to vital marketing and clinical questions—answers that can effect new products introduction or the continuation of existing health care products and services.

Medical Publishing Group (The) *Booths 440, 539*
1440 Main Street 617-893-3800
Waltham, MA 02154-1649, USA

The Medical Publishing Group plans to exhibit the following newsletters, books and reprint collections at the convention: *The New England Journal of Medicine; AIDS Clinical Care Newsletter; Morbidity & Mortality Weekly Report; Journal Watch; AIDS Reprint Collections, I & II; Medical Ethics Reprint Collections; Medical Uses of Statistics; Law-Medicine Notes; The AIDS Knowledgebase (hardcover); Compact Library: AIDS*—full demonstrations. We intend to display our books and reprint collections, distribute sample copies of our magazines and newsletters and demonstrate *Compact Library: AIDS.*

Medicorp, Inc. *Booth 530*
5800 Royalmount 514-733-3000
Montreal, Quebec H4P 1K5
Canada

Medicorp, Inc. the exclusive licensee of the patented passive hyperimmune therapy [PHT] is sponsoring clinical trials in London, New York City and The Congo with others planned for California, Canada and Argentina. PHT involves the transfusion of sterilized plasma containing high titer neutralizing antibody from asymptomatic seropositives into AIDS patients.

MediGenics, Inc. *Booth 133*
7101 Mercy Road, Suite 420 402-391-6944
Omaha, NB 68106, USA

Purified HIV-1 protease in milligram quantities is now available for purchase, supplied as lyohilized powder. Protease solutions and other custom forms may be considered as special order items.

Menlo Care, Inc. *Booth 634*
1350 Willow Road 800-752-8900
Menlo Park, CA 94025, USA

Menlo Care offers venous access devices made of Aquavene®, a new material that softens to silicone-like flexibility in the vessel, and expands two gauge sizes. Streamline® peripheral catheters reduce complications for longer dwell. Landmark® midline catheters offer over-the-needles, virtually bloodless insertion up to 6 inches for access to larger vessels without guidewires or introducers.

Merieux Institute, Inc. *Booth 826*
P.O. Box 523980 800-356-0585
Miami, FL 33152-3980, USA

Merieux Institute invites you to stop by our booth and discuss with us Ditiocarb Sodium, a drug that has undergone international clinical trials for use as an immunoprotective agent in advanced ARC/AIDS patients, as well as Multitest CMI, skin test antigens for delayed hypersensitivity.

MicroGeneSys, Inc. *Booth 103*
400 Frontage Road 203-932-3203
West Haven, CT 06516, USA

Recombinant HIV-1 gp160, gp120, p66 and p24 proteins are available for AIDS research. These highly purified full-length proteins, produced with MicroGeneSys' advanced baculovirus expression-vector technology, are useful in Western blotting, ELISAs, and lymphocyte binding and stimulation studies. Kits for antibody detection against all four antigens and antisera are also available.

Multiple Peptide Systems, Inc. *Booth 727*
10955 John Jay Hopkins Drive 619-455-3710
Building 2, Room L239
San Diego, CA 92121, USA

Proprietary techniques enable MPS to supply you with all the custom HIV or other peptides you need at a fraction of the time and cost of other facilities. MPS offers three grades of peptides, as well as conjugation, HF cleavage service and apparatus.

Murex Corporation *Booths 737, 739*
3075 Northwoods Circle 404-662-0660
Norcross, GA 30071, USA

Murex will feature its new 10-minute SUDS AIDS Antibody Screening Test for use by hospitals, physicians and in alternate sites where laboratory facilities are not available. The Company will also present new tests for HIV-1 and HIV-2, a method for rapid screening of HIV cultures, and HIV specific monoclonal antibodies.

Nature Publishing *Booth 206*
65 Bleecker Street 212-477-9600
New York, NY 10012, USA

Nature Publishing Co.—Home of *Nature*, the world's foremost scientific journal; *Biotechnology*, international monthly for industrial biology; *Diagnostics & Clinical Testing*, the industry's new magazine of record; *Lab Animal*, information, ideas, and methods for the animal research professional.

Neosystem Laboratoire *Booth 735*
7 rue de Boulogne 33-88-79-08-79
67100 Strasbourg
France

With over 200 references, Neosystem Laboratoire offers the following services: HIV peptides, custom peptide synthesis, solid-phase and liquid-phase synthesis, bio active peptides, and antisera.

New England Critical Care
Integrated Care Systems *Booths 108, 110*
50 Washington Street 508-836-3610
Westborough, MA 01581, USA

Information will be provided on the comprehensive therapies and services offered by New England Critical Care and Integrated Care Systems in regards to home infusion and aerosol therapies. Therapies offered to persons with HIV disease include antibiotics, aerosol pentamidine, chemotherapy, pain management, hydration therapy, parenteral and enteral nutrition, and other innovative therapies. Educational information regarding the therapies and services provided by New England Critical Care and Integrated Care Systems will be available at the booth.

North American Biologicals, Inc. *Booth 207*
16500 NW 15th Avenue 305-628-0080
Miami, FL 33169, USA

North American Biologicals, Inc. (NABI), the largest independent provider of human blood plasma elements to the healthcare industry worldwide, collects, processes, tests and sells human-blood-related products. Its Specialized Testing Services division performs in excess of 7 million blood tests annually, including 3.5 million HIV tests. NABI provides HIV testing to most U.S. military departments.

Norwich Eaton Pharmaceuticals, Inc. *Booth 205*
17 Eaton Avenue 607-335-2937
Norwich, NY 13815, USA

Norwich Eaton Pharmaceuticals, Inc. will be promoting Vivonex® T.E.N. (Total Enteral Nutrition), the only enteral formula shown to reduce moderate-to-severe diarrhea and maintain body weight in HIV-positive patients.

Okamoto U.S.A., Inc. *Booths 831, 833*
18 King Street 203-378-0003
Stratford, CT 06497, USA

Manufacturer/Distributor of full line of latex rubber condoms including Crown, Harmony, Beyond and Beyond Plus (spermicidal).

Olympus Corporation *Booths 115, 117*
Clinical Instruments Division 800-426-2042
Lake Success, NY 11042, USA

Olympus will introduce our new SynthEIA™ microwell screen for HIV antibodies, using synthetic peptide technology. A complete EIA line for retrovirus research (HIV-2, HIV-1/2, HTLV-I, HTLV-II, and HTLV-I/II) is also available. Olympus Immunochemicals will show a complete line of monoclonal antibodies for human immunology and retrovirus research.

Organon Teknika N.V. *Booths 726, 728, 825, 827*
Veedijk 58 32-14-40-40-40
Turnhout B-2300
Belgium

Organon Teknika serves hospital and blood bank laboratories through forty local subsidiaries in all geographical regions around the globe. Diagnostic systems are mainly, but not exclusively, based upon the Microelisa principle. The product ranges include viral, bacterial, parasital and endocrinological assays. In retroviral diagnostics these are: for screening/diagnosis—Vironostika HIV MIXT, Vironostika HIV, Vironostika anti-HIV Uniform, Vironostika HTLV-I; for confirmation/diagnosis—Vironostika HIV Antigen, Vironostika HIV Core, LIATEK HIV 1+2, HIV Western Blot.

Ortho Diagnostic
Systems Inc. *Booths 126, 128, 225, 227*
Route 202 201-218-8588
Raritan , NJ 08869, USA

Ortho Diagnostic Systems offers a wide range of products for Hepatitis and retroviral testing. This includes licensed tests for HBsAg, HBcAb, HIV-1, HTLV-I, and HIV-1 Western Blot. Research use only products available include recombinant tests for HIV-1, and HIV-1/2, RIBA-HIV216, HIV-2 Western Blot, HTLV-I Western Blot and HCV.

Serologicals, Inc. *Booth 111*
2550 Windy Hill Road, Suite 219 404-956-1611
Marietta, GA 30067, USA

Serologicals, Inc., Specialty Products Division, Marietta, GA, will be featuring HIV and HTLV I/II Serum Panels, an HIV-1 Seroconversion Panel, Cryopreserved Lymphocytes from HTLV I or HTLV II infected donors as well as other Disease-State antibodies and services for research and development.

Syntex Laboratories, Inc. *Booth 209*
3401 Hillview Avenue 415-855-5185
Palo Alto, CA 94303, USA

Syntex, makers of CYTOVENE® (ganciclovir sodium), the only commercially available treatment of CMV Retinitis, invites you to stop by our booth. Detailed product information along with relevant articles from professional journals about CMV Retinitis and CYTOVENE® will be provided.

Synthetic Genetics *Booth 202*
10455 Roselle Street 619-587-0320
San Diego, CA 92121, USA

Synthetic Genetics is a manufacturer of Synthetic Oligonucleotides. Please stop by our booth to see our display of synthetic DNA's & RNA's, non-radio labeled fine and custom oligos.

Syva Company *Booth 211*
P.O. Box 10058 415-493-2200
Palo Alto, CA 94303, USA

Syva Company, the diagnostics division of Syntex, is a leading developer and manufacturer of diagnostic tests and instrument systems. Syva's MicroTrak® monoclonal antibody-based tests rapidly identify infectious diseases in direct patient or culture specimens. MicroTrak tests featured will include those for cytomegalovirus and recombinant HIV-1. A new automated ELISA instrument system for infectious disease testing will also be highlighted.

TSI Mason Research Institute *Booth 112*
57 Union Street 508-791-0931
Worcester, MA 01608, USA

Full service AIDS drug and vaccine testing facility for GLP preclinical safety assessment and efficacy studies. In vitro cell culture assays to measure antiviral drug effects for HIV and SIV in peripheral blood lymphocytes and continuous cell lines. Animal model studies in SIV infected macaques, HIV infected SCID mice and rabbits, and MuLV infected mice.

U.S. Public Health Service *Booths 308–318; 407–418; 511–518; 613–617*

The U.S. Public Health Service (PHS) delivers services to protect and advance the physical and mental health of the general public. The exhibits displayed in the PHS area highlight the HIV and AIDS programs of the PHS agencies. Information on specific programs will be provided by exhibit staff.

U.S. Public Health Service 301-443-4100
Agency for Health Care Policy Research
5600 Fishers Lane, Room 18-12
Rockville, MD 20857, USA

The Agency for Health Care Policy Research (AHCPR) aims to enhance the quality, appropriateness, and effectiveness of health care services and to improve access to them. AHCPR conducts and supports research, demonstrations, and evaluations; develops practice guidelines for selected medical conditions; and assesses technologies that are being considered for coverage by Federally funded health programs.

U.S. Public Health Service 800-TRIALS-A
AIDS Clinical Trials Information Service
P.O. Box 6421
Rockville, MD 20850, USA

The AIDS Clinical Trials Information Service (ACTIS) is a central resource providing current information on Federally and privately sponsored clinical trials to evaluate experimental drugs and other therapies for adults and children at all stages of HIV infection. ACTIS is a Public Health Service project provided collaboratively by CDC, FDA, NIAID, and NLM.

U.S. Public Health Service 301-443-3783
Alcohol, Drug Abuse and Mental Health Administration
5600 Fishers Lane, Room 12C-15
Rockville, MD 20857, USA

The Alcohol, Drug Abuse and Mental Health Administration (ADAMHA) is comprised of the National Institute of Mental Health, the National Institute on Drug Abuse, and the National Institute on Alcohol Abuse and Alcoholism. It also includes the Office for Substance Abuse Prevention and the Office for Treatment Improvement. ADAMHA supports more than 85 percent of the Nation's biomedical and behavioral research on alcohol, drug abuse and mental illness.

U.S. Public Health Service
Centers for Disease Control
1600 Clifton Road, NE
Atlanta, GA 30333, USA

The Centers for Disease Control (CDC) has been active in the fight against disease for almost half a century. CDC has led efforts to prevent such disease as malaria, polio, smallpox, toxic shock syndrome, Legionnaire's disease, and more recently, acquired immunodeficiency syndrome. The mission of CDC is to improve the quality of life for all Americans by preventing unnecessary disease, disability, and premature death and by promoting healthy lifestyles.

U.S. Public Health Service 301-443-3377
Health Resources and Services Administration
5600 Fishers Lane
Rockville, MD 20857, USA

The Health Resources and Services Administration (HRSA) supports the delivery of health services to the disadvantaged and underserved. HRSA addresses issues as diverse as organ transplantation, AIDS, and rural health issues; and is responsible for funding ongoing programs such as health professions education and a variety of primary care services.

U.S. Public Health Service 404-639-0956
National AIDS Information and Education Program
1600 Clifton Road, NE, Executive Park 26-E25
Atlanta, GA 30333, USA

The National AIDS Information and Education Program of the Centers for Disease Control is responsible for informing the American public about HIV and AIDS. This is done through a comprehensive communications system that comprises the National Media Campaign (America Responds to AIDS), the National AIDS Information Clearinghouse, and the National AIDS Hotline.

U.S. Public Health Service 202-472-4248
National AIDS Program Office
200 Independence Avenue, SW, Room 738G
Washington, DC 20201, USA

The National AIDS Program Office (NAPO) is the PHS focus for coordinating and integrating efforts to prevent and control the occurrence and spread of HIV/AIDS. NAPO provides leadership in developing PHS policies and activities related to the HIV epidemic and promotes information sharing and cooperation throughout the public and private sector.

U.S. Public Health Service 301-496-5717
National Institutes of Health
9000 Rockville Pike
Building 31, Room 7A32
Bethesda, MD 20892, USA

The National Institutes of Health, the U.S. Government's principal biomedical research agency, is a world leader in the discovery of new knowledge that is leading to improved health for all. NIH conducts laboratory and clinical studies at its own facilities; supports the work of scientists in universities, medical schools, hospitals, and other research institutions throughout the United States and abroad; trains scientists; and fosters and supports biomedical communication.

U.S. Public Health Service 202-245-0020
Office of Minority Health
Hubert H. Humphrey Building
200 Independence Avenue, SW
Washington, DC 20201, USA

The PHS Office of Minority Health coordinates federal minority health activities to combat problems such as HIV, cancer, cardiovascular disease/stroke, diabetes, chemical dependency, violence and injury, and infant mortality. HIV programs include minority community coalition grants, regional/national conferences, and projects linking public and private activities. Its Resource Center provides information and names of volunteer technical experts in each program area.

U.S. Public Health Service 301-443-0104
U.S. Food and Drug Administration
5600 Fishers Lane
Rockville, MD 20857, USA

The U.S. Food and Drug Administration (FDA) is one of the largest consumer protection agencies of the federal government and is responsible for helping assure the safety and effectiveness of drugs, biologics, and medical devices. FDA also helps safeguard the nation's blood supply and the safety of foods.

V-Tech *Booth 736*
Clonatech 714-596-7741
270 East Bonita Avenue
Pomona, CA 91767, USA

V-Tech, Inc. (a U.S. Corporation) and Clonatech (a French Corporation) have formed a strategic alliance to develop and market a rapid EIA Membrane Diagnostic Test Kit for HIV-1 and HIV-2. These tests are part of a broad line of membrane kits, the Target Diagnostic System.

Wellcome *Booths 326-340; 425-439*
3030 Cornwallis Road 919-248-3715
Research Triangle Park, NC 27709, USA

Please stop by our booth for the latest information on Wellcome products.

Wyeth-Ayerst Laboratories *Booth 107*
P.O. Box 8299 800-950-5099
Philadelphia, PA 19101, USA

The TUBEX Hands-Off Injection system is designed to reduce the risk of accidental needlestick injuries. Its design facilitates disposal of used cartridge needle units into puncture resistant containers without recapping.

NONPROFIT EXHIBITORS
MARRIOTT HOTEL, GOLDEN GATE HALL

18th Street Services — *Table 2006*
Mr. Mike Shriver — 415-861-4898
Community Liaison
217 Church Street
San Francisco, CA 94114

18th Street Services provides outpatient counselling services for gay/bisexual men with substance abuse problems. We operate on a sliding scale, no one is turned away for lack of funds. Gay/Bisexual staff, three outstationed Outreach Workers. Program emphasis on the correlation between HIV risk, education, and intervention and Substance Abuse/Recovery services.

AAPHR—American Association of Physicians for Human Rights — *Booth 1054*
Mr. Pierre Ludington — 415-255-4547
Executive Director
2940 16th St. Room 105
San Francisco, CA 94103

AAPHR is an association of American and Canadian physicians and medical students in which lesbian and gay physicians can find a source of professional and personal support and affiliation.

Academy for Educational Development — *Booth 1059*
Valerie Lovett — 202-862-1835
1255 23rd St., N.W.
Washington, DC 20037

AED is a private, non-profit organization dedicated to national and international human development needs. AIDSCOM, funded by USAID, is a communications program designed to create and implement HIV prevention activities worldwide. Children's HIV and AIDS Model Program, funded by the Robert Wood Johnson Foundation, develops educational materials for caretakers of children with HIV.

ActionAIDS — *Table 2039*
Ms. Anna Forbes — 215-981-3321
1216 Arch Street, 4th Floor
Philadelphia, PA 19107

ActionAIDS is a community-based, non-profit agency providing a wide range of services to people living with AIDS and their loved ones. These services include comprehensive case management, a volunteer Buddy System, weekly support groups, public educational programs and both individual and systems advocacy on behalf of people with HIV disease.

ACT UP: AIDS Coalition to Unleash Power — *Booth 1014*
James A. Serafini, Ph.D. — 212-989-1114
496A Hudson St., Suite G4
New York, NY 10014

ACT UP is a diverse, non-partisan group united in anger and committed to direct action to end the AIDS crisis. We research and distribute the latest medical information. We meet with government and public health officials. We protest and demonstrate; we are not silent!

Agency for Health Care Policy and Research (AHCPR) — *Table 2057*
Ms. Maria Friedman — 301-443-4100
Chief, PIR
Health Care Technology Assessment
5600 Fishers Ln. Rm 18-12
Rockville, MD 20857

The Agency for Health Care Policy and Research is the primary source of Federal support for research on problems related to the quality and delivery of health services. AHCPR undertakes and supports research on problems related to organizing, delivering and financing health care services; conducts assessments of health care technology and disseminates research findings.

AIDS Action Network — *Table 2058*
Dennis Lorenzo — 702-384-2899
1721 E. Charleston
Las Vegas, NV 89104

AIDS Benefits Counselors — *Table 3002*
Thomas Story — 415-673-3780
1547 California Street
San Francisco, CA 94109

AIDS Benefits Counselors provides Social Security, employee benefits and insurance counseling for persons with HIV disease to assist them in achieving and maintaining financial independence. The agency also offers community education on the need for early financial planning and training for caregivers who may wish to know more about entitlements.

AIDS Education for the Deaf — *Booth 1039*
Lewis Merkin — 213-654-5942
8350 Santa Monica Boulevard, Suite 203
West Hollywood, CA 90069

Formed November, 1987, to promote AIDS education and prevention in the deaf community, AED presents workshops to organizations and schools; develops materials specifically for the deaf community; provides information, referral, and a drop-in center with captioned/signed videotapes and one-to-one peer counseling. AED is funded by California Office of AIDS. In March, 1990, through a CDC grant, AED expanded to develop HIV training for deaf organizations, and training on deafness for AIDS organizations, on a national level.

AIDS Education for Youth — *Booth 1045*
Tom Ammiano — 415-241-6220
1950 Mission Street
San Francisco, CA 94103

Funded thru the San Francisco Department of Public Health and the San Francisco School District by the CDC. Purpose is to prevent the spread of HIV by educating youth of the risk involved and encouraging positive behavior and lifestyle changes.

NON PROFIT EXHIBITORS
MARRIOTT HOTEL/GOLDEN GATE HALL

1103 Integrity	1102 Hosp. Maine	1101 Hlth Inf Net	1100 Articulation	1099 ETR	1098 Yale Press	1097 San Mateo	1096 AWARE	1095 Open Hand	1094 PAWS

MISSION STREET

1013 UCSF University-Wide	1035 National AIDS Clearing	1036 Community Res. All & Proj. Inform	1058 Sacramento AIDS Foundation	1059 Academy for Educational Development	1081 Mid-Missouri	1082 Brooklyn AIDS Task Force
1014 ACT UP	1034 National AIDS Clearing	1037 Davies Medical Center	1057 University of Miami	1060	1080 Mid-Missouri	1083 AIDS/ARC Vigil
	1033 National AIDS Clearing	1038 National Hemophilia Foundation	1056 American Red Cross	1061 Service Providers Association	1079 Mid-Missouri	1084 Columbus AIDS Task Force
1016 Oriental Healing Arts	1032 Quan Yin	1039 AIDS Educ. for the Deaf	1055 PWA Health Group	1062 UCSF Post-Grad Program	1078 NIH Clinical Nursing	1085
1017 Seattle King County	1031 San Fran AIDS Foundation	1040 Body Pos. & Community Hlth Proj.	1054 AAPHR & BAPHR	1063 AIDS Proj of the ACLU	1077 George Washington University	1086 Larkin St. Youth Center
1018 Exodus	1030 UCSF AIDS Health Project	1041 Japan AIDS Proj. & A/P AIDS Coal.	1053 American Psychiatric Association	1064 National Episc. AIDS Coalition	1076 Western Consortium	1087 Institute for Comp. Health
1019 AmFAR	1029 Medical Research Council	1042 Los Alamos	1052 Assoc. of Nurses in AIDS Care	1065 NYC Dept. of Health	1075 San Fran VA Hospital	1088 Visual AID
1020 Parents AIDS Ed Project	1028 Catholic Charities & St. Mary's	1043 Hearing Alt. & Carl Vogel	1051 Physician's Association	1066 Community Research Initiative	1074 Visiting Nurses Hospice	1089 AIDS/ARC Int Group & CA Nurses
1021 Perinatal HIV	1027 SFGH PERC	1044 Coalition for the Homeless	1050 Mid-Atlantic AIDS Center	1067 SALSA	1073 National Council of La Raza	1090 UCSF School of Nursing
1022 Asian AIDS Project	1026 Tucson AIDS Project	1045 AIDS Ed for Youth & Forensic Yth	1049 National Interfaith & Inter. Coal.	1068 PHREDA	1072 Assoc. of Reg. Center Agencies	1091 Inst. La Raza & Latino AIDS
1023 National Minority AIDS Council	1025 National AIDS Network	1046 American Indian AIDS	1048 AIDS Indigent & Metta Vihara	1069 Haitian Coalition	1071 Hebrew Union	1092 Assoc. Nat'l per la lotta
	1024 Bayview & City Clinic SFDH		1047 5th Conference Africa		1070 Assoc. of Asian/ Pacific	

MARKET STREET

2006 18th St.			2007 Serv Employ	2008 West Berkely		2009 Birmingham	2010 Child Quilt	2011 Mid-City	2019 RISE	2018 Walden
2005 Com Outreach	2059 Nat Task Frc	2058 AIDS Act Net	2057 Agcy Hlth	2056 CALPEP	2055 Continuum	2054 Santa Clara	2053 AIDS Intrfth	2052 Nat Director	2051 Prevent Pt	
2004 Child Hosp	2036 Oper Concern	2037 Am College	2038 Social Sec	2039 ActionAIDS	2040 Hemo Council	2041 Region V	2042 Center Subst	2043 Diablo Vlly	2044 Contra Costa	2021 Cure AIDS
						2030 Multcultural	2029 Kaiser	2028 Howard Brown	2027 Ark of Love	2022
										2023 MTO

CONCOURSE

3001 Swedish Phy.	3002 Bene. Counc.	3003 Kairos	3004 NIH Reagents	3005 Allcare	3006 PSI	3007 Maitri	3008 Comp Hlth Ed	3009 Mass Med Soc	3010 YES	3011 The Center	3012 AAP	3013 Nat. Academy

AIDS Indigent Direct Services *Booth 1048*
Michael Thompson 415-441-2467
55 Mason Street, Suite 214
San Francisco, CA 94102

A.I.D.S. is a direct services organization for indigent people with symptomatic HIV infection living in the Tenderloin District of San Francisco. We provide nursing assistance and intervention including home care, emotional and practical support, emergency food and clothing, social service referral, payee services for financial benefits and early intervention education and referral. Our program is an experimental model of service for indigent, urban, HIV infected individuals.

AIDS Interfaith Council of Southern California *Table 2053*
Ms. Elizabeth Yaruss 213-250-9564
637 South Lucas Ave.
Los Angeles, CA 90017

AIC is dedicated to the unification of compassionate response of the religious community to AIDS/HIV disease. Fostering education among clergy and congregations, we promote spiritual care for persons who are affected by HIV. Support Services include: "The Connecting Point" Referral Service which links compassionate clergy/laity and HIV+ persons and loved ones, Interfaith Conferences, Seminars, and Workshops and "Open Hearts" monthly newsletters.

AIDS/ARC Interest Group *Booth 1089*
Mr. Allen Harris, RN, Chair 415-552-9280
2710 Market St. #4
San Francisco, CA 94114-1935

HIV nursing education programs are provided at Bay Area hospitals through a cooperative effort of Association of Nurses in AIDS Care/San Francisco Bay Area Chapter, California Nurses Association Region 12 AIDS/ARC Interest Group, and University of California School of Nursing. HIV experts provide information to enhance nursing care.

AIDS National Interfaith Network *Booth 1049*
Rev. Susan Harlow 212-870-2100
Communications Coordinator
475 Riverside Dr. 10th Floor
New York, NY 10115

The AIDS National Interfaith Network is a coalition of religious organizations and individuals involved in HIV/AIDS ministries of service, support, education and advocacy. ANIN provides religious leadership training and referrals for pastoral care and HIV/AIDS prevention and awareness education. Through its Washington D.C. Public Policy Office, ANIN assists in the development of responsible legislative initiatives.

AIDS Policy Center of the Intergovernmental Health Policy Project *Booth 1077*
Ms. Kate Cauley 202-676-8144
Activity Director
Intergovernmental Health Policy Project
2021 K St. N.W. Suite 210
Washington, DC 20006

George Washington University's AIDS Policy Center monitors and analyzes all AIDS-related legislation in the United States. Recognizing the responsibilities of the states both to protect individuals and the public we work with policy makers to inform and guide their work.

AIDS Project of the ACLU *Booth 1063*
Judy Greenspan 202-331-0500
1616 P. Street, N.W.
Washington, DC 20036

The AIDS Project of the ACLU National Prison Project is an information, referral and education center for corrections administrators, prisoners, AIDS educators, lawyers, students and others concerned about the issue of AIDS and prison. The AIDS Project monitors national, state and local correctional policies concerning the management, housing and treatment of HIV-infected prisoners.

AIDS Service Providers Association of the Bay Area *Booth 1061*
Mr. Robert Munk 415-241-5519
10 United Nations Plaza Suite 200
San Francisco, CA 94102

The Association is a membership organization serving as a resource to all agencies in the San Francisco Bay Area that provide services related to HIV disease. Several member organizations are sharing the exhibit space.

AIDS/ARC Vigil *Booth 1083*
Harvey Maurer 415-861-6261
459 Potrero Ave.
San Francisco, CA 94110

The ARC/AIDS Vigil is an ongoing act of civil disobedience giving witness 24 hours a day to unmet needs surrounding HIV. We are situated in 6 tents at 50 United Nations Plaza—San Francisco. For 4 1/2 years we have distributed AIDS education and prevention materials, made referrals, engaged in political advocacy, and provided outreach to the homeless and substance abusing populations.

Allcare, Inc. *Table 3005*
Paul Sinclair 303-860-1448
1576 Sherman St., Suite 210
Denver, CO 80218

Allcare Incorporated is a non-profit, Denver based organization which was formed to help Prisoners With AIDS throughout the U.S. It's programs include a phone help line which accepts collect calls, as well as offering financial assistance and counseling while incarcerated and after release.

American Buddhist Congregation, Inc. *Booth 1048*
Metta Vihara Monastary 415-232-3095
Azel Jones
607 Key Street
Richmond, CA 94801

Metta Vihara is an RAS that offers food, shelter, and social services to homeless people with HIV disease. The target population consists of homeless people of all ethnic backgrounds and genders. Due to the alarming rise of HIV disease among Blacks and Latinos, special emphasis is being placed on this group. The present population at the RAS is 100% black, however, over the past year that ethnic composition has been as much as 80% white and 50% female.

American College Health Association *Table 2037*
Patricia Downey 301-963-1100
1300 Piccard Drive, Suite 200
Rockville, MD 20850

ACHA and its affiliates represent and serve a diverse group of professionals who provide health services to the higher education community. ACHA is a non-profit organization promoting excellence in college health care by setting standards and providing quality health programs and services to colleges and universities in the United States, Canada, and internationally.

American Indian AIDS Institute *Booth 1046*
Phil Tingley, MSW, Exec. Dir. 415-626-7639
333 Valencia St., Suite 200
San Francisco, CA 94103

The Institute is the primary AIDS prevention educator for the Bay Area's multi-ethnic, multi-cultural Native American population. The Institute provides education workshops, develops outreach materials, provides client advocacy services, and advocates to existing government and non-governmental agencies for Native American needs.

American Foundation for AIDS Research (AmFAR) *Booth 1019*
Paul Corser 212-719-0033
1515 Broadway, Suite 3601
New York, NY 10036

The Community-Based Clinical Trials (CBCT) Network is a consortium of 42 community-based organizations conducting clinical research on new AIDS treatments. The Network, facilitated by AmFAR, provides ongoing communication among the groups, develops guidelines for quality assurance and data collection in drug trials in the community setting, and enhances access to experimental treatment trials for people with HIV infection.

American Preferred Plan *Table 3012*
Ellie Adiel, Director 516-222-7004
5 South Street
Garden City, NY 11530

American Preferred Plan is a free membership organization which works to provide cost-free or discounted medications to as many HIV-positive people as possible. We refer uninsured members to free courses in the country or in their states, and arrange for discounted sales with a cooperating mail-order pharmacy for those who are ineligible for such programs. Those who do have insurance pay neither a down-payment nor a co-payment, and get their medications shipped directly to their homes. In addition, APP sponsors fund-raising projects for several AIDS organizations (e.g. AIDS Manasota, PWA Coalition Hawaii, Northwest AIDS Foundation) and makes periodic donations to others (Project Inform, AIDS Treatment News).

American Psychiatric Association *Booth 1053*
Ms. Carol Svoboda 202-682-6104
1400 K St. N.W.
Washington, DC 20005

The APA serves the professional needs of more than 35,000 members nationwide and provides medical leadership for intervention in problems of mental health. Through the AIDS Education Project and Commission on AIDS, the APA provides training and education on the psychiatric, neuropsychiatric and biopsychosocial aspects of AIDS and establishes policy for psychiatrists in dealing with HIV disease.

American Red Cross *Booth 1056*
National Headquarters 202-639-3223
Ms. Mary Jo Power
HIV Education Division
1709 New York Avenue NW, Suite 208
Washington, DC 20006

The American Red Cross offers HIV/AIDS education on national and local levels through the following products: videos containing general HIV/AIDS information; 13 brochures on individual topics; educational and training programs targeting workplace, youth, including Hispanic and African-American youth and families, and the general public. Local Red Cross chapters should be contacted for detailed information.

An Ark of Love, Inc. *Table 2027*
Rev. Yvette Flunder 415-482-1288
3814 MacArthur Blvd.
Oakland, CA 94619

An Ark of Love provides discreet, minority-focused AIDS information in workshop and seminar formats to youth ages 13-19, gay/bisexual men, drug users in and out of treatment, and to one specialized group of service providers, ministers and layworkers.

Articulations *Table 1100*
Eric Jazmen 415-929-7200
2404 California Street, Suite 26
San Francisco, CA 94115

Articulations is an organization devoted to the need of educating doctors, care givers, patients and families about AIDS Dementia through a humanizing and caring approach. Articulations has produced a video "I Still Am" to help overcome the fear and denial associated with dementia, and to give deserved dignity to those afflicted.

Asian AIDS Project *Booth 1022*
Lori L. Lee 415-227-0946
300 4th Street, Suite 401
San Francisco, CA 94107

The Asian AIDS Project provides HIV Prevention Research and Direct Services to San Francisco's Asian/Pacific Islander communities. Sponsors development of culturally sensitive and liguistically appropriate materials.

Asian Pacific Aids Coalition *Booth 1041*
Mr. Steve Lew 415-255-3663
1380 Howard Street
San Francisco, CA

Provides advocacy, support to grassroots projects, information and resources sharing, and a volunteer program for emotional and practical support to Asian and Pacific Islanders affected by HIV.

Association of Asian/Pacific Community Health Organizations — *Booth 1070*
Mr. Jeff Kositsky — 415-272-9536
310 8th Street, Suite 310
Oakland, CA 94607

The Association of Asian/Pacific Community Health Organizations is a national network of seven community health centers across the U.S. which serve Asian and Pacific Islander populations. Its mission is to improve the health status of Asians and Pacific Islanders within the United States and its territories with special focus on the medically underserved.

Association of Nurses in AIDS Care — *Booth 1052*
Ms. Susan Holman — 212-613-2430
217 Bergen St. Suite 4
Brooklyn, NY 11217

The Association of Nurses in AIDS Care (ANAC) was founded in 1987 to foster the professional development of nurses in all aspects of AIDS and to promote the health, welfare and rights of all persons affected by HIV.

Association of Regional Center Agencies — *Booth 1072*
Ms. Ellen Fishman — 916-446-4950
Project Director
AIDS Education Project
428 J. Street, Suite 410
Sacramento, CA 95814

ARCA is the association of the 21 non-profit regional centers which provide case management, purchase of services, placement and support services to people with developmental disabilities. The AIDS Project has developed a statewide comprehensive training program in AIDS education and prevention for professional staff, community service providers, parents and clients.

Associazione Nazionale Per La Lotta Contro L'AIDS — *Booth 1092*
Alessandra o Doriana — 06-48-20-999
Via Barberini, 3 — FAX 48-21-077
00187—ROMA

The National Association for AIDS became a Moral Body on January 1, 1988 with the main aim of promoting enterprises for the prevention and diagnosis of AIDS. Contributions and funds received are used for AIDS research, for acquiring medical equipment to be distributed in various hospital centres, for providing grants and awards to medical students and researchers working in the AIDS field, for organizing annual meetings on AIDS.

A.W.A.R.E.—Association for Women's AIDS Research and Education — *Table 1096*
Barbara Jordon
995 Potrero Avenue
Bldg 90, Ward 95, Room 513
San Francisco, CA 94110

The Association for Women's AIDS Research and Education provides counseling, testing, follow-up and referral for S.F. Bay Area Women infected with HIV and those at risk for becoming infected. Services are community-based, free, and confidential.

BAPHR—Bay Area Physicians for Human Rights — *Booth 1054*
Brian Dobrow — 415-558-9353
Executive Coordinator
2940 16th St., Suite 309
San Francisco, CA 94103

BAPHR was founded in 1977 to promote gay/lesbian health. The group's early AIDS efforts included development of safer sex guidelines and blood donation guidelines which were then adopted nationally. BAPHR's activism also includes liaison with more traditional medical groups to provide advice on HIV-related health policy issues.

Bayview Hunter's Point Foundation — *Booth 1024*
Ms. Michelle Payne — 415-822-7500
AIDS Services
1625 Carroll
San Francisco, CA 94124

Bayview Hunter's Point Foundation: (1) AIDS Education Unit Services Provide: AIDS Presentations, in home AIDS prevention socials, IV drug users workshops, neighborhood outreach, bar outreach, educational materials (posters, buttons, etc.) Safe sex workshops. (2) AIDS Emotional Support Unit Services Provide: Food bank, clothes bank, home visits, women's group, HIV counseling.

Birmingham AIDS Outreach — *Table 2009*
Patricia Todd — 205-322-4197
P.O. Box 550070
Birmingham, AL 35255

Birmingham AIDS Outreach provides social services to people affected by AIDS. B.A.O. also provides education on HIV and serves as advocates for PWA's.

Body Positive — *Booth 1040*
Paul Wychules — 212-721-1618
209 Broadway, Suite 203
New York, NY 10011

Brooklyn AIDS Task Force — *Booth 1082*
Dr. Yannick Durand — 718-596-4781
Director of Education
22 Chapel Street
Brooklyn, NY 11201

Our goal is to promote and coordinate AIDS related efforts in Brooklyn communities. The agency has meetings held on the 4th Thursday of the month, 2:30-4:30 pm, serves as an information exchange and forum for dialogue, assists development and implementation of our mission in relation to other AIDS-related programs in Brooklyn. We have an AIDS Hotline, education and training as well as support services.

California Nurses Association — *Booth 1089*
Ms. Helen Miramontes — 415-864-4141
Chair
1855 Folsom Street, Suite 670
San Francisco, CA 94103

The California Nurse's Association has taken an aggressive approach to promote and support education of health care workers about HIV disease and the specific care needs of persons infected with the virus. The program, based upon adult learning principles and using a train the trainer format, has been very effective and is known internationally.

California Prostitutes Education Project (CAL-PEP) — *Table 2056*
Gloria Lockett — 415-558-0450
333 Valencia Street, Suite 101
San Francisco, CA 94102

CAL-PEP is a street outreach and education program designed to provide HIV prevention education to working prostitutes and their sex partners with an emphasis on those who use injection drugs. The program combines one-on-one contact through street outreach, support groups, and workshops. CAL-PEP also has a Vocational Reorientation program and a forensic HIV prevention program.

Carl Vogel Foundation, Inc. — *Booth 1043*
Ronnie Mealy, Executive Director — 202-293-5153
2025 Eye Street, N.W., Suite 917
Washington, DC 20006

The Carl Vogel Foundation (CVF) is a non-profit 501(c)(3) organization which provides (1) comprehensive treatment information regarding traditional, experimental and complimentary therapies collected from scientific journals and AIDS-treatment publications, (2) information evaluating the importance of early treatment intervention, (3) educational workshops and lectures with nationally recognized AIDS experts and dietitians, and (4) nutritional products near wholesale cost with detailed information examining the relationship between nutrition and AIDS.

Catholic Charities/ AIDS-ARC Division — *Booth 1028*
Mr. Bob Nelson — 415-864-7400
Coordinator of Direct Services
1049 Market St.
San Francisco, CA 94103

Catholic Charities/AIDS-ARC Division serves over 1000 PWA/ARC per year with housing, case management, and financial assistance. The two residence, The Peter Claver Community and Rita La Cascia House are world renowned for their work with homeless men, women and children with AIDS.

CDC Perinatal HIV Prevention Projects — *Booth 1021*
Stuart Berman, M.D. — 404-639-2536
CDC Division of STD/HIV Prevention
Atlanta, GA 30333 Mailstop EO2

Projects in 10 cities evaluate and facilitate the use of contraception among women at highest risk for HIV infection. Interventions utilize case-management, peer/professional counseling, on-site gynecologic services in drug treatment, or availability of family planning in non-traditional sites.

The Center — *Table 3011*
Corinna Lewis — 415-655-3435
3421 Martin Luther King Jr. Way
Oakland, CA 94609

The Center is the multi-service Day Center for persons with AIDS/ARC in Alameda County. Since 1987, hundreds of people have been helped to live with AIDS or ARC with dignity and hope. The Center provides: Counseling; Practical Support; Social Activities; Food Bank; Mid-Day Meals; and Housing Referrals. All services are provided without charge.

The Center for AIDS and Substance Abuse Training — *Table 2042*
Jack B. Stein, LCSW, Director — 703-820-2424
5205 Leesburg Pike, Suite 400
Falls Church, VA 22041

The Center for AIDS and Substance Abuse Training was established in 1988 by the National Institute on Drug Abuse. The goal of The Center is to enhance the capacity of state alcohol and drug abuse authorities to respond to the training-related needs of substance abuse treatment workers. Specifically, The Center offers technical assistance in designing state training plans, develops and continually updates training courses in various HIV and substance abuse issues, and provides training of trainers in selected courses deemed most relevant to state needs.

Children's Quilt Project — *Table 2010*
Diane Dehler — 415-548-3843
1478 University Ave., Suite 186
Berkeley, CA 94702

Provides quilts on request to children with HIV/AIDS/ARC diagnosis. Offers an AIDS Awareness Program providing AIDS information to schools. Sponsors a Christmas and Easter Toy Drive. Areas served: most large cities. Application: apply by phone or mail (Quilts for Kids).

City Clinic of San Francisco Department of Health — *Booth 1024*
Jacqueline McCright — 415-431-0751
1372 Mission Street
San Francisco, CA 94103

The S.F. City Clinic provides testing, evaluation, counseling and/or treatment for sexually transmitted diseases for anyone 12 years or older. Special services include: Anonymous and confidential HIV-Antibody testing; Pap smears and pregnancy testing; STDs/HIV outreach in community and school settings, targeting higher-risk youth and adults.

Columbus AIDS Task Force — *Booth 1084*
Ms. Gloria Smith — 614-488-2437
Executive Director
1500 West Third #329
Columbus, OH 43212

Columbus AIDS Task Force is the largest full service AIDS Organization in Ohio. Services include case management for persons affected by HIV as well as education programs for all populations.

Community Health Project — *Booth 1040*
Rona Affoumado — 212-675-3559
208 West 13th Street
New York, NY 10011

The Community Health Project has been providing primary medical care for people with HIV/AIDS since 1985. The clinic provides comprehensive and coordinated medical, educational, psycho-social and nutritional services. The clinic's programs emphasize early diagnosis and treatment and support health promotion and health maintenance. More than 2000 patients are receiving care at the clinic.

Community Outreach Sessions *Table 2005*
Mike Shriver 415-861-4898
18th Street Services
217 Church Street
San Francisco, CA 94114

Community Outreach Sessions will be held each day of the Conference to summarize the day's proceedings from a community perspective, and hold a public forum on key policy issues presented by the epidemic. Open to the public and free of charge, the Outreach Sessions are co-sponsored by the Sixth International Conference on AIDS and community based AIDS organizations. Wednesday through Friday 7:00 to 10:00 pm, and Saturday 2:00 to 5:00 at Herbst Theatre, War Memorial Building, Van Ness Avenue at McAllister.

Community Research Initiative *Booth 1066*
Mr. Marvin Palmer 212-481-1050
Administrator/Office Manager Fax 212-689-5291
31 West 26th St. 3rd Floor
New York, NY 10010

Community Research Initiative is a community based organization doing clinical trials of AIDS therapies with pharmaceutical company sponsorship. There are PWA's on the board, I.R.B., and staff. We have produced data contributing to two FDA approvals; aerosolized pentamidine and erythropoietin.

Comprehensive Health Education Foundation *Table 3008*
Steven Goldenberg 206-824-2907
22323 Pacific Highway South
Seattle, WA 98198

Comprehensive Health Education Foundation's (CHEF) products include multimedia curricula for AIDS prevention education, drug and alcohol education, real world survival skills, and peer helping.

Continuum HIV Day Services *Table 2055*
Jeffrey Sterman, Executive Director 415-241-5500
10 United Nations Plaza
San Francisco, CA 94102

Continuum is a community based Adult Day Health program who's primary objectives are:

To restore, or maintain optimal capacity for self care to persons living with HIV disease.

To delay or prevent inappropriate or personally undesirable institutionalization.

Services include: Nursing care, physical therapy, occupational therapy, medication monitoring, benefit counseling, individual and group counseling, psychiatric evaluation, stress reduction, art, movement, yoga, meditation, adult education programs, transportation, hot meals and nutritional counseling.

Contra Costa AIDS Task Force *Table 2044*
Mr. John Bermudez 415-689-1077
70 Doray Drive, Suite 16
Pleasant Hill, CA 94523

Contra Costa County AIDS Task Force is a community based organization with over 250 volunteers providing emotional and practical support to HIV impacted individuals and HIV related education to schools and the public at large.

Cure AIDS Now *Tables 2021 and 2022*
Robert P. Kunst 305-856-8378
2240 S. Dixie Hwy.
Miami, FL 33133

C.A.N. is an International Clearinghouse, and lobbying effort for an $18 billion Care and Cure Component. We have also delivered 250,000 meals-on-wheels to 1250 People Living and Loving With AIDS, as an alternative to hospitalization and raised $2 million from four governments and 150 corporations.

Davies Medical Center *Booth 1037*
Mr. Brian Christianson 415-595-6153
HIV Institute
Castro and Duboce Sts.
San Francisco, CA 94114

Davies Medical Center is located in San Francisco's Castro District, home of the highest incidence of AIDS in the U.S. Davies responds by offering a full system of HIV related inpatient and outpatient services. Davies helped pioneer aerosolized pentamidine, ganciclovir, and fluconazole. Other experimental drugs are available through extensive clinical drug trials. We work to keep our people out of the hospital.

Department of Veterans Affairs Medical Center *Booth 1075*
Mr. Thomas Conlon 415-221-4810 633
Infectious Diseases Clinics
4150 Clement St. (111W)
San Francisco, CA 94121

The VA Medical Center in San Francisco is a 350-bed acute general medical and surgical center. Its Infectious Diseases Clinics have treated over 750 patients with HIV Disease since 1981. The Clinics strive to provide comprehensive primary care in an ambulatory setting.

ETR Associates — *Table 1099*
Ms. Judith Carey — 408-438-4060
Publicity Manager
PO Box 1830
Santa Cruz, CA 95061-1830

ETR Associates/Network Publications is a national center for family life education and health education materials, training and research. ETR serves a diverse national, and international audience, including teachers and other professionals from medical school and community service settings.

Exodus Trust — *Booth 1018*
Renee Jones — 415-928-1133
1523 Franklin St.
San Francisco, CA 94109

Exodus Trust is a California nonprofit charitable trust. Its sole and exclusive purpose: to perform educational, scientific and literary functions related to sexual, emotional, mental, and physical health. Exodus Trust is dedicated to the advancement of sexology through the Institute for Advanced Study of Human Sexuality—a state-approved graduate school.

Fifth International Conference on AIDS and Associated Cancers in Africa — *Booth 1047*
Ms. Jan Vielfont — 32-3-258-58-80
Institute of Tropical Medicine
Nationalestraat 155
2000 Antwerp,
Belgium

Fifth International Conference on AIDS in Africa October 10-12 1990. In order to promote discussions and an efficient exchange of information, emphasis will be put on round tables and poster sessions. At the end of the conference, recommendations will be presented based on the discussions in each of the round tables. Overviews relevant to control of AIDS/HIV in Africa will be presented in the plenary sessions.

Forensic Youth Services — *Booth 1045*
Michael Baxter — 415-753-7595
375 Woodside Ave. #209
San Francisco, CA 94127

Special Programs for Youth provides medical, psychiatric, and education services to adolescents in San Francisco. Services are specifically geared to incarcerated, homeless, and runaway youth. AIDS work includes prevention education, counseling, testing, treatment, policy writing, training and advocacy.

Haitian Coalition on AIDS — *Booth 1069*
Yvon Rosemond — 718-855-0972
50 Court Street
Brooklyn, NY 11201

The Haitian Coalition on AIDS provides educational workshops, lectures, and information to community groups, schools, universities, churches and related organizations. These activities are targest to Haitians and all other minorities. In addition, social, medical, legal, and financial counseling services are offered to the Haitian population.

Healing Alternatives Foundation — *Booth 1043*
Mr. Richard Copeland — 415-626-2316
1748 Market St.
San Francisco, CA 94102

Healing Alternatives Foundation maintains a public HIV/AIDS information library to encourage client participation in their health care program. Our Buyer's Club offers substantial savings on products aimed at improving the health of HIV+/PWA's including vitamins, minerals, herbals and more.

Health Information Network — *Table 1101*
Ms. Kathi Knowles — 206-784-5655
Project Director
PO Box 30762
Seattle, WA 98103

Health Information Network provides AIDS education and community resource information and referrals in Region X.

The HIV Center of Children's Hospital of San Francisco — *Table 2004*
Joseph A. Cecere — 415-666-7840
3700 California St., East Campus
San Francisco, CA 94118

The HIV Center of Children's Hospital of San Francisco offers evaluation and consultation with experienced HIV practitioners to people exposed to or at risk for exposure to the AIDS virus. Immune function monitoring, counseling, aerosol pentamidine, referral to and follow-up of patients on clinical trials are also offered.

HIV Sequence Database and Analysis Project Los Alamos National Laboratory — *Booth 1042*
Dr. Gerald Myers — 505-665-0480
T-10, MS K710
Los Alamos, NM 87545

The AIDS Program of the National Institute of Allergy and Infectious Diseases provides, at no cost to qualified investigators, sequence information and analyses pertaining to HIV, SIV and related retroviruses. The database is currently being sent to more than 1200 researchers and institutions in over fifty countries.

Hospice of Maine — *Table 1102*
Greg Kendrick — 207-871-0041
Box 7590 DTS
Portland, ME 04112

Howard Brown Memorial Clinic — *Table 2028*
Daniel Dever, Development /PR Director — 312-871-5777
945 W. George St.
Chicago, IL 60657

Howard Brown Memorial Clinic is the Midwest's largest provider of HIV/AIDS services and a major center for HIV/AIDS research. Programs include anonymous HIV testing, psychosocial services, STD testing and treatment, aerosolized pentamidine treatment, and clinical research.

Institute of Comparative Health Policy and Law — *Booth 1087*
Ms. B. Jayasuriya
40/12 Swarnadisi Place, Koswatte Road
Nawala
Sri Lanka
56-3038/56-2004
FAX 9-41-546477

ICHPL compiles and publishes special reports on various dimensions of the AIDS pandemic. It assists governments and NGO's to develop policies and programs to prevent the further spread of AIDS.

Instituto Familiar de la Raza, Inc. — *Booth 1091*
Concha Saucedo Director
2401 24th Street, Suite 2
San Francisco, CA 94110-3506
415-647-4141

The Instituto Familiar de la Raza is the first bicultural/bilingual mental health program for Latinos/as in San Francisco. Through the Latino AIDS Project, Instituto has served as the leader in AIDS education and prevention in the Latino community. Services include confidential house meetings, workshops at schools, community organizations, youth groups and at drug rehabilitation centers. Our philosophy is based upon the belief that la Raza population has special needs that require culturally and linguistically appropriate skills. We seek to reduce the barriers to services and to increase their effectiveness.

Integrity SFBA — *Table 1103*
Robert L. Elkins
635 Clayton Street, #5
San Francisco, CA 94117
415-564-5820

The local chapter of Integrity, Inc., a national organization of lesbian and gay Episcopalians, will offer free informational materials on various aspects of its AIDS/ARC/HIV ministry. These include: hospice volunteer work and support, models for HIV+ support groups in parish communities, jail chaplaincy, interfaith work in the community and worship and healing services.

Japanese AIDS Project of JCYC — *Booth 1041*
Mr. Jim Naritomi
1596 Post Street
San Francisco, CA 94109
415-563-1717

Offers a full range of AIDS educational workshops, outreach, information and referral, and support services targeting but not limited to the Japanese community.

Kairos House — *Table 3003*
Mr. Buz Hermes
114 Douglass Street
San Francisco, CA 94114
415-861-0877

Kairos House (meaning "this is the moment of life") offers support to professional and non-professional caregivers in helping them deal with their stress and grief issues and helping them learn life lessons and provide quality care for their patients as well as care for their own physical, mental, and emotional needs.

Kaiser Permanente Hospital — *Table 2029*
Michael Allerton
1950 Broadway
Oakland, CA 94612
415-987-3582

Richard Shadoian
Director of Public Affairs
99 Montecillo Road
San Rafael, CA 94903
415-499-2000

Pre-paid health plan providing enrolled members full range of comprehensive health care, including prevention, HIV testing, early intervention, out-patient care, hospitalization, home health, hospice and research, plus mental health and related supportive services for HIV+ members. Non-profit 501(c)(3).

Larkin Street Youth Center — *Booth 1086*
Ms. Maureen Gammon
1044 Larkin St.
San Francisco, CA 94109
415-673-0911

The Larkin Street Youth Center offers a drop-in center, counseling, substance abuse prevention counseling, AIDS prevention education and HIV testing and medical treatment along with support services, screening for health needs, educational services, street outreach, linkage to other services, long term stabilization planning, food and referrals, crisis intervention and counseling for homeless/runaway youth ages 13–17 and ages 18–21.

Latino AIDS Project — *Booth 1091*
Juanita Quintero, Director
2401 24th Street, Suite 2
San Francisco, CA 94110-3506
415-647-5450

The Latino AIDS Project has been in existence since the Fall of 1986. For the past 2 years, the project has been providing AIDS information, education and prevention on AIDS to the Latino community of San Francisco and the Bay Area.

MAITRI — *Table 3007*
Ms. Jan Clark
57 Hartford Street
San Francisco, CA 94114
415-863-8508

Maitri (from the Sanskrit, meaning "the joys of true friendship") was founded by Issan Dorsey and the Hartford Street Zen Center and began full-scale operations in November 1988. Maitri provides residential care and coordinated hospice services for "homeless" and financially-needy persons living with ARC and AIDS.

Massachusetts Medical Society — *Table 3009*
Ms. Sarah Morrison
1410 Main Street
Waltham, MA 02154
617-893-3800

The Massachusetts Medical Society is the publisher of the *New England Journal of Medicine, Journal Watch, Morbidity & Mortality Weekly Report* and the newly-released *AIDS Clinical Care* newsletter. The Society provides a full spectrum of books and reprint collections, and also produces *Compact Library:AIDS*, a fully-searchable library of AIDS literature on a single compact disc.

Medical Research Council, U.K. — *Booth 1029*
Dr. Rosie Ward
20 Park Crescent
London, W1N 4AL
ENGLAND

The Medical Research Council is funded by the British Government to promote the development of medical and related biological research in the U.K. In the field of AIDS and HIV, it supports a Directed Program aimed at vaccine and drug development and a Strategic Program of epidemiological and clinical research.

Mid-Atlantic AIDS Regional Education and Training Center — *Booth 1050*
John Bonnage — 301-3285483
University of Maryland
520 West Lombard Street
Baltimore, MD 21201

With a major focus on education of health care providers in 5 jurisdictions, the Mid-Atlantic AIDS ETC is currently developing educational programs specifically for home health care workers and for dentists in order to increase the availability of these services to the HIV community.

Mid-Missouri AIDS Project — *Booths 1079, 1080, and 1081*
John Hawkins — 314-875-2437
P.O. Box 1371
Columbia, MO 65205

The Mid-Missouri AIDS Project, a consortium of ASOs and CBOs, providing services for the benefit of those challenged by HIV. The Missouri display will show services provided across the state both metropolitan and rural, such as, education, housing, food, medical assistance and referrals of all aspects pertaining to AIDS.

Multicultural Training Resource Center — *Table 2030*
Mr. Sala Udin
Executive Director
1540 Market Street Suite 320
San Francisco, CA 94102

The Multicultural Training Resource Center (MTRC) is established to provide multicultural and ethnic specific substance abuse prevention and AIDS support services. The services available: training/technical assistance, information, educational materials, and a reference/research library. Also, MRTC provides consultation, networking, computer searches and other services to providers, schools, churches, etc.

National AIDS Information Clearinghouse — *Booths 1033, 1034, and 1035*
Renee Brown-Bryant — 301-251-5145
P.O. Box 6003
Rockville, MD 20850

The exhibit is targeted to provide actual on-site demonstrations of services and resources offered by NAIC and other partner groups (National AIDS Hotline, National AIDS Communications Program and others). The activities of the exhibit are accessible to persons who are working with HIV/AIDS in a variety of settings.

All services of the Clearinghouse are free or at a nominal cost.

The National AIDS Hotline operates 24 hours each day, seven days a week. It is able to provide assistance and information to a number of persons who are concerned about AIDS. It is the only national hotline on AIDS/HIV in the United States operating services for a wide variety of persons.

The National AIDS Hotline is also the primary service for calls and inquiries regarding AIDS and deafness. NAH also operates the SIDA hotline, a service for Spanish speakers.

National AIDS Network — *Booth 1025*
Peter Lee — 202-293-2437
2033 M Street N.W., Suite 800
Washington, DC 20006

NAN is the national leadership organization for the community-based response to AIDS in the United States. NAN was founded in 1985 by six pioneering AIDS service organizations to serve as the national voice for local agencies providing AIDS/HIV care and prevention. Dedicated to the development and viability of the community-based response, NAN supports its constituency of over 800 local AIDS organizations by providing them with vital information about AIDS service, prevention and funding issues, technical assistance materials and publications, training, and advocacy.

National Coalition for the Homeless — *Booth 1044*
Ms. Virginia Shubert — 212-460-8110
105 East 22nd Street
New York, NY 10010

The AIDS Project of the National Coalition for the Homeless is engaged in advocacy and direct services with the goal of ensuring that homeless persons who are HIV seropositive have access to appropriate housing and that they have consistent access to necessary social and medical services and to potentially life-saving experimental treatment programs.

National Council of La Raza (NCLR) AIDS Center — *Booth 1073*
Denise Armenta — 202-289-1380
810 First St., N.E. Suite 300
Washington, DC 20002

NCLR is a nonprofit organization serving as an advocate for Hispanic Americans and as a national umbrella organization for 116 "affiliated" community-based groups (CBOs). The NCLR AIDS Center is a five-year project designed to bring together Council affiliates and other groups, which share a commitment to AIDS prevention and education, into a mutually supportive information and skills-sharing network. It is designed to provide the network with training, technical assistance and resources to reach and educate Hispanics about AIDS prevention and care.

National Directory of AIDS Care — *Table 2052*
Helenmae Hammrich — 213-839-3108
3439 Mentone Avenue, #1
Los Angeles, CA 90034

The National Directory of AIDS Care is one of a kind! It is comprehensive in scope, service-oriented in nature, and diverse for its users. This 600 page directory has 12,000 plus entries of agencies, community based organizations, and health care institutions in towns and cities across the country. It is a quick reference that should be in the hands of every health care provider committed to quality care.

Visit our booth and review this Directory. Perhaps, even find your name in the listings. Order forms will be available for your convenience.

National Episcopal AIDS Coalition — *Booth 1064*
Mr. William Riggs — 202-628-6628
Executive Director
733 15th Street NW Suite 315
Washington, DC 20005

The National Episcopal AIDS Coalition is a coalition of 250 AIDS programs in the Episcopal Church nationally. The pur-

pose of NEAC is to help the religious community, locally and nationally, prevent the spread of HIV and assist local organizations with their ministries.

National Hemophilia Foundation — *Booth 1038*
Ms. Lisa Flam — 212-219-8180
Director
HANDI
110 Greene Street Suite 406
New York, NY 10012

The National Hemophilia Foundation is dedicated to the treatment of and the cure for hemophilia, related bleeding disorders, and their complications including HIV infection, as well as to improving the quality of life of all those affected through the promotion and support of research, education and other services.

National Institutes of Allergy and Infections Diseases—Clinical Center Nursing Department — *Booth 1078*
Ms. Ann London — 301-496-5717
Office of Communications
Bldg. 31/7A32
Bethesda, MD 20892

The National Institute of Allergy and Infectious Diseases is the component of the National Institutes of Health with major responsibility for the support of AIDS research. The Institute funds a broad range of studies, including basic research in immunology, preclinical drug development, clinical trials of promising therapies, and vaccine studies.

National Institutes of Health — *Table 3004*
AIDS Reagents Program — 301-340-0245
Dr. Susan Stern
649A Lofstrans Lane
Rockville, MD 20850

National Minority AIDS Council — *Booth 1023*
Mr. Paul Kawata — 202-544-1076
300 I St. N.E.
Washington, DC 20012

The National Minority AIDS Council strives to foster and maintain the commitment to initiate, respond to, and represent issues that affect racial and ethnic minority communities in the delivery of HIV/AIDS services.

National Task Force on AIDS Prevention/BWMT — *Table 2059*
Mr. Reggie Williams — 415-255-8378
273 Church St.
San Francisco, CA 94114

The National Task Force on AIDS Prevention of the National Association, Black and White Men Together. Designed by and for ourselves as gay men of color, our program includes basic research such as a KAB study of Black gay and bisexual men, targeted safer sex risk reduction "playshops" for Black and Latino gay/bisexual men, partnership-building and advocacy. We work through 23 chapters of our National organization.

Northern California Hemophilia Foundation and The Hemophilia Council of California — *Table 2040*
Dana Francis — 415-568-7074
7700 Edgewater Drive, #710
Oakland, CA 94602

The Northern California Hemophilia Foundation is a volunteer, non-profit organization serving the needs of people with hemophilia. The Foundation provides newsletters, hemophilia literature, an Annual Education Symposium, scholarships, youth programs, legislative efforts, summer camp, and other programs for the hemophilia community.

NYC Department of Health — *Booth 1065*
Ms. Anne Sternberg — 212-285-4631
Assistant Commissioner — FAX 212-566-1718
Division of AIDS Program Services
125 Worth St. Room 222
New York, NY 10013

The Division of AIDS Programs Services (DAPS) of the New York City Department of Health provides AIDS education and prevention services and resources, including anonymous HIV counseling and testing, research and surveillance, educational materials, multi-media AIDS prevention campaigns, training and other services for the general public, community groups and professionals.

Operation Concern AIDS Prevention Program — *Table 2036*
Mr. Rob Hopcke — 415-626-7000
Operation Concern
1853 Market St.
San Francisco, CA 94103

Operation Concern AIDS Prevention Program is a gay and lesbian mental health agency with two programs dealing specifically with HIV-related concerns. The AIDS Prevention Program and The AIDS Family Project.

Oriental Healing Arts Institute — *Booth 1016*
Mr. Daniel Hsu — 213-431-3544
1945 Palo Verde Avenue, Suite 208
Long Beach, CA 90815

The Oriental Healing Arts Institute is devoted to disseminating information on AIDS and Chinese medicine. Throughout East-Asia, Traditional Chinese Medicine is officially integrated with the practice of conventional Western medicine. Thirteen laboratory and clinically-tested Chinese herbs inhibit HIV proliferation, and one kills HIV-infected cells. Coupled with immune-reconstructing tonics, these treatments are important AIDS therapies.

Parents AIDS Education Project —Cornell University — *Booth 1020*
Ms. Jennifer Tiffany
Director, AIDS Project
Cornell University 184 MVR
Ithaca, NY 14853
607-255-1942

The Cornell University Cooperative Extension Parent AIDS Education Project works to reduce the spread of HIV and to increase AIDS awareness in our communities by teaching parents and guardians basic facts about AIDS/HIV, risk reduction skills, and skills for communicating this information to children.

PAWS — *Table 1094*
Ms. Leah Talley — 415-824-4040
PO Box 460489
San Francisco, CA 94146-0489

Pets Are Wonderful Support recognizes the importance of the human-animal bond and therefore seeks to maintain and improve the quality of life for PWA's/PWARC's by helping them maintain their pet through practical support, financial assistance and educational materials.

PHREDA Project — *Booth 1068*
Ms. Wanetta McGilbery — 415-476-0802
3130 20th Street, 3rd Floor
San Francisco, CA 94110

The PHREDA Project, Perinatal HIV Reduction and Education Demonstration Activity is a research program that provides women's health care to San Francisco women at high-risk for HIV. A team of community health outreach workers (CHOWS) recruit eligible women, provide case management and facilitate good relations between high-risk women and clinical sites.

Physician's Association For AIDS Care — *Booth 1051*
Mr. Donovan Ash — 312-222-1326
101 W. Grand Ave. Suite 200
Chicago, IL 60610

The Physician's Association for AIDS Care (PAAC) is a not-for-profit association of physicians and other healthcare professionals who are concerned with the impact of HIV infection on medical practice and the related problems of HIV on society.

Population Services International — *Table 3006*
Steve Chapman — 202-785-0072
1120 19th St., N.W., Suite 600
Washington, DC 20036

PSI, a non-profit organization, develops, operates and provides technical assistance to AIDS prevention, health, and family planning programs in developing countries. PSI projects are combating the spread of AIDS in Africa by promoting and distributing condoms using social marketing, and through innovative mass-media information, education and communication campaigns.

Prevention Point — *Table 2051*
George Clark — 415-861-6710
227 9th Street, Suite 41
San Francisco, CA 94103

Project Inform — *Booth 1036*
Carol Adams — 415-558-8669
347 Dolores Street
San Francisco, CA 94110

Project Inform is a non-profit organization working to provide the HIV community with the means to make informed choices about the most promising treatment options. Recognizing that the problem of access to treatment is as much political as it is medical, Project Inform works to change federal drug licensing policies which delay or prevent that access. Project Inform has also recently merged with Community Research Alliance, allowing us to provide a viable community-based clinical research alternative and supplement to the more costly research being conducted through university or hospital-based centers.

Project Open Hand — *Table 1095*
Mr. Marc Lagasse — 415-558-0600
2720—17th Street
San Francisco, CA 94110

Project Open Hand, founded by Ruth Brinker in 1985, is the first food service in the U.S. to deliver two meals per day seven days per week to homes of PWA's/PWARC's. Our modern kitchen facility is currently producing 1500 meals per day which is 20% of capacity.

PWA Health Group — *Booth 1055*
Mr. Steve Wilkinson — 212-532-0280
31 West 26th Street
New York, NY 10010

People With AIDS Working for Health, Inc. is a not-for-profit corporation doing business as the PWA Health Group, a buyer's club that helps people with or at risk for AIDS obtain substances that — for one reason or another — are otherwise unavailable to them.

Quan Yin Healing Center — *Booth 1032*
Ms. Vanessa Negron — 415-861-4964
1748 Market St.
San Francisco, CA 94102

Quan Yin Healing Arts Center is an international leader in the treatment of HIV using Chinese Medicine. Work includes ongoing Herbal Research programs with 160-175 clients as well as multi-disciplinary treatment.

Region V Training,
Indiana Family Health Council — *Table 2041*
Shelley Ryan — 614-466-8960
1581 Waltham Road
Columbus, OH 83221

Region V Training provides workshops for Title X family planning staff and volunteers in the North Central United States. The video at the table—"HIV/AIDS: The Family Planning Connection" is intended to assist family planning staff in integrating HIV AIDS education, risk reduction and referral into the family planning clinic. Additional education materials developed specifically for family planning and AIDS from other areas of the United States will also be displayed at the table.

RISE — *Table 2019*
John Records — 707-765-2758
P.O. Box 2733
Petaluma, CA 94953

RISE provides health education and practical life management techniques, including meditation. Participants can increase their sense of control and vitality, and reduce anger, anxiety, depression, and confusion. RISE has been offered to hundreds at sites in 5 states and Canada.

Sacramento AIDS Foundation — *Booth 1058*
Patty S. Blomberg — 916-448-2437
1900 K. Street, Suite 201
Sacramento, CA 95814

The Sacramento AIDS Foundation is a private, nonprofit health organization serving Sacramento, Yolo, Placer and El Dorado Counties. SAF has a dual mission: 1) to stop the spread of AIDS through education and 2) assure quality medical and psychological care for people with AIDS. The agency provides services in five major areas: case management, volunteer emotional and practical support, home health care, education and prevention, and the Protocol project.

San Francisco AIDS Foundation — *Booth 1031*
Joe Ferra — 415-864-4376
333 Valencia St., 4th Floor
San Francisco, CA 94103

The San Francisco AIDS Foundation has been at the forefront of the battle against AIDS since 1982. it strives to dispel ignorance through education, replace fear with understanding, and counter prejudice by providing compassionate care to those in need. The San Francisco response to the epidemic is an internationally-recognized model, and the San Francisco AIDS Foundation continues to play a major role in developing that response.

San Francisco General Hospital Robert N. Ross Patient Education Resource Center — *Booth 1027*
Susan Perlman — 415-821-5400
San Francisco General Hospital
1001 Potrero Aveneu—Ward 4C-35
San Francisco, CA 94110

San Francisco General Hospital provides medical and psychosocial services to PLWA's, PLWARC's and HIV infected persons. Our dedicated staff has gained recognition for its work in the areas of patient care, research and education.

San Francisco Interreligious Coalition on AIDS — *Booth 1049*
Bob Nelson, Chair — 415-558-7066
445 Church Street
San Francisco, CA 94114

A network of over 200 religious agencies, congregations and individuals involved in the epidemic. Publishes a directory of AIDS sensitive clergy and memorial/healing services. The coalition is co-sponsoring "A Celebration of Life", 7 pm June 21, at Grace Cathedral, all conference attenders are invited.

San Mateo County AIDS Project — *Table 1097*
Mr. Jonathan Mesinger — 415-573-2588
Acting Coordinator
225 West 37th Ave.
San Mateo, CA 94403

San Mateo County AIDS Project, the primary AIDS education provider for San Mateo County, provides training/workshops for business, private and public agencies, schools and the community at large, as well as services for HIV infected people.

Santa Clara County Health Department — *Table 2054*
AIDS Program — 408-299-4151
Mr. David Burgess
AIDS Program
976 Lenzen Ave.
San Jose, CA 95126

The AIDS Program has offered services since 1983. Program areas include: community education and consultation, street outreach and bleach distribution, HIV antibody counseling and testing, early intervention services to HIV infected individuals, a pilot treatment module, public health nursing and laboratory services, community networking and planning, advocacy and case surveillance.

Seattle-King County — *Booth 1017*
Department of Public Health — 206-296-4854
Mr. Tim Burak
AIDS Project Manager
AIDS Prevention Project
1116 Summit Ave. Suite 200
Seattle, WA 98101

The Seattle AIDS Prevention Project, a health department-based program, demonstrates how using a "lead" community organization model can foster the timely and efficient delivery of programs and services, with a minimum of duplication and competitiveness. Services, privately and publicly funded include: AIDS education, case management, demonstrations of innovative counseling techniques and services for seropositive persons.

Service Employees International Union — *Table 2007*
Mr. John Mehring — 415-552-6086
240 Golden Gate Ave. Room 110
San Francisco, CA 94102

Service Employees is a 1 million member, North American Union. As part of our health and safety program we have an AIDS Project which involves members and their families in education programs, organizes members to protect themselves from occupational transmission and advocates workplace policies to protect workers from HIV discrimination.

Social Security Administration — *Table 2038*
Ms. Ernestine Bell — 301-965-7675
ID/OME/MRB
1500 Woodlawn Drive Room 2040
Baltimore, MD 21241

The Social Security Administration's exhibit is designed to acquaint physicians who work with disabled patients with the elements which influence SSA's decision making and are important in understanding the disability process. This will assist physicians/health professionals in providing SSA with the type of medical evidence necessary for disability; claim decisions for persons with AIDS or other Symptomatic HIV infection. These guidelines will assist the physician in documenting the disability application's condition adequately for SSA purposes.

St. Mary's Hospital and Medical Center *Booth 1028*
Mr. Daniel Ostrow/HIV Program 415-750-5787
450 Stanyan St.
San Francisco, CA 94117

The hospital provides a comprehensive HIV services program for people affected by HIV infection and disease, and their loved ones, regardless of their insurance status. The program includes inpatient and outpatient care, primary care, home health care, counseling, information and referral services, case management, community outreach, volunteer support and bereavement/emotional support.

State AIDS Legal Services Association (SALSA) *Booth 1067*
Clint Hockenberry 415-864-8186
c/o AIDS Legal Referral Panel
25 Hickory Street
San Francisco, CA 94102

SALSA is an association of 20 California AIDS legal services that deliver free and low cost essential legal services to people with HIV infection.

Swedish Physicians Against AIDS *Table 3001*
Ake Ringner 46-8-24-00-02
Kammakargatan 48
S-111 60 Stockholm
Sweden

SPAA is an independent, non-profit association of doctors and medical students. Its aims are to work towards a limitation of the HIV/AIDS epidemic and its consequences through information to public, politicians and media, provide research by its research fund, work for optimum care of HIV-infected persons, to combat sexual discrimination.

Union of American Hebrew Congregations Committee on AIDS *Booth 1071*
Ms. Jody Reise 415-567-8860
1600 Scott Street
San Francisco, CA 94115

The Jewish community provides direct services, counseling, education and spiritual support to people living with HIV and their families. Several different Jewish organizations providing HIV education and services in the Jewish community will also be represented.

University of California, San Francisco AIDS Health Project *Booth 1030*
Paul Causey, Marketing/ 415-476-6430
Development Coordinator
Box 0884
San Francisco, CA 94143-0884

UCSF AIDS Health Project is an AIDS prevention, education and mental health promotion program serving over 15,000 persons at high risk for AIDS, HIV infection and their care providers. The project was designed in 1984 by mental health professionals who sought to bring the latest advancements in their field to the fight to stop AIDS. Services include individual counseling, HIV/AIDS antibody testing and counseling and support groups.

University of California, San Francisco Postgraduate Programs— Department of Medicine, UCSF and SFGH "Clinical Care of the AIDS Patient" *Booth 1062*
Ric Wilson, Program Coordinator 415-476-5208
521 Parnassus Avenue, C-405
San Francisco, CA 94143-0656

"Clinical Care of the AIDS Patient" focuses on practical, clinical issues in the care of patients at all HIV disease stages. It is one of a variety of subspecialty CME programs addressing practical issues in clinical medicine and demonstrating relevant scientific advances.

University of California, San Francisco School of Nursing *Booth 1090*
Angie Lewis 415-476-4455
Box 0610
San Francisco, CA 94143-0610

UCSF School of Nursing, rated one of the top three Nursing Schools in the U.S., offers an AIDS minor in the M.S. Support is also offered for HIV research by doctoral students. The school sponsors an HIV Nursing Research interest group and, is co-sponsor for HIV Nursing Grand Rounds.

University of California *Booth 1013*
Universitywide AIDS Research Program 415-642-0732
Ms. Marge Jencks
2149 Addison 764 Univ. Hall
Berkeley, CA 94720

University of California-University Wide AIDS Research Program conducts the solicitation and evaluation of competitive AIDS research proposals requesting support from State funds allocated to the University of California. Support in basic, clinical, and social and behavioral sciences, including epidemiology and public health, is available to UC campuses and to non-profit research institutions in California.

University of Miami *Booth 1057*
Dr. Margaret Fischl 305-549-7092
Director, Comprehensive AIDS Program
AIDS Clinical Research Unit
PO Box 016960
Miami, FL 33101

The University of Miami is a university based clinical research unit. Unit consists of several programs, including HIV screening, epidemiologic and natural history studies, clinical trials and educational outreach program. Education outreach program consists of State of the Art lectures to health care professionals, courses for the general public and development of posters, pamphlets and other educational materials.

Visiting Nurses and Hospice of San Francisco — *Booth 1074*
Mr. Brent Hawk — 415-861-8705
1390 Market St. Suite 510
San Francisco, CA 94102

Visiting Nurses and Hospice of San Francisco provides skilled health care and compassionate support in the home or in the Coming Home Hospice residence to people with AIDS/HIV disease and their loved ones. Support is provided by a medical director, nurses, social workers, volunteer attendant caregivers, rehabilitation therapists, chaplains and bereavement counselors who work together as a team with each patient's physician to develop an appropriate plan of care.

Visual AID — *Booth 1088*
Daniel Goldstein — 415-621-5761
550 Bush St., Suite 403
San Francisco, CA 94108

Visual AID is an Arts Organization whose primary function is to provide funding for artists, particularly those affected by HIV. Funds are distributed in the form of small grants awarded on a quarterly basis. Activities are continuing to expand into other areas of artistic support.

Walden House AIDS Program — *Table 2018*
Jeff Pressment — 415-554-1100
520 Townsend Street
San Francisco, CA 94103

Residential Substance Abuse Treatment Program. In response to the increase of seroprevalence among IVDU's, Walden House provides a comprehensive variable length program for addicts who are HIV infected. While participating in regular program activities, HIV clients are offered body work, psychotherapy, a meditation group, HIV support group, non-traditional therapies as well as coordination of traditional medical treatment.

West Berkeley Health Center — *Table 2008*
Linda K. Collins — 415-644-6939
2031 Sixth St.
Berkeley, CA 94710

West Berkeley Health Center is a primary care facility serving residents of Alameda County. Providing health and other support services at low or no-cost which include: Medical, Dental, Gynecology, Podiatry, Pediatric, Substance Abuse Counseling, AIDS Education, Homeless Programs and Outreach Advocacy.

Western Consortium for Public Health/Int'l Health — *Booth 1076*
408-459-2678
Ms. Betty Steinmetz — FAX 408-458-3659
210 High Street
Santa Cruz, CA 95060

Stateside and abroad, IHP has provided technical assistance and continuing education for health personnel for developing nations since 1971. Areas of expertise are: Communication for AIDS prevention, family planning, program management, family life education, training of trainers, nutrition, child survival, maternal/child health. Training is conducted in French, English, Spanish, Arabic.

Yale University Press — *Table 1098*
Susan Faber — 203-432-0960
92A Yale Station
New Haven, CT 06520

Yale University Press is exhibiting two new books relating to AIDS—Thomas P. McCormack's *The AIDS Benefits Handbook*, which is the first comprehensive guide to obtaining social welfare benefits for people with AIDS and ARC, and Lawrence O. Gostin's *AIDS and the Health Care System*. Also on exhibit is Harlon L. Dalton's *AIDS and the Law: A Guide for the Public*, and other related titles.

Y.E.S./AIDS Intervention Training Center — *Table 3010*
Pat Norman — 415-922-6135
507 Divisadero Street
San Francisco, CA 94117

The YES Training Center trains community health outreach workers (CHOWs) in effective methods of street-based aids prevention outreach to high-risk populations including intravenous drug users, their sexual partners, homeless youth and prostitutes. The center also provides training supervisors and administrators of AIDS prevention programs with an outreach component.

Y.E.S./Mid City Consortium to Combat AIDS — *Table 2011*
Ms. Bernadette Powers — 415-751-4221
Director of Outreach
1779 Haight St.
San Francisco, CA 94117

YES/Mid City Consortium To Combat AIDS is a multicultural coalition of six agencies in San Francisco whose primary goal is to promote behavioral changes among IV drug users (IVDUs) and their sexual partners. At the heart of the program are trained Community Outreach Workers (CHOWS) who provide street-based AIDS education and information to out-of-treatment IVDUs and their sexual partners.

(The descriptions above were furnished by the exhibitors. Unless otherwise noted, the Sixth International Conference on AIDS and the Regents of the University of California neither endorse nor warrant any representations made regarding the products or services exhibited.)

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DEFINITION OF SESSION TERMS

MORNING SESSIONS

Plenary Sessions
Thursday–Saturday, 8:00 am–10:30 am
Video rebroadcast, 10:30 am–1:00 pm

"State of the Art"
Six lectures providing the latest understanding on a variety of scientific, clinical, and epidemiologic issues in AIDS. Each lecture approximately 20 minutes in length. Lecture only (no discussion).

"Science to Policy"
Seven brief (12-minute) lectures exploring a single issue each day (Prevention of HIV Infection, Clinical Trials and Drug Development, and Access to Health Care) from a multidisciplinary and international perspective. A moderated discussion among the invited participants follows the formal lectures.

"Rapporteur Session": Sunday, 24 June, 8 am–10:30 am
Presentations by experts in each of the four thematic tracks (Basic Sciences, Clinical Science and Trials, Epidemiology and Prevention, and Social Science and Policy), summarizing new findings presented during the Sixth International Conference of AIDS. Lecture only (no discussion).

MIDDAY

Poster Discussions with Individual Authors
Thursday–Saturday, 11:00 am–12:45 pm
More than 700 posters on a wide variety of subjects will be displayed each day at the Conference (8:30 am–5:00 pm). Authors will be stationed by their posters during the midday period, available to discuss their findings.

Poster Discussion Sessions
Thursday–Saturday, 11:30 am–12:30 pm
Moderated discussion centered on 10–12 posters dealing with a single specialized topic. The posters will be up for viewing all day. Please review the posters before the session begins to take maximum advantage of the discussion.

AFTERNOON SESSIONS

Thursday–Saturday, 1:00–3:00 pm; 3:30–5:30 pm

Symposium
A session in which six speakers deliver addresses on one topic or related topics. Each 15-minute lecture is followed by a 5-minute discussion period.

Abstract Session
Oral presentations of 10 minutes, each based on selected abstracts. Each lecture is followed by a 5-minute discussion period.

Panel Discussion
Six brief presentations examining a single topic from a multidisciplinary and international perspective; followed by a 45-minute moderated discussion among the invited participants.

KEY TO NUMBERING OF ABSTRACTS/ABSTRACT VOLUMES

The presentations (oral and poster) are grouped by day and by thematic track.

The three abstract volumes are organized as follows:

Volume 1: Introductory material, and daily program and abstracts for Wednesday, 20 June, and Thursday, 21 June.

Volume 2: Daily program and abstracts for Friday, 22 June, as well as all published, but not presented, abstracts.

Volume 3: Daily program and abstracts for Saturday, 23 June, and Sunday, 24 June, as well as complete author, chair, and keyword (subject) indices.

The system used to number the abstracts identifies the day, the track, and the type of presentation. An abstract with a number *below* 200 is an oral presentation. One with a number *above* 200 is a poster presentation.

EXAMPLES

Th. Thursday	B. Track B	227 Poster presentation: this number is the poster board number. (numbered above 200)	in Volume 1 (Thursday)
F. Friday	A. Track A	38 Oral presentation (numbered below 200)	in Volume 2 (Friday)

Note

Track A: Basic Science
Track B: Clinical Science and Trials
Track C: Epidemiology and Prevention
Track D: Social Science and Policy

GENERAL INSTRUCTIONS TO CHAIRS, SPEAKERS, AND POSTER PRESENTERS

SPEAKERS' CENTER

The Speakers' Center is located in the Moscone Center West Mezzanine. It will be open *Wednesday–Sunday, 20–24 June, 7:30 am– 7:00 pm.*

The following information for session chairs is available from the Speakers' Center: (1) whether a speaker has checked in; (2) messages for speakers and chairs; (3) speaker information (brief c.v.).

CHAIRS OF AFTERNOON SESSIONS

Briefing

An instructional meeting for all chairs and moderators of abstract sessions, symposia, and panel discussions will take place on *Wednesday, 20 June, at 6:00 pm* (following the Opening Ceremony) in Room E of the Moscone Center. A short meeting for the day's chairs and moderators will take place daily at 7:30 am, in the Speakers' Center Conference Room, Moscone Center West Mezzanine. Please be on time. Food and beverages will be provided.

Services for Chairpersons

Please contact the Chairpersons' Desk in the Speakers' Center for any service or assistance.

SPEAKERS IN AFTERNOON SESSIONS

Services Provided for Speakers

- Transfer of slides to conference-standard slide trays;
- projection equipment for viewing slides;
- sealing and identification of slide trays to be stored by conference staff, ready to be taken at the proper time and place to the speaker's presentation. (Projection during the presentation is provided by Conference staff.)

Slide trays will be returned to the Speakers' Center, where they can be collected at the conclusion of each session.

Procedures for Speakers

We kindly ask speakers to observe the following procedures:

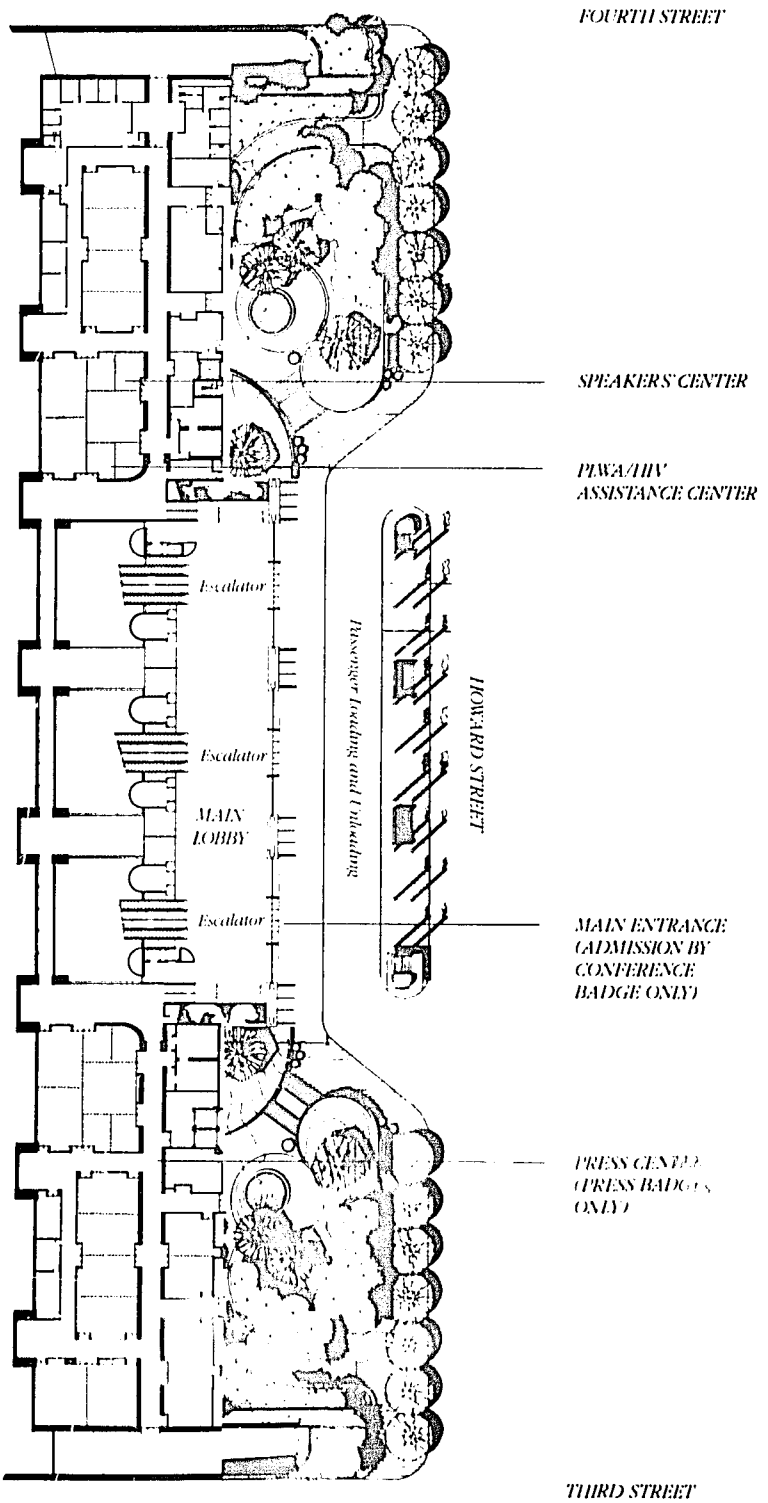
- Report to the Speakers' Center at least 24 hours before the scheduled time of presentation and drop off your slides at that time.
- Make sure that each slide is marked at the bottom left hand corner to ensure proper loading in the slide trays.
- Sign consent forms to allow Conference staff to tape sessions.
- Meet with the session chairs in the session hall 15 minutes before the session begins.
- During the presentation, please conform to the instructions regarding the length of your oral presentation.

POSTER PRESENTERS

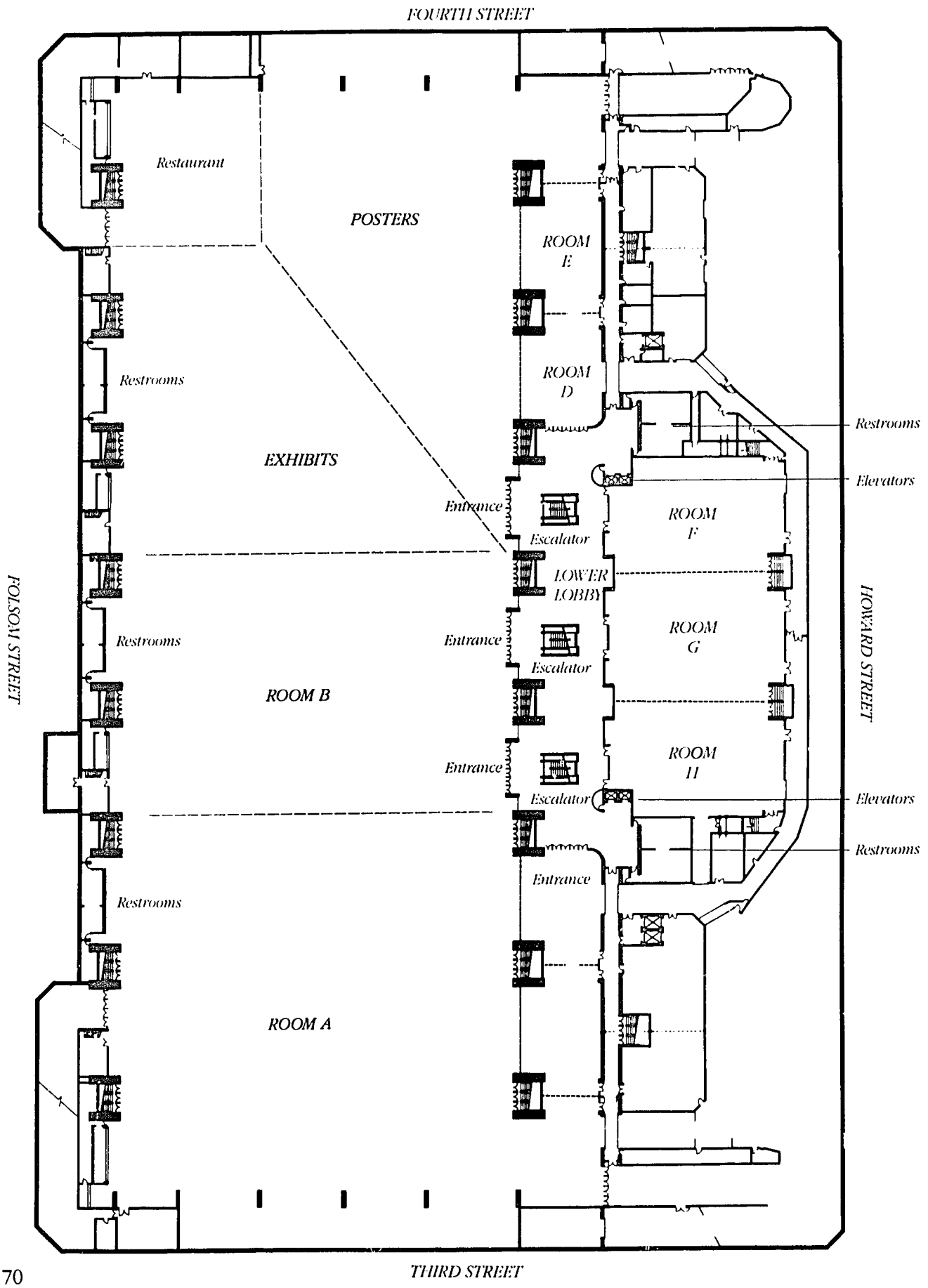
Authors are responsible for setting up and removing their posters themselves according to the following schedule:

Day	*Mounting Time*	*Discussion Time*	*Removal Time*
Thursday, 21 June	7:30–8:30 am	11:00 am–12:45 pm	5:00–6:00 pm
Friday, 22 June	7:30–8:30 am	11:00 am–12:45 pm	5:00–6:00 pm
Saturday, 23 June	7:30–8:30 am	11:00 am–12:45 pm	5:00–6:00 pm

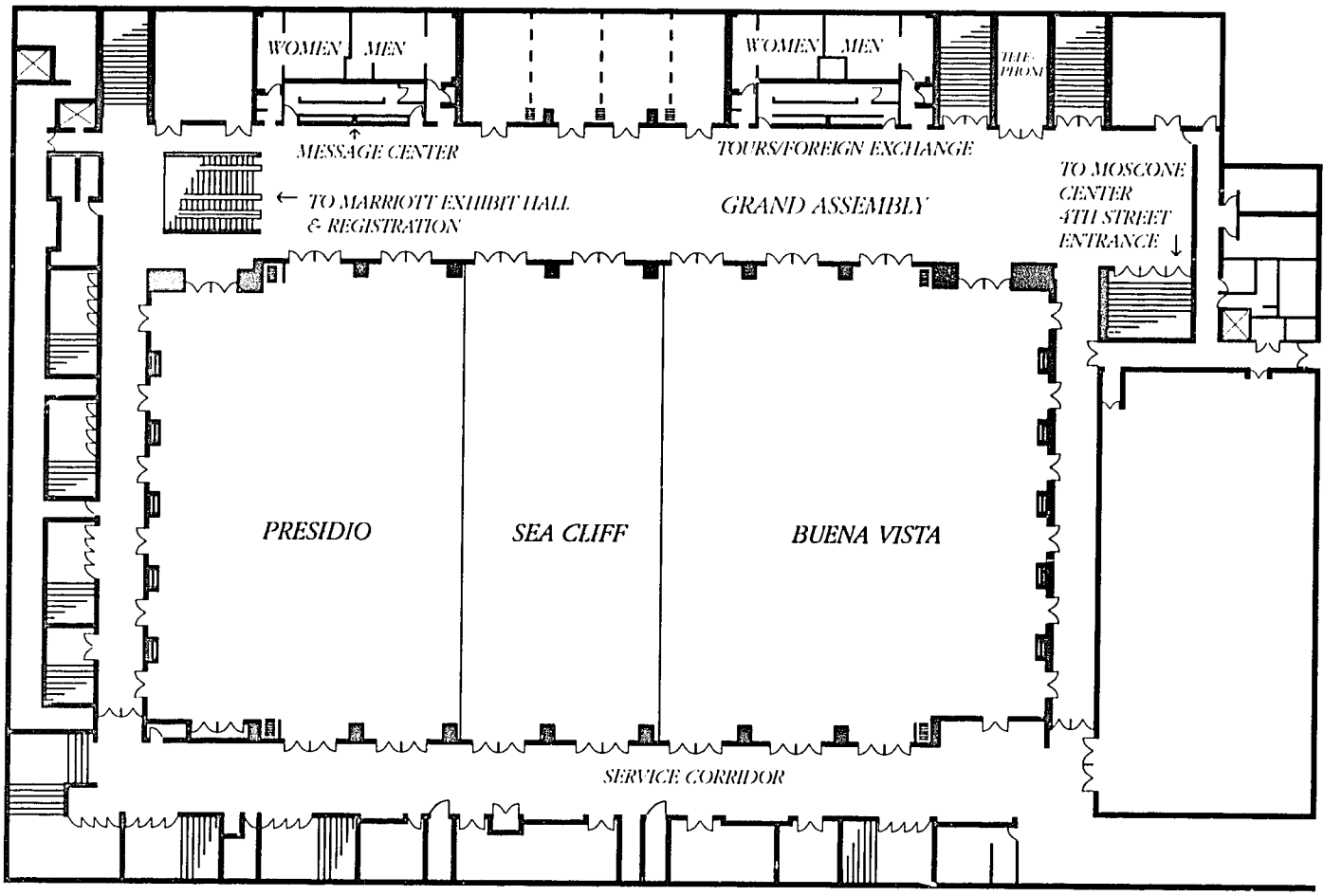
Posters not removed by 6:00 pm on the day of presentation will be discarded by Conference staff.



MOSCONE SESSION ROOMS
(LOWER LEVEL)



SF MARRIOTT SESSION ROOMS



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INTRODUCTORY SEMINARS
WEDNESDAY, 20 JUNE, 10:30 AM–12:30 PM

"The Global Strategy for the Prevention and Control of AIDS"

World Health Organization and International AIDS Society

Marriott, Buena Vista

Opening Remarks

Lars Olof Kallings
President, International AIDS Society

Director, Global Programme on AIDS
World Health Organization

Challenges to National AIDS Programs

Therese Mulandi
Kenya AIDS Control Program, Kenya

Peter Figueroa
National AIDS Program, Jamaica

Daniel Tarantola
Global Program on AIDS, WHO

Open Discussion

National AIDS Programs and NGOs

Sheryl Overs
Victorian Prostitutes Collective, Inc., Australia

To Be Announced
Stop AIDS Organization, Nigeria

Chantiwipa Apisuk
EMPOWER, Thailand

Open Discussion

International Scientific Collaboration Research—By Whom and For What?

"Diagnostics and Vaccines"
Geoffrey Schild
Institute for Biological Standards and Control, United Kingdom

"Therapeutics"
Thomas Merigan
Stanford University, USA

"Clinical Research"
Bila Kapita
Mama Yemo Hospital, Zaire

"Behavior"
Eustace Muhondwa
Behavioral Sciences Department, Tanzania

Open Discussion

"The San Francisco Model for Care and Treatment of Persons with HIV Infection"

Marriott, Presidio

Introduction and Closing Remarks

David Werdegar, Director, SF Department of Public Health (SFDPH)

Organization, Administration, and Financing of the San Francisco Model

George Rutherford, Former Director, AIDS Office, SFDPH

Panel Discussion: Community-Based, Voluntary, and Private Sector Responses

Herbert Houston, Haight-Ashbury Free Medical Clinic

Robert Munk, AIDS Service Providers Association of the Bay Area

Lee Smith, Levi Strauss & Company

Panel Discussion: Prevention

Jeffrey Amory, Former Administrative Director, AIDS Office, SFDPH

James Naritomi, Japanese Community Youth Center

Larry Bye, Communications Technologies

Shirley Gross, Bayview-Hunter's Point Foundation

Panel Discussion: Medical and Nursing Care

Donald I. Abrams, San Francisco General Hospital

William Owen, Private Practice

Anita Kline, San Francisco General Hospital

Jeannee P. Martin, Visiting Nurses and Hospice of SF

Panel Discussion: Community-Based Support, Housing, and Mental Health Services

Sophia Chang, AIDS Office, SFDPH

Michael Lee, SF AIDS Foundation

James Dilley, AIDS Health Project

Adolfo Mata, Mission Neighborhood Health Center

INTRODUCTORY SEMINARS
WEDNESDAY, 20 JUNE, 1:00–3:00 PM

"Science to Policy: A UCSF Introduction"
University of California, San Francisco

Marriott, Buena Vista

Chair: Joseph B. Martin
Dean, School of Medicine
University of California, San Francisco (UCSF)

Molecular Biological Approaches to Understanding and Controlling the AIDS Virus

William Rutter
Director, Hormone Research Laboratory, UCSF

Immunity and AIDS

Arthur Weiss
Howard Hughes Medical Institute, UCSF

Epidemiology and AIDS: Inferences from Counting and Comparing

Virginia Ernster
Chair, Department of Epidemiology and Biostatistics, UCSF

AIDS and Health Policy

Philip Lee
Director, Institute for Health Policy Studies, UCSF

Epidemics in Historical Perspective

Donald Ganem
Department of Microbiology, UCSF

"Ultimate Questions at the Heart of AIDS"
American Foundation for AIDS Research

Marriott, Presidio

This seminar will focus on critical moments in the life of a person infected by HIV that compel him or her to address ultimate questions such as: What worth is my life? Who loves me? Is there a God? Is there an after-life? What is most important now in my life? How can I find spiritual resources?

The epidemic strikes deep into the faith system of individuals and it is critical that these issues be explored in the most healthy way possible.

To confront these significant moments, three brief dramas will be performed Each will be followed by a panel discussion given by caregivers and HIV-infected persons who will elaborate on the spiritual issues raised by the given drama. Finally, the audience will have an opportunity to engage the panel.

Additional Opportunities

1. The San Francisco Interreligious Coalition on AIDS will have forty people available for individual dialogue with Conference delegates.

2. A Reflection Room will be available in the Marriott Hotel, as will local churches.

3. At Grace Cathedral, there will be a service of story, music, and prayer entitled "A Celebration of Life" on Thursday, June 21, at 8 pm. Jewish, Buddhist, and Christian approaches will be featured. A reception for Conference delegates will follow in the Cathedral's undercroft.

OPENING CEREMONY

WEDNESDAY, 20 JUNE, 4:00–6:00 PM / MOSCONE, ROOM A–B

WELCOMING REMARKS
John Ziegler
Conference Chair

Julius R. Krevans
Chancellor
University of California, San Francisco

The Honorable Art Agnos
Mayor of San Francisco

Robert Wachter
Conference Program Director

"CHANGING CONCEPTS IN HIV INFECTION: CHALLENGES FOR THE 1990s"
Jay A. Levy
Professor, Department of Medicine, and
Research Associate, Cancer Research Institute
University of California, San Francisco

"SCIENCE AND PUBLIC HEALTH"
June Osborn
Dean, School of Public Health
University of Michigan
Chair, US National Commission on AIDS

"PERSONAL PERSPECTIVES ON AN EPIDEMIC"
Leon McKusick
Co-Chair, Conference Community Task Force
Vito Russo
New York, NY
Sallie Perryman
AIDS Institute for New York State

KEYNOTE ADDRESS
Eunice Muringo Kiereini
Chair, Family Health, Foundation of Kenya;
former Chief Nursing Officer, Kenya

CLOSING REMARKS
Paul Volberding
Conference Co-Chair

SF Gay Men's Chorus
Stan Hill, Musical Director

UCSF Orchestra
Jonathan Davis, Artistic Director

DAY AT A GLANCE / THURSDAY

8:00–10:30AM
TWO CONCURRENT PLENARIES

"State of the Art" Session (Moscone B). Twenty-minute lectures covering: Molecular Virology, Immunopathogenesis of HIV, Basic Approaches to Anti-Viral Treatment, Controversies in Early Therapy, Anti-Viral Drug Resistance, and Pathogenesis of HIV Dementia.

"Science to Policy" Session (Moscone A). Brief lectures followed by a moderated discussion in the area of "Prevention of HIV Infection."

10:30AM–1PM
THREE CONCURRENT EVENTS

Poster Viewing: More than 700 posters dealing with topics in Basic Science, Clinical Science, Epidemiology and Prevention, and Social Science and Policy.

Plenary Rebroadcasts: Videotapes of both concurrent plenaries may be viewed in the same rooms as their original presentations.

Poster Discussion Sessions: Two moderated discussions based on posters dealing with "Nutritional Aspects of HIV Infection" (Moscone D) and "AIDS in the Corporate Workplace" (Moscone E).

1:00–3:00PM
ORAL SESSIONS

A1	Molecular Biology of HIV Infection (S)	Marriott BV
A2	HIV Detection (AS)	Marriott SC
B1	New Concepts Regarding the Use of Zidovudine (AS)	Moscone B
B2	Psychiatric Issues in HIV Infection (AS)	Marriott Pres
C1	Natural History of HIV Infection (AS)	Moscone A
C2	Issues in Vertically Transmitted HIV Infection (AS)	Moscone G
D1	Human Sexuality and Issues of Sex Workers (AS)	Moscone F
D2	Access to Health Care and Models of Delivery (AS)	Moscone H

3:30–5:30PM
ORAL SESSIONS

A3	HIV Pathogenesis (AS)	Marriott BV
A4	Antibody Immunity in HIV Infection (AS)	Marriott SC
B3	Clinical Trials with New Anti-Retrovirals (S)	Moscone B
B4	Update in Hematology and Oncology (S)	Marriott Pres
C3	Transmission of HIV Infection (AS)	Moscone A
C4	Distribution and Determinants of Risk Behavior (AS)	Moscone G
D3	Human Rights and Systems of Justice (P)	Moscone F
D4	Perinatal, Pediatric, and Family Issues (AS)	Moscone H

Session Type Abbreviations
(AS): Abstract Session (P): Panel Discussion (S): Symposium

Marriott Hotel Session Room Abbreviations
BV: Buena Vista SC: Sea Cliff Pres: Presidio

PLENARY SESSIONS
THURSDAY, 21 JUNE, 8:00–10:30 AM

State of the Art / Moscone, Room B

Chairs: Rakhim Khaitov
Ministry of Public Health, USSR

Robert Yarchoan
National Cancer Institute, USA

Immunopathologic Effects of HIV
Ronald Penny
Department of Clinical Immunology
University of New South Wales, Australia

The Molecular Virology of AIDS
Flossie Wong-Staal
Department of Medicine
University of California, San Diego, USA

Basic Approaches to Anti-Retroviral Treatment
Eric De Clercq
Rega Institute for Medical Research
Catholic University, Belgium

Controversies in Early Therapy of HIV Disease
Margaret Fischl
Division of Internal Medicine
University of Miami Medical School, USA

Resistance to Anti-Viral Agents
Brendan Larder
Senior Scientist, Molecular Sciences Department
The Wellcome Research Laboratory, United Kingdom

Pathogenesis of HIV-Related Brain Injury and the AIDS Dementia Complex
Richard Price
Chair, Dept. of Neurology, University of Minnesota, USA

(Each lecture in this plenary will last approximately 20 minutes.)

Science to Policy / Moscone, Room A
"Prevention of HIV Infection"

Chair: James Mason
Assistant Secretary of Health, USA

Moderator: John Galluwey
Radcliffe Infirmary, United Kingdom

Strategies for Prevention: An Overview of Methodology
Alan Hinman
Director, Center for Prevention Services
Centers for Disease Control, USA

Strategies for Prevention of Sexual Transmission
Gloria Ornelas Hall
National Coordinator, AIDS Information Centers
National AIDS Prevention Committee, Mexico

Strategies for Prevention of Parenteral Transmission
Peter Lamptey
Director, AIDSTECH/Family Health International, Ghana/USA

Strategies for Prevention of Perinatal Transmission
Janet Mitchell
Chief of Perinatology
Harlem Hospital, USA

The Role of HIV Testing: Technical Aspects of Testing
Jean-Pierre Allain
Director, Medical Research
Abbott Laboratories, USA

HIV Testing in a Comprehensive AIDS Prevention Strategy
Thomas Coates
Director, Behavioral Medicine Unit
University of California, San Francisco, USA

HIV Testing: A Personal Account of Discrimination
Hacib Aoun, USA

(Each lecture in this plenary will last approximately 12 minutes. The lectures will be followed by a moderated discussion.)

Videotapes of both sessions may be viewed from 10:30 am to 1:00 pm in the same rooms as the original presentations.

THURSDAY, 21 JUNE / 1:00–3:00 PM
TRACK A: BASIC SCIENCE

A1 *Marriott, Buena Vista*

Symposium: Molecular Biology of HIV Infection

Chairs: Francois Clavel (France)
Lee Ratner (USA)

1:00 Th.A.1
CONTROL OF ACUTE AND CHRONIC HIV INFECTION. Martin, Malcolm A.; Laboratory of Molecular Microbiology, NIAID, National Institutes of Health, Bethesda, MD, USA.

1:20 Th.A.2
REGULATORY GENES OF HIV. Pavlakis, George N.; National Cancer Institute, National Institutes of Health, Bethesda, MD, USA.

1:40 Th.A.3
MECHANISM OF HIV tat AND HTLV tax. Jeang, Kuan-Teh; Laboratory of Molecular Biology, National Institute of Allergy and Infectious Diseases, NIH, Bethesda, MD, USA.

2:00 Th.A.4
CELLULAR FACTORS AFFECTING HIV INFECTION. Gaynor, Richard; University of California, Los Angeles, CA, USA.

2:20 Th.A.5
STRUCTURE AND FUNCTION OF HIV ENVELOPE. Sodroski, Joseph; Dana-Farber Cancer Institute, Boston, MA, USA.

2:40 Th.A.6
ACCESSORY GENES IN HIV REPLICATION. Haseltine, William; Dana-Farber Cancer Institute, Boston, MA, USA.

A2 *Marriott, Sea Cliff*

Abstract Session: HIV Detection

Chairs: Ofelia T. Monzon (Philippines)
Thomas M. Folks (USA)

1:00 Th.A.9
THE USE OF PCR IN HIV RESEARCH. Sninsky, John; Cetus Corp., Emeryville, CA, USA.

1:15 Th.A.10
A RAPID METHOD FOR DETECTION AND DIFFERENTIATION OF AMPLIFIED HIV-1 AND HIV-2 DNA USING A SENSITIVE CHEMILUMINESCENT DNA PROBE SYSTEM (HPA). McDonough, Sherrol*; Brown, V.†; Ryder, T.*; Ou, C.-Y.†; Schochetman, G.†; *Gen-Probe, Inc., San Diego, CA, †CDC, Atlanta, GA, USA.

1:30 Th.A.11
SILENT HIV INFECTION: A RARE OCCURRENCE IN A HIGH RISK HETEROSEXUAL POPULATION. Sullivan, John L.*; Brettler, D.B.; Somasundaran, M.; Koup, R.A.; Forsberg, A.; Brewster, F.; Byron, K.S.; Chattopadyay, B.; U. of Mass. Med. Sch., Med. Ctr. of Central Mass.-Mem., Worcester, MA, USA.

1:45 Th.A.12
RESOLUTION OF WESTERN BLOT-INDETERMINATE AND HIGH RISK SERONEGATIVE BLOOD DONORS BY PCR. Khayam-Bashi, Hassan*; Eble B.*; Busch, M.†; Hurt, M.*; Nason, M.†; Garner, J.†; Guiltinan, A.†; Vyas, G.*; *UCSF, CA, †Irwin Mem. Blood Ctr., SF, CA, USA.

2:00 Th.A.13
DETECTION OF HIV-1 INFECTED INDIVIDUALS IN A SERONEGATIVE HIGH-RISK POPULATION BY POLYCLONAL B CELL ACTIVATION IN VITRO. Sell, Kenneth*; Yehuda-Cohen, T.*; Slade, B.†; Powell, J.*; Villinger, F.*; McClure, H.‡; Ansari, A.*; *Emory U. Sch. of Med., †Grady Mem. Hosp., ‡Yerkes Primate Ctr., Atlanta, GA, USA.

2:15 Th.A.14
EARLY DETECTION OF HIV INFECTION BY PCR BEFORE SEROCONVERSION IN MULTITRANSFUSED SERONEGATIVE HEMOPHILIACS AND SEXUAL PARTNERS. Moncany, Maurice L.J.*; Berthier, A.†; Ferris, S.*; Montagnier, L.*; *Inst. Pasteur, Paris, †Ctr. Rey-Leroux, La Bouexiere, France.

2:30 Th.A.15
ENZYME-LINKED IMMUNOSPOT (ELISPOT) AND PCR FOR THE DIAGNOSIS OF HIV INFECTION IN INFANTS. Lee, Francis K.*; Ou, C.Y.†; Nesheim, S.R.*; Jones, D.†; Schochetman, G.†; Nahmias, A.J.*; *Emory U. Sch. of Med., †CDC, Atlanta, GA, USA.

2:45 Th.A.16
MIXED HIV-1/HIV-2 INFECTION IN BRAZIL CONFIRMED BY PCR ANALYSIS. Pieniazek, Danuta†; Peralta, J.M.*; Ferreira, J.A.*; Krebs, J.W.†; Sion, E.S.‡; Ferrera Ramos Filho, C.‖; Morais de Sa, C.A.‡; Weniger, B.G.†; Heyward, W.L.†; Ou, C.Y.†; Schochetman, G.†; Rayfield, M.A.†; *Oswaldo Cruz Fdtn., Rio de Janeiro, Brazil, †CDC, Atlanta, GA, USA, ‡Hosp. Gaffree e Guinle, U. of Rio de Janeiro, Brazil, ‖Univ. Fed. of Rio de Janeiro, Brazil.

THURSDAY, 21 JUNE / 1:00–3:00 PM
TRACK B: CLINICAL SCIENCE & TRIALS

B1 *Moscone, Room B*

Abstract Session: New Concepts Regarding the Use of Zidovudine (AZT)

Chairs: Mary Fanning (Canada)
David L. Cohn (USA)

1:00 Th.B.17
ZIDOVUDINE THERAPY OF ASYMPTOMATIC HIV INFECTED PERSONS WITH LESS THAN 500 CD4+ CELLS/mm3—ACTG PROTOCOL 019. Volberding, Paul*; Lagakos, S.†; Koch, M.‡; Pettinelli, C.‖; Myers, M.‖; Booth, D.‡; and the NIAID ACTG; *UCSF, CA, †Harvard U., Boston, MA, ‡Res. Triangle Inst., Research Triangle Park, NC, ‖NIAID, Rockville, MD, USA.

1:15 Th.B.18
LONG TERM EFFECTS OF ZIDOVUDINE THERAPY IN EARLY HIV DISEASE—RESULTS FROM THE MULTICENTRE CANADIAN AZIDOTHYMIDINE TRIAL (MCAT). Ruedy, John; Montaner, J.; Schechter, M.; Le, T.; Fanning, M.; Tsoukas, C.; Falutz, J.; Wells, G.; Child, S.; O'Shaughnessy, M.; Wainberg, M.; St. Paul's Hospital, Vancouver, BC, Canada.

1:30 Th.B.19
FUNCTIONAL STATUS AND WELL-BEING IN A PLACEBO-CONTROLLED TRIAL OF ZIDOVUDINE IN EARLY ARC. Wu, Albert W.*; Rubin, H.*; Mathews, W.†; Brysk, L.†; Hardy, W.‡; Bozzette, S.†; Atkinson, J.†; Grant, I.†; Richman, D.†; *UCSF, CA, †UCSD, CA, ‡UCLA, CA, USA.

1:45 Th.B.20
THE EFFICACY AND SAFETY OF A LOWER DOSE OF ZIDOVUDINE IN THE TREATMENT OF PATIENTS WITH AIDS-ASSOCIATED PNEUMOCYSTIS CARINII PNEUMONIA. Fischl, Margaret; Parker, C.; Pettinelli, C.; Wulfsohn, M.; Rasheed, S.; and ACTG; NIAID, Bethesda, MD, USA.

2:00 Th.B.21
RANDOMIZED PROSPECTIVE TRIAL OF TWO REGIMENS OF ZIDOVUDINE IN AIDS AND ARC PATIENTS: 1200 MG/DAY VS. 600 MG/DAY. Salmon, Dominique; Detruchis, P.; Matheron, S.; Bouvet, E.; Levacher, M.; Leport, C.; and ZDV Coop. Study Group; Claude Bernard-Bichat Hosp., Paris, France.

2:15 Th.B.22
A RANDOMIZED TRIAL COMPARING ZIDOVUDINE, ALPHA INTERFERON, OR THE COMBINATION IN EARLY HIV INFECTION. Davey, Victoria; Cefali, E.; Metcalf, J.A.; Masur, H.; Fauci, A.S.; Lane, H.C.; et al.; NIH, Bethesda, MD, USA.

2:30 Th.B.23
PHASE II TRIAL OF ALTERNATING AND INTERMITTENT REGIMENS OF ZDV AND ddC IN ARC AND AIDS. Skowron, Gail; Merigan, T.; and the 047 Study Group of the ACTG; Stanford U., UCSD, U. Miami, U. Washington, USC, Northwestern/Rush-Presbyterian, UMDNJ, St. Luke's-Roosevelt, Harvard, Tulane, George Washington U., U. Minnesota, Albert Einstein (NY), NIAID, Bethesda, MD, USA.

2:45 Th.B.24
DECREASED HIV PLASMA TITER IN RESPONSE TO COMBINED LOW-DOSE ZIDOVUDINE AND ACYCLOVIR THERAPY IN CDC CLASS IVA PATIENTS. Coombs, Robert W.; Collier, A.C.; Chaloupka, K.; Corey, L.; University of Washington, Seattle, WA, USA.

B2 *Marriott, Presidio*

Abstract Session: Psychiatric Issues in HIV Infection

Chairs: Stuart Nichols (USA)
Ermine Bell (West Indies)

1:00 Th.B.25
COPING RESPONSES AND PSYCHOLOGICAL ADJUSTMENT IN GAY MEN WITH AIDS: A LONGITUDINAL ANALYSIS. Reed, Geoffrey M.*; Kemeny, M.†; Taylor, S.†; *University of Washington, Seattle, WA, †University of California, Los Angeles, CA, USA.

1:15 Th.B.26
PSYCHOLOGICAL ADJUSTMENT TO HIV INFECTION. Keily, Brian; Raphael, B.; Zournazi, A.; Dunne, M.; Smith, S.; Department of Psychiatry, University of Queensland, Brisbane, QLD, Australia.

1:30 Th.B.27
RELATIONSHIPS BETWEEN CD4 LYMPHOCYTES AND PSYCHOSOCIAL VARIABLES AMONG HIV SEROPOSITIVE ADULTS. Perry, Samuel; Jacobsberg, L.; Fishman, B.; Cornell University Medical College, New York, NY, USA.

1:45 Th.B.28
PSYCHOSOCIAL ADJUSTMENT TO HIV INFECTION: EFFICACY OF DIFFERENT GROUP INTERVENTIONS IN GAY AND BISEXUAL MEN. Flinders, R.†; Earl, William*; Flahive, M.‡; Flinders, T.‡; Bartholow, B.*; Kobayashi, J.*; Cohn, D.*; *Denver Health & Hospitals, Denver, CO, †Sonoma County Hospital, Santa Rosa, CA, ‡RISE Program Management, Denver, CO, USA.

2:00 Th.B.29
AIDS INPATIENTS AND PSYCHIATRIC DISTURBANCES: DIAGNOSTICAL AND THERAPEUTICAL ASPECTS. Tempesta, Enrico*; Di Giannantonio, M.*; Mattioni, T.*; Persico, A.*; Lestingi, L.*; Ortona, L.†; *Dept. of Psychiatry, †Dept. of Infectious Diseases, Catholic University of Sacred Heart, Rome, Italy.

2:15 Th.B.30
A COMPARISON OF SELF-REPORTED SUICIDAL BEHAVIORS IN DIFFERENT STAGES OF HIV INFECTION. Orr, D.; O'Dowd, Mary Alice; McKegney, F.; Natali, C.; Montefiore Medical Center, Albert Einstein College of Medicine, Bronx, NY, USA.

2:30 Th.B.31
PHARMACOLOGIC MANAGEMENT OF DELIRIUM IN MEDICALLY HOSPITALIZED AIDS PATIENTS. Marotta, R.†; Breitbart, W.*; Platt, M.*; Corbera, K.*; Weisman, H.†; Cancellieri, F.†; *Memorial Sloan-Kettering Cancer Center, †St. Luke's/Roosevelt Hospital Center, New York, NY, USA.

2:45 Th.B.32
THE EFFICACY OF IMIPRAMINE IN THE TREATMENT OF HIV-RELATED DEPRESSION. Manning, Donna; Jacobsberg, L.; Erhart, S.; Perry, S.; Frances, A.; The New York Hospital-Cornell Medical Center, Department of Psychiatry, New York, NY, USA.

THURSDAY, 21 JUNE / 1:00–3:00 PM
TRACK C: EPIDEMIOLOGY & PREVENTION

C1 *Moscone, Room A*

Abstract Session: Natural History of HIV Infection

Chairs: George Rutherford (USA)
Peter Piot (Belgium)

1:00 Th.C.33
NATURAL HISTORY OF HIV INFECTION IN A COHORT OF HOMOSEXUAL AND BISEXUAL MEN: CLINICAL AND IMMUNOLOGIC OUTCOME, 1977-1990. Lifson, A. R.*; Hessol, Nancy*; Rutherford, G.*; O'Malley, P.*; Barnhart, L.*; Buchbinder, S.*; Cannon, L.*; Bodecker, T.*; Holmberg, S.†; Harrison, J.†; Doll, L.†; *Dept. of Pub. Hlth. SF, CA, †CDC, Atlanta, GA, USA.

1:15 Th.C.34
NATURAL HISTORY OF HIV INFECTION, A PROSPECTIVE STUDY IN A COHORT OF 162 HIV SEROCONVERTERS. Pedersen, Court; Gerstoft, J.; Lindhardt, B.O.; Lundgren, J.D.; Jensen, B.L.; Dickmeiss, E.; et al.; University of Copenhagen, Copenhagen, Denmark.

1:30 Th.C.35
AIDS INCIDENCE TRENDS OVER 5 YEARS IN THE MULTICENTER AIDS COHORT STUDY (MACS). Visscher, Barbara*; Munoz, A.†; Jacobson, L.†; Dudley, J.P.*; Chmiel, J.†; Zhou, S.‖; Graham, N.†; Vermund, S.#; Detels, R.*; *UCLA Sch. of Pub. Hlth., LA, CA, †Johns Hopkins U., Baltimore, MD, †Northwestern U., Evanston, IL, ‖U. of Pittsburgh, Pittsburgh, PA, #NIAID/NIH, Wash., DC, USA.

1:45 Th.C.36
CESSATION OF INTRAVENOUS DRUG USE REDUCES PROGRESSION OF HIV INFECTION IN HIV+ DRUG USERS. Weber, Rainer; Ledergerber, B.; Opravil, M.; Luthy, R.; University of Zurich, Zurich, Switzerland.

2:00 Th.C.37
THE RATE OF DEVELOPMENT OF HIV-1 RELATED ILLNESS IN WOMEN WITH A KNOWN DURATION OF INFECTION. Anzala, Omu*; Wambugu, P.*; Bosire, M.†; Ngugi, E.N.*; Waiyaki, P.†; Plummer, F.A.*/‡; *U. of Nairobi, Nairobi, Kenya, †Kenya Med. Res. Inst., Nairobi, Kenya, ‡U. of Manitoba, Winnipeg, Canada.

2:15 Th.C.38
THE PROGRESSION TO AIDS IN THE ITALIAN HEMOPHILIA POPULATION OVER A SIX-YEAR PERIOD. Schinaia, Nicola; Chiarotti, F.; Italian Cooperative Hemophilia-HIV Study Group, Istituto Superiore de Sanita, Rome, Hemophilia Treatment Centers and Hemophilia Foundation, Rome, Italy.

2:30 Th.C.39
CIGARETTE SMOKING AND INCIDENCE OF AIDS. Royce, Rachel A.*; Winkelstein, W.*; Bacchetti, P.†; *UCB, CA, †UCSF, CA, USA.

2:45 Th.C.40
SURVIVAL IN ADULT AIDS CASES, BRAZIL, 1980-1989. Chequer, Pedro*; Hearst, N.†; Castilho, E.†; Loures, L.A.*; Rodrigues, L.*; Rutherford, G.‖; *Ministry of Health, Brasilia, Brazil, †UCSF, CA, USA, ‡Oswaldo Cruz Fdtn., Rio de Janeiro, Brazil, ‖SF Hlth. Dept., SF, CA, USA.

C2 *Moscone, Room G*

Abstract Session: Issues in Vertically Transmitted HIV Infection

Chairs: Joyce Lashof (USA)
Francis A. Plummer (Canada)

1:00 Th.C.41
ROUTINE VS. TARGETED PRENATAL TESTING FOR HIV. Barbacci, Marguerite; Chaisson, R.E.; The Johns Hopkins University School of Medicine, Baltimore, MD, USA.

1:15 Th.C.42
PERINATAL OUTCOME IN HIV-INFECTED WOMEN IN UGANDA. Guay, L.†; Mmiro, F.*; Ndugwa, Christopher*; Kataha, P.*; Mugisha, K.*; Goldfarb, J.‡; Hom, D.‡; Friesen, H.*; Toltzis, P.‡; Coulter, B.‡; Olness, K.‡; *Makerere University, Kampala, Uganda, †Case Western Reserve University, Cleveland, OH, USA, ‡Liverpool School of Tropical Hygiene, Liverpool, UK.

1:30 Th.C.43
MOTHER TO CHILD TRANSMISSION OF HIV: FIRST IMMUNOLOGIC AND SEROLOGIC FEATURES FROM AN ONGOING COHORT STUDY IN KIGALI, RWANDA. Van de Perre, Philippe*; Simonon, A.*; Hitimana, D.G.†; Msellati, P.A.†; Dabis, F.†; Baganizi, E.*; Van Goethem, C.†; Bazubagira, A.†; Stevens, A.M.†; Lepage, P.†; *AIDS Reference Lab, Kigali, Rwanda, †Centre Hospitalier de Kigali, Rwanda, ‡INSERM U 330, U. of Bordeaux, II, France.

1:45 Th.C.44
RISK FOR HIV-1 PERINATAL TRANSMISSION VARIES WITH THE MOTHER'S STAGE OF HIV INFECTION. Boue, F.; Pons, J.C.; Keros, L.; Chambrin, V.; Papiernik, E.; Henrion, R.; Delfraissy, J.F.; Service de Medecine Interne et de Gynecologie-Hopital Antoine Beclere, Clamart 92 141, France.

2:00 Th.C.45
ELEVATED MATERNAL TOTAL AND NEUTRALIZING ANTI-HIV1 ANTIBODY DOES NOT PREVENT PERINATAL HIV1. Krasinski, Keith; Cao, Y.-Z.; Friedman-Kien, A.; Borkowsky, W.; Fidelia, A.; Bebenroth, D.; NYU Med. Ctr., NY, NY, USA.

2:15 Th.C.46
IgA SPECIFIC ANTIBODY TO HIV IN INFANTS. Martin, Natasha*; Wara, D.*; Levy, J.†; Crombleholme, W.‡; Hourtane, M.*; Legg, H.‡; Cowan, M.*; Weintrub, P.*; Depts. of *Ped., †Med., ‡Ob/Gyn, UCSF, CA, USA.

2:30 Th.C.47
LACK OF PROVIRAL SEQUENCES IN CHILDREN WHO HAVE LOST MATERNAL ANTIBODY FOLLOWING BIRTH TO HIV (+) MOTHERS. Abrams, Elaine†; Rogers, M.*; Ou, C.*; Nesheim, S.‡; Mayers, M.‖; Connor, E.#; *CDC, Atlanta, GA, †NYC Perinatal HIV Transmission Collab. Study Group, New York, NY, ‡Emory Univ., Atlanta, GA, ‖Montefiore Med. Ctr., Bronx, NY, #Univ. of Medicine & Dentistry of NJ, Newark, NJ, USA.

2:45 Th.C.48
TRANSMISSION OF HIV INFECTION FROM AN INFECTED INFANT TO HIS MOTHER BY BREASTFEEDING. Kuznetsova, Irina I.; Pokrovsky, V.V.; Eramova, I.; Central Research Institute of Epidemiology, 3-a, Novogyreyevskaya, Moscow, USSR.

THURSDAY, 21 JUNE / 1:00–3:00 PM
TRACK D: SOCIAL SCIENCE & POLICY

D1 *Moscone, Room F*

Abstract Session: Human Sexuality and Issues of Sex Workers

Chairs: Arletti Pinel (Brazil)
Pramilla Senanayake (Thailand)

1:00 Th.D.49
HOMOSEXUALLY AND NONHOMOSEXUALLY IDENTIFIED MALE BLOOD DONORS WHO HAVE SEX WITH MEN: A BEHAVIORAL COMPARISON. Doll, Lynda S.*; HIV Blood Donor Study Group†; *Centers for Disease Control, Atlanta, GA, †Investigators from 20 blood centers, USA.

1:15 Th.D.50
AIDS-RELATED HEALTH BEHAVIOR AND SEXUAL PRACTICES OF GAY MEN IN JAPAN. Sawazaki, Yasushi; Kehoe, J.; Department of Health Sociology, Graduate School of Medical Science, University of Tokyo, Tokyo, Japan.

1:30 Th.D.51
PROFILE OF THE FEMALE PROSTITUTION IN MEXICO AND HIV RISK FACTORS. Loo, Elia; Valdespino, J.L.; Izazola, J.A.; Garcia, M.L.; Magis, C.; Sepulveda, J.; General Directorate of Epidemiology, Ministry of Health, Mexico City, Mexico.

1:45 Th.D.52
KAP STUDY AND HIV SEROPREVALENCE AMONG PROSTITUTES IN RURAL BURKINA FASO. Didier, Bakouan*; Lorenz, N.†; Ouedraogo, L.H.*; Zina, Y.*; Barth, P.‡; Rehle, T.‡; *Ministere de la Sante et de l'Action Sociale, Ouagadougou, Burkina Faso, †Gesellschaft fur Technische Zusammenarbeit (CTZ), Ouagadougou, Burkina Faso, ‡Gesellschaft fur Technische Zusammenarbeit (CTZ), Eschborn, FRG.

2:00 Th.D.53
PSYCHOSOCIAL PREDICTORS OF INTENDED CONDOM USE AMONG ZIMBABWEAN SCHOOL PUPILS. Wilson, David; Lavelle, S; University of Zimbabwe, Harare, Zimbabwe.

2:15 Th.D.54
PREFERRED STRATEGIES FOR SAFE SEX: RELATION TO PAST AND ACTUAL BEHAVIOUR AMONG SEXUALLY ACTIVE MEN AND WOMEN. Gallois, Cynthia; Kashima, Y.; Hills, R.; McCamish, M.; University of Queensland, St. Lucia (Brisbane), Queensland, Australia.

2:30 Th.D.55
SEROSTATUS AND RELATIONSHIP FORMATION IN THE GAY COMMUNITY: THE AIDS BEHAVIORAL RESEARCH PROJECT. Hoff, Colleen C.; McKusick, L.; Coates, T.J.; Hilliard, B.; Center for AIDS Prevention Studies, University of California, San Francisco, CA, USA.

2:45 Th.D.56
SEX AND POWER: YOUNG WOMEN'S SEXUALITY IN THE SHADOW OF AIDS. Holland, Janet*; Ramazanoglu, C.†; Scott, S.‡; Sharpe, S.*; Thomson, R.‡; *Institute of Education, London University, London, †Goldsmiths' College, London University, London, ‡Manchester University, Manchester, UK.

D2 *Moscone, Room H*

Abstract Session: Access to Health Care and Models of Delivery

Chairs: Veneita L. Porter (USA)
Margaret Duckett (Australia)

1:00 Th.D.57
ACCESS TO CLINICAL TRIALS: THE "ACTU WITHOUT WALLS" CONCEPT. Kramer, Amy S.; Brownstein, A. P.; The National Hemophilia Foundation, New York, NY, USA.

1:15 Th.D.58
FEASIBILITY OF EARLY INTERVENTION, COUNSELING AND FOLLOW UP OF HIV POSITIVES IN THE HAITIAN COMMUNITY. Marcel, Adrien J.; Charles, C.; Pierre-Louis, E.; Romulus, J.R.; Michel, C.; Landesman, S.H.; SUNY, Health Science Ctr./Kings County Hosp. Ctr., Brooklyn, NY, USA.

1:30 Th.D.59
ACCESS, EQUITY, AND SURVIVAL: USE OF ZVD AND PENTAMIDINE BY PERSONS WITH AIDS. Hidalgo, Julia*; Sugland, B.†; Moore, R.†; Chaisson, R.E.†; *Department of Health and Mental Hygiene, AIDS Administration, Baltimore, MD, †Johns Hopkins University, School of Medicine, Baltimore, MD, USA.

1:45 Th.D.60
MEDICAL CARE FOR INTRAVENOUS DRUG USERS WITH AIDS AND ARC: DELIVERING SERVICES AT A METHADONE TREATMENT PROGRAM. Batki, Steven L.*; London J.†; Goosby, E.†; Clement, M.†; Wolfe, R.†; Ryan C.*; French, D.†; Young, M.*; Miller, D.†; Christmas, R.†; Sorenson J.L.†; *University of California, San Francisco, Dept. of Psychiatry, †San Francisco General Hospital, Department of Medicine, and ‡San Francisco Treatment Research Unit, San Francisco, CA, USA.

2:00 Th.D.61
A STUDY OF SIX HOME-CARE PROGRAMMES FOR PERSONS WITH HIV-INFECTION IN AFRICA. Victor, Birgit W. C.*; Widdus, R.†; Schietinger, H.†; *The Nordic School of Public Health, Goteborg, Sweden, †Global Programme on AIDS, The World Health Organization, Geneva, Switzerland.

2:15 Th.D.62
INSURANCE COVERAGE FOR INVESTIGATIONAL DRUGS. Austein, Cheryl; Walkover, M.; Hadley, E.; U.S. Department of Health and Human Services, Washington, DC, USA.

2:30 Th.D.63
"BUYERS' CLUBS" AND THE LEGITIMIZATION OF THE AIDS TREATMENT UNDERGROUND—THE PWA (PEOPLE WITH AIDS) HEALTH GROUP AS CASE STUDY. Hodel, Derek; Wilkinson, S.D., The PWA Health Group, New York, NY, USA.

2:45 Th.D.64
ACCESS TO HEALTH CARE FOR HIV INFECTION: A CONSUMER'S PERSPECTIVE. Ludington, Pierre; Executive Director, American Association of Physicians for Human Rights, San Francisco, CA, USA.

THURSDAY, 21 JUNE / 3:30–5:30 PM
TRACK A: BASIC SCIENCE

A3 *Marriott, Buena Vista*

Abstract Session: HIV Pathogenesis

Chairs: Luc Montagnier (France)
Helga Rubsamen-Waigman (FRG)

3:30 Th.A.65
HIV PATHOGENESIS. Montagnier, Luc; Institut Pasteur, Paris, France.

3:45 Th.A.66
NEUTRALISING MONOCLONAL ANTIBODY AND rCD4 SELECTED HIV-1 VARIANTS. McKeating, Jane A.*; Clapham, P.R.*; Moore, J.*; Ferguson, M.†; Balfe, P.†; Almond, J.‖; Evans, D.‖; Weiss, R.A.*; *Institute of Cancer Research, London, †NIBSC, Potters Bar, ‡University of Edinburgh, ‖University of Reading, UK.

4:00 Th.A.67
HIV-1 ENTRY INTO QUIESCENT PRIMARY LYMPHOCYTES: MOLECULAR ANALYSIS REVEALS A LABILE, LATENT VIRAL STRUCTURE. Zack, Jerome; Arrigo, S.; Chen, I.S.Y.; University of California, Los Angeles, CA, USA.

4:15 Th.A.68
PHYSICAL MAPPING OF REPLICATIVE AND CYTOPATHIC PROPERTIES OF HIV-1. Cheng Mayer, Cecilia; Shioda, T.; Seto, D.; Levy, J.A.; University of California, School of Medicine, San Francisco, CA, USA.

4:30 Th.A.69
BIOLOGICAL CHARACTERIZATION OF A HIGHLY CYTOPATHIC VARIANT OF AN ATTENUATED HIV-2. Hoxie, James A.*, Haggarty, B.*, Pletcher, C.*, Sweet, R.†, Chaikin, M.‡, Kappes, J.C.‡, Hahn, B.H.‡; *University of Pennsylvania, Philadelphia, PA; †SKB Laboratories, King of Prussia, PA; ‡University of Alabama, Birmingham, AL, USA.

4:45 Th.A.70
ANTI-HIV ENHANCING ANTIBODIES DO NOT ALLOW INFECTION OF A CD4-NEGATIVE IgG Fc RECEPTOR-POSITIVE MONOCYTIC CELL LINE. Grangette, Corinne*; Ameisen, J.C.*; Maniez, M.†; Tourvieille, B.*; Antolin, S.†; Vampouille, N.†; Capron, A.*; *Institut Pasteur, Lille, †CRTS, Lille, France.

5:00 Th.A.71
INHIBITION OF HIV INFECTION IN VITRO BY ANTI-CARBOHYDRATE MONOCLONAL ANTIBODIES. Hansen, John-Erik S.*; Clausen, H.†; Nielsen, C.†; Teglbjaerg, L.S.; Nielsen, C.M.; Mathiesen, L.R.; Hakomori, S.; Nielsen, J.O.; *Dept. of Infectious Diseases, Hvidovre Hospital, Denmark; †The Biomembrane Institute, Seattle, WA, USA; ‡Enterovirus Dept., State Serum Institute, Denmark.

5:15 Th.A.72
IN VITRO INFECTION AND GENERATION OF CHRONICALLY HIV-1 INFECTED CD3+CD8+ T CELLS FROM PERIPHERAL BLOOD LYMPHOCYTES OF HEALTHY DONORS. ANTI-CD2-2+3 MEDIATED REACTIVATION IS ASSOCIATED WITH VIRUS REPLICATION AND CELL DEATH. DeMaria, Andrea, Pantaleo, G., Schnittman, S.M., Fauci, A.S; NIAID, National Institutes of Health, Bethesda, MD, USA.

A4 *Marriott, Sea Cliff*

Abstract Session: Antibody Immunity in HIV Infection

Chairs: Jan McClure (USA)
Jaap Goudsmit (The Netherlands)

3:30 Th.A.73
RELATIONSHIP BETWEEN HIV-1 DISEASE STAGE, TITER OF ANTI-P24 ANTIBODY AND P24 ANTIGEN: A MULTICENTER AIDS COHORT STUDY (MACS). Farzadegan, Homayoon*; Chmiel, J.†; Saah, A.*; Allain, J.P.‡; Hardy, W.*; Phair, J.†; *Johns Hopkins U., Baltimore, MD, †Northwestern U., ‡Abbott Labs, Chicago, IL, USA.

3:45 Th.A.74
ANTIBODY RESPONSES TO SELECTED PEPTIDES OF HIV-1 gp160 IN IMMUNIZED OR HIV-1 INFECTED INDIVIDUALS. Buchanan, Thomas*; Coombs, R.*; Hu, S-L.†; Smith, G.‡; McCullough, D.‖; Jasman, R.*; Corey, L.*; *U. of Wash., Seattle, WA, †Immunodiagnostics, Inc., Seattle, WA, ‡Oncogen Corp., Seattle, WA, ‖MicroGeneSys, Inc., New Haven, CT, USA.

4:00 Th.A.75
PRODUCTION OF HUMAN MONOCLONAL ANTIBODIES AGAINST THE V3 LOOP OF gp120. Zolla-Pazner, Susan; Gianakakos, V.; Williams, C.; Sharpe, S.; Gorny, M.K.; VAMC, NYU Med. Ctr., NY, NY, USA.

4:15 Th.A.76
A NEUTRALIZING HUMAN MONOCLONAL ANTIBODY IDENTIFIES AN EPITOPE WITHIN THE PUTATIVE CD4-BINDING DOMAIN OF HIV-1 gp120. Ho, David D.*; Li, X.L.*; Daar, E.S.*; Moudgil, T.*; Sun, N.C.†; Holton, D.†; et al.; *UCLA, Cedars-Sinai Med. Ctr., LA, CA, †Tanox Biosystems, Houston, TX, ‡LSU Med. Ctr., New Orleans, LA, USA.

4:30 Th.A.77
DEVELOPMENT OF AN IgG-1 HUMAN MONOCLONAL ANTIBODY THAT NEUTRALIZES HIV1 INFECTIVITY AND BINDING AND REACTS WITH A CELL SURFACE ANTIGEN EXPRESSED BY HIV1 INFECTED CELLS. Posner, Marshall; Mukherjee, M.; Hideshima, T.; Cannon, T.C.; Mayer, K.; Brown University Medical School, Providence, RI, USA.

4:45 Th.A.78
TWO IMMUNODOMINANT DOMAINS OF THE HIV-1 TRANSMEMBRANE GLYCOPROTEIN, gp41, BIND ANTIBODIES WHICH ENHANCE HIV-1 INFECTION IN VITRO. Robinson, W. Edward*; Lake, D.†; Gorny, M.K.‡; Horton, L.*; Montefiori, D.C.*; Zolla-Pazner, S.‡; et al.; *Vanderbilt U., Nashville, TN, †U. of Arizona, Tucson, AZ, ‡VAMC, NY, NY, USA.

5:00 Th.A.79
IDENTIFICATION OF gp41 DETERMINANTS RECOGNIZED BY ANTIBODIES IN CYTOLYTIC ASSAYS. Wood, Lauren*; Koenig, S.*; Wood, R.†; Fuerst, T.†; Newell, A.*; Brewah, A.*; et al.*; *NIH, Bethesda, MD, †MVI, Inc., Gaithersburg, MD, USA.

5:15 Th.A.80
BIOLOGICAL PROPERTIES OF CD4 IMMUNOADHESINS. Capon, Daniel J.*; Byrn, R.A.†; Mordenti, J.*; Smith, D.*; Lucas, C.*; Marsters, S.A.*; et al.; *Genentech, Inc., So. SF, CA, †Harvard Med. Sch., NE Deaconess Hosp., Boston, MA, USA.

THURSDAY, 21 JUNE / 3:30–5:30 PM
TRACK B: CLINICAL SCIENCE & TRIALS

B3 *Moscone, Room B*

Symposium: Clinical Trials With New Anti-Retrovirals

Chairs: Ian Weller (UK)
John S. James (USA)

3:30 Th.B.81
CLINICAL STUDIES WITH ddI. Dolin, Raphael; Infectious Disease Unit, University of Rochester Medical Center, Rochester, NY, USA.

3:50 Th.B.82
CLINICAL STUDIES WITH ddC. Merigan, Tom; School of Medicine, Stanford University Medical Center, Stanford, CA, USA.

4:10 Th.B.83
ANTI-RETROVIRAL DRUGS AS SINGLE AGENTS AND IN COMBINATION THERAPY. Yarchoan, Robert; National Cancer Institute, National Institutes of Health, Bethesda, MD, USA.

4:30 Th.B.84
RECOMBINANT SOLUBLE CD4 AND DERIVATIVES. Corey, Lawrence; University of Washington, Seattle, WA, USA.

4:50 Th.B.85
INTERFERONS. Lane, H. Clifford; Laboratory of Immunoregulation, National Institutes of Health, Bethesda, MD, USA.

5:10 Th.B.86
IMMUNE BASED THERAPIES FOR HIV INFECTION. Schooley, Robert; Massachusetts General Hospital, Boston, MA, USA.

B4 *Marriott, Presidio*

Symposium: Update in Hematology and Oncology

Chairs: Susan E. Krown (USA)
Jean-Marie Andrieu (France)

3:30 Th.B.89
SIGNIFICANCE AND MANAGEMENT OF IMMUNE THROMBOCYTOPENIA IN HIV INFECTION. Oksenhendler, Eric; Department of Clinical Immunology and Hematology, Hopital Saint-Louis, Paris, France.

3:50 Th.B.90
USE OF HEMAPOETIC GROWTH FACTORS. Mitsuyasu, Ronald; UCLA Medical Center, Los Angeles, CA, USA.

4:10 Th.B.91
KAPOSI'S SARCOMA AS A SEXUALLY TRANSMITTED DISEASE. Peterman, Tom; Centers for Disease Control, Atlanta, GA, USA.

4:30 Th.B.92
PRESENTATION AND MANAGEMENT OF KAPOSI'S SARCOMA IN CENTRAL AFRICA. Bayley, Anne C.; University of Zambia, Lusaka, Zambia.

4:50 Th.B.93
NEW DIRECTIONS IN THE TREATMENT OF HIV-RELATED NON-HODGKIN'S LYMPHOMA. Kaplan, Lawrence D.; San Francisco General Hospital, University of California, San Francisco, CA, USA.

5:10 Th.B.94
PREMALIGNANT AND MALIGNANT LESIONS ASSOCIATED WITH HUMAN PAPILLOMAVIRUS INFECTION. Palefsky, Joel; University of California, San Francisco, CA, USA.

THURSDAY, 21 JUNE / 3:30–5:30 PM
TRACK C: EPIDEMIOLOGY & PREVENTION

C3 *Moscone, Room A*

Abstract Session: Transmission of HIV Infection

Chairs: Courtenay Bartholomew (Trinidad and Tobago), Zena Stein (USA)

3:30 Th.C.97
NON ULCERATIVE SEXUALLY TRANSMITTED DISEASES (STD) AS RISK FACTORS FOR HIV INFECTION. Laga, Marie[‡/†]; Nzila, N.[*]; Manoka, A.T.[*]; Malele, M.[*]; Bush, T.J.[‡]; Behets, F.[*]; Heyward, W.L.[‡]; Piot, P.[‡]; Ryder, R.[*/‡]; [*]Projet SIDA, Kinshasa, Zaire, [‡]Centers for Disease Control, Atlanta, GA, USA, [†]Institute of Tropical Medicine, Antwerp, Belgium.

3:45 Th.C.98
RISK FACTORS FOR HIV-1 INFECTION IN PREGNANT WOMEN IN MALAWI. Chiphangwi, John[‡]; Dallabetta, G.[*]; Saah, A.[*]; Liomba, G.[‡]; Miotti, P.[*]; [*]Johns Hopkins University, Baltimore, MD, USA, [‡]Ministry of Health, Lilongwe, Malawi.

4:00 Th.C.99
CONTRACEPTIVE USE AND HIV INFECTION AMONG WOMEN ATTENDING FAMILY PLANNING CLINICS IN NAIROBI, KENYA. Mati, Japheth[*]; Maggwa, A.[*]; Chewe, D.[*]; Solomon, M.[*]; Mbugua, S.[*]; Bhullar, V.[*]; Tukei, P.[‡]; Hunter, D.[‡]; Achola, P.[‖]; [*]University of Nairobi, Kenya, [‡]Kenya Medical Research Institute, Nairobi, Kenya, [‡]Harvard University, Boston, MA, USA, [‖]Nairobi City Commission, Nairobi, Kenya.

4:15 Th.C.100
HETEROSEXUAL TRANSMISSION OF HIV: FOLLOW-UP OF A EUROPEAN COHORT OF COUPLES. De Vincenzi, Isabelle; Ancelle-Park, R. (for the European Community Study Group on heterosexual transmission of HIV); WHO Collaborating Centre on AIDS, Paris, France.

4:30 Th.C.101
THE RELATIVE EFFICIENCY OF FEMALE-TO-MALE HIV SEXUAL TRANSMISSION. Padian, Nancy[*]; Shiboski, S.[*]; Jewell, N.[‡]; [*]University of California, San Francisco, CA, [‡]University of California, Berkeley, CA, USA.

4:45 Th.C.102
HIV RECOVERY FROM SEMEN: MINIMAL IMPACT OF CLINICAL STAGE OF INFECTION AND MINIMAL EFFECT ON SEMEN ANALYSIS PARAMETERS. Krieger, John N.; Coombs, R.; Collier, A.; Ross, S.; Chaloupka, K.; Cummings, D.; Corey, L.; Department of Urology, University of Washington, Seattle, WA, USA.

5:00 Th.C.103
CRACK USE PREDICTS INCIDENT HIV SEROCONVERSION. Schoenbaum, Ellie E.; Hartel, D.; Friedland, G.H.; Montefiore Medical Center, Bronx, NY, USA.

5:15 Th.C.104
NOSOCOMIAL TRANSMISSION OF HIV IN ROMANIA. Beldescu, Nicolae; Apetrei, Roxana; Calumfirescu, Alexandru; National AIDS Committee, Ministry of Health, Bucharest, Romania.

C4 *Moscone, Room G*

Abstract Session: Distribution and Determinants of Risk Behaviors

Chairs: Lazare Kaptue (Cameroon) Stephen B. Hulley (USA)

3:30 Th.C.105
DISTRIBUTION AND DETERMINANT FOR RISK BEHAVIORS OF HIV INFECTION AMONG YOUNG ADULTS IN ZAIRE?. Moore Melinda[*], Bomboko B.[‡], Bertrand W.E.[‡], Adjou Moumouni[‡], Kashala T.D.[‡]; [*]CDC, Atlanta-USA; [‡]Ecole de sante Publique, Zaire; [†]Tulane U. USA.

3:45 Th.C.106
HIV TRANSMISSION KNOWLEDGE, BELIEFS ABOUT PERSONAL RISK OF AIDS AND CONDOM USE IN THE USA, FRANCE, AND UK. Wells, James A.[*]; Will, A.[*]; Sell, R.[*]; Valleron, A.-J.[‡]; Cohen, M.[‡]; DeFilippes, P.[*]; [*]Proj. HOPE Ctr. for Hlth. Affairs, Chevy Chase, MD, USA, [‡]INSERM SC4, U263, Paris, France, [‡]INSERM Unite 21, Villejuif, France.

4:00 Th.C.107
HIV-1 BEHAVIORAL AND SOCIOLOGICAL RISKS AND CONDOM USE IN GAY MEN IN MEXICO. Izazola, Jose A.[*/‡]; Valdespino, J.L.[*]; Sepulveda, J.[*]; Gortmaker, S.L.[‡]; Townsend, J.[‡]; Palacios, M.[*]; et al.; [*]Min. of Hlth., Mexico City, Mexico, [‡]Harvard Sch. Pub. Hlth., Boston, MA, USA, [‡]Pop. Council, Mexico City, Mexico.

4:15 Th.C.108
RELAPSE FROM SAFER SEX: THE AIDS BEHAVIORAL RESEARCH PROJECT. Stall, Ron; Ekstrand, M.; Pollack, L.; Coates, T.J.; UCSF, CA, USA.

4:30 Th.C.109
RECENT CHANGES IN BEHAVIOUR AND PRACTICES IN RELATION TO THE HIV EPIDEMIC IN RURAL RAKAI DISTRICT, UGANDA. Musagara, Maako[*]; Konde-Lule, J.[‡]; Musgrave, S.[‡]; Serwadda D.[‖]; Wawer, M.J.[‡]; Sewankambo, N.[‖]; [*]AIDS Control Prog., Uganda, [‡]Makerere U., Kampala, Uganda, [‡]Columbia U., NY, USA, [‖]Mulago Hosp., Kampala, Uganda.

4:45 Th.C.110
CONDOM USE AND STDs AMONG COMMERCIAL SEX WORKERS UNDERGOING A HEALTH EDUCATION/ INTERVENTION PROGRAM ON AIDS IN THE PHILIPPINES. Santana, Rosemarie T.[*]; Monzon, O.T.[*]; Paladin, F.J.E.[*]; Bautista, A.N.[*]; Bagasao, T.M.P.[‡]; Giannone, P.[‡]; [*]Inst. for Trop. Med., Metro Manila, Philippines, [‡]Kabalikat ng Pamilyang Pilipino Fdtn., Metro Manila, Philippines, [‡]Family Hlth. Intl., Research Triangle Park, NC, USA.

5:00 Th.C.111
INCIDENCE OF HETEROSEXUAL PAIRINGS ASSOCIATED WITH RISK OF SECONDARY HIV TRANSMISSION: POPULATION-BASED ESTIMATES. Capell, Frank J.; Schuller, G.; CA Dept. of Hlth. Svcs., Sacramento, CA, USA.

5:15 Th.C.112
HETEROGENEITY AND FLUCTUATIONS IN HOMOSEXUAL BEHAVIOR: IMPLICATIONS FOR MODELING THE AIDS EPIDEMIC. Van Griensven, Godfried; De Vroome, E.; Veugelers, P.; Coutinho, R.A.; Municipal Health Service, Amsterdam, The Netherlands.

THURSDAY, 21 JUNE / 3:30–5:30 PM
TRACK D: SOCIAL SCIENCE & POLICY

D3 *Moscone, Room F*

Panel Discussion: Human Rights and Systems of Justice

Chair: Sev Fluss (WHO)
Moderator: David Barr (USA)

3:35 Th.D.113
THE UK DECLARATION OF THE RIGHTS OF PEOPLE WITH HIV AND AIDS: VOLUNTARY ORGANISATIONS JOIN TO DEFEND HUMAN RIGHTS. Grimshaw, Jonathan*; Jay, M.†; Kelmanson, A.†; *National AIDS Trust (NAT) and Body Positive, London, UK; †NAT.

3:45 Th.D.114
AIDS AND HUMAN RIGHTS IN CZECHOSLOVAKIA. Machala, Ladislav; Infections House, Bulovka Hospital, Prague, Czechoslovakia.

3:55 Th.D.115
AIDS, HUMAN RIGHTS, AND DISCRIMINATION IN MEXICO. Galvan Diaz, Francisco*; de la Pena, R.†; Gonzalez, R.‡; *Universidad Autonoma Metropolitana, GIS-SIDA, AC, Mexico City, Mexico; †Universidad Iberoamericana, GIS-SIDA, AC, Mexico; ‡Universidad Pedagogica Nacional, GIS-SIDA, AC, Mexico.

4:05 Th.D.116
HIV SEROPOSITIVITY IN SPANISH PRISONS. Granados, Angeles*; Miranda, M.J.†, Martin, L.*; *Ministeria de Justica, Madrid, Spain; †Complutense Univ. Madrid, Spain.

4:15 Th.D.117
ISSUES IN AIDS RELATED LEGISLATION: HEALTH CONTROL VERSUS HUMAN RIGHTS. Bhimani, G.V.; Gilada,I.S.; Thakur,V.; Indian Health Organisation, J.J.Hospital, Bombay, India.

4:25 Th.D.118
THE IMPACT OF HIV INFECTION ON HOMOPHOBIA IN THE US. Coles, Matt; ACLU–San Francisco, CA, USA.

4:35
DISCUSSION.

D4 *Moscone, Room H*

Abstract Session: Perinatal, Pediatric, and Family Issues

Chairs: Mary Boland (USA)
Dan S. Obikeze (Nigeria)

3:30 Th.D.121
POOR SUSTAINABILITY OF BIRTH CONTROL UTILIZATION AND CONSEQUENT HIGH FERTILITY RATES IN A COHORT OF 249 HIV(+) ZAIRIAN WOMEN AWARE OF THEIR SEROSTATUS AND FOLLOWED FOR 30 MONTHS POST-PARTUM. Badi, Nsanga*; Nsuami, M.*; Mundele, L.*; Utshudi, M.†; Matela, B.*; Ryder, R.*/‡; *Projet SIDA, †Mama Yemo Hospital, Kinshasa, Zaire, ‡Centers for Disease Control, Atlanta, GA, USA.

3:45 Th.D.122
COMMUNITY IMPACT OF MATERNAL HIV-1 INFECTIONS ON INFANT AND CHILDHOOD SURVIVAL IN A HAITIAN SLUM, 1976-1989. Boulos, Reginald*; Halsey, N.†; Coberly, J.‡; Holt, E.‡; Kissinger, P.*; Brutus, J.R.*; Quinn, T.‡; Ruff, A.‡; Boulos, C.*; *The Centers for Development and Health, Port-au-Prince, Haiti , †The Johns Hopkins University, Baltimore, MD, USA.

4:00 Th.D.123
TREATING THE NON-INFECTED SIBLING: AN AIDS DILEMMA. Harris, Adell; Nozyce, M.; Caffrey, B.; Wiznia, A.; Caspe, W.; Bronx-Lebanon Hospital Center, Albert Einstein College of Medicine, Bronx, NY, USA.

4:15 Th.D.124
ADULT CHILDREN OF PERSONS WITH AIDS: ISSUES AND TREATMENT. Greene, Darrell; McVinney, D.; Gay Men's Health Crisis, New York, NY, USA.

4:30 Th.D.125
CLINICIANS' ATTITUDES ABOUT THE AGGRESSIVENESS OF TREATMENT FOR NEWBORNS AT RISK FOR AIDS: AN ETHICAL ISSUE IN THE NICU. Levin, Betty Wolder*; Driscoll, J.M.†; Fleischman, A.R.‡; *Brooklyn College, Brooklyn, NY, †College of Physicians and Surgeons, Columbia University, New York,NY, ‡Albert Einstein College of Medicine and Montefiore Medical Center, Bronx, NY, USA.

4:45 Th.D.126
PEDIATRIC AIDS HOSPITALIZATIONS IN NEW JERSEY. Conviser, Richard*; Grant, C.M.†; Coye, M.J.‡; *Children's Hospital AIDS Program, Newark, NJ; †New Jersey Department of Health, Trenton, NJ; ‡The Johns Hopkins University, Baltimore, MD, USA.

5:00 Th.D.127
AIDS ORPHANS IN KINSHASA, ZAIRE. Kamenga, Munkolenkole*; DaSilva, M.*; Muniaka, K.*; Matela, B.*; Batter, V.*; Ryder, R.*/†; *Projet SIDA, Kinshasa, Zaire, †Centers for Disease Control, Atlanta, GA, USA.

5:15 Th.D.128
ADOPTION AS A LIFE PLAN FOR HIV-POSITIVE CHILDREN. Gurdin, Phyllis*; Wiznia, A.†; Canepa, L.*; *Leake and Watts Children's Home, Inc., Yonkers, NY, †Bronx Lebanon Hospital, Bronx, NY, USA.

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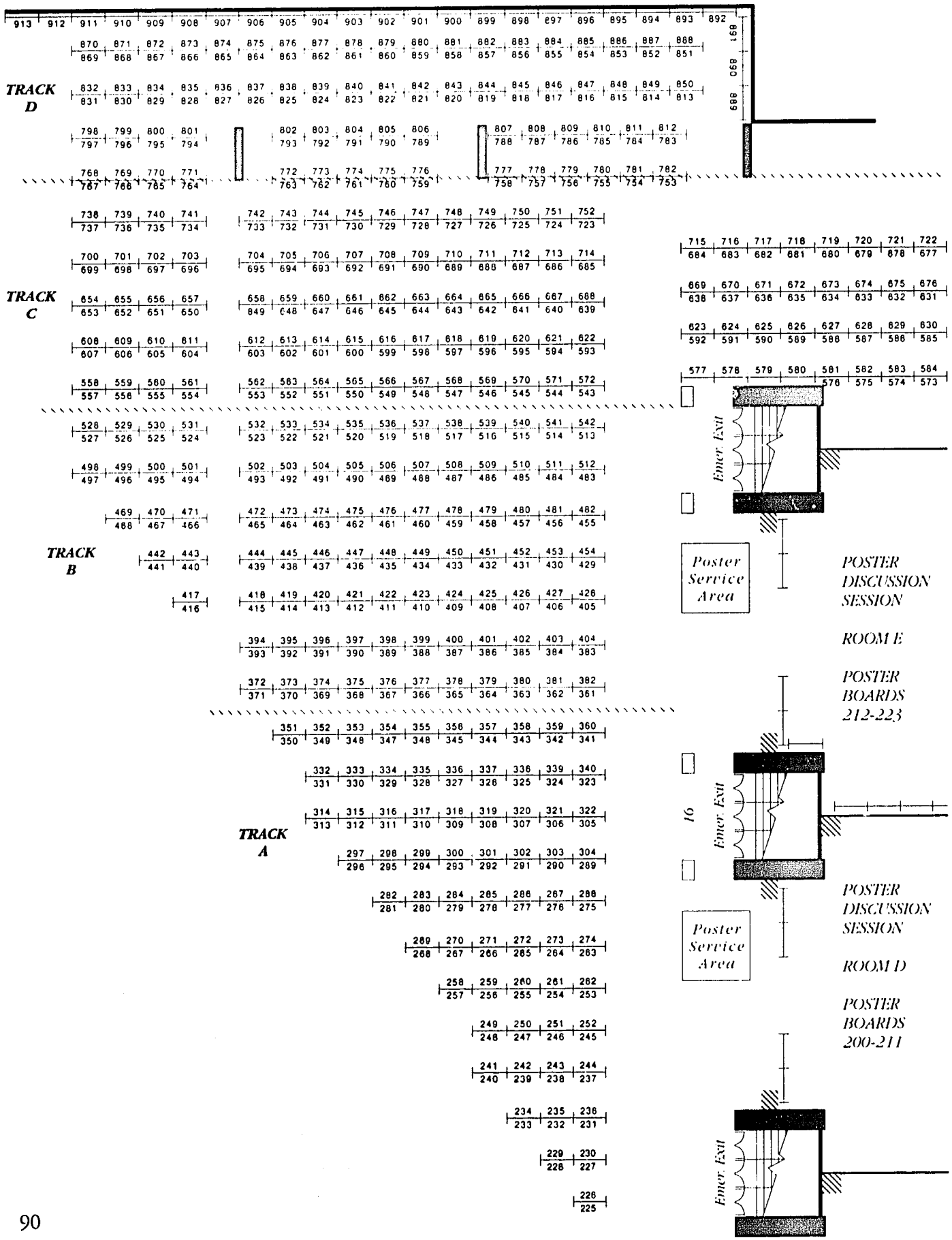
POSTER AREA
MOSCONE/LOWER AREA



POSTER PRESENTATIONS
THURSDAY, 21 JUNE

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Drug Development	225–274
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Track B

Gastrointestinal Manifestations	361–373
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Enteric Parasites	519–524
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Epidemiology & Prevention: Various Topics	543–552
Biology of HIV Transmission	553–559
Sexual Transmission in Homosexual and Bisexual Men	560–563
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Natural History: Homosexual and Bisexual Men	619–634
Natural History: Transfusion Recipients and Hemophiliacs	635–643
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AIDS Surveillance: Attributable Mortality	743–753
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Nutritional Aspects of HIV Infection	200–211
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THURSDAY, 21 JUNE / 11:30 AM–12:30 PM
TRACK B: CLINICAL SCIENCE & TRIALS
MOSCONE, ROOM D

Poster Discussion: Nutritional Aspects of HIV Infection
Chairs: Mark K. Hellerstein (USA), J. L. Vilde (France)

Th.B.200
NUTRITIONAL STATUS OF HIV+ PATIENTS DURING THE EARLY STAGES OF DISEASE. Coulston, Ann*; McCorkindale, C.†; Dybevik, K.; Merigan, T.*; *Stanford University, Stanford, CA, USA, †San Francisco General Hospital, San Francisco, CA, USA.

Th.B.201
DIETARY INTAKE IN AIDS, AIDS-RELATED COMPLEX AND ASYMPTOMATIC SEROPOSITIVE HIV PATIENTS. Seaton, Timothy, Dworkin, B.M., Wormser, G.; New York Medical College, Valhalla, NY, USA.

Th.B.202
DIETARY INTAKE, NUTRITIONAL STATUS, AND IMMUNOLOGIC FUNCTION IN PATIENTS WITH HIV INFECTION. Chlebowski, R.T., M Grosvenor, S Kruger, V Tai, G Beall.; Harbor-UCLA Medical Center, Department of Medicine, Torrance, CA: 90509, U.S.A.

Th.B.203
EVALUATION AND THERAPY OF MALNUTRITION IN ENTEROPATHOGENIC AIDS. Scevola Daniele, Barbarini G., Zambelli A., Bottari G., Guanziroli A., Franchini A.; Institute of Infectious Diseases, IRCCS Policlinico S. Matteo—University of Pavia V. le Taramelli, 5 27100 Pavia Italy.

Th.B.204
INCREASED ENERGY EXPENDITURE AND LEAN BODY MASS IN HIV INFECTED PATIENTS. Melchior, J. D., Salmon, D., Rigaud, D., Leport, C., Vilde, Jean-Louis, Apfelbaum, M.; *Hopital Bichat-Claude Bernard, Paris, FRANCE.

Th.B.205
HYPOVITAMINEMIA B-12 IN HIV INFECTED PATIENTS. Riera, A.; Remacha, A.; Cadafalch, J.; Gimferrer, E.; Serveis de Medicina Interna i Hematologia. Seccio Patologia Organica. Unitat Toxicomanies. Programa Sant Pau—CITRAN. Hospital de la Santa Creu i Sant Pau. UAB. Barcelona, Spain.

Th.B.206
TRACE METAL AND VITAMIN DEFICIENCIES IN AIDS. Malcolm, John A.*; Tynan, P.F.*; Sutherland, D.C.*; Dobson, P.* Kelson, K.*; Carlton, J*.; *Department of Clinical Immunology, Royal Newcastle Hospital, Newcastle, Australia.

Th.B.207
LIPID ABNORMALITIES IN HIV INFECTION. Blatt, Stephen; Zajac, R.; Lucey, D.; Hendrix, C.; Abbadessa, S.; Melcher, G.; Boswell, R.; Wilford Hall USAF Medical Center, Lackland Air Force Base, Texas, USA.

Th.B.208
THREE MONTH EVALUATION OF CONTROLLED HIGH CALORIE/PROTEIN INTAKE IN AIDS PATIENTS. S. Johnston*, B. Clotet†, C. Biosca†, E. Abad‡, C. Alcalde‖, T. Castro‖, M. Pont‖; *Dietetic, †Infectious Disease, ‡Biochemistry, ‖Nursing Depts. Hospital Germans Trias I Pujol—Badalona—Barcelona—Spain.

Th.B.209
METABOLIC DISTURBANCES IN AIDS: THE ROLE OF CIRCULATING INTERFERON ALPHA (IFNA) AND TUMOR NECROSIS FACTOR (TNF) IN THE HYPERTRIGLYCERIDEMIA OF AIDS. Grunfeld, Carl, Pang, M.Y., Doerrler, W., Shigenaga, J.K., Kotler, D.P., Feingold, K.R.; University of California, San Francisco, CA and Columbia College of Physicians and Surgeons, New York, NY; USA.

Th.B.210
EVALUATION OF THE EFFECTIVENESS OF MEGESTROL ACETATE AS INDUCER OF APPETITE, WEIGHT GAIN AND IMPROVED NUTRITION IN ARC PATIENTS. Viteri, Fernando E.*, Kahn, J.†, Mudie, H.*, Conroy, A.‡, Abrams, D.‡, Hellerstein M.*; *University of California, Berkely, CA; †University of California, San Francisco, CA; ‡County Community Consortium, San Francisco, CA, USA.

Th.B.211
A RETROSPECTIVE STUDY ON THE EFFECT OF MEGACE ON BODY WEIGHT IN HIV PATIENTS WHO HAD LOST MORE THAN 5% BODY WEIGHT: ITS EFFICACY AND ITS LIMITATION AS A FORM OF TREATMENT FOR WEIGHT LOSS Chen, Wai, Brown, S., Gazzard, B., Howard, L.; Dept. of Genito-Urinary Medicine, Westminster Hospital, London, England.

The posters listed above will be up for viewing all day. Please review the posters before the session begins to take maximum advantage of the discussion.

THURSDAY, 21 JUNE / 11:30 AM–12:30 PM
TRACK D: SOCIAL SCIENCE & POLICY
MOSCONE, ROOM E

Poster Discussion: AIDS in the Corporate Workplace
Chairs: B. J. Stiles (USA), Renée Sabatier (Canada)

Th.D.212
AIDS-EDUCATION AND PREVENTION IN THE WORKPLACE IN UGANDA. Rwakagiri, Francis*; Okware, Sam; *Federation of Uganda Employers, †Director, National AIDS Control Programme, Uganda.

Th.D.213
HIV INFECTIVITY PREVENTION PROGRAM ON TAP AIR PORTUGAL. Alves—SA, J.*, Sousa—UVA, A.*, SA—Leal, A.*; *Health Department (Director A. Sa—Leal), TAP Air Portugal, Lisboa, Portugal.

Th.D.214
WHY DO PERSONS WITH HIV-RELATED ILLNESS STOP WORKING? Yelin, Edward H; Greenblatt, R; Hollander, H; McMaster J.; University of California, San Francisco, USA.

Th.D.215
TRAINING MANAGERS AND SUPERVISORS ON THE "LAW OF AIDS" IN THE UNITED STATES. Nau, Charles; Syntex Corporation, Palo Alto, CA, USA.

Th.D.216
AN EVALUATION OF A WORKPLACE AIDS EDUCATION INTERVENTION PROGRAM FOCUSING ON HIV KNOWLEDGE LEVELS AND ATTITUDES TOWARD GAY MEN AND PEOPLE WITH AIDS. Cowen, Edward*; Maddix, J.†; *D.C. Area Resource Center of Mid-Atlantic AIDS Education and Training Center, Georgetown University, Washington, DC, †Whitman-Walker Clinic, AIDS Education Services, Washington, DC, USA.

Th.D.218
LARGE INCREASE IN HEALTH CARE UTILIZATION BY HIV INFECTED EMPLOYEES AT A COMMERCIAL BANK IN KINSHASA, ZAIRE. Mposo, Ntumbanzondo*, Bertozzi, S.†, Kamenga, M.*, Doppagne, A.‡, Engele, B.*, Ryder, R.*; *Projet SIDA, Kinshasa, Zaire; †MIT, Cambridge, MA, USA; ‡Banq Comm Zaire, Kinshasa, Zaire.

Th.D.219
AIDS PREVENTION IN BRAZILIAN ENTERPRISES. Moreira Lima, Maria Dulce*, Rodrigues, Lair Guerr*, Rodrigues Jr., Jose Florencio†; *Ministry of Health—National Division of STD/AIDS—Brasilia-DF, Brazil †University of Brasilia—Brasilia/Brazil.

Th.D.220
THE IMPACT OF WORKPLACE AIDS EDUCATION ON ATTITUDES TOWARD PEOPLE WITH HIV AIDS. Leonard, John; Hartfield, K.; Smith, K.; Seattle-King County Department of Public Health, Seattle, Washington, USA.

Th.D.221
THE "OPEN-BOX" CONDOM POLICY IN THE WORKPLACE IN AFRICA: EFFECTS ON ATTITUDES AND PRACTICES. Tavrow, Paula A.*; *USAID, Dar Es Salaam, Tanzania.

Th.D.222
STILL ON THE JOB: THE ARMY'S EXPERIENCE WITH THE WORKPLACE MANAGEMENT OF THE HIV+ SOLDIER. Major Vernon, Darleen V.; Walter Reed Retrovirology Research Working Group, Walter Reed Institute of Research.

Th.D.223
WORKPLACE TRAINING IN AN INTERNATIONAL NON-GOVERNMENTAL ORGANISATION. Couteau, P., Wallace, B., Michael, L., Brever, N.; *League of Red Cross and Red Crescent Societies, Geneva, Switzerland. †American Red Cross, Los Angeles, California.

The posters listed above will be up for viewing all day. Please review the posters before the session begins to take maximum advantage of the discussion.

Drug Development

Th.A.225
MOLECULAR DYNAMICS SIMULATIONS OF HIV-1 PROTEASE MONOMER AND BINDING OF INHIBITORS TO THE DIMER IN SOLUTION. R M Venable*, B R Brooks†, Frederick W Carson‡; *CBER, FDA, Bethesda, MD 20892; †DCRT, NIH, Bethesda, MD 20892; ‡Dept. of Chemistry, American University, Washington, DC 20016, USA.

Th.A.226
INHIBITORS OF HIV PROTEASE. Martin, Joseph A., Broadhurst, A.V., Galpin, S.*, Handa, B.K., Kinchington, D.*, Krohn, A., Lambert, R.W., Machin, P.J., Merrett, J.H., Parkes, K.E.B., Redshaw, S., Roberts, N.A., Thomas, G.J.; Roche Products Ltd., Welwyn Garden City, Hertfordshire, England and *St Mary's Hospital Medical School, London, England.

Th.A.227
A FLUOROQUINOLONE (DR-3355) PROTECTS HUMAN LYMPHOCYTE CELL LINES FROM HIV-1 MEDIATED CYTOTOXICITY. Furusawa, Mitsuri#; Renard, J.##; Iino, T.#; Sato, Y.#; Marumoto, Y.*; Ohta, G.#; #Daiichi Pharmaceutical Co., Ltd., Tokyo, Japan. ##Tokyo Medical College, Tokyo, Japan.

Th.A.228
INHIBITION OF HIV REPLICATION AND CYTOPATHICITY IN VITRO BY SYNTHETIC SOLUBLE MELANINS. Candia, Albert F.; Modliszewski, M.; Shaff, D.I.; Montefiori, D.C.; Dept. of Pathology, Vanderbilt University Medical School, Nashville, TN, USA.

Th.A.229
ANTI-HIV ACTIVITY OF PORPHYRINS AND PHTHALOCYANINES IN VITRO. Kato, Akihisa*,†; Higuchi, H.‡; Kaji, H.*; *Jefferson Med. Coll, Philadelphia, PA; †Tsumura Institute for Molecular genetics, Ibaraki, Japan.

Th.A.230
PAPAVERINE HYDROCHLORIDE; EFFECTS ON HIV REPLICATION AND T-LYMPHOCYTE CELL FUNCTION. Nokta, Mostafa*; Albrecht, T.†; Pollard, R.*; Div. of Infectious Diseases*; Dept. of Microbiology†; The Univ. of Texas Medical Branch, Galveston, TX, USA.

Th.A.231
THE SYNTHESIS, BIOLOGICAL EVALUATION, AND STRUCTURE ACTIVITY OF AMIDO PHOSPHOCHOLINES AND RELATED ANALOGS AS ANTI-HIV-1 AGENTS. Marasco, Carlo; Piantadosi, C.; Meyer, K.; Kucera, L.*; University of North Carolina at Chapel Hill School of Pharmacy, Chapel Hill, N.C., USA; *Wake Forest University Medical Center, Winston-Salem, N.C., USA.

Th.A.232
EFFECTS OF GLQ223-TM ON SYNTHESIS AND ACCUMULATION OF HIV AND CELLULAR PROTEINS IN ACUTELY INFECTED T CELLS IN VITRO. Abrams, Holly; Kibort, T.; Shiba, A.; Ross, B.; Wang, M.; Lifson, J.; Genelabs, Inc., Redwood City, CA, USA.

Th.A.233
EFFECTS OF GLQ223-TM ON HIV AND CELLULAR RNA SPECIES FROM ACUTELY INFECTED T CELLS. Caldwell, Susan; Luk, K.C.; Lifson, J.; Genelabs, Inc., Redwood City, CA, USA.

Th.A.234
IMMUNOADHESIN ANTIBODY HYBRIDS FOR AIDS THERAPY. Berg, Joerg; Loetscher, Erika; Steimer, Kathelyn; Capon, Daniel; Jack, Hans Martin; Wabl, Matthias R.; Dept of Microbiology and Immunology and Laboratory of Radiology and Environmental Health; University of California, San Francisco, CA.

Th.A.235
THE SULFATED SUGAR ALPHA-CYCLODEXTRIN SULFATE (A-CDS) IS A POTENT ANTI-HIV AGENT, HAS MARKED SYNERGISM WITH AZT, AND EXHIBITS LYMPHOPROLIFERATIVE ACTIVITY. Anand, R.*; Nayyar, Sanjeev† and Pitha, J.‡; *Food and Drug Administration, Bethesda, Maryland, USA, †Saint Elizabeths Hospital, Washington, DC, USA, ‡National Institute of Aging, Baltimore, Maryland, USA.

Th.A.236
SULFATED POLYMERS ARE POTENT INHIBITORS OF HIV REPLICATION AND GIANT CELL FORMATION. De Clercq, Erik*; Schols, D.*; Baba, M.*; Pauwels, R.*; Low, M.†; Gorog, S.†; *Rega Institute for Medical Research, K.U. Leuven, B-3000 Leuven, Belgium, †Chemical Works of Gedeon Richter Ltd., Budapest, Hungary.

Th.A.237
INHIBITORY EFFECT OF CHINESE HERBAL MEDICINES ON HIV-1 IN VITRO. Li, Xi Ling; Mohri, H; Chia, J; Kim, T; Hoang, V; Ho, DD.; UCLA School of Medicine and Cedars-Sinai Medical Center, Los Angeles, CA, USA.

Th.A.238
MECHANISM OF ACTION OF INHIBITION OF HIV INFECTION BY SULPHATED POLYANIONS. Low, Loretta C., Parish, C., Fenning, G., Warren, H., Dalgleish, A., Cunningham, A.; Virology Unit, Westmead Hospital, Sydney, Australia; and Woden Valley Hospital, Canberra, C.R.C., Northwick Park, England.

Th.A.239
THE EXPRESSION OF HIV INTEGRASE AS A FUSION PROTEIN IN E.COLI. Pemberton, Iain., Levantis, P., Oxford, J.S.; The London Hospital Medical College, London, U.K.

Th.A.240
DEVELOPMENT OF RIBOZYMES THAT CLEAVE HIV MRNA. James, William; Crisell, Paul.; Sir William Dunn School of Pathology, University of Oxford, South Parks Road, Oxford OX1 3RE, UK.

Th.A.241
EFFECT OF 2'3'-DIDEHYDRO-3'-DEOXYTHYMIDINE (d4T) ON p24 ANTIGENEMIA IN PATIENTS WITH AIDS OR ARC. Squires, Kathleen E.*, Weiss, W.*, Sacks, H.†, Hassett, J.‡, Gugliotti, R.‡, and Murray, H.*; Cornell Medical College* and Mount Sinai Medical Center†, NY, NY, Bristol-Myers Squibb‡, Wallingford, CT, and the NIH AIDS Clinical Trials Group, Bethesda, MD.

Th.A.242
REPORTER GENE SIGNAL ACTIVATION BY HIV-1: ADAPTATION FOR ANTIVIRAL DRUG SCREENING. Polsky, Bruce*; Mallon, R.‡; Dasmahapatra, B.‡; Borkowski, J.A.‡; MacLow, C.*; Baron, P.A.*; Gold, J.W.M.*; Schwartz, J.‡; Armstrong, D.*; *Memorial Sloan-Kettering Cancer Center, New York, New York, ‡Schering Research, Bloomfield, New Jersey, USA.

Th.A.243
ANTI-HIV-1 COMBINATION EFFECTS OF ANTISENSE OLIGONUCLEOTIDE (S-DC-28) WITH AZT, INTERFERON ALPHA (IFN) AND DEXTRAN SULFATE-8000 (DS). Chou, T. C.*, Zhu, Q.-Y.* and C. Stein‡; *Memorial Sloan-Kettering Cancer Center, New York, N.Y. ‡National Cancer Institute, Bethesda, MD, U.S.A.

Th.A.244
HIV-1 REPLICATION IS REDUCED BY ANTISENSE RNA EXPRESSION. Sczakiel, Georg; Pawlita, Michael; Deutsches Krebsforschungszentrum, Heidelberg, FRG.

Th.A.245
INHIBITION OF HIV REPLICATION IN CELL CULTURE BY ENDOGENOUSLY SYNTHESIZED ANTISENSE RNA. Rhodes, Andrew; James, William.; Sir William Dunn School of Pathology, University of Oxford, South Parks Road, Oxford OX1 3RE, UK.

Th.A.246
PHOSPHATE-METHYLATED HIV-1 TAR LOOP DNA SEQUENCES HAMPER VIRUS SPREAD PRE- AND POST-INTEGRATION. Smit, Lia*; Goudsmit, J.*; Jurriaans, S.*; Geelen, J.L.M.C.*; Van Genderen, M.‡; Buck, H.‡; *Human Retrovirus Lab., Academic Med. Ctr., Amsterdam, The Netherlands; ‡Eindhoven Univ. of Tech., Dept. of Organic Chemistry, Eindhoven, The Netherlands.

Th.A.247
INHIBITION OF HIV-1 REPLICATION IN CD4+ CELLS BY POKEWEED ANTIVIRAL PROTEIN CONJUGATED TO MONOCLONAL ANTIBODY AGAINST CD4. Zarling, Joyce*; Moran, P.*; Haffar, O.*; Sias, J.*; Ledbetter, J.*; Uckun, F.‡; *Oncogen, Seattle, WA; ‡University of Minnesota, Minneapolis, MN, USA.

Th.A.248
CD4-PSEUDOMONAS EXOTOXIN INHIBITS HIV REPLICATION SYNERGISTICALLY WITH REVERSE TRANSCRIPTASE INHIBITORS IN LYMPHOCYTE CULTURES AND SPECIFICALLY KILLS INFECTED MONOCYTE/MACROPHAGE AS WELL AS LYMPHOCYTE CELL LINES. Ashorn, P., Moss, B. and Berger, Edward A.; Laboratory of Viral Diseases, NIAID, NIH Bethesda, MD.

Th.A.249
STRUCTURE-FUNCTION RELATIONSHIP OF CD4-PE HYBRID TOXINS. Winkler, Gunther; Jakubowsky, A.; Turner, S.; Liu, T.; Heane, T.; Burrus, B.; McGray, P.; Rosa, M.; Griffiths, B.; Thomas, D.; Meade, H.; Biogen, Inc., Cambridge, MA, USA.

Th.A.250
THE INTERACTION OF RECOMBINANT SOLUBLE CD4 (sT4) AND GP120 IN NORMAL HUMAN AND AIDS PATIENT PLASMA. Potts, William; Van Horn, R.A.; Urbanski, J.J.; Fong, K.L.L.; Dept. of Drug Metabolism, SmithKline Beecham Parmaceuticals, King of Prussia, PA, USA.

Th.A.251
WHOLE BLOOD DISTRIBUTION AND QUANTITATION OF RECOMBINANT SOLUBLE CD4 (sT4) IN HIV-INFECTED PLASMA BY SINGLE AND DOUBLE MONOCLONAL BASED ELISAS DIRECTED TO sT4 V1 AND V4 REGIONS. Crysler, Carl; Boyle, K.E.; Jonak, Z.; Oka, M.; Culp, J.; Urbanski, J.J.; Dept. of Drug Metabolism, SmithKline Beecham Parmaceuticals, King of Prussia, PA, USA.

Th.A.252
INHIBITION OF THE INFECTIVITY OF HIV BY DIFFERENT RECOMBINANT FORMS OF CD4. Zverev, Vitali*; Malushova, V.*; Sidorov, A.*; Zdanovsky, A.#; Blinov, V.‡; Korneeva, M.; Pugach, A.*; Yankovsky, N.; Andjaparidze, O.*; *Institute for Viral Preparations, Moscow, USSR; #Research Institute of Genetics, USSR, ‡Institute of Molecular Biology, Koltsovo, USSR.

Th.A.253
ANTI-HIV-1 ACTIVITY OF CDU SYNTHETIC OLIGO PEPTIDES. Cereda, Paolo M.; Pagani, L.; Filice, G.; Rassu, M.; Mengoli, C.; Dettin, M.; Palu, G.; Di Bello, C.; Institute of Microbiology, Univ. of Pavia, Pavia, Italy.

Th.A.254
SELECTIVE KILLING OF PERSISTENTLY HIV-1-INFECTED CELLS BY DIMYRISTOYLPHOSPHATIDYLCHOLINE LIPOSOMES CONJUGATED WITH CD4(68-94) PEPTIDE. Kumagai, Kazuo*; Nabeshima, S.*; Ohki, K.‡§; Ohmura, K.‡; Ikuta, K.‡; Ueda, S.‖; Kato, S.*¶; *Biotechnology Laboratory, Sumitomo Chem. Co. Ltd., Hyogo; ‡R&D Center, The Calpis Food Ind. Co. Ltd., Tokyo; §Inst. Immunol. Sci., Hokkaido Univ., Hokkaido; ‖Res. Inst. Microb. Dis., Osaka Univ., Osaka, Japan.

Th.A.255
THE PYRIMIDINE NUCLEOSIDE 3'-DEOXY-3'-FLUOROTHYMIDINE (FLT) INHIBITS THE REPLICATION OF FELINE ONCO- AND LENTI-RETROVIRUSES IN VITRO AND IN VIVO. Hardy, William D., Jr.*, Zuckerman, E.E.*, Boeckerer, J*, Corbishley, J‡., Kong, X.-B.,* Wantanabe, K.A.* Polsky, B.W.*, Gold, J.W.M.*, Baron, P.*, Chou, T.-C., Fox, J.*, Armstrong, D.*; *Memorial Sloan Kettering Cancer Center, NY, NY and ‡ Oradell Animal Hospital, Oradell, NJ., USA.

Th.A.256
MURINE RETROVIRUS-INDUCED IMMUNODEFICIENCY DISEASE: COMPARATIVE EFFECTS OF AZT AND LIPOSOMAL AZT MONOPHOSPHATE. Li, Jui-Lien*, Felgner, P.L.*, Richman, D.D.‡, Hostetler, K.Y.* and ‡; *Vical, Inc., San Diego, CA; ‡University of California, San Diego and the VA Medical Center, San Diego, CA; USA.

Th.A.257
INFREQUENT DOSING OF 9-(2-PHOSPHONYL-METHOXYETHYL) ADENINE (PMEA) RESULTS IN AN INCREASED ANTIRETROVIRAL EFFECT IN VIVO. Balzarini, Jan, Naesens, L., De Clercq, E.; Rega Institute for Medical Research, Leuven, Belgium.

Th.A.258
QUANTITATIVE ANALYSIS OF ANTIVIRAL EFFICACY IN THE SCID-HU MOUSE BY POLYMERASE CHAIN REACTION. Shih, Chu-Chi; O'Toole, T.; Salimi, S.; Kaneshima, H.; Namikawa, R.; Rabin, L.; McCune, J.M.; SyStemix, Inc., Palo Alto, CA, USA.

Th.A.259
PREVENTION OF GP120-INDUCED NEURONAL DAMAGE IN THE DEVELOPING RAT BRAIN BY PEPTIDE T: A GOLGI STUDY. Mervis, R.E.*; Hill, J.M.†; Brenneman, D.E.‡; *Div. Neuropath Ohio State University, Columbus, OH, USA, †Peptide Design L.P., Germantown, MD, USA, ‡LDN, NICHD, NIH, Bethesda, MD, USA.

Th.A.260
PHARMACOKINETICS OF 3'-FLUORO-3'-DEOXYTHYMIDINE (FDT), 3'-DEOXY-2',3'-DIDEHYDROTHYMIDINE (D4T) AND 3'-AZIDO-2',3'-DIDEOXY-5-METHYLCYTIDINE (AZDDMEC) IN MONKEYS. Boudinot, Douglas F.*; Schinazi, R.F.†; Doshi, K.J.*; McClure, H.M.‡; Qin, Y.X.*; Chu, C.K.*; *College of Pharmacy, Univ. of GA, Athens, GA, USA; †Veterans Admin. Medical Center and Emory Univ. Sch. of Med., Atlanta, GA, USA; ‡Yerkes Regional Primate Research Ctr/Emory Univ., Atlanta, GA, USA.

Th.A.261
SCREENING FOR ANTIRETROVIRAL AGENTS AGAINST SIV IN VITRO. Tsai, Che-Chung 1; Follis, K.E.1; Yarnall, M.1; Deaver, L.E.1; Benveniste, R.E.2; and Sager, P.R.3.; 1Regional Primate Research Center, University of Washington, Seattle, WA, USA. 2Laboratory of Viral Cacinogenesis, NCI, Frederick, MD, USA and 3Developmental Therapeutics Branch, Division of AIDS, NIAID, Bethesda, MD, USA.

Th.A.262
ANTI-HIV-1 ACTIVITY OF 3'-AZIDO-2',3'-DIDEOXYTHYMIDINE (AZT) IN PRIMARY MONONUCLEAR PHAGOCYTES. Beenhouwer, David Owen, Rankin, J.A., Mellors, J.W.; Department of Internal Medicine, Yale University School of Medicine and VA Medical Center, West Haven, CT, USA.

Th.A.263
IN VITRO STUDY OF DRUG-SENSITIVITY OF HIV STRAINS ISOLATED FROM PATIENTS WITH AIDS OR ARC BEFORE AND AFTER THERAPY WITH AZT AND/OR 2',3'-DIDEOXYCYTIDINE (DDC). Shirasaka, T.*, Yarchoan, R.*, Aoki, S.*, Ford, H.*, DeVico, A.‡, Sarngadharan, M.G.‡, Richman, D.D.‡, Broder, S.*, Mitsuya, Hiroaki*; *National Cancer Institute, NIH, Bethesda, MD; ‡Advanced Bioscience Laboratories, Inc., Kensington, MD; ‡University of California, San Diego, CA, USA.

Th.A.264
EFFECT OF AZIDOTHYMIDINE (AZT) IN COMBINATION WITH DOUBLE STRANDED RNA (POLY I POLY C) ON HUMAN IMMUNODEFICIENCY VIRUS REPLICATION IN T CELLS AND MONOCYTEMACROPHAGES. Gohchi, Kengo*, Sinet, M.†, Dazza, M.C.*, Dameron, G.‡, Brun-Vezinet, F.*; *Laboratoire de Virologie, Hospital Bichat-Claude Bernard, Paris, France; †INSERM U13, Hospital Claude Bernard, Paris,France.

Th.A.265
ANTIRETROVIRAL EFFECTS OF GLYCEROPHOSPHOLIPID STEREOISOMERS OF AZT ON HIV REPLICATION IN HT4-6C CELLS. Kumar, Raj*, Richman, D.D.†, Hostetler, K.Y.* and †; *Vical, Inc., San Diego, CA; †University of California, San Diego and the VA Medical Center, San Diego, CA; USA.

Th.A.266
MECHANISM OF INHIBITION BY CARBOVIR TRIPHOSPHATE OF HIV REVERSE TRANSCRIPTASE AND HUMAN DNA POLYMERASES, COMPARED WITH THE ACTION OF AZT TRIPHOSPHATE AND DIDEOXYNUCLEOSIDE TRIPHOSPHATES. E.L. White*, S.C. Shaddix*, R. Vince†, W.M. Shannon*, and W.B. Parker*; Southern Research Institute, Birmingham, AL, USA*; Univ. of Minnesota, Minneapolis, MN, USA†.

Th.A.267
HALOGENATED CONGENERS OF 2',3'-DIDEOXYPURINE NUCLEOSIDES ACTIVE AGAINST HIV IN VITRO: A NEW CLASS OF LIPOPHILIC PRODRUG. Shirasaka, Takuma*, Murakami, K.†, Ford, H.*, Kelley, J.*, Yoshioka, H.†, Kojima, E.†, Aoki, S.*, Driscoll, J.S.*, Broder, S.*, Mitsuya, H.*; *National Cancer Institute, NIH, Bethesda, MD, USA; †Sanyo-Kokusaku Pulp Co., Iwakuni, Yamaguchi, Japan.

Th.A.268
NOVEL 6-SUBSTITUTED ACYCLOURIDINE DERIVATIVES AS HIGHLY SPECIFIC INHIBITORS OF HIV-1. Baba, Masanori*; Tanaka, H.†; Miyasaka, T.†; Ubasawa, M.†; Walker, R.T.‡; De Clercq, E.*; *Fukushima Medical College, Fukushima, Japan; †Showa University, Tokyo, Japan; ‡Mitsubishi Kasei Corporation, Yokohama, Japan; ‡University of Birmingham, Birmingham, UK; *Rega Institute, K.U.Leuven, Leuven, Belgium.

Th.A.269
SYNTHESIS AND INHIBITION OF HIV-1 AND HIV-2 ACTIVITY BY NAPHTHALENEDISULFONIC ACID SPACER DERIVATIVES. Mohan, Prem*; Singh, R.*; Baba, M.†; *University of Illinois at Chicago, Chicago, Illinois, USA †Fukushima Medical College, Fukushima, Japan.

Th.A.270
THE EFFECTS OF 5'-HYDROGENPHOSPHONATES AND 5'-METHYLPHOSPHONATES OF PYRIMIDINE NUCLEOSIDES AGAINST HIV-1 REPLICATION IN VITRO. Zhu, Qing-Yu, Watanabe, K.A., Krayevsky, A.A., Tarussova, N.B., Polsky, B.W. Gold, J.W.M., Baron, P., Hardy, W., Armstrong, D., Chou, T.-C.; Memorial Sloan-Kettering Cancer Center, New York, N.Y., U.S.A.

Th.A.271
ANTI-HIV ACTIVITIES OF NOVEL NUCLEOSIDES ANALOGS: ACYCLIC AND TRICYCLIC BASE NUCLEOSIDES. Clayette, Pascal M.*; Merrouche, Y.*; Poques, P.†; Olomucki, M.†; Dormont, D.*,‡; *SSA/DPS/SPEC EA, Fontenay aux Roses, France; †Biochimie Cellulaire, College de France, Paris, France; ‡Institut Pasteur, Paris, France.

Th.A.272
ANTIVIRAL ACTIVITY OF ACRIFLAVINE AND OTHER ACRIDINE ANALOGUES AS MEASURED IN VIVO IN FRIEND LEUKEMIA VIRUS CARRYING MICE AND IN VITRO ON HIV-1 INFECTED CELLS. Mathe, Georges, Trabaud, M., Bourut, C., Chenu, E.; Institute of Cancer and Immunology, Hospital Paul-Brousse, Villejuif, France.

Th.A.273
SYNTHESIS OF A SERIES OF TETRAHYDRO-IMIDAZO[4,5,1-JK][1,4]-BENZODIAZEPIN-2(1H)-ONES AND -THIONES WITH POTENT AND SELECTIVE IN VITRO ANTI HIV-1 ACTIVITY. Kukla, Michael J.*, Breslin, H.*, Janssen, M.A.C.†, Raeymaeckers, A.†, Van Gelder, J.†, Janssen, P.A.J.†; *Janssen Research Foundation, Spring House PA, USA, †Janssen Research Foundation, Turnhoutseweg, Beerse, Belgium.

Th.A.274
INHIBITION OF HEPATITIS B VIRUS (HBV) REPLICATION IN HBV-PRODUCING HEPATOMA CELLS BY 2',3'-DIDEOXYNUCLEOSIDES IN VITRO. O'Brien, Mary*; Aoki, S*; Fujii, H†; Ford, H*; Broder, S*; and Mitsuya, H*; *National Cancer Insdtitute and †National Heart Lung and Blood Institute; Bethesda, Maryland, USA.

Animal Models

Th.A.275
IMMUNE ACTIVATION AND IMMUNE DEFICIENCY CHANGES DURING A LONGITUDINAL STUDY OF SIV INFECTION. Shum, Archie, McGraw, T., Vowels, B., Gardner, M., Hofmann, B., Fahey, J.; California Primate Research, UC Davis, Davis, CA; and †UCLA School of Medicine, Los Angeles, CA, USA.

Th.A.276
A NEW IMMUNODEFICIENCY VIRUS ISOLATE FROM A WILD CAPTURED CHIMPANZEE: SIVCPZANT-1. Martine, Peeters*; Fransen, K.*; Delaporte, E.*; Van den Haesevelde, M.†; Saman, E.†; van der Groen, G.*; Piot, P.*; *Institute of Tropical Medicine, and †Innogenetics, Antwerp, Belgium.

Th.A.277
INVESTIGATIONS INTO THE GENETIC AND IMMUNOLOGICAL BASIS FOR THE LACK OF PATHOGENESIS OF SIV AGM IN ITS NATURAL HOST, THE AFRICAN GREEN MONKEY (AGM). Kurth, Reinhard; Norley, S.G., Kraus, G.; Hartung, S.; Ennen, J.; Baier, M.; Cichutek, K.; Paul Ehrlich Institute, Langen-Frankfurt, FRG.

Th.A.278
INDUCTION OF IL-6 IN SIV SMM-PBJ INFECTION: EVIDENCE FOR A CYTOKINE MEDIATED DISEASE. Birx, Deborah*; Lewis, M.†; Vahey, M.*; Zack, P.†; Jarhling, P.†; Burke, D.*; Redfield, R.*; *Div. of Retrovirology, WRAIR, Rockville, MD; †Disease Assessment; †Pathology, USAMRIID, MD.

Th.A.279
MALIGNANT LYMPHOMAS IN SIV INFECTED CYNOMOGLUS MONKEYS. Biberfeld, Peter J.*, Feichtinger, H.*, Putkonen, P.†, Parravicini, C.†, Bottiger, D.†, Biberfeld, G.†; *Immunopathology Laboratory, Karolinska Institute, Stockholm, Sweden; †Immunology Department, National Bacteriological Laboratory, Stockholm, Sweden.

Th.A.280
LOCALIZATION OF SIV ANTIGEN AND RNA IN THE CNS OF MACAQUES WITH SIV ENCEPHALITIS. Lackner, Andrew, Dandekar, S., Smith, M.O., Marx, P.A.; Research Center and Department of Medical Pathology, University of California, Davis, CA, USA.

Th.A.281
PERSISTENT PRODUCTIVE INFECTION OF RHESUS MACAQUES BY DIFFERENT STRAINS OF HIV-2. Castro, B.A., Lerche, Nicholas W.*, Nepomuceno, M., Barboza, A., Legg, H., Levy, J.A.; University of California, School of Medicine, San Francisco, CA; *California Primate Center, Davis, CA, USA.

Th.A.282
A FELINE MODEL OF THE AIDS DEMENTIA COMPLEX (ADC)? Wheeler, David W.*, Whalen, L.R.*, Gasper, P.W.†, Overbaugh, J.‡; Departments of *Anatomy and Neurobiology, and †Pathology, Colorado State University, Ft. Collins, CO, USA, ‡Department of Microbiology, University of Washington, Seattle, WA, USA.

Th.A.283
IMMUNOLOGY OF FELINE IMMUNODEFICIENCY VIRUS (FIV) INFECTION. Ishida, Takuo; Taniguchi, A.; Washizu, T.; Tomoda, I.; Nippon Veterinary and Zootechnical College, Tokyo, Japan.

Th.A.284
MOLECULAR CLONING OF THE JAPANESE ISOLATES OF FELINE IMMODEFICIENCY VIRUS (FIV). Fukasawa, Masashi*; Hasegawa, S.†; Maki, N.†; Miyazawa, T.‡; mikami, T.‡; Hayami, M.*; *Univ. of Kyoto, Kyoto; †To-nen K.K. Co., Ltd., Saitama; ‡Univ. of Tokyo, Tokyo, Japan.

Th.A.285
ELIMINATION OF RETROVIRUSES FROM CATS USING ALLOGENEIC MARROW TRANSPLANTATION. Gasper, Peter W., Fulton, R., Thrall, M.A., Oulton, S.A., Rose, B.J., Overbaugh, J.*, and C.S.U. Marrow Transplant Team, Pathology Dept., Colorado State University; *Microbiology Dept., School of Medicine, University of Washington, Seattle, USA.

Th.A.286
TISSUE DISTRIBUTION OF FIV AND RELATIONSHIP TO PATHOGENESIS IN CATS AND COMPARISON WITH THE SIV MODEL. Pedersen, Neils; Dandekar, S.; Marifeld, D.J.; Torten, M.; Luciw, P.A.; Univ. of California, Davis, CA, USA.

Th.A.287
SUSTAINED INCREASES IN CEREBROSPINAL FLUID QUINOLINIC ACID IN RHESUS MACAQUES INFECTED WITH SIMIAN IMMUNODEFICIENCY VIRUS: RELATIONSHIP TO NEUROLOGIC SIGNS. M.P. Heyes*, M. Gravell!, W.T. London+, P. Johnson+, B.J. Quearry* and S.P. Markey*; Section on Analytical Biochemistry*, Laboratory of Clinical Science, Building 10, Rm 3D40, NIMH Bethesda MD 20892 and NINDS!, Building 36, Bethesda MD 20892 and Georgetown University+, Twinbrook II, Rockville MD 20852.

Th.A.288
THE EFFECT OF HIV-1 INFECTION ON SPECIFIC IMMUNE RESPONSES IN RABBITS. Gordon, M.R.; Dickerson, D.; Kindt, T.J., Bauer, J.; Laboratory of Immunogenetics, NIAID, NIH, Bethesda, MD, USA.

Th.A.289
A MURINE MODEL OF CNS INFECTION IN AIDS. Sei, Yoshitatsu, Makino, M., Vitkovic, L., Kinjo, J., Hartley, J.W., Torrence, P.F., MorseIII, H.C., and Arora, P.K.; National Institutes of Health, Bethesda, MD 20892, U.S.A.

Th.A.290
GLOMERULOSCLEROSIS IN TRANSGENIC MICE EXPRESSING HIV-1 GENES. Felser, James M.†#; Dickie, P.*; Bryant, J.*; Notkins, A.L.*; Silver, J.†; *Natl. Institute of Dental Research; †Natl. Institute of Allergy and Infectious Diseases; #VA Medical Center, Washington, D.C., USA.

Th.A.291
GENERATION OF TRANSGENIC MICE CARRYING HIV TAT AND NEF GENES. Dinchuk, Joe*; Cheng-Mayer, C.†; Lueiw, P.†; Yoo-Warren, H.*; Wirak, D.*; Levy, J.†; *Molecular Therapeutics, Inc., West Haven, CT †School of Medicine, Cancer Research Institute, Univ. of California, San Francisco, CA ‡California Primate Research Center, University of California, Davis, CA USA.

Th.A.292
HIV INTEGRATION IN A CELL FREE SYSTEM. Ellison, Viola*; Abrams; H.**, Roe, T.*; Lifson, J.**; Brown, P.O.*; *Howard Hughes Medical Institute, Stanford, CA, **Genelabs Inc., Redwood City, California, CA, USA.

Th.A.293
CHARACTERIZATION OF ACUTE HIV INFECTION IN THE PBMC-RECONSTITUTED SCID MOUSE. Hesselton, Ruthann; Koup, R.A.; Sullivan, J.L.; University of Massachusetts Medical Center, Department of Pediatrics and Program in Molecular Medicine, Worcester, MA, USA.

Th.A.294
XENOCHIMERIC SCID MICE AS A POSSIBLE MODEL FOR HUMAN ANTIVIRAL IMMUNITY. Svedersky, Lloyd*; Roey, S.*; Scillian, J.*; Parslow, T.†; and Stites, D.*; *Department of Laboratory Medicine and †Departments of Pathology, Microbiology and Immunology, UCSF, San Francisco, CA, USA.

Th.A.295
DEVELOPMENT OF AN ANIMAL MODEL TO STUDY HIV INFECTION OF HUMAN HEMATOPOIETIC PROGENITOR CELLS. Weilbaecher, Katherine; Namikawa, R.; Mccune, J.M.; SyStemix, Inc., Palo Alto, CA, USA.

Th.A.296
CHARACTERISTICS OF HIV-1 INFECTED CELLS WITHIN THE HUMAN LYMPHOID ORGANS OF THE SCID-HU MOUSE. Namikawa, Reiko, Fedor, J., Kaneshima, H., McCune, J.M.; SyStemix, Inc., Palo Alto, Ca, USA.

Th.A.297
T CELL FUNCTIONS AND PHENOTYPES IN SCID-HU MICE. Krowka, John; Sarin, S.; Namikawa, R.; McCune, J.M.; Kaneshima, H.; SyStemix, Inc.; Palo Alto, CA, USA.

Related Retroviruses

Th.A.298
MONOCLONAL ANTIBODIES TO SIV ENVELOPE PROTEINS. Kent, K.*; Gritz, L.†; Cranage, M.‡; Silvera, P.*; Corcoran, T.*; Stott, E.J.*; *National Institute for Biological Standards and Control, Potters Bar, UK. †Centre for Applied Microbiology and Research, Porton, UK. ‡Applied Biotechnology, Cambridge, MA, USA.

Th.A.299
INTERFERENCE OF SIVAGMTYO-7 GP130 WITH HUMAN CD-4. Polzien, Frank; Luke, W.; Traunecker, A.; Karajalainen, K.; and Hunsmann, G.; German Primate Center, Gottingen, FRG; Basel Institute for Immunology, Basel, Switzerland.

Th.A.300
ANTIBODIES TO SIV MAC (K1) ENVELOPE-DERIVED SYNTHETIC PEPTIDES IDENTIFY SHARED ANTIGENIC DETERMINANTS FROM RELATED PRIMATE IMMODEFICIENCY VIRUS ISOLATES. Kanda, Patrick; Dunham, R.G.; Shuler, K.R.; Allan, J.S.; Southwest Fdn. for Biomedical Research, San Antonio, TX.

Th.A.301
MOLECULAR STUDIES OF PATAS VIRAL ISOLATES FROM SENEGAL. Saksena, Nitin*; Muller, M.*; Deslandres, A.*; Durand, J.-P.†; Lang, M.-C.*; Digoutte, J.-P.†; Barre-Sinoussi, F.*; *Institut Pasteur, Paris, France, †Institut Pasteur, Dakar, Senegal

Th.A.302
HTLV-I AND HTLV-II INFECTION IN U.S. BLOOD DONORS IS ASSOCIATED WITH DIFFERENT RISK FACTORS. Lee, Helen H.*; Sherwood, W.C.†; Smith, D.E.‡; Tegtmeier, G.E.+; Fernando, L.P.++; Fang, C.T.‡ & Kleinman S.H.‡; *Abbott Laboratories, N. Chicago, IL, †American Red Cross, Rockville, MD, ‡Blood Center for SE Louisiana, +Community Blood Center, Kansas City, MO, ++Sacramento Medical Foundation Blood Center, Sacramento, CA.

Th.A.303
HTLV-I AND HTLV-II SEROPREVALENCE AMONG OUTPATIENTS AT A SAN FRANCISCO PUBLIC HOSPITAL. Murphy, Edward L.*; Varney, K.*; Hurt, M.*; Bobey, L.*; Eble, B.*; Alexander, S.†; Khayam-Bashi, H.*; Vyas, G.*; *U. Cal., SF, CA; †Biotech Labs, Rockville, MD, USA.

Th.A.304
RAPID SEROLOGICAL DETERMINATION OF HTLV-I/II ANTIBODIES. Yajko, David M.*, Gonzalez, P., Lipka, J., Chun, P., Foung, S. K-H., Chu, A., Ng, V.L., Hadley, W.K.; University of California, SanFrancisco,California, USA; Stanford University Blood Bank, Palo Alto, California, USA; E-Y Laboratories, San Mateo, California, USA.

Th.A.305
AN OVERVIEW OF THE DEPARTMENT OF DEFENSE (DOD) HTLV-I/II TESTING EXPERIENCE: THE FIRST YEAR. Roberts, Chester; Fipps, D.; Burke, D.; Walter Reed Retroviral Research Group.

Th.A.306
USE OF PCR AMPLIFICATION FOR DIAGNOSIS OF HTLV-I AFTER BLOOD TRANSFUSION. Agbalika F., Honderlick P., Ferchal F., Perol Y.; Department of Bacteriology-Virology, St-Louis Hospital, Paris VII University France.

Th.A.307
DEVELOPMENT AND CHARACTERIZATION OF AN HTLV-I,II ANTIGEN CAPTURE ELISA. Pearlman, Sam; Toedter, G.; Charie, L.; Looney, S., Faerman, L.; Hofheinz, D.; Coulter Immunology, Hialeah, Florida U.S.A.

Th.A.308
ESTABLISHMENT OF HTLV-I IMMORTALIZED RAT CELL LINES. Tateno, Masatoshi*; Sato, H.*; Sakurai, H.†; Ikeda, H.†; Wakisaka, A.†; Yoshiki, T.†; *Dept. of Pathology, Sapporo City General Hospital, Sapporo, Japan; †Dept. of Pathology, Hokkaido University, Sapporo, Japan.

Th.A.309
IFA CONFIRMATION OF HTLV-I/II ANTIBODIES. Abadom, Vivian; Rosebrock, J.; Hung, C-L; Okamoto, D.; Malamud, M.; Sheldon, J.; Serologicals, Inc., Marietta, Georgia, USA and Pharmacia Diagnostics, Inc. Columbia, Maryland, USA.

Th.A.310
TYPE-SPECIFIC IDENTIFICATION OF HTLV'S BY POLYMERASE CHAIN REACTION (PCR). Mitra, Rita*, Gildea, J.*; Fowler, A.*; Roberts, C.‡; Burke, D.S.‡; *SRA Technologies Inc., Rockville, MD, USA; ‡Walter Reed Retrovirus Research Group, Walter Reed Army Institute of Research, Washington, DC, USA.

Th.A.311
EVALUATION OF THREE COMMERCIAL SCREENING TESTS FOR HTLV-I ANTIBODIES IN A DEVELOPING COUNTRY. Muchinik, Guillermo*; Bouzas, M.B.*; De Rosa, M.F.*; Cahn, P.‡; Gallo, D.‡; Hanson, C.‡; *Instituto de Investigaciones Hematologicas, Academia Nacional de Medicina, Buenos Aires, Argentina; ‡Hospital Juan A Fernandez, Buenos Aires, Argentina; ‡Viral and Rickettsial Diseases Lab., CA Dept. of Health Services, Berkeley, CA, USA.

Th.A.312
EVALUATION OF SIX ENZYME IMMUNOASSAYS (EIA) FOR DETECTION OF ANTIBODY AGAINST HUMAN T-LYMPHOTROPIC VIRUSES TYPES 1 AND 2 (HTLV-1/2). Kline, Richard*; Brothers, T.‡; Halsey, N.‡; Ruff, A.‡; Lairmore, M.‡; Quinn, T.*; *NIAID, NIH, Bethesda, ‡Johns Hopkins University, Baltimore, MD, ‡CDC, Atlanta, GA.

Th.A.313
MUTATIONAL ANALYSIS OF THE HTLV-I TAX PROTEIN. Semmes, O.J.; Jeang, K.T.; Laboratory of Molecular Microbiology, National Institute of Allergy and Infectious Disease, National Institutes of Health, Bethesda, Maryland, USA.

Th.A.314
PCR ANALYSIS OF INTRAVENOUS DRUG USER SAMPLES REACTIVE WITH HTLV-I AND HTLV-II. Shriver, Kathleen*, Oluouch, E.*, Olmsted, L.*, Masinovsky, R.*, Fitzsimmons, L.*, Schwebke, J.‡, Holmes, K.‡; *Genetic Systems Corporation, Seattle, WA; ‡Harborview Medical Center/University of Washington, Seattle, WA, USA.

Th.A.315
USE OF SYNTHETIC PEPTIDE BASED EIAS TO DISTINGUISH HTLV-I FROM HTLV-II INFECTION. Hosein, Barbara, Present, B., Fang, C., Wang, C.Y.; United Biomedical, Inc., Lake Success, NY, USA, American Red Cross, Rockville, MD, USA.

Th.A.316
RISK FACTORS FOR PCR-DETERMINED HTLV-I AND HTLV-II INFECTION IN NORTHERN CALIFORNIA BLOOD DONORS. Eble, Bernard*; Busch, M.‡; Guiltinan, A.‡; Khayam-Bashi, H.*; Vyas, G.*; Murphy, E.*; *Dept. Lab. Med. Univ. CA, SF, CA, USA; ‡Irwin Memorial Blood Center, SF, CA, USA.

Th.A.317
EVALUATION OF SENSITIVITY IN THE DETECTION OF HUMAN T LYMPHOTROPIC VIRUS I (HTLV-I) ANTIBODIES: IS WESTERN BLOT (WB) USEFUL FOR CONFIRMATORY TESTING?. Georgopoulou, Urania, Okayama, A., Mueller, N., Hatzakis, A.; National Retrovirus Reference Center, Athens University Medical School, Athens, Greece.

Th.A.318
HTLV, HEPATITIS B AND C MARKERS IN AFRICANS WITH TUBERCULOSIS AND AIDS. Munema, J.*, Williams, O.‡, Purcell, R.‡, Wong, D.‡; *Muhimbili Medical Center, Dar-Es-Salam, Tanzania; and ‡National Institutes of Health, Bethesda, MD, USA.

Th.A.319
RH9 CELLS EXPOSED TO SALIVARY GLAND EXTRACTS FROM PATIENTS WITH SJOGREN'S SYNDROME PRODUCE AN A-TYPE PARTICLE ANGITENICALLY-RELATED TO HIV. Garry, Robert F.*; Talal, Norman‡; Hart, Darrenn J.*; Fermin, Cesar D.*; Alexander, Steve S.‡; Dang, Howard‡.; *Tulane School of Medicine, New Orleans, Louisiana,USA, ‡University of Texas Health Science Center and Audie L. Murphy Memorial Veterans Administration Hosp., San Antonio, Texas, USA, ‡Biotech ResearchLaboratories, Rockville, MD, USA.

Th.A.320
MONKEY BLOOD THAT SEROLOGICALLY CROSS REACTS WITH HIV-1 ANTIGENS CONTAINS A PROVIRUS THAT HYBRIDISES WITH HIV-1 PROBES AT LOW STRINGENCY. Kolesnitchenko, V.; Laaroubi, K.; Messinger, D.; Snart, R.; Gallo, R.; Zagury, D.; Universite Pierre et Marie Curie, Paris, France.

Oncogenesis

Th.A.321
AUTOCRINE AND PARACRINE GROWTH STIMULATION OF KAPOSIS SARCOMA-DERIVED CELL CULTURES. Roth, Willi Kurt; Werner, S.; Hofschneider, P.H.; Max-Planck-Institut fuer Biochemie, Martinsried, FRG.

Th.A.322
CULTURED KAPOSI'S SARCOMA-DERIVED SPINDLE CELLS EXPRESS VASCULAR PERMEABILITY INDUCING ACTIVITY. Sakurada, Shinsaku; Nakamura, S.; Salahuddin, S.Z.; Gallo, R.C.; Lab. of Tumor Cell Biology, Natl. Cancer Institute, Natl. Institutes of Health, Bethesda, MD, USA.

Th.A.323
PHENOTYPIC CHARACTERIZATION OF AIDS-KAPOSI'S SARCOMA CELLS IN LONG-TERM CULTURE IN THE ABSENCE OF RETROVIRALLY CONDITIONED MEDIUM. Way, D.*, Witte, Marlys*; Bernas, M.; Fiala, M.‡; Witte, C.*; Nagle, R.‡; Stuntz, M.*; Ramirez, G., and Milligan, M.‡; *Dept. of Surgery and ‡Pathology, The Univ. of Arizona College of Medicine, Tucson, AZ, and Departments of Medicine‡ and Pathology‡, Eisenhower Medical Center, Palm Springs, CA, USA.

Th.A.324
KAPOSI'S SARCOMA AND HIV INFECTION IN CAMEROON. Ossondo Nlom, Marlene M.*; Etoundi-Mballa, G.,A.‡; Ndumbe, P.*; Zekeng, L.‡; Ngu, V.A.*; *Univ. Center for Health Sciences in Yaounde, Cameroon; ‡Univ. Teaching Hospital in Yaounde; ‡Public Health in Ngaoundere, Cameroon.

Th.A.325
HIGH PREVALENCE OF ANAL INTRA-EPITHELIAL NEOPLASIA AND ANAL PAPILLOMAVIRUS INFECTION AMONG MALES WITH GROUP IV HIV DISEASE. Palefsky, Joel*; Gonzales, J.‡; Ahn, D.‡; Hollander, H.‡; Departments of *Laboratory Medicine, ‡Pathology and ‡Medicine, University of California, San Francisco, San Francisco, CA, USA; ‡Northern California Cancer Center, Belmont, CA, USA.

Th.A.326
INTERACTION OF HUMAN IMMUNODEFICIENCY AND PAPILLOMA VIRUSES: ASSOCIATION WITH ANAL EPITHELIAL ABNORMALITY IN HOMOSEXUAL MEN. Goedert JJ, Caussy D, Palefsky*, Gonzales J*, Grossman RJ‡, DiGioia RA‡, Sanchez WC‡, et al.; NCI, Bethesda MD USA, *UCSF, San Francisco CA USA, ‡ New York NY USA, ‡ Washington DC USA.

Th.A.327
SIGNIFICANCE OF RETROVIRAL DNA SEQUENES IN MALIGNANT TUMORS FROM AFRICA. Williams, Olufemi A.*, Mugerwa, J.‡, Wamukota, W.‡, Owor, R.‡; *Fogarty International Centre (FIC), National Institutes of Health, Bethesda, MD, USA; ‡Department of Pathology, Mulago Hospital, Kampala, Uganda.

Th.A.328
IMMUNOGLOBULIN SECRETED BY AN AIDS LYMPHOMA CELL LINE RECOGNIZES HIV GP160, SUGGESTING THAT THE IMMUNE RESPONSE TO HIV ANTIGENS MAY CONTRIBUTE TO LYMPHOMAGENESIS. Ng, Valerie L.*, Fein, C.*, Khayam-Bashi, F.*, Nelson, P.‡, Fry, K.‡, McGrath, M.S.*; *University of California, San Francisco, CA, USA, *GeneLabs, Redwood City, CA, USA.

Th.A.329
MULTISITE MOLECULAR ANALYSIS OF AIDS-ASSOCIATED LYMPHOMAS. Herndier, Brian*; Shiramizu, B.*; Sanchez, H.*; Kaplan, L.*; Meeker, T.‡; McGrath, M.*; *SFGH and *VA Medical Center, University of California, San Francisco, California, USA.

Vaccine Development

Th.A.330
AIDS VACCINE DEVELOPMENT: SCIENTIFIC AND PUBLIC POLICY CHALLENGES FOR THE 1990'S. Koff, Wayne C., Schultz, A.M., Mathieson, B.J., Detrick, B., Glass, M.J., Wescott, S.L., and Lawrence, D.N.; Division of AIDS, NIAID, NIH, Bethesda, Maryland, U.S.A.

Th.A.331
HIV-1 TAT PROTEIN RELEASED DURING ACUTE INFECTION STIMULATES GROWTH OF SPINDLE CELLS DERIVED FROM AIDS-KAPOSI'S SARCOMA. Ensoli, Barbara; Barillari, G.; Salahuddin, S.Z.; Gallo, R.C.; Wong-Staal, F.; Laboratory of Tumor Cell Biology, National Cancer Institute, National Institutes of Health, Bethesda, MD 20892, USA.

Th.A.332
HIV-SPECIFIC B AND T LYMPHOCYTE FUNCTIONS IN UNINFECTED HUMAN VOLUNTEERS IMMUNIZED WITH HIV RECOMBINANT GP160. Clerici, Mario*; Tacket, C.O.‡; Via, C.S.‡; Berzofsky, J.A.*; Shearer, G.M.*; *Natl. Cancer Institute, Bethesda, MD, USA; ‡Univ. of MD, Baltimore, MD, USA.

Th.A.333
ENHANCED IMMUNOGENICITY IN HUMANS OF AN HIV SUBUNIT VACCINE REGIMEN EMPLOYING PRIMING WITH A VACCINIA GP160 RECOMBINANT VIRUS (VAC/ENV) BY BOOSTING WITH RECOMBINANT HIV ENVELOPE GLYCOPROTEIN (RGP160). Cooney, Elizabeth L.*; Corey, L.*; Hu, S.L.*; Collier, A.*; Arditti, D.*; Hoffman, M.*; Smith, G.*; Steimer, K.‡; Greenberg, P.‡; Univ. of WA, Seattle, WA, USA; Oncogen, ‡MicroGenesys; ‡Chron Corps., Seattle, WA, USA.

Th.A.334
STUDY OF HUMORAL RESPONSE FROM FRENCH SERONEGATIVE HEALTHY IMMUNIZED VOLUNTEERS AGAINS HIV. Boyer V*, Picard O‡, Mortier M*, Zagury D‡, Desgranges Claude; * Inserm u 271 Lyon France, ‡ University Pierre Et Marie Curie Paris France.

Th.A.335
IMMUNE THERAPY: CLINICAL TRIAL (PHASE I) IN AIDS/ARCS PATIENTS. Picard, O‡; Imbert, J.C.‡; Salaun, J.J.‡; Lurhama, Z.‡; Moss, B.‖; Gallo, R.C.‖; and Zagury, D.*; *Universite Pierre et Marie Curie (Paris) and Institut Jean Godinot (Paris) ‡Hopital Saine Antoine (Paris) ‡INRB et Cliniques Universitaires *Kinshasa) ‖NIH/NCI (Bethesda).

Th.A.336
THE HLA-A11 MOLECULE IS CTL RESTRICTING FOR THE IMMUNODOMINANT EPITOPE, PEPTIDE 18, OF HIV GP160 IN IMMUNIZED HUMANS. Achour, Ammar; Lambamedi, S.; Willer, A.; Berzofsky, J.; Gallo, R.; Zagury, D.; Univ. Piere & Marie Curie, Paris France.

Th.A.337
IMMUNIZATION OF HIV-INFECTED INDIVIDUALS WITH INACTIVATED HIV IMMUNOGEN: SIGNIFICANCE OF HIV-SPECIFIC CELL-MEDIATED IMMUNE RESPONSE. Levine, A*; Henderson, BE*; Groshen, S*; Burnett, K‡, Jensen, F‡; Peters, R‡; Carlo, D‡; Gersten, M‡; Salk, J‡; *Univ Southern CA, Los Angeles, CA, USA; ‡Immune Response Corp and ‡Salk Institute, San Diego, CA, USA.

Th.A.338
EXPERIENCE WITH THIRTEEN HIV EFFICACY TRIALS IN CHIMPANZEES. Eichberg, Jorg W.; Southwest Foundation for Biomedical Research, San Antonio, Texas, USA.

Th.A.339
ANTI-HIV ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY (ADCC) IN SERA OF IMMUNIZED CHIMPANZEES. Belo, M.*; Yagello, M.*; Laurent, J.P.*; Girard, M.‡; Jean-Claude Gluckman*; *Cervi, Pitie-Salpetriere Medical School, Paris, ‡Pasteur Vaccins, Marnes-la-Coquette, France.

Th.A.340
CHALLENGE WITH HIV IS NOT FOLLOWED BY AN ANTIBODY RESPONSE TO VIRAL CORE PROTEINS IN A CHIMPANZEE IMMUNIZED WITH RECOMBINANT GP160. Mannhalter, Josef*; Eibl, M.M.‡; Dorner, F.*; Moss, B.‡; Gallo, R.C.‡; Eder, G.*; *Immuno AG, ‡University of Vienna, Vienna, Australia; ‡N.I.H., Bethesda, MD.

Th.A.341
SURVEILLANCE OF AIDS VACCINE STUDIES IN NON-HUMAN PRIMATES. Schultz, Alan M.; Division of AIDS, NIAID, National Institutes of Health, Bethesda, Maryland, USA.

Th.A.342
SIV VACCINE PROTECTION OF RHESUS MACAQUES. Gardner, Murray B., McGraw, T., Luciw, P., Carlson, J.; Department of Medical Pathology, California Primate Research Center, University of California, Davis, CA, USA.

Th.A.343
IMMUNIZATION WITH HIV-1 GP160 ENHANCES HIV-SPECIFIC IMMUNE RESPONSES ELICITED BY VACCINIA-HIV RECOMBINANT VIRUS. Hu, Shiu-Lok*; Klanicki, J.*; Schmitt, R.*; Wain, R.M.*; Dykers, T.*; Morein, B.+; Lewis, J.B.*.; *Oncogen, Seattle, WA, USA; +The National Veterinary Institute, Uppsala, Sweden.

Th.A.344
THE EFFICIENT EXPRESSION OF SIMIAN IMMUNODEFICIENCY VIRUS (SIV) ENVELOPE PROTEIN FROM THE RECOMBINANT HUMAN ADENOVIRUS TYPE 5 WITH A HOST-RANGE MUTATION. Cheng, Sheau-Mei, Ronchetti-Blume, M., Hum, W., Politis-Virk, K., Dheer, S., Hirsch, V.*, Johnson, P.*, Mizutani, S., Davis, A., Lee, S., Hung, P.; Wyeth-Ayerst Research, Radnor, PA, *Georgetown University, Rockville, MD, USA.

Th.A.345
SPECIFIC RESPONSE OF RHESUS MONKEYS TO AN IMMUNISATION WITH VACCINIA-HIV2 RECOMBINANTS. Vogt, Guillaume*; Dormont, D.*,†; Kieny, M.P.‡; Kaczorek, M.‖; Sonigo, P.‡; Girard, M.‡; *SSA/DPS/SPE/CEA, Fontenay aux Roses, France; †Institut Pasteur, Paris, France; ‡Transgene, Strasbourg, France; ‖Pasteur Vaccin, Marne la Coquette, France.

Th.A.346
ASSEMBLY OF HIV-LIKE PARTICLES BY A RECOMBINANT VACCINIA VIRUS EXPRESSION SYSTEM. Haffar Moar, Garrigues J.,Travis B., Moran P., Smmithgall M., Zarling J., Hu S.-L.; Oncogen Corp., Seattle, WA, USA.

Th.A.347
FORMATION OF PRIMATE LENTIVIRUS PARTICLES IN CELLS INFECTED WITH VACCINIA RECOMBINANTS. Panicali, Dennis*, Mazzara, G.*, Stallard, V.*, Cormier, N.*, Derosiers, N.†, King, N.†; *Applied bioTechnology, Cambridge, MA and †New England Regional Primate Research Center, Southborough, MA, USA.

Th.A.348
EXPRESSION AND PROCESSING OF HIV GAG PROTEINS WITH RECOMBINANT ADENOVIRUS VECTORS. Wilhelm, James; Kalyan, N.; Chanda, P.; Murthy, S.; Vernon, S.; Molnar-Kimber, K.; Mizutani, S.; Davis, A.; Lee, S.; Hung, P.; Wyeth-Ayerst Research, Philadelphia, PA, USA.

Th.A.349
CONSTRUCTION OF SYNTHETIC HIV PEPTIDE IMMUNOGENS USING DEFINED T AND B-CELL EPITOPES. Sia, D.Y.; CHong, P; Rovinski, B; Haynes, J; and Klein, M.; Connaught Centre for Biotechnology Research, 1755 Steeles Avenue West, Willowdale, Ontario M2R 3T4, Canada.

Th.A.350
SYNTHETIC PEPTIDES FROM A CONSERVED REGION OF THE HIV ENVELOPE INDUCE BROADLY REACTIVE ANTI-HIV RESPONSES. Morrow, W. John W., Williams, W.M., Whalley, A., Ryskamp, T., Newman, R., Kang, C.-Y., Chamat, S., Kohler, H., Kieber-Emmons, T.; IDEC Pharmaceuticals Corporation, La Jolla, CA, USA.

Th.A.351
PARATOPE-SPECIFIC ANTI-IDIOTYPIC ANTIBODY (AB-2) INDUCES HIV-1 NEUTRALIZING ANTIBODIES IN RABBITS. Fung, Michael, Sun, C., Liou, R., Gordon, W., Chang, N., Chang, T.W., Sun, N.C.; Tanox Biosystems, Inc., Houston, TX, USA.

Th.A.352
PREPARATION OF ANTI-IDIOTYPIC ANTIBODIES BY USING SYNTHETIC CD4 FRAGMENT PEPTIDE (70-132) INHIBITING HIV-1 REPLICATION AND SYNCYTIUM FORMATION. Ohki, Kohji*,†; Kimuta, T.*; Ohmura, K.†; Ikuta, K.*; *Inst. Immunol. Sci., Hokkaido Univ., Sapporo, †The Calpis Food Industry Co., Ltd., Tokyo, Japan.

Th.A.353
ANTI-CD4 IDIOTYPES: POTENTIAL FOR AIDS VACCINATION. D.W. Buck*, K. Schroeder*, M. Suni*, J. Kelkenberg*, P. Estess*, D. Healey†, R. Sweet‡, A.Truneh‡; *Becton Dickinson Monoclonal Center, Mountain View, California, USA, †Imperial Cancer Research Fund, Human Tumor Immunology Unit, London, U.K. ‡ Smith Kline French Laboratories, King of Prussia, Pennsylvania, USA.

Th.A.354
GENERATION OF MONOCLONAL ANTI-IDIOTYPIC ANTIBODIES AGAINST A NEUTRALIZING MONOCLONAL ANTIBODY (0.5) OF HIV-1. Maeda, Yosuke; Matsushita, S.; Murakami, T.; Koito, A.; Hattori, T.; Takatsuki, K.; Second Department of Internal Medicine, Kumamoto University Medical School, Kumamoto, Japan 860.

Th.A.355
T4A—SPECIFIC ANTIBODIES IMITATING THE GP120 BINDING SITE USED FOR VACCINATION AGAINST HIV. Sutor, Christian; Dreikhausen, U.; Schedel, I.; Dept. of Internal Medicine, Div. of Immunology, Medical Sch. of Hannover, F.R. of Germany.

Th.A.356
AUTOLOGOUS AND RECOMBINANT HIV-1 CORE PARTICLES PRODUCED IN DIFFERENT EUCARYOTIC EXPRESSION SYSTEMS AS A VACCINE CANDIDATE. Wagner, R., Fliessbach H., Deby G., v. Brunn A., Modrow S., Gelderblom H., Wolf H.; Max von Pettenkofer-Institut, Munchen, FRG.

Th.A.357
DENATURATION ABOLISHES CD4 MEDIATED IMMUNOSUPPRESSIVE ACTIVITY, BUT NOT ANTIGENICITY OF GP120. Manca F., Department of IMM S. Martino Hospital 16132 Geno Italy Habeshaw J A Dalgleish A G; Department of IMM S. Martino Hospital 16132 Genoa Italy Habeshaw J A Dalgleish A G Retrovirus Research Group Mrc Clinical Research Centre Harrow Middx HA1 3UJ England.

Th.A.358
THE IMMUNOGENICITY OF STREPTOCOCCUS PNEUMONIAE (PN) CONJUGATE VACCINES IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION. Lambert, John S., Insel, R., Weissbach, N., Keefer, M., Reid, J., Anderson, P.; University of Rochester Medical Center, Rochester, NY, USA.

Th.A.359
ADOPTIVE TRANSFER OF HUMAN IMMUNE MEMORY RESPONSES TO HU-PBL/SCID MICE: EFFECT OF DONOR AND RECIPIENT IMMUNIZATION. Markham, Richard B., Barber JP and Donnenberg AD.; Johns Hopkins Medical Institutions, Baltimore, MD.

Th.A.360
ASSESSMENT OF HIV 1-P18 ANTIGENS ON THE SURFACE OF HIV 1-INFECTED LYMPHOCYTES BY MEANS OF SCANNING ELECTRONMICROSCOPY. Dennin, Reinhard; Beyer, A.; Institut fur Medizinische Mikrobiologie, Medizinische Universitat; 2400 Lubeck, Federal Republic of Germany.

Gastrointestinal Manifestations

Th.B.361
CORTICOSTEROID THERAPY OF IDIOPATHIC ESOPHAGEAL ULCERS IN AIDS. Borcich, Anthony; Reka, S.; Winkler, W.P.; Kotler, D.P.; St. Luke's/Roosevelt Hospital Center, Columbia P & S, New York, NY, USA.

Th.B.362
RECURRENT ANOGENITAL WARTS AND HIV STATUS. Thomas, Gary; Geraci, A.; Lavigne, J.; Levy, M.; Laser Medical Associates.

Th.B.363
TREATMENT OF CHRONIC DIARRHEA WITH SACCHAROMUCES BOULARDII. Saint Marc, Thiery, Sellem, C., Rosselo, L., Touraine, J.L., Livrozet, J.M.; Hopital Edouard Herriot, Lyon, France.

Th.B.364
EFFICACY AND TOLERANCE OF SMS 201-995 (A SOMATOSTATIN ANALOGUE) IN HIV INFECTED PATIENTS WITH DIARRHEA. Mallolas, Jose; Miro, J.M.; Gatell, J.M.; Moreno, A.; Soriano, E.; Infectious Disease Unit, Hospital Clinic, Barcelona, (SPAIN).

Th.B.365
PRELIMINARY RESULTS OF VAPREOTIDE (A NEW SOMATOSTINE ANALOGUE) IN AIDS RELATED DIARRHEA. Girard, Pierre-Marie, Goldschmidt, E., Vittecoq, D., Massip, P., Meyohas, M-C., Kouslama, K.; INSERM U.13, Hopital Claude Bernard, Paris, France.

Th.B.366
JEJUNAL AUTONOMIC NEURONAL DEGENERATION IN HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION. Batman, Philip; Miller, A.*; Griffin, G.E.*; Departments of Histopathology and Communicable Diseases:, St. George's Hospital Medical School, London, UK.

Th.B.367
JEJUNAL BIOPSY IN HIV INFECTED PATIENTS. Elia, Celeste S.*, Madi, K.*, Trajman, A.*, Silva, C.F.*, Kotze, L.S.†, Barroso, P.F.*; *Federal University of Rio de Janeiro, Rio de Janeiro, Brazil; †Federal University of Parana, Curitiba, Brazil.

Th.B.368
DIARRHOEA IN ADVANCED HIV INFECTION ASSOCIATED WITH INCREASED SMALL INTESTINAL PERMEABILITY IN BOTH AFRICAN AND CAUCASIAN PATIENTS. Kapembwa, Moses*; Fleming, S*; Serwadda, D†; Goodgame, R†; Lucas, ‡; Sewankambo, N†; Griffin, G*.; *St. George's Hospital and ‡University College/Middlesex Middle Schools, London, UK, †Makere University, Kampala, Uganda.

Th.B.369
INTESTINAL INFLAMMATION ASSOCIATED WITH HIV INFECTION. Reka, Safak; Kotler, D.P.; St. Luke's/Roosevelt Hospital Center, Columbia P & S, New York, NY, USA.

Th.B.370
HELICOBACTER PYLORI INFECTION IN PATIENTS WITH AIDS OR ARC. Battan Ruggero, Palagiano A, Raviglione MC, Sabatini MT, Boyle J, Sayad K, Ottaviano L.; Cabrini Medical Center, New York, NY, USA.

Th.B.371
HELICOBACTER PYLORI INFECTION IN HIV+ PATIENTS. Bernal, Antonio; Rachal, L.; del Junco, G.; Piot, D,.; Salvato, P.; Park Plaza Hospital, Houston, Texas, U.S.A.

Th.B.372
INTESTINAL SPIROCHETOSIS OF HIV-INFECTED HOMOSEXUAL MALES. Kasbohrer, A.1; Schneider, Christiane2; Gelderblom, H.R.3; Arasteh, K.2; Heise, W.2; Grosse, G.2; Lage, M.2; Pauli, G.1; 1AIDS-Zentrum, 2Auguste-Viktoria-Hospital, 3Robert Koch-Institut, FRG.

Th.B.373
VIRAL GASTROINTESTINAL INFECTION IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION. Rolston, Kenneth, Rodriguez S.; The University of Texas M.D. Anderson Cancer Center, Houston, Texas USA.

Oral Manifestations

Th.B.374
SIALOCHEMISTRY IN HIV-ASSOCIATED SALIVARY GLAND DISEASE. Schiodt, Morten*, Atkinson, J.†, Greenspan, D.*, Fox, P.‡, Dodd, C.L.*; *Oral AIDS Center, University of California, San Francisco, CA, USA and University Hospital and Royal Dental College, Copenhagen, Denmark; †National Institute of Dental Research, Bethesda, MD, USA.

Th.B.375
RELIABILITY OF NEGATIVE STAINING EM FOR THE DETECTION OF EPSTEIN BARR VIRUS IN ORAL HAIRY LEUKOPLAKIA. Sugihara, K.*, Reichart, Peter A.†, Gelderblom, H.R.‡, et al.; *Kagoshima University Dental School, Kagoshima, Japan; †Free University, Dept. for Oral Surgery, Berlin, FRG; ‡Robert Koch Instutite of the Federal Health Office, Berlin, FRG.

Th.B.376
PREVALENCE OF HAIRY LEUKOPLAKIA BY CD4 COUNT LEVEL. Feigal, David W.*, Greenspan, D.†, Winkelstein, W.‡, Rutherford, G.||, Moss, A.W.‡, Greenspan, J.S.†; *University of California, San Diego; †University of California, San Francisco; ‡University of California, Berkeley; ||Department of Public Health, San Francisco, CA; USA.

Th.B.377
HAIRY LEUKOPLAKIA LIKE LESIONS IN PATIENTS WITHOUT HIV INFECTION. Epstein, Joel B.*; Sherlock, CS†; Greenspan, J.S.‡; *Cancer Control Agency of B.C., Vancouver, B.C., Vancouver General Hosp., Vancouver, B.C., Univ. of B.C., Vancouver, B.C., Canada, †St. Paul's Hosp., Vancouver, B.C., Univ. of B.C., Vancouver, B.C., Canada, ‡Univ. of California, San Francisco, CA, USA.

Th.B.378
MOLECULAR TYPING OF CANDIDA ALBICANS ISOLATED FROM ORAL LESIONS OF HIV-INFECTED INDIVIDUALS. Powderly, William, Robinson, K. and Keath, E.J.; VA Medical Center and Washington University, Division of Infectious Diseases, St. Louis, MO, USA.

Th.B.379
ORAL LESIONS IN CHILDREN WITH HIV INFECTION. PJ Leggott‡, MT Mastrucci+, L Macphail*, PS Weintrub†, CL Rumsey†, MJ Cowan† GB Scott+, JS Greenspan*; Oral AIDS Center, USCF*, Department of Pediatrics, USCF†, Department of Pediatrics, University of Miami, Florida+, and University of British Columbia, Canada‡.

Th.B.380
ORAL PATHOLOGY IS A GOOD PREDICTOR FOR HIV INFECTION IN HIGH RISK POPULATION. Casariego, Zulema*; Cahn, P.*; Perez, H.*; Casiro, A.*; Muchinik, G.†; Rickard, E.†; *Hal. Fernandez, Buenos Aires, Argentina; †HHEMA, Academia de Medicina, Buenos Aires, Argentina.

Th.B.381
ORAL MUCOSAL LYMPHOMAS IN AIDS PATIENTS. Raphael Martine!, Pallesen G.*, Chomette G.!, Audouin J.!!, Szpirglas H.!, Hamilton-Dutoit S.*, Lenoir G.‡; !Chu Pitie-Salpetriere, Paris, France, *University Institute of Pathology, Aarhus, Denmark, !!Hotel Dieu Hospital, Paris, France, ‡International Agency on Cancer Res.

Th.B.382
APHTHOUS ULCERS ASSOCIATED WITH HIV-DISEASE: RELATIONSHIP OF T4 AND T8 COUNTS TO TYPE OF ULCER. MacPahil, Laurie A.*, Greenspan, D.*, Feigal, D.W.†, Lennete, E.T.*, Dodd, C.*, Schiodt, M.*, Greenspan, J.S.*; *Oral AIDS Center, University of California, San Francisco; †University of California, San Diego; CA; USA.

Th.B.383
LONGITUDINAL OBSERVATION OF HIV-ASSOCIATED GINGIVITIS. Grassi, Markus, Hammerle, C., Staschek, I., Berthold, H., Lang, N.P.; University of Bern, School of Dental Medicine, Bern, Switzerland.

Th.B.384
FLUCONAZOLE IN MAINTENANCE THERAPY OF ORAL CANDIDIASIS IN HIV INFECTED ADULTS. Reynes, Jacques; Azay, J.; Montes, B.; Mallie, M.; Janbon, F.; Bertrand, A.; (Infectious Diseases Unit and Parasitological Laboratory), University of Montpellier, Montpellier, France.

Th.B.385
FLUCONAZOLE OR CLOTRIMAZOLE TROCHE FOR OROPHARYNGEAL CANDIDIASIS IN HIV-1 POSITIVE PATIENTS. Lichter, Saralyn; Palenicek, J.; Yamaguchi, E.; Chaisson, R.E.; Barbacci, M.; The Johns Hopkins University School of Medicine, Baltimore, MD, USA.

Nutritional Aspects

Th.B.386
THE ROLE OF TUMOR NECROSIS FACTOR (TNF) AND ALTERED METABOLIC RATE IN WEIGHT LOSS IN AIDS. Dworkin, Brad M., Seaton T., Wormser, G.; New York Medical College, Valhalla, NY, USA.

Th.B.387
SUPPLEMENTAL PARENTAL NUTRITION IN PATIENTS WITH AIDS AND PROTEIN-CALORIE MALNUTRITION. Cimoch, Paul J.; Friedberg, G.; Jackowski, J.; Reiter, W.M.; Center for Special Immunology Ft. Lauderdale, Florida, USA.

Dermatologic Manifestations

Th.B.388
DERMATOLOGICAL FINDINGS IN PATIENTS WITH ADVANCED HIV RELATED DISEASE. Manela-Azulay, M.; Cavalcanti, M.; Caneschi, J.; Ramos-Filho, C.; Perez, M.; Schechter, M.; Universidade Federal do Rio de Janeiro—Rio de Janeiro, Brazil.

Th.B.389
MUCOCUTANEOUS MANIFESTATIONS OF HIV IN CHILDREN AND THEIR CORRELATION WITH IMMUNOSUPPRESSION. Co, M., Sadick, N., Ravipati, M., Kaplan, E., Lim W., Pahwa, S.; North Shore University Hospital-Cornell University Medical College, Manhasset, N.Y.

Th.B.390
HYPERPIGMENTED ERYTHRODERMIA IN AIDS. Picard, Catherine*; Matheron, S.*; Salmon, D.*; Raphael, M.†; Crickx, B.*; Belaich, S.*; *Bichat-Claude-Bernard Hospital, Paris, France—†Pitie-Salpetriere Hospital, Paris, France.

Th.B.391
SEBORRHOEIC DERMATITIS (SD) AND PITYROSPORUM OVALE (PO) COLONISATION OF THE SKIN IN HIV(+) PATIENTS AND HIV(-) CONTROLS. Vandenbruaene, Marc; Colebunders, R.; Goeman, J.; Goilav, C.; Peeters, M.; De Vroey C. Institute of Tropical Medicine Antwerpen Belgium.

Pneumocystis Carinii *Pneumonia*

Th.B.392
IS PNEUMOCYSTIS CARINII (PC) TRANSMISSIBLE FROM AIDS TO OTHER PATIENTS: A CASE-CONTROL STUDY OF A CLUSTER OF PC PNEUMONIA IN RENAL TRANSPLANT RECIPIENTS. Chave, Jean-Philippe; David, S.; Wauters, J.-P.; Glauser, M.P.; Francioli, P.; Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland.

Th.B.393
DETECTION OF PNEUMOCYSTIS CARINII ANTIGEN IN BRONCHOALVEOLAR LAVAGE (BAL) BY DOT IMMUNOBINDING ASSAY (DIB). Contini, Carlo*; Cignarella L.*; Romani R.*; Ajassa C.*; Zamora C.†; Delia S.*; *Institute of Infectious Diseases, University La Sapienza, rome, Italy; †Depart. DE Biotechn. Inst. Pasteur, Paris, France.

Th.B.394
SYSTEMIC AND ALVEOLAR PRODUCTION OF INTERLEUKIN 6 IN HIV PATIENTS WITH PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Goujard, C., Delraissy, J.F., Wallon, C., Boue, F., Dormont, J., Galanaud, P.; Service de Medecine Interne-Inserm U 131-Hopital A. Beclere-Clamart-92141, France.

Th.B.395
AEROSOLIZED PENTAMIDINE VS. TRIMETHOPRIM/ SULFAMETHOXAZOLE FOR ACUTE PNEUMOCYSTIS CARINII PNEUMONIA: A RANDOMIZED DOUBLE BLIND TRIAL. Montgomery, A. Bruce*, Feigal, D.W.†, Edison, R.E.‡, Sattler, F.‡, Hopewell, P.*, Mason, G.||; *University of California, San Francisco; †University of California, San Diego; ‡University of Southern California; ||University of California, Los Angeles, CA; USA.

Th.B.396
CLINDAMYCIN/PRIMAQUINE VS TRIMETHOPRIM/ SULFAMETHOXAZOLE FOR PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS. Toma, Emil, Fournier, S., Morisset, R., Bolduc, P., Marechal, C.; Hotel-Dieu de Montreal and University of Montreal, Montreal, Quebec, Canada.

Th.B.397
EFFICACY OF CLINDAMYCIN/PRIMAQUINE (C/P) VS TRIMETHOPRIM SULFAMETHOXAZOLE (TMP/SMZ) IN ACUTE TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Ruf, B., Rohde, Iris, Pohle, H.D.; II. Department of Internal Medicine Rudolf Virchow University Hospital (Wedding), Berlin, FRG.

Th.B.398
EFLORNITHINE VERSUS CO-TRIMOXAZOLE IN THE TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA. Smith Don*; Smithson, J*; Harding, I†; Gazzard, B*; Nelson, M*.; *Westminster Hospital, London, England. †Merrell Dow Institute, Winnersh, UK.

Th.B.399
A PILOT STUDY OF PIRITREXIM (PTX) WITH LEUCOVORIN (LCV) FOR THE TREATMENT OF PNEUMOCYSTIS PNEUMONIA. Falloon, Judith*; Kovacs, J.*; Allegra, C.*; O'Neill, D.*; Tuazon, C.=; Frame, P.†; Dohn, M.†; Joseph, P.++; Feuerstein, I.*; LaFon, S.+; Rogers, M.+; Masur, H.*; *Nat'l. Inst. of Health, Bethesda, MD; +Burroughs-Wellcome Co, Research Triangle Pk, NC; =George Wash. U Med Ctr, Wash. DC; †Univ. Cinn. Med Ctr, Cincinnati OH; ++Merritt/Peralta Hosp., Oakland, CA, USA.

Th.B.400
EVALUATION OF PHARMACOKINETIC INTERACTIONS BETWEEN THE COMBINATION OF PRIMAQUINE PLUS CLINDAMYCIN AND ZIDOVUDINE (ZDV). Jones, David R. and Black, John R.; Indiana University School of Medicine, Indianapolis, Indiana USA.

Th.B.401
SUCCESSFUL OUT-PATIENT TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS. Falutz, Julian; Tsoukas, C; Sampalis, J; Grover S.; Montreal General Hospital, Montreal, Canada.

Th.B.402
PRONOSTIC VALUE OF COLLAGENIC MARKERS IN SEVERE PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Capella Fausto*, Guidet B.*, Farjanel J.†, Hartman D.†, Meyohas M.C.*, Offenstadt G.*; *Hop. Saint-Antoine, Paris; †Institut Pasteur and UA 244, Lyon, France.

Th.B.403
UNRELATED PARASITICAL AND CLINICAL DATA DURING EVOLUTION OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS PATIENTS. Roux, Patricia D.*, Parrot, A.†, Parquin, F.†, Denis, M.†, Akoun, G.†, Mayaud, C.†; *Laboratory of Parasitolo and †Chest Department, Tenon Hospital, Paris, France.

Th.B.404
CORRELATION OF CYST DENSITY WITH MORTALITY IN AIDS PATIENTS WITH PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Blumenfeld, Walter; Mayall, Brian; Griffiss, McLeod; University of California, San Francisco, CA, USA.

Th.B.405
CHANGING OUTCOME OF MECHANICALLY VENTILATED ACUTE RESPIRATORY FAILURE SECONDARY TO AIDS RELATED PCP. McGladrey, Janis; Ronco, J.; Russell, J.; Lawson, L.; Schechter, M.; Ruedy, J.; et al.; *St. Paul's Hospital, Vancouver, BC, Canada.

Th.B.406
A RANDOMIZED, PROSPECTIVE, CONTROLLED, AND COMPARATIVE TRIAL OF INHALED PENTAMIDINE FOR PRIMARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Chopard, Pierre; Hirschel, B.; Lazzarin, A.; The Swiss Group for Clinical Studies on AIDS. Division of Infectious Diseases, Geneva University Hospital, Geneva Switzerland and Ospedale L. Sacco, Milano Italy.

Th.B.407
RANDOMIZED TRIAL OF INTERMITTENT DAPSONE VERSUS AEROSOLIZED PENTAMIDINE FOR PRIMARY AND SECONDARY PROPHYLAXIS OF PNEUMOCYSTIT CARINII PNEUMONIA (PCP). Torres, Ramon; Thorn, M.; Newlands, J.; Ortiz, P.; Martin, M.; Chanin, E.; Altholz, J.; Thornton J.; St. Vincent's Hospital and Medicel Center, New York, N.Y., USA.

Th.B.408
AEROSOLIZED PENTAMIDINE IN THE PROPHYLAXIS OF PRIMARY AND SECONDARY PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Chan, Charles K., Rachlis, A., Walmsley, S.L., Varga, R., Bast, M.R., Phillips, A.M., Ferro, S.; Toronto Aerosolized Pentamidine Study Group, University of Toronto, Toronto, Ontario, Canada.

Th.B.409
AN OPEN, RANDOMISED, PROSPECTIVE COMPARISON OF ORAL DAPSONE AND NEBULISED PENTAMIDINE FOR PCP PROPHYLAXIS. Slavin, Monica; Hoy, J.F.; Mijch, A.M.; Sandland, A.M.; Stewart, K.; Lucas, C.R.; Fairfield Hospital, Melbourne, Australia.

Th.B.410
THE EFFECT OF INHALED PENTAMIDINE ON ALVEOLAR MACROPHAGE POPULATIONS. Johnson Margaret A, Squire S B, Condez A, Poulter L W; Royal Free Hospital and School of Medicine, London, England.

Th.B.411
THE SAFETY OF WEEKLY DAPSONE AND WEEKLY DAPSONE + PYRIMETHAMINE AS PNEUMOCYSTIS PROPHYLAXIS. Ogata-Arakaki, Debra*; Falloon, J.*; Lavelle, J.†; Byrne, A.†; Kovacs, J.*; Pierce, P.†; Davey, R.*; Polis, M.*; Lane, H.C.*; Zunich, K.*; Zurlo, J.*; Masur, H.*; *Clinical Center/NIAID, National Institutes of Health, Bethesda, Maryland, †Georgetown U. Med. Ctr., Washington, DC, USA.

Th.B.412
SULFAMETHOXAZOLE-TRIMETHOPRIM AS SECONDARY PROPHYLAXIS AGAINST PCP. Nielsen, Thyge L., Jensen, B.N., Nelsing, S., Pedersen, C., Orholm, M., Skinhoej, P., Mathiesen, L.R.; Department of Infectious Diseases, University Hospital, Hvidovre, Denmark. Department of Infectious Diseases, State University Hospital, Copenhagen, Denmark.

Th.B.413
ONCE DAILY TRIMETHOPRIM-SULFAMETHOXAZOLE AS A PROPHYLAXIS FOR PNEUMOCYSTIS CARINII PNEUMONIA. Kelly, Janine, Keyes, C.; Marte, C.; Wolbert, J.; Chieffe, R.; *Bellevue Hospital/Community Health Project, New York, NY, USA.

Th.B.414
TWICE WEEKLY DAPSONE-PYRIMETHAMINE FOR PREVENTING P. CARINII PNEUMONIA RELAPSES IN HIV INFECTED PATIENTS. Clotet, B.; Sirera, G.; Romeu, J.; Velasco, P.; Gimeno, JM.; Tor, J.; Infectious Diseases Unit. Hospital de Badalona Germans Trias i Pujol. Spain.

Th.B.415
AEROSOLISED PENTAMIDINE (AP). WHICH NEBULISER?. Thomas, S.; O'Doherty, M.; Page, C.; Bradbeer, C.; Nunan, T.; Bateman, N.; St. Thomas's Hospital, London SE1 7EH, UK.

Th.B.416
DISTRIBUTION OF PENTAMIDINE (PM) AFTER INTRAVENOUS AND INHALED APPLICATION IN AIDS-PATIENTS. Vohringer, Hans-F.; Arasteh, K.; Hardtmann, E.; Auguste-Viktoria-Hospital, Free University of Berlin, FRG.

Th.B.417
SCINTIGRAPHIC EVALUATION OF THE LUNG DELIVERY OF THREE NEBULIZERS USED FOR PENTAMIDINE INHALATION. Paycha, Frederic; Paris, France.

Th.B.418
AUTORADIOGRAPHIC EXAMINATION OF THE ORGAN DISTRIBUTION OF 14C-LABELLED PENTAMIDINE IN RATS AFTER I.V. AND INHALATIVE ADMINISTRATION. Wingen, Franz; Clinical Research Dpt., Rhone-Poulenc, Koln, FRG.

Th.B.419
RISK OF TB TRANSMISSION IN HIV INFECTED PATIENTS RECEIVING AEROSOLIZED PENTAMIDINE TREATMENT. Leoung, Gifford*; Schecter, G.*; Kandal, K.†; Freeman, E.‡; Corkery, K.*; Wardlaw, L.*; *University of California, San Francisco (SFGH), †Pacific Presbyterian Medical Center, ‡Ralph K. Davies Medical Center, San Francisco, California, USA.

Th.B.420
AEROSOLIZED PENTAMIDINE INDUCED BRONCHOSPASM (PIB): RELATION TO AIRWAY HYPERRESPONSIVENESS AND RESPONSE TO PREVENTATIVE THERAPY. Quieffin, Jean; Hunter, J.; Pare, P.; Schechter, M.; Ruedy, J.; Montaner, J.G.; St. Paul's Hospital, Vancouver, BC, Canada.

Th.B.421
BRONCHOCONSTRICTION INDUCED BY NEBULIZED PENTAMIDINE. SEVERITY, DURATION, AND REVERSIBILITY WITH TERBUTALINE. Leith, Timothy*; Wiggins, J.*; Gazzard, B.G.*; Collins, J.V.†; *Westminster and †Brompton Hospitals, London, England, U.K.

Th.B.422
DIABETES MELLITUS IN HIV+ PATIENTS POST-PNEUMOCYSTIS PNEUMONIA AND THE IMPACT OF AEROSOLIZED PENTAMIDINE. Waskin, Hetty*; Hardy WD†; McClain, N*; Fall H*; *Duke Medical Center, Durham North Carolina † UCLMedical Center, Los Angeles California USA.

Th.B.423
RADIOGRAPHIC MANIFESTATIONS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN PATIENTS RECEIVING AEROSOLIZED PENTAMIDINE (AP) FOR SECONDARY PROPHYLAXIS. Duguay, Donna; Falutz, J; Fanning, M; Fong, IW; Garber, G; Gervais, A; Gilmore, N; Hyland, R; Lawson, L; Louie, T; MacFadden, DK; Martel, AY; Montaner, JSG; Schlech, W; Rachlis, A; Renzi, P; Simor, AE; Taylor, G.; Canada. Montreal General Hospital.

Th.B.424
ULTRASOUND DIAGNOSIS OF DISSEMINATED PNEUMOCYSTIS CARINII. Phillips, Anne, Vellend H., Rachlis A., Gopinath N., Cameron, R., Wilson S.; University of Toronto, Toronto, Ontario, CANADA.

Th.B.425
UNUSUAL MANIFESTATIONS OF PNEUMOCYSTIS CARINII INFECTION IN HIV POSITIVE SUBJECTS ON PROLONGED INHALED PENTAMIDINE PROPHYLAXIS. Scheibel, Steven; Valenti, W.; Williams, C.; Community Health Network, Rochester, New York, 14620, U.S.A.

Th.B.426
ATYPICAL PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN PATIENTS RECEIVING INHALED PENTAMIDINE PROPHYLAXIS (IPP). Edelstein, Howard, McCabe R.E.; University of California School of Medicine, Davis, CA and Veterans Administration Medical Center, Martinez, CA, USA.

Th.B.427
CLINICAL DATA OF DISSEMINATED PNEUMOCYSTIS CARINII INFECTION (DPCI) IN 6 AIDS PATIENTS RECEIVING SECONDARY PROPHYLAXIS WITH AEROSOLIZED PENTAMIDINE (AP). Denis, Michel F.*, Guidet, B.†, Lebas, J.‡; *Tenon Hospital, Paris, France; ‡Saint-Antoione Hospital, Paris, France.

Th.B.428
EXTRAPULMONARY PNEUMOCYSTIS CARINII IN PATIENTS RECEIVING AEROSOLIZED PENTAMIDINE. Noskin Gary, Murphy RL, Finn WG, Timins M.; Northwestern University Medical School Chicago, IL.

Th.B.429
DISSEMINATED PNEUMOCYSTIS CARINII INFECTION IN PATIENTS WITH AIDS. Feuerstein, Irwin; Falloon, J.; Polis, M.; Pluda, J.; O'Neill, D.; Travis, W.; Masur, H.; National Institutes of Health, Bethesda, MD, USA.

Cytomegalovirus

Th.B.430
IS CMV VIREMIA PREDICTIVE OF SUBSEQUENT CMV RETINITIS?. Stewart, Karen; Hayes, K.; Stent, J.; : Mijch, A.M.; McLean, H.; Hoy, J.F.; Sandland, A.M.; Lucas, C.R.; Fairfield Hospital, Melbourne, Australia.

Th.B.431
RELATIONSHIP BETWEEN CMV CULTURE POSITIVITY AND CIRCULATING CD4 COUNT IN PATIENTS WITH HIV INFECTION. Zurlo, John; O'Neill, D.; Polis, M.; Manischewitz, J.; Davey, R.; Falloon, J.; Kovacs, J.; Zunich, K.; Yarchoan, R.; Lane, H.C.; Masur, H.; Clinical Center/NIAID/NCI, National Institutes of Health, Bethesda, MD, USA.

Th.B.432
GANCICLOVIR (GCV) IN AIDS PATIENTS WITH IMMEDIATELY SIGHT-THREATENING CMV RETINITIS (ISTCR): INITIAL SUMMARY OF TREATMENT IND DATA. Feinberg, Judith*; Katz, D.*; Mastre, B.†; DeArmond, B.†; *Division of AIDS, National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, USA; †Syntex Research, Palo Alto, California, USA.

Th.B.433
THREE TIMES A WEEK MAINTENANCE GANCICLOVIR TO PREVENT RELAPSE OF CMV RETINITIS IN AIDS. Jennens, Ian; Stewart, K.; McLean, H.; Slavin, M.; Sandland, A.M.; Mijch, A.M.; Hoy, J.F.; Lucas, C.R.; Fairfield Hospital, Melbourne, Australia.

Th.B.434
INTERMITTENT AND AMBULATORY TREATMENT OF CMV RETINITIS WITH FOSCARNET IN AIDS. Dohin Elisabeth, Katlama Christine, Cochereau Isabelle, Ingrand Didier, Le Hoang Phuc, Gentilini Marc; Hopital Pitit-Salpetriere, Paris, France.

Th.B.435
MAINTENANCE THERAPY WITH FOSCARNET IN PREVENTION OF CYTOMEGALOVIRUS (CMV) RETINITIS IN AIDS PATIENTS. Katlama Christine, Dohin E., Robinet M., Caumes E., Le Hoang P., Gentilini M.; Hopital Pitie-Salpetriere, Paris, France.

Th.B.436
AN OPEN STUDY OF FOSCARNET TREATMENT OF CYTOMEGALOVIRUS RETINITIS IN AIDS PATIENTS. Leonard, Lonnie; Lippe, M.*; Follansbee, S.*; Drennan, D.*; Karol, C.†; *Davies Medical Center, San Francisco, CA, USA, †Astra Pharmaceutical Products, Inc., Westborough, MA, USA.

Th.B.437
TREATMENT OF GANCICLOVIR (GCV) RESISTANT CYTOMEGALOVIRUS (CMV) RETINITIS WITH FOSCARNET (PFA). Parenti, David M.; Drew, W.L.; Feinberg, J.E.; O'Donnell, J.J.; Whitmore, P.V.; Miner, R.; Jacobson, M.A.; The George Washington Univ. Med. Ctr., Wash., DC; UCSF and San Francisco General Hospital, Mt. Zion Hospital, San Francisco, CA; NIAID AIDS Clinical Trials Group, Bethesda, MD, USA.

Th.B.438
ANTI-CMV ACTIVITY OF FOSCARNET IN A RANDOMIZED CONTROLLED CLINICAL TRIAL FOR THE TREATMENT OF NON-SIGHT THREATENING CMV RETINITIS. Manischewitz, Jody*; Golding, H.*; Baird, B.†; de Smet, M.‡; Polis, M.†; *FDA, Bethesda, MD, USA; †Clinical Center and ‡NEI, NIH, Bethesda, MD, USA.

Th.B.439
EFFECTS OF FOSCARNET ON CALCIUM HOMEOSTASIS IN MAN. Nauss-Karol, Cheryl*Redding,K†Sagaties, M.*, Gary, W.*, Ussery,H.,E.†; *Astra Pharmaceutical Products, Inc. Westborough, MA, USA. †Foscarnet Research Project, Park Plaza Hospital, Houston, TX, USA.

Th.B.440
GENITAL ULCERATIONS (GU) OCCURING DURING FOSCARNET (F) THERAPY. Picard, C.*; Salmon, D.*; Fegueux, S.*; Longuet, P.*; Sauvage, C.*; Gilquin, J.†; Desmoulins, T.‡; *Hopital Bichat-Claude Berrnard, † Hopital Broussais,‡Lab. Astra, Paris, France.

Th.B.441
SUPPRESSION OF CMV RETINITIS WITH HIGH DOSE INTRAVENOUS (IV) ACYCLOVIR (ACV). Sha, Beverly, Benson, C., Deutsch, T., Pottage, J., Urbanski, P., Kessler, H.; Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL, USA.

Th.B.442
HUMAN MONOCLONAL ANTIBODY TO CYTOMEGALOVIRUS (TI-23): PHARMACOKINETICS AND TOXICITY STUDY IN HIV SEROPOSITIVE PATIENTS. Petersen, Eskild*; Kaplan, C.*; Fish, D.*; Hersh, E.*; Grayson, J.*; Gray, J*; Masuho, Y.†; *University of Arizona, Tucson, Arizona, USA, †Teijin Limited, Tokyo, Japan.

Th.B.443
GASTROINTESTINAL CMV- MANIFESTATIONS IN AIDS. Walter Heise, P. Mostertz, K. Arasteh, J. Skorde, G. Grosse, M. Lage; Auguste-Viktoria-Krankenhaus, West Berlin, West Germany Rubensstr. 125, D-1000 Berlin 41.

Th.B.444
CMV ENCEPHALITIS IN AIDS PATIENTS: FREQUENCY AND SIGNIFICANCE OF DIAGNOSTIC PROCEDURES! RESULTS FROM A CLINICO PATHOLOGICAL STUDY. Habicht, Sabine*, Jautzke, B.†, Iglesias J.R.†,Schurmann, D.* Pohle, H.D.*, Ruf, B.*; II. Department of Internal Medicine*, Pathology† and Neuropathology‡, Rudolf Virchow University Hospital.

Th.B.445
BRONCHOSCOPY CULTURES FOR THE DIAGNOSIS OF CYTOMEGALOVIRUS (CMV) PNEUMONIA. Nichols, Larry, Klatt, E.C., Appleman, M.D., DeGirolami, P.C., Balogh, K.; LAC-Univ. of Southern California Medical Center, Los Angeles, CA; New England Deaconess Hospital, Boston, MA.

Other Viral Opportunistic Infections

Th.B.446
EVOLUTION OF FOSCARNET AND ACYCLOVIR RESISTANT HERPES SIMPLEX INFECTION IN RESPONSE TO THERAPY. Doherty, Richard*; Hayes, K†; Birch, C†.; *Macfarlane Burnet Centre for Medical Research, Fairfield Hospital; †Department of Virology, Fairfield Hospital, Victoria, Australia.

Th.B.447
FOSCARNET (PFA) INDUCTION AND MAINTENANCE THERAPY FOR ACYCLOVIR-RESISTANT (ACV-R) HERPES SIMPLEX (HSV) INFECTIONS IN AIDS. Tan, Clinson*; Hardy, D*; Chafey S*; Karol, C†.; *UCLA School of Medicine, Los Angeles, CA, †Astra Pharmaceutical Products, Westborough, Massachusetts, USA.

Th.B.448
HERPES ZOSTER AND HIV INFECTION IN RWANDA. Harelimana Fidele and Bugingo Godefroid; National University of Rwanda, Butare, Rwanda.

Th.B.449
CLINICAL AND EPIDEMIOLOGICAL CONSIDERATIONS ON 31 CASES OF PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY (PML) IN AIDS. Galli, M.; Vago, L.*; Rizzardini, Giuliano†; Coen, M.†; Isabella, L.†; Albarello, V.; Castagna, A.; Costanzi, G.*; Clinic of Infectious Diseases, *V Chair of Pathology, †University of Milan; L. Sacco H.

Th.B.450
PERSISTENCE OF POLYOMAVIRUS INFECTION IN BRAIN TISSUE OF AIDS PATIENTS DETECTED BY DNA HYBRIDIZATION. Ingrand D.*, Moret H.*, Sazdovitch V.†, Agut H.*, Huraux J-M.*; *Laboratoire de Virologie du Cervi, Hopital de la Pitie, France. †Laboratoire de Neuropathologie, Hopital de la Salpetriere, France.

Th.B.451
NATURALLY ACQUIRED ANTIBODY TO HEPATITIS B ANTIGEN IN HIV INFECTED PATIENTS. Vandercam B, Omar M, Mardon J, Cornu C, Zech F, Shawsky S, Lamy M.; Departments of Internal Medicine and Virology Cliniques Universitaires St-Luc, 1200 Brussels—Belgium.

Th.B.452
SEROPREVALENCE OF HEPATITIS C VIRUS ANTIBODIES IN HIV EUROPEAN SEROPOSITIVE PATIENTS. Ranger S, Weinbreck Pierre, Loustaud V, Mounier M, Delpeyroux C, Denis F.; Department of Bacteriology-Virology and Department of Internal Medicine, CHU Dupuytren, Limoges, France.

Th.B.453
THE ROLE OF HEPATITIS C (HCV) AND HIV INFECTIONS IN THE CHRONIC LIVER DISEASE OF HEMOPHILIACS. Hatzakis, Angelos, Yannitsiotis, A., Polychronaki, H., Karafoulidou, A., Gialeraki, A., Katsouyanni, K., Mandalaki, T; Laikon General Hospital and Athens University Medical School, Athens, Greece.

Cryptococcus

Th.B.454
RELATION BETWEEN DECREASING SERIC CD4 LYMPHOCYTES COUNT AND OUTCOME OF CRYPTOCOCCOSIS IN AIDS PATIENTS: A BASIS FOR A NEW DIAGNOSIS STRATEGY. Lecomte, Isabelle M.*; Meyohas, M.†, De Sa M.†; *Tenon Hospital, Paris; †Saint-Antoine Hospital, Rothschild Hospital, Paris; France.

Th.B.455
PULMONARY CRYPTOCOCCOSIS IN AIDS PATIENTS. Boucot, Isabelle*; Rous, P.*; Poirot, J.L.†; C.I.S.I.H. Est Parisien*, *Tenon Hospital, †Saint Antoine Hospital, Paris, France.

Th.B.456
EFFECT OF PRONASE TREATMENT ON CRYPTOCOCCAL ANTIGEN TESTS ON SPECIMENS FROM AIDS PATIENTS. Noble, Anita*; Hamilton, J.R.*; Stevens, D.A.*,†; Denning, D.W.*,†; *Santa Clara Vly. Med. Ctr., San Jose, CA.; †Stanford Univ., Stanford, CA.; Inst. for Med. Research, San Jose, CA., USA.

Th.B.457
THE SIGNIFICANCE OF ISOLATED POSITIVE CEREBROSPINAL FLUID (CSF) CRYPTOCOCCAL ANTIGEN TITERS IN HIV-INFECTED PATIENTS. Gurtman, Alejandra; Masci, J.; Pierone, J; Nicholas, P.; Mt. Sinai Services, Elmhurst Hospital Center, Elmhurst, NY, USA.

Th.B.458
AIDS-RELATED CRYPTOCOCCOSIS IN RWANDA, EPIDEMIOLOGICAL FEATURES. Bogaerts, J.*, Taelman, H*; Abdel Aziz, M*; Kagame, A*; Batungwanayo, J.** Msllati, P.†; Swinne, D.‡; Deryoey, C.‡; *Departments of Microbiology, Internal Medicine, Centre Hospitalier de Kigali (CHK), Rwanda †INSERM U. 330, Bordeaux, France, ‡Institute of Tropical Medicine, Antwerp, Belgium.

Th.B.459
INTRAVENOUS AND ORAL FLUCONAZOLE IN THE TREATMENT OF ACUTE CRYPTOCOCCAL MENINGITIS. V. Sanjana, H. Cortes, M. Davidson, M. Mullen, D. Boyle, M. Raviglione.; Cabrini Medical Center, NYC, N.Y., U.S.A.

Th.B.460
FLUCONAZOLE (FLU): A FIRST-LINE DRUG FOR CRYPTOCOCCOSIS (C) IN AIDS. Marchou, Bruno*; Pascal, C*; Carles, M†; Reynes, J†; *Hop Purpan, Toulouse, †Hop Archet, Nice, †Hop Gui Chauliac, Montpellier, France.

Th.B.461
LACK OF SURVIVAL BENEFIT AND FREQUENT NEUROLOGIC COMPLICATIONS OF INTRATHECAL AMPHOTERICIN B FOR CRYPTOCOCCAL MENINGITIS. Holtom, Paul D.; Leal, M.; Riley, K.; Larsen, R.; University of Southern California, Los Angeles, CA, USA.

Other Opportunistic Fungal Infections

Th.B.462
THE INCIDENCE OF COLONIZATION AND INVASIVE DISEASE IN A POPULATION OF AIDS PATIENTS WITH ASPERGILLUS SPECIES. Pursell, K., Paredes, J.; Gold, J.; Carrow, M.; Armstrong, D.; Memorial Sloan-Kettering Cancer Center (MSKCC), New York, N.Y., USA.

Th.B.463
ASPERGILLUS INFECTION IN AIDS. Just-Nuebling, G.; Helm, E.B.*; Laubenberger, C.*; Falk, S.†; Keul, H.G.†; Huebner, K.†; Grafin Vitzhum, H.†; Wolki, U.†; Schlote, W.†; Stille, W.*; *Zentrum der Inneren Medizin; †Senckenbergisches Zentrum der Pathologie; †Edinger Institut, Johann Wolfgang Goethe Universitat, Theodor-Stern-Kai 7, 6000 Frankfurt, FRG.

Th.B.464
PULMONARY ASPERGILLOSIS IN AIDS. PATTERNS OF DISEASE, PREDISPOSING FACTORS AND OUTCOME IN 12 PATIENTS. Denning, David W.*; Follansbee, S.†; Scolaro, M.‡; Norris, S.+; Edelstein, H.++; Stevens, D.A.*.; *Sta. Clara Val. Med. Cntr. (Stanford Univ), San Jose CA; †Davies Med. Cntr., San Francisco ‡St. Vincent Med. Cntr., Los Angeles, CA; +Community Hosp.; Indianapolis, IN; ++Veterans Admin. Hosp., Martinez, CA.

Th.B.465
PROSPECTIVE COMPARATIVE STUDY OF GENTIAN VIOLET, KETOCONZAOLE AND NYSTATINE TO TREAT ORAL AND OESOPHAGEAL CANDIDIASIS IN AIDS PATIENTS. Nyst, Michel 1; Perriens, J. 1,2,3; Luskaumunu, K. 3; Kapita, B. 3; Piot, P. 4; 1. Project SIDA; 2. Belgian-Zairian Cooperation; 3. Mama Yemo Hospital, Kinshasa, Zaire; 4. I.T.M.; Antwerp, Belgium.

Th.B.466
FLUCONAZOLE PREVENTIVE THERAPY FOR CANDIDA ESOPHAGITIS IN AIDS. Lavilla, P.; Gil, A.; Valencia, M.E.; Pintado, V.; Dupla, J.M.L.; Puig, J.G.; Hospital La Paz, Universidad Autonoma, Madrid, Spain.

Th.B.467
TREATMENT OF ESOPHAGEAL CANDIDIASIS (EC) WITH FLUCONAZOLE: A PROSPECTIVE STUDY. Urbain, Daniel†; De Wit, S.*; Rahir, E.; Clumeck, N.*; Division of *Infectious Diseases; †Gastroenterology, St. Pierre Univ. Hospital, Brussels, Belgium.

Th.B.468
FLUCONAZOLE RESISTANCE DURING SUPPRESSIVE THERAPY OF AIDS-RELATED THRUSH AND ESOPHAGITIS CAUSED BY CANDIDA ALBICANS. Fulton, Patricia*; Phillips,P.; University of British Columbia, Vancouver, BC, Canada.

Th.B.469
COCCIDIOIDOMYCOSIS DURING HIV INFECTION. A CONTINUING PROSPECTIVE STUDY. Ampel, Neil M.; Dols, C.L.; Galgiani, J.N.; Tucson Veterans Affairs Medical Center and the University of Arizona College of Medicine, Tucson, AZ 85723, USA.

Th.B.470
EPIDEMIOLOGY AND IMMUNOLOGIC CHARACTERISTICS OF SYMPTOMATIC COCCIDIOIDOMYCOSIS IN PATIENT WITH HIV/AIDS. Cone, Lawrence, Woodard, D., Fiala, M., Christopher, S., Sneider, R.; Eisenhower Medical Center, Rancho Mirage, CA, USA.

Th.B.471
A HIGHER THEN EXPECTED FREQUENCY OF HISTOPLASMOSIS: IMPORTANCE OF ROUTINE OBTAINTION OF BLOOD CULTURES FOR FUNGI. Peixoto, Carlos M., Caiuby, J.M., Schechter, M., Assis, T.L.; AIDS Program, Federal University of Rio De Janeiro, Rio de Janeiro, Brazil.

Th.B.472
AMPHOTERICIN B IN THE TREATMENT AND PREVENTION OF AIDS: SELECTIVE REDUCTION OF CYTOTOXICITY BY COMPLEXING TO LIPIDS. Pontani, D.R., Wolf, B., Zuberbuehler, D., Bryant, P., Plescia, O.J., Schaffner, C., Shahied, S.I; New Jersey Department of Health, Trenton, NJ, USA, Waksman Institute, Piscataway, NJ, USA.

Toxoplasmosis

Th.B.473
TOXOPLASMOSIS IN SPANISH AIDS PATIENTS: A MULTICENTER RETROSPECTIVE STUDY. Bolao, Ferran; Podzamczer, D.; *Miro, JM.; †Sirera, G.; ‡Cosin, J. Gudiol, F.; Hospitales Bellvitge, *Clinic and ‡Badalona, Barcelona, and ‡Hospital Gregorio Maranon, Madrid, Spain.

Th.B.474
ISOLATION OF TOXOPLASMA GONDII IN LYMPH NODES OF PATIENTS WITH HIV INFECTION AND GENERALIZED LYMPHADENOPATHY. L. De La Rubia, J. Fernandez Martin, J.J. Vazquez, C. Gamallo, F.J. Barbado, J.A. De Diego.; La Paz Hospital & Parasitology Dpt. U.A.M. Madrid. Spain.

Th.B.475
CEREBRAL TOXOPLASMOSIS IN AIDS PATIENTS: ACCURACY OF PRESUMPTIVE DIAGNOSTIC CRITERIA. Antonucci, Giorgio*; Antonelli, L.*; Armignacco, O.*; Galgani, S.*; Grillo, L.R.†; Tozzi, V.*; *L. Spallanzani Hosp. for Infectious Diseases, Rome, Italy; †San Camillo Hosp., Rome, Italy.

Th.B.476
PREVALENCE OF TOXOPLASMOSIS IN 365 AIDS AND ARC PATIENTS BEFORE AND DURING ZIDOVUDINE TREATMENT. Matheron, S*; Dourno,E*; Garakhanian,S*; Leport,C*; Detruchis,P*; Gaudebout,C*; * ZDV Claude Bernard Study Group, Paris.; * Hopital Bichat-Claude Bernard, Paris, France.

Th.B.477
COTRIMOXAZOLE TREATMENT OF TOXOPLASMA ENCEPHALITIS IN AIDS PATIENTS. Canessa, Andrea, Del Bono, V., De Leo, P., Pagano, G., Piersantelli, N.*, Terragna, A.; Department of Infectious Diseases, University of Genoa, Genoa, Italy, *Department of Infectious Diseases, Ospedale Galliera, Genoa, Italy.

Th.B.478
TREATMENT OF BRAIN TOXOPLASMOSIS BY FANSIDAR (R). Paulic P, Pestre P, Bonnet E, Gasquet J, Prodhome C, Gallais H.; Infectious disease unit Marseille France.

Th.B.479
FAILURE OF DOXYCYCLINE IN THE TREATMENT OF CEREBRAL TOXOPLASMOSIS. Turett, Glenn; Pierone, G.; Masci J.; Nicholas, P.; Mt. Sinai Services, Elmhurst Hospital Center, Elmhurst, N.Y., USA.

Th.B.480
SULPHADIAZINE DESENSITISATION IN PATIENTS WITH AIDS AND CEREBRAL TOXOPLASMOSIS. Tenant-Flowers, M.*; Boyle, M.*; Carey, D.‡; Marriott, D.‡; Cooper, D.A.*; Penny, R.*; *Department of Immunology, †Department of Pharmacology, ‡Department of Microbiology, St. Vincent's Hospital, Sydney, NSW, Australia.

Th.B.481
RELATION BETWEEN DECREASING SERIC CD4 LYMPHOCYTE COUNT AND OUTCOME OF TOXOPLASMOSIS IN AIDS PATIENTS: A BASIS FOR PRIMARY PROPHYLAXIS. Eliaszewicz, Murielle M.*, Lecomte, I.†, De Sa, M.‡; *Saint-Antoione Hospital, Paris; †Tenon Hospital, Paris; ‡Rothschild Hospital, Paris; France.

Th.B.482
TRIMETHOPRIM-SULFAMETHOXAZOLE IN THE PREVENTION OF CEREBRAL TOXOPLASMOSIS. Nicholas, Peter; Pierone, G.; Lin, J.; Gertman, A.; Schechter, C.; Masci, J.; Mount Sinai Services, Elmhurst Hospital Center, Elmhurst, New York, USA.

Th.B.483
INTERMITTENT MAINTENANCE THERAPY FOR TOXOPLASMIC ENCEPHALITIS (TE) IN AIDS PATIENTS. Gonzalez-Clemente, J.M.; Miro, Josep Maria; Pedrol, E.; Gatell, J.M.; Guelar, A.; Valls, M.E.; Infectious Diseases and Microbiology Units. Hospital Clinic. Barcelona, Spain.

Th.B.484
PREVENTION OF TOXOPLASMA ACTIVATION AMONG IMMUNOCOMPROMISED PATIENTS; A DECISION ANALYSIS. Rose, David N.; Mount Sinai School of Medicine, New York, NY, USA.

Tuberculosis

Th.B.485
A RETROSPECTIVE COHORT STUDY OF THE INCIDENCE OF TUBERCULOSIS (TB) AMONG CHILD-BEARING WOMEN WITH HIV INFECTION IN KINSHASA, ZAIRE. Badi, N.*; Braun, Miles†; Ryder, R.*; Nsa, W.*; Willame, J.‡; Kaboto, M.‡; Heyward, W.†; *Project SIDA, Kinshasa, Zaire; †CDC, Atlanta, USA; ‡Bureau National de la Tuberculose, Kinshasa, Zaire.

Th.B.486
COHORT STUDY OF HIV INFECTED TUBERCULOSIS PATIENTS, NAIROBI, KENYA: DATA AT PRESENTATION AND MORTALITY. Nunn Paul, Wasunna K, Kwanyah G, Gathua S, Brindle R, Omwega M, Were J, McAdam K, Elliott A.; HIV/TB Project, Kenya Medical Research Institute, Nairobi, Kenya and London School of Hygiene & Tropical Medicine, London, U.K.

Th.B.487
A PROSPECTIVE STUDY OF PULMONARY TUBERCULOSIS AND HIV INFECTION IN INTRAVENOUS DRUG ABUSERS (IDA'S) IN DETOXIFICATION. Muga, R; Tor, J; Contijoch, Cristina; Villanueva, C; Manterola, JM; Foz, M.; Service of Internal Medicine. Hospital Germans Trias i Pujol. Badalona, Barcelona. Spain.

Th.B.488
TUBERCULOSIS AMONG HIV-INFECTED INDIVIDUALS—DIFFERENT PATTERNS IN BUENOS AIRES, ARGENTINA AND VANCOUVER, B.C. CANADA. Gonzalez Montaner, Pablo; Montaner, J.S.; Blackie, S.; Musella, R.; Vendal, S.; Benetucci, J.; St. Paul's Hospital, Vancouver, BC, Canada.

Th.B.489
A STUDY OF HIV INFECTION IN ASSOCIATION WITH TUBERCULOSIS IN INFECTIOUS DISEASES HOSPITAL (IDH) NAIROBI. Kibuga, D.; Infectious Disease Hospital Nairobi, Kenya.

Th.B.490
HIV-1 INFECTION IN ADULT TUBERCULOSIS PATIENTS IN CITE SOLEIL, HAITI. Cermont HC*, Chaisson RE†, Davis H*, Boulos R*, Holt E‡, Halsey NA†, Ruff AJ‡, Coberly J‡, Boulos C*.; Centers for Development and Health, Cite Soleil, Haiti, ‡Johns Hopkins University, Baltimore, MD, USA.

Th.B.491
TUBERCULOSIS AND AIDS IN A MEXICAN HOSPITAL. Romo Javier, Salido Francisco, Jessurum Jose*, Higuera Francisco.; Hospital General de Mexico SS. Servicio de Infectologia, Servicio de Patologia. Mexico, Distrito Federal, Mexico.

Th.B.492
AIDS AND TUBERCULOSIS: ENCOUNTER BETWEEN TWO EPIDEMICS IN A LATIN AMERICAN COUNTRY. Garcia, M.L., Valdespino, J.L., Salcedo Arturo, Mora, J.L., Bravo, E., Sepulveda, J.; General Directorate of Epidemiology, Ministry of Health, Mexico.

Th.B.493
COMPARISON OF TUBERCULOSIS IN HIV-POSITIVE AND HIV-NEGATIVE INPATIENTS IN RIO DE JANEIRO, BRAZIL. Quinhoes, Eleonora P.*; Morais de Sa, C.A.*; Ferreira Ramos Filho, C.†; Weniger, B.G.‡; Rodrigues, L.G.M.‖; Heyward, W.L.‡; *Hospital Gaffree e Guinle, Universidade do Rio de Janeiro; †Hospital Clementino Fraga Filho, Universidade Federal do Rio de Janeiro; ‡Centers for Disease Control, Atlanta; ‖Ministry of Health, Brasilia.

Th.B.494
ASSOCIATION OF TUBERCULOSIS AND HIV INFECTION IN ZIMBABWE. Mahari, Maxwell, Legg, W., Houston, S., Ray, C., Chiguye, W., Latif, A., Mashingaidze, A., Neill, P., Pozniak, A., Mengeranwa, L. Emmanual, J.; City Health, Harare, Zimbabwe.

Th.B.495
HIV SEROPREVALENCE IN TUBERCULOSIS PATIENTS IN BAHIA, BRAZIL. Santos, Regina, M.B.*; Cruz, A.*; Ribeiro, T.T.*; Badaro, R.*; Johnson, W.D., Jr.†; *Federal Univ. of Bahia, Salvador, Brazil; †Cornell Univ. of Medical College, NY.

Th.B.496
HOUSEHOLD CONTACTS (HC) OF HIV(+) PATIENTS IN ZAIRE WITH ACTIVE PULMONARY TUBERCULOSIS (PTB) ARE NOT AT INCREASED RISK OF SECONDARY M. TUBERCULOSIS (MTB) INFECTION. Baende, Ekungola*; Lelo, U.*; Kaboto, M.†; Willame, J.‡; Ngamboli, K.*; Ryder, R.*/‡; *Projet SIDA, Kinshasa, Zaire; †CDT, Kinshasa; ‡CDC, Adanta, GA, USA.

Th.B.497
TUBERCULOUS ABSCESSES IN AIDS. Cerigo, Helene S.; Brau, N.; Simberkoff, M.; Flomenberg, P.; New York Veterans Administration Medical Center (NYVA); New York University Medical Center, New York, NY, USA.

Th.B.498
MYCOBACTERIAL LYMPH NODE INFECTION AND AIDS IN SAO PAULO, BRAZIL. Chaves, Ricardo Lima*; Nascimento, M.F.A.†; Batista, L.‡; Albano, A.‡; Martins, M.C.‡; Maresca, A.F.‖; *Hospital Brigadeiro, Sao Paulo; †Hospital Emilio Ribas, Sao Paulo; ‡Instituto Adolfo Lutz, Sao Paulo; ‖Centro de Ref. e Treinamento AIDS, Sao Paulo, Brazil.

Th.B.499
SUSCEPTIBLE M. TUBERCULOSIS REFRACTORY TO STANDARD THERAPY WITH PROGRESSION TO CENTRAL NERVOUS SYSTEM INVOLVEMENT. Davis, Iris; Acosta, A.; Lee, S.; The New York Hospital-Cornell Medical Center, New York, NY, USA.

Th.B.500
CENTRAL NERVOUS SYSTEM TUBERCULOSIS IN AIDS. Laguna, Fernando; Polo, R; Saenz, E; Adrados, M; Puente, S; Gonzalez, JM; Centro de Investigacion Clinica, Madrid, Spain.

Th.B.501
BLOOD CULTURE VALUE IN THE DIAGNOSTIC OF THE DISSEMINATED TUBERCULOSIS IN AIDS PATIENTS. de Bouza, Jorge, Di Lonardo, M., Benetucci, J., Gonzalez Montaner, J., Abbate, E., Corti, M., Compagnucci, M., Ortega, G. Astarloa, L.; Hospital of Infectious Diseases Fransisco J. Muniz, Buenos Aires, Argentina.

Th.B.502
INTRACRANIAL TUBERCULOMAS IN PATIENTS WITH AIDS. Abos, J.; Graus, F.; Miro, J.M.(); Mallolas, J.(); Trilla, A.(); Mercader, J.M.; Tolosa, E.; Neurology and ()Infectious Disease Unit Hospital Clinic, University of Barcelona, Barcelona, Spain.

Th.B.503
MYCOBACTERIA ISOLATIONS FROM STOOLS AND INTESTINAL BIOPSIES FROM HIV (+) PATIENTS AND CONTROLS IN KINSHASA, ZAIRE. Colebunders Robert*; Nembunzu M†; Portaels F‡; Lebughe I*; Lusakumunu K‡; Piot P‡.; *Projet SIDA and †Mama Yemo Hospital, Kinshasa, Zaire; ‡Institute of Tropical Medicine, Antwerp, Belgium.

Th.B.504
COHORT STUDY OF HIV INFECTED TUBERCULOSIS PATIENTS, NAIROBI, KENYA: BASELINE RADIOLOGICAL FEATURES. Gathua, Samuel; Nunn, P.; Wasunna, K.; Kwanyah, G.; Omwega, M.; Were, J.; McAdam, K.; HIV/TB Project—Kenya medical Research Institute, Nairobi, Kenya and London School of Hygiene and Tropical Medicine, London, England.

Th.B.505
CHEST ROENTGENOGRAMS IN 104 HIV-POSITIVE PATIENTS WITH TUBERCULOSIS (TB). Camara, Carmen Schmidt; Santos, A.A.S.*; Moraes, A.P.O.*; Eyer-Silva, W.A.*; Morais-de-Sa, C.A.*; Kischinhevski, W.*; Camisao, C.C.*; *Gaffree & Guinle Univ. Hospital, Univ. of Rio de Janeiro (UNI-RIO), Brazil.

Th.B.506
PULMONARY TUBERCULOSIS (PT) AND AIDS: CHEST RADIOGRAPHIC (CR) FEATURES. Silva, Vania M.C.[1]; Werneck, E.[1]; Kritski, A.L.[1]; Silva, R.A.[1]; Costa, A.M.M.[1]; Oliveira, J.R.[1]; Sion, F.[2]; de Sá, C.A.M.[2]; Basin, A.[3]; Souza, R.V.[4]; Vergara, T.R.C.[5]; Dalcolmo, M.[6], Instituto de Tisiologia e Pneumologia-UFRJ[1]; Clin. Med. B. Hosp. Gaffree Guin le-UNIRIO[2]; DIP-Hosp. Ant. Pedro-UFF[3]; HEC-FioCruz[4]; Centro Hemat. Santa Catarina[5]; Hosp. Raphael Paula Souza[6], Rio de Janeiro-Brazil.

Th.B.507
SHORT COURSE ANTITUBERCULOUS THERAPY FOR PULMONARY TUBERCULOSIS IN HIV SEROPOSITIVE PATIENTS. Mukadi Y1, Perriens Joseph1,2,7, Willame J.C.2,3, Kaboto M.4, Roscigno G.5, Prignot J.6, Pprtaels F.7, Piot P.7; 1Projet SIDA; 2Belgian-Zairian Cooperation; 3BNT; 4CDT, Kinshasa, Zaire; 5Merrel Dow Research Instituten, Strassbourg, France; 6u CL, Mont Godinne.

Th.B.508
TREATMENT OF TUBERCULOSIS IN HIV-INFECTED PATIENTS. Zamora, Laura; Gatell, J.M.; Mallolas, J.; Guelar, A.; Miro, J.M.; Soriano, E.; Infectious Disease Unit. Hospital Clinic. Barcelona, Spain.

Th.B.509
STEVENS-JOHNSON SYNDROME ASSOCIATED WITH TREATMENT OF TUBERCULOSIS IN PATIENTS WITH HIV INFECTION IN TANZANIA. Sugarman, Jeremy*; Cegielski, P.†; Lallinger, G.‡; Mwakyusa, D.‡; *Duke University Medical Center, Durham, North Carolina, USA. †Muhimbili Medical Center, Dar-es-Salaam, Tanzania.

Th.B.510
ISONIAZIDE PROPHYLAXIS AMONG PATIENTS WITH HIV-1 INFECTION. Wadhawan, D.*; Hira, S.*; Mwansa, N.*; Tembo, G.*; Perine, PL.†; *University Teaching Hospital, Lusaka, Zambia; †Uniformed Services University of Health Sciences, Bethesda, USA.

Other Mycobacteria

Th.B.511
MYCOBACTERIAL INFECTIONS IN AIDS. G.P. Cadeo*, I. El Hamad*, S. Rossi*, L. Corda*, G. Carosi*, F. Bottura†, F. Suter†; *University of Brescia; General Hospital of Busto Arsizio† Italy.

Th.B.512
CONCOMITANT HIV AND MYCOBACTERIAL INFECTION IN AUTOPSIED IVDU'S IN NEW YORK CITY. Araneta, Maria Rosario; Laroche, E.; Stoneburner, R.L.; New York City Dept. of Health, New York, NY, USA.

Th.B.513
MYCOBACTEREMIA IN AIDS PATIENTS: RESULTS EMPHASIZING THE IMPORTANCE OF ROUTINE BLOOD CULTURE. Schurmann Dirk, Ruf B. Mauch H., Pohle H.D.; H. Department of Internal Medicine, Rudolf VirchowUniversity Hospital (Wedding) Freie Universitat Berlin, Heckeshorn Hospital, Berlin, FRG.

Th.B.514
RELATIONSHIP OF RESPIRATORY AND GI TRACT COLONIZATION WITH MYCOBACTERIUM AVIUM COMPLEX (MAC) TO DISSEMINATED MAC DISEASE IN HIV INFECTED (+) PATIENTS. Benson, Constance, Kerns, E., Sha, B., Glick, E., Pottage, J., Harris, A., Kessler, H.; Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL, USA.

Th.B.515
CLINICAL RISK FACTORS FOR DISSEMINATED MYCOBACTERIUM AVIUM COMPLEX INFECTION (DMAC) IN PERSONS WITH HIV INFECTION. Havlik, Joseph A. Jr.; Emory Univ. School of Medicine, Dept. of Medicine, Inf. Diseases, Atlanta, GA.

Th.B.516
SURVIVAL OF AIDS PATIENTS WITH DISSEMINATED MYCOBACTERIUM AVIUM COMPLEX INFECTION (DMAC): A CASE-CONTROL STUDY. Horsburgh, C. Robert*; Havlik, J.A.†; Thompson, S.E.‡; *Division of HIV/AIDS, CDC, and †Department of Medicine, Emory University School of Medicine and Grady Memorial Hospita, Atlanta, GA, USA.

Th.B.517
TREATMENT OF AIDS-RELATED DISSEMINATED MYCOBACTERIUM AVIUM COMPLEX DISEASE (D-MAC) WITH A MULTIPLE DRUG REGIMEN INCLUDING AMIKACIN. Benson, C., Pottage, John, Kessler, H.; Rush-Presbyterian-St. Luke's Medical Center, Chicago, IL, USA.

Th.B.518
RIFABUTIN MAY DELAY THE ONSET OF MYCOBACTERIUM AVIUM COMPLEX INFECTION (MAC) IN PATIENTS WITH AIDS. Siegal, Frederick P.*; Borenstein, M.*; Gehan, K.*; Campbell, S.†; Davidson, B.*; Weiser, B.‡; Burger, H.‡; Singer, C.*; Gold, J.W.M.‡.; *Long Island Jewish Medical Center/Albert Einstein College of Medicine, New York, NY, USA; †Memorial Sloan-Kettering Cancer Center, New York, NY, USA; ‡SUNY/ Stony Brook, Stony Brook, NY, USA.

Enteric Parasites

Th.B.519
CLEARANCE OF CRYPTOSPORIDIAL INFECTION IN HIV POSITIVE MEN: A POSITIVE CORRELATION WITH CD4 COUNTS. Flanigan, Timothy P.*; Soave R.†; Kotler, D.‡; Toerner, J.*; *Case Western Reserve University, Cleveland, Ohio, †Cornell University, New York, New York, ‡St. Lukes-Roosevelt Hospital Center, Columbia University, New York, New York.

Th.B.520
ORAL DICLAZURIL THERAPY FOR CRYPTOSPORIDIOSIS. Soave, Rosemary*; Dieterich, D.†; Kotler, D.‡; Gassyuk, E.*; Tierney, A.R.‡; Liebes, L.†; Legendre, R.‖; *Cornell Medical Center, †New York University, ‡St. Lukes/Roosevelt, NY, NY; ‖Janssen Research Foundation, Piscataway, NJ.

Th.B.521
CRYPTOSPORIDIUM DIARRHOEA IN AIDS PATIENTS TREATED WITH HYPERIMMUNE BOVINE COLOSTRUM. Hojlyng Niels*; Henriksen, S.A.†; Gaub, J.‡; Hjelt, K.‖; Mathiesen, L.†; Jepsen, S.*; Ladefoged, K.‖; Tzipori, S.#; *Statens Seruminstitut, Copenhagen, Denmark, †State Veterinary Laboratory, Copenhagen, Denmark, ‡Hvidovre Hospital, Copenhagen, Denmark, ‖Rigshospital, Copenhagen, Denmark, #Royal Childrens Hospital, Melbourne, Australia.

Th.B.522
MICROSPORIDIOSIS IN AIDS: AN UPDATE OF ENTERITIS CAUSED BY E. BIENEUSI AND A SECOND SPECIES, AND E. CUNICULI AS A CAUSE OF KERATOCONJUNCTIVITIS. Orenstein, Jan*; Friedberg, D.N.†; Cali, A.‡; Kotler, D.P.‖; *George Washington Univ. Med. Ctr., Washington, DC, †NYU Med. Ctr., NY, NY ‡Rutgers Univ., Newark, NJ, ‖St. Luke's-Roosevelt Hosp. Ctr., NY, NY.

Th.B.523
IS SMALL INTESTINAL MICROSPORIDIOSIS ANOTHER OPPORTUNISTIC INFECTION OF IMPORTANCE IN AIDS?. J.K.M. Eeftinck Schattenkerk*, R.J. van Ketel†, T. van Gool†, J.F.W.M. Bartelsman‡; Departments of Medicine (AIDS-unit)*, Medical Microbiology† and Gastroenterology‡, Academic Medical Center, Meibergdreef 9, 1105 AZ Amsterdam, The Netherlands.

Th.B.524
THE PREVALENCE OF INVASIVE AMEBIASIS AND CYSTICERCOSIS IS NOT INCREASED IN MEXICAN PATIENTS DYING OF AIDS. Barron-Rodriguez, L.P.*; Jessurun, Jose*; Hernandez-Avila, M.†; *unidad de Patologia Hospital General de Mexico SSa. UNAM, †Direccion General de Epidemiologia, SSa.

Bacterial Opportunistic Infections

Th.B.525
BACTEREMIA IN ADULT HIV-INFECTED PATIENTS. Weinke, T.; Roegler, Gertrud; Rohde, L.; Pohle, H.D.; Universitaetsklinik Rudolf Virchow, II. Medical Clinic, Freie Universitaet Berlin, FRG.

Th.B.526
COMMUNITY-ACQUIRED BACTEREMIA, FUNGEMIA AND PARASITEMIA IN FEBRILE ADULTS INFECTED WITH HIV IN CENTRAL AFRICA. Taelman, Henri, Bogaerts, J., Batungwanayo, J., Kagame, A., Nyirabareji, A., Kabagabo, L., Rutogeniza, V., Rutigouwe, M. Blouche, P. Abdel Aziz, M., Gillicaux, M., Von Ste. Perre, P.*; Dept. of Internal Medicine, Microbiology, Centre Hospitalier de Kigali, Kigali, Rwanda; *National AIDS Control Program, Kigali, Rwanda.

Th.B.527
SEVERE S.AUREUS (SA) INFECTIONS IN PATIENTS (PTS) WITH AIDS. Cernuschi, Massimo; Franzetti, F.; Lazzarin, A.; Esposito, R.; Moroni, M.; Clinic of Infectious Diseases, University of Milan, Italy.

Th.B.528
CENTRAL VENOUS CATHETERS (CVC) IN AIDS: RISK FACTORS FOR BACTERIAL INFECTION. Bary, M., Cazala JB, Vittecoq D., Boucot I., Berche P., Bach FJ; Hospital Necker, Paris, France.

Th.B.529
INCREASED CARRIAGE RATE OF STAPHYLOCOCCUS AUREUS AMONG HIV-PATIENTS. Weinke, Thomas; Scherer, W.; Rohde, L.; Schiller, R.; Fehrenbach, F.-J.; Pohle, H.D.; Universitaetsklinik Rudolf Virchow, II. Medical Clinic and Department of Medical Microbiology, Berlin, FRG.

Th.B.530
STAPHYLOCOCCUS AUREUS NASAL CARRIAGE IN GAY MEN WITH AND WITHOUT HIV INFECTION: INFLUENCE OF SEXUAL BEHAVIOR. Battan, R.*; Raviglione, M.C.*; Wallace, J.†; Cort, S.†; Boyle, J.*; Taranta, Angelo*; *Cabrini Medical Center, New York, New York, USA; †Foundation for Research on Sexually Transmitted Diseases, New York, New York, USA.

Th.B.531
VANCOMYCIN PROPHYLAXIS FOR LONG-TERM CENTRAL VENOUS CATHETER INFECTIONS IN AIDS PATIENTS. Battan, R; Raviglione, MC; D'Amore, T; Pablos-Mendez, A; Raggi, P; Hedni, R.; Cabrini Medical Center, New York, NY, USA.

Th.B.532
OUTCOME AND PREVENTION OF RELAPSES ON NON THYPHOIDAL SALMONELLA BACTEREMIA IN 55 AIDS PATIENTS. Coulaud, Jean Pierre; Hopital Bichat—Claude Bernard, Paris, France.

Th.B.533
RISK FACTORS FOR CAMPYLOBACTER INFECTIONS IN MEN WITH AIDS/ARC. Kent, Charlotte K.*, Reingold, A.L.*, Anderson, G.†, Gordon, R.†, Stone, E.†, Holmberg, S.‡; *University of California, Berkeley, CA; †County Health Departments of Alameda, Contra Costa, Los Angeles and San Francisco, CA; ‡Centers for Disease Control (CDC), Atlanta, GA; USA.

Th.B.534
ALTERED SEROLOGIC RESPONSE TO NATURAL HUMAN INFECTION WITH HAEMOPHILUS DUCREYI, *DUE TO HIV* INFECTION. Cameron, D. William*; Thompson, C.E.*; Filton, L.J.*; Ronald, A.R.†; Piot, P.‖; Ndinya-Achola, J.O.‡; Plummer, F.A.†; *Univ. of Ottawa, Ottawa, Ontario; †Univ. of Manitoba, Winnipeg, Canada; ‡Univ. of Nairobi, Nairobi, ‖Institute for Tropical Medicine, Antwerpen, Belgium.

Th.B.535
MYCOPLASMA INCOGNITUS INFECTION IN KIDNEYS OF AIDS PATIENTS WITH AIDS-ASSOCIATED NEPHROPATHY. F.A. Bauer, D.J. Wear, P. Angritt and S-C. Lo.; American Registry of Pathology Armed Forces Institute of Pathology, Washington, D.C.

Th.B.536
IN VITRO ANTIMICROBIAL SUSCEPTIBILITY TESTING FOR THE NEWLY IDENTIFIED PATHOGENIC HUMAN MYCOPLASMA—M. INCOGNITUS. Lo, Shyh-Ching; Wear, D.J.; Hayes, M.M.; American Registry of Pathology, Armed Forces Institute of Pathology, Washington, DC.

Th.B.537
BACILLARY NECROPELIOSIS OF THE LIVER IN PATIENTS WITH CAT-SCRATCH DISEASE AND AIDS. Angritt, P.; Ishak, K.; Rabin, L.; Tuur, Sylvana M.; Armed Forces Institute of Pathology (AFIP), Washington, D.C. 20306-6000 USA.

Th.B.538
DISSEMINATED EXTRA-CUTAINEOUS BACILLARY EPITHELIOID ANGIOMATOSIS IN THE IMMUNOCOMPROMISED HOST. Kemper, C.A.*,†; Lombard, C.M.*; Deresinski, S.C.*,†; Tompkins, L.S.*; *Stanford University School of Medicine, Stanford, CA; †Santa Clara Valley Medical Center, San Jose, CA.

Th.B.539
GRAM-NEGATIVE BACTEREMIAS (GNB) IN HIV-INFECTED PATIENTS. Yamaguchi, Elena; Chaisson, R.E.; Johns Hopkins University, Baltimore, MD, USA.

Miscellaneous Opportunistic Infections

Th.B.540
FEVER OF UNKNOWN ORIGIN IN AIDS. Pierone, Gerald; Lin, J.; Masci, J.; Nicholas, P.; Mount Sinai Services, Elmhurst Hospital, Elmhurst, NY, USA.

Th.B.541
PRIMARY CHEMOPROFILAXIS IN AIDS. Banhegyi, Denes*; Miskovits, E*.; Szlavik, J.*; Gerlei, Zs.*; Ujhelyi, E.†; Varnai, F.*; *Institute for Infectious and Tropical Diseases, Postgrad. Med. School, Budapest, Hungary, †National Institute for Hematology and Blood Transfusion, Budapest, Hungary.

Th.B.542

EVALUATION OF MEASLES AND RUBELLA VACCINATION AMONG HIV-INFECTED ADULTS. Sprauer, Mary1; Markowitz, L.1; Dales, L.2; Khoury, N.3; Nicholson, J.1; Stewart, J.1; Atkinson, W.1; 1Centers for Disease Control, Atlanta, Ga., USA, 2Department of Health Services, Berkeley, Ca., USA, 3Department of Corrections, Sacramento, Ca., USA.

Epidemiology & Prevention: Various Topics

Th.C.543
CLINICAL MANIFESTATIONS OF HIV-1 INFECTION AMONG WOMEN WORKING AS PROSTITUTES IN NAIROBI. Wambugu, Peter*; Plummer, F.A.*; Anzala, A.O.;*; Gilks,C.*; Bosire, M.†; Ngugi, E.N.*.; *University of Nairobi, Nairobi, Kenya, †Kenya Medical Research Institute, Nairobi, Kenya.

Th.C.544
USE OF POLYMERASE CHAIN REACTION (PCR) IN THE DIAGNOSIS OF PEDIATRIC HIV INFECTION. Brandt, C.; Rakusan, Tamara; Josephs, S.; Parrott, R.; Sever, J.; Children's National Medical Center and The George Washington University School of Medicine and Health Sciences, Washington, DC, USA.

Th.C.545
USE OF PCR FOR AN EARLY DETECTION OF HIV GENES IN SERONEGATIVE EXPOSED PREGNANT WOMEN. Henrion, Roger*; Ferris, Stephane†; Montagnier, Luc† and Moncany, Maurice L.J.†; *Maternite Port-Royal, Hopital Cochin, Paris, France; †Unite d'Oncologie Virale, Institut Pasteur, Paris, France.

Th.C.546
PRESENCE OF THE HIV DETECTED BY PCR IN SERONEGATIVE BABIES BORN TO SEROPOSITIVE MOTHERS. Ferris, Stephane*; Sprecher, Suzy†; Levy, Jacques‡; Montagnier, Luc* and Moncany, Maurice L.J.*; *Unite d'Oncologie Virale, Institut Pasteur, Paris, France; †Institut Pasteur du Brabant, Brussells, Belgium; ‡Hopital St. Pierre, Brussells, Belgium.

Th.C.547
PEDIATRIC AIDS: EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS AND SURVIVAL. Rubini, Norma de Paula Motta*; Quinhoes, E.P.*; Signorini, D.J.H.P.*; Guimaraes, M.D.C.†; Sion, F.S.*; Morais de Sa, C.A.*; Graca, M.H.P.*; Goncalves, R.S.*; *Gaffree & Guinle Univ. of Rio de Janeiro (UNI-RIO), Brazil; †Federal Univ. of Minas Gerais; FIOCRUZ.

Th.C.548
LYMPHOCYTE-ASSOCIATED P24 ANTIGEN: A NEW TECHNIQUE FOR DIAGNOSIS OF HIV INFECTION IN PEDIATRIC PATIENTS. Rich, Kenneth C.*; Cory, Joan M.†; Landay, Alan‡; Ohlsson-Wilheim, Betsy M.†; *University of Illinois at Chicago, IL; †The Pennsylvania State University, COM, Hershey, PA; ‡Rush Medical College, Chicago, IL.

Th.C.550
IMPACT OF HIV ON PEDIATRIC OUTPATIENT CLINIC USE IN KIGALI, RWANDA. Roberts, J.*; Nsengumuremyi, F.*; Allen, S.*†; Carlson, C.*; Kahn, J.‡; Schwalbe, J.*; Lepage, P.‖; *Project San Francisco, Kigali, Rwanda; †UCSF Center for AIDS Prevention Studies (CAPS), San Francisco, CA; ‡UCSF Center for Health Policy Studies, SF,CA; ‖National AIDS Prevention Program, Kigali, Rwanda.

Th.C.551
SEROEPIDEMIOLOGY OF HTLV-1 INFECTION IN THE VENEZUELAN POPULATION. Echeverria de Perez, Gloria*; Loreto, O.*; Lee, H.†; Bianco, N.*; *Institute of Immunology, Central University, Caracas,Venezuela, †Abbott Laboratories, Chicago, USA.

Th.C.552
THE TALKING SEX PROJECT: RESULTS OF A RANDOMIZED CONTROL STUDY FOR THE PREVENTION OF AIDS. Myers, Ted‡; Tudiver, F.†; Kurtz, R.†; Jackson, E.*; Orr, K.*; Rowe, G.†.; *AIDS Committee of Toronto, Toronto, Ont., Canada, †Sunnybrook Medical Centre, Toronto, Ont., Canada, ‡University of Toronto, Toronto, Ont., Canada.

Biology of HIV Transmission

Th.C.553
PREVALENCE AND TEMPORAL VARIATION OF HIV-1 IN SEMEN. Anderson, Deborah*; Politch, J.A.*; Martinez, A.*; Wolff, H.*; Pudney, J.*; Van Voorhis, B.*; Mayer, K.†; Saltzman, S.†; Seage, G.‡; Horsburg, C.R.‖; *Harvard Med. Sch.; †Fenway Community Health Center; ‡Boston Dept. of Health & Hospitals, Boston, MA; ‖Centers for Disease Control, Atlanta, GA, USA.

Th.C.554
PREVALENCE OF HIV IN THE CERVICOVAGINAL SECRETIONS WOMEN SEROPOSITIVE FOR HIV: CORRELATION WITH THE CLINICAL STATUS AND IMPLICATIONS FOR HETEROSEXUAL TRANSMISSION. Y. Henin+, F. Porrot+, L. Montagnier+, R. Henrion++; +Institut Pasteur, Paris, France. ++ Hopital Port-Royal Cochin, Paris, France.

Th.C.555
SEXUAL BEHAVIOR, SMOKING, AND HIV-1 IN HAITIAN WOMEN. Halsey, N.*; Coberly, Jacqueline*; Boulos, R.†; Holt, E.*; Coreil, J.‡; Kissinger, P.†; Brutus, J.R.‡; Boulos, C.†; *The Johns Hopkins Univ., Baltimore, MD; †Centers for Development and Health, Port-au-Prince, Haiti; ‡University of South Florida, Tampa, FL, USA.

Th.C.556
IMMUNOLOGICAL AND CLINICAL STATUS OF PCR POSITIVE, HIV ANTIBODY NEGATIVE MULTITRANSFUSED HAEMOPHILIACS. Berthier AM*, Moncany M†, Ferris S‡, Genetet N‡, Montagnier L‡; *Centre Rey-Leroux 35340 Labouexiere ‡I. Pasteur Paris ‡CRTS Rennes La Bouexiere, France.

Th.C.557
DETECTION OF HIV-1 INFECTION BY POLYMERASE CHAIN REACTION (PCR) AND CULTURE IN HIV-1 SERONEGATIVE PATIENTS ATTENDING AN EMERGENCY DEPARMENT. Quinn, T.*; Kelen, G.†; Meyer, W.‡, Fleetwood, D.‡, Brothers, T.‡, Kline, R.*; *NIAID, NIH, Bethesda, MD; †Johns Hopkins Hospital, Baltimore, MD; ‡Maryland Medical Laboratory, Baltimore, MD, USA.

Th.C.558
DETECTION OF HIV-1 INFECTION IN SERONEGATIVE IVDU's BY POLYMERASE CHAIN REACTION (PCR). Farzadegan H., Ward, Linda, Solomon L., Cohen S., and Vlahov D.; Department of Epidemiology, The Johns Hopkins University, Baltimore, MD, USA.

Th.C.559
INDETERMINANT WESTERN BLOT ASSAYS IN A COHORT OF HOMOSEXUAL MEN. Phair, John; Hoover D; Wright P; Saah A; Detels R;Rinaldo C; Kaslow R; and the Multicenter AIDS Cohort Study, Chicago, IL,Baltimore, MD, Los Angeles, CA, and Bethesda, MD.

Sexual Transmission in Homosexual and Bisexual Men

Th.C.560
A COMPARISON OF RISK FACTORS FOR HIV-1 AND HEPATITIS B VIRUS (HBV) IN HOMOSEXUAL MEN. Koziol, Deloris*; Saah, A., Odaka, N., Munoz, A.; *NIH, Bethesda, MD and Johns Hopkins University School of Hygiene and Public Health, Baltimore, MD.

Th.C.561
LITTLE EVIDENCE FOR GENITAL ULCERATIVE INFECTIONS AS A RISK FACTOR FOR HIV-1 ACQUISITION AMONG HOMOSEXUAL MEN. Keet, Ireneus P*; Lee, FK‡; van Griensven, GJP*; Lange, JMA‡; Nahmias, A‡; Coutinho, RA*.; *Municipal Health Service, Amsterdam, The Netherlands; ‡Emory University School of Medicine, USA; ‡University of Amsterdam.

Th.C.562
LONGITUDINAL FOLLOW-UP OF HIV-1 DISCORDANT COUPLES IN THE BALTIMORE MACS STUDY. Palenicek, John G., Fox, R., Odaka, N., Harris, J., Hardy, W., Taylor, E.Margolick, J.; The Johns Hopkins School of Hygiene and Public Health, Baltimore, MD, USA.

Th.C.563
RECENT HIV INFECTION IN MEN IN THE ARMY: A CASE-CONTROL STUDY. McNeil, J.G.*; Peterman, Tom A.‡; Renzullo, P.O.*; Lasley-Bibbs, V.*; Levin, L.L.*; the Study Group.; *Walter Reed Army Institute of Research, Washington, DC, USA; ‡Centers for Disease Control, Atlanta, GA, USA.

Sexual Transmission in Heterosexuals

Th.C.564
HETEROSEXUAL COTRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND HEPATITIS C VIRUS (HCV). Eyster, M. Elaine, Alter, H., Aledort, L., Hatzakis, A., Goedert, J. J., et al.; NCI Multicenter Study of AIDS in Hemophiliacs, Bethesda, MD USA.

Th.C.565
HIV INFECTION IN CHILDREN TRANSMITTED BY SEXUAL ABUSE. Di John, David; Darren, N.; Motch, S.; Rigaud, M.; Borkowsky, W.; McHugh, M.; NY Univ. Medical Center, Dept. of Pediatrics, NY, NY, USA.

Th.C.566
RISK OF HIV HETEROSEXUAL TRANSMISSION IN WOMEN FROM BUENOS AIRES CITY. Benetucci J*, da Bouza J*, Multare S*, Corti M*, Gomez Carrillo M‡, Ortega G*, Boxaca M‡, Compagnucci M* and Astarloa I.*.; *Hospital of Infectious Diseases Francisco J. Muniz, Buenos Aires, Argentina. ‡Department of Microbiology, School of Medicine, Buenos Aires University, Argentina.

Th.C.567
LACK OF FEMALE TO MALE TRANSMISSION IN HUSBANDS OF HIV INFECTED WOMEN GAFFREE & GUINLE UNIVERSITY HOSPITAL, RIO DE JANEIRO, BRAZIL. Sion, Fernando Samuel; Santos, E.A.; Salerno-Goncalves, R.; Almeida, M.C.R.; Morais-de-Sa, C.A.; Vanderborght, B.*; Carvalho, M.A.; Brandao, A.C.C.; Rocha, J.T.G., Univ. of Rio de Janeiro (UNI-RIO), Brazil; *Imunogenetics, Gent, Belgium.

Th.C.568
HETEROSEXUAL HIV TRANSMISSION: A MULTICENTER PARTNER STUDY IN MEXICO CITY. Jaime Sepulveda; Mauricio Hernandez; Emilio Herrera; Carlos Avila; Directorate of Epidemiology, Secretaria of Health, Mexico.

Th.C.569
RISK FACTORS FOR HIV-2 INFECTION IN GUINEA-BISSAU. Harrison, L.*; De Silva, A.P.J.‡; Albina, P.‡; Del Castillo, F.‡/§; Lee-Thomas, S.*; Gayle, H.*; *CDC, Atlanta, GA, USA; ‡Ministry of Public Health, Bissau, Guinea-Bissau; §Global Programme on AIDS, WHO, Geneva, Switzerland.

Th.C.570
CERVICAL ECTOPY AND LACK OF MALE CIRCUMCISION AS RISK FACTORS FOR HETEROSEXUAL TRANSMISSION OF HIV IN STABLE SEXUAL PARTNERSHIPS IN KENYA. Moss, Gregory B.*; D'Costa, L.J.‡; Ndinya-Achola, J.O.§; Plummer, F.A.‖; Reilly, M.P.*; Kreiss, J.K.*; *University of Washington, Seattle, WA, USA; ‡Nairobi City Commission, Kenya; §University of Nairobi, Kenya; ‖University of Manitoba, Winnipeg, Canada.

Th.C.571
INCIDENCE OF HIV-1 SEROCONVERSION IN WOMEN WITH GENITAL ULCERS. Plourde, Pierre*,‡, Plummer, F.A.*,‡, Pepin, J.‡, Maitha, G.* Ndinya-Achola, J.O.* D'Costa, L.§; *University of Nairobi, Nairobi, Kenya, ‡University of Manitoba, Winnipeg, Canada, §Nairobi City Commission, Nairobi, Kenya.

Th.C.572
PREVALENCE OF HIV AMONG MEN AND WOMEN WITH H. DUCREYI AND NEISSERIA GONORRHOEAE INFECTION IN NAIROBI, KENYA. Ombette, John*; Ndinya-Achola, J.O.*; Maitha, G.*; Emonyi, E.*; Plourde, P.‡; Temmerman, M.§; Owili, D.M.‖; Plummer, F.A.*; *Univ. of Nairobi, Nairobi, Kenya; ‡Univ. of Manitoba, Winnipeg, MB, Canada; §Institute of Tropical Medicine, Antwerp, Belgium; ‖Kenyatta National Hospital, Nairobi, Kenya.

Th.C.573
RISK FACTORS FOR HIV AMONG KENYAN WOMEN IN A LOW RISK POPULATION IN NAIROBI, KENYA. Hunter, David*; Maggwa, A.‡; Mati, J.§; Tukei, P.‖; Solomon, M.‖; Mbugua, S.‖; Bhullar, V.‖; Mohammedali, Y.‖; *Harvard University, Boston, MA, USA, ‡University of Nairobi, Kenya, §Kenya Medical Research Institute, Nairobi, ‖Nairobi City Commission, Kenya.

Th.C.574
VAGINAL TIGHTENING AGENTS AS RISK FACTORS FOR ACQUISITION OF HIV. Dallabetta, Gina*; Miotti, P*; Chiphangwi, J‡; Liomba, G‡; Saah, A*; *Johns Hopkins University, Baltimore, USA, ‡Ministry of Health, Malawi.

Th.C.575
HIV-1 SEROPOSITIVITY AND SEXUAL HISTORY AMONG RWANDAN WOMEN. Duerr, Ann*; Bulterys, M.*; Dushimamana, A.; Chao A*; Hoover, D*; Shea, M.*; Saah, A.*; *Johns Hopkins University, Baltimore, USA; † National University of Rwanda, Butare, Rwanda.

Th.C.576
RISK FACTORS FOR HIV-1 SEROPOSITIVITY AMONG RURAL AND URBAN PREGNANT WOMEN IN RWANDA. Bulterys, Marc*; Chao, A*; Saah, A*, Dushimamana, A†; Habimana, P†; Hoover, D*; Shea, M*; Duerr, A*.; *Johns Hopkins University, Baltimore, USA, †National University of Rwanda, Butare, Rwanda.

Th.C.577
HIV INFECTION AMONG PATIENTS IN A UGANDA STD CLINIC. Hellmann, Nicholas*; Nsubuga, P.†; Baingana, B.†; Mbidde, E.K.†; Hellmann, S.D.*; *University of California, San Francisco, USA; †Makerere University/Mulago Hospital, Kampala, Uganda.

Th.C.578
SPECIFIC HETEROSEXUAL RISK BEHAVIORS AND HIV SEROPOSITIVITY IN A UGANDA STD CLINIC. Hellmann, N.S.*; Nsubuga, P.†; Mbidde, E.K.‡; Desmond-Hellmann, Susan*; *University of California, San Francisco, California, USA; †Mulago Hospital, Kampala, Uganda; ‡Uganda Cancer Institute, Kampala, Uganda.

Th.C.579
HIV RISK FACTORS IN STEADY MALE PARTNERS OF KINSHASA PROSTITUTES. Nzila, Nzilambi*; Kivuvu, M.*; Manoka, AT.*; Edidi, B.*; Ryder, R.*/†; Laga, M.‡.; *Project SIDA, Kinshasa, Zaire; †CDC, Atlanta, GA, USA; ‡Institute of Tropical Medicine, Antwerp, Belgium.

Th.C.580
ANTI-HIV EFFICACY OF BARRIER CONTRACEPTIVES IN HIV-DISCORDANT COUPLES. Fortney, Judith*; Feldblum, P.J.*; Hira, S.K.†; Mukololo, P.†; Kamanga, J.†; Mukelabai, G.†; Godwin, S.*; *Family Health Intl., Research Triangle Park, NC, USA; †Univ. Teaching Hospital, Lusaka, Zambia.

Th.C.581
HIV INFECTION IN URBAN MEN IN ZIMBABWE. Bassett, M.T.*; Emmanuel, J.C.†; Katzenstein, D.†; Latif, A.†; *Community Medicine, University of Zimbabse, Harare; †Blood Transfusion Services, Harare, Zimbabwe.

Th.C.582
HIV TRANSMISSION RATES AND COFACTOR IN HETEROSEXUEAL COUPLES. Rehmet, Sibylle*, Staszewski, S.*; V. Wangenheim, I.†; Bergmann, L.*; Helm, E.B.*, Doerr, H.W.‡; Stille, W.*; *Zentrum der Inneren Medizin, ‡Zentrum der Hygiene, Johann Wolfgang Goethe-Universitat, Theodor-Stern-Kai 7, 6000 Frankfurt/FRG, †Paul-Ehrlich-Institut, 6070 Langen/FRG.

Th.C.583
RISK FACTORS IN HETEROSEXUAL TRANSMISSION OF HIV. Chiodo, Francesco; Marinacci, G.; Costigliola, P.; Ricchi, E.; Colangeli, V.; University of Bologna, Institute of Infectious Diseases—Bologna Italy.

Th.C.584
ORAL CONTRACEPTION, IUD, CONDOM USE AND MAN TO WOMAN SEXUAL TRANSMISSION OF HIV INFECTION. Mussico, Massimo for the Italian Partner's Study; National Research Council—ITBA, Milan, Italy.

Th.C.585
DIFFERENT SUSCEPTIBILITY OF WOMAN AND MAN TO HETEROSEXUAL TRANSMISSION OF HIV. Nicolosi Alfredo, for Italian Partner's Study; National Council of Research, ITBA, Milan, Italy.

Th.C.586
INCIDENCE OF SEROCONVERSION (SC) IN WOMEN WHO ARE STEADY PARTNERS OF HIV INFECTED MEN (IC). Saracco Alberto for Italian Partner's Study; Clinic of Infectious Diseases, University of Milan, Milan, Italy.

Parenteral Transmission in Drug Users

Th.C.587
SEXUAL PARTNERS OF INTRAVENOUS DRUG USERS IN SAN FRANCISCO. Moore, Lisa; Padian, N.; Vranizan, K.; Brodie, B.; Moss, A.; Univ. of California, SF, CA, USA.

Th.C.588
HETEROSEXUAL TRANSMISSION OF HIV ASSOCIATED WITH THE USE OF SMOKABLE FREEBASE COCAINE (CRACK). Chiasson, Mary Ann, Stoneburner, R.L., Hildebrandt, D.S., Telzak, E.E., Jaffe, H.W.; New York City Department of Health, New York, NY and Centers For Disease Control (CDC), Atlanta, GA, USA.

Th.C.589
PATTERNS OF COCAINE USE IN RELATION TO HIV INFECTION AMONG INTRAVENOUS DRUG USERS IN NEW YORK CITY. Nemoto, Tooru*; Brown, L.S.*; Battjes, R.J.†; Siddiqui, N.S.*; *Addiction Research and Treatment Corporation, Brooklyn, NY, USA; †National Institute on Drug Abuse, Baltimore, MD, USA.

Th.C.590
COCAINE USE AND HIV RISK AMONG INTRAVENOUS OPIATE ADDICTS. Amsel, Zili; Battles, R.; and Pickens, R.; National Institute on Drug Abuse, Rockville, Maryland, USA.

Th.C.591
CRACK USE AND RELATED RISK FACTORS IN IVDU'S IN SAN FRANCISCO. Wolfe, Hannah*; Vranizan, K.M.*; Gorter, R.G.*; Cohen, J.B.*; Moss, A.R.*; University of California, San Francisco/SF General Hospital, CA, USA.

Th.C.592
HIV-1 CULTURES FROM SHOOTING GALLERY NEEDLES AND SYRINGES. Trapido, Edward J.*; McCoy, C.*; Chitwood, D.*; Resnick, L.†; *Univ. of Miami School of Medicine, Miami, FL; †Mount Sinai Medical Center, Miami, Beach, FL, USA.

Th.C.593
RISK FACTORS OF HIV INFECTION IN SPANISH PRISONS. Martin, Louisa*; Miranda, M.J.†; Granados, A.*; *Ministry of Justice, Madrid, Spain; †University of Madrid, Spain.

Parenteral Transmission in Blood Product Recipients

Th.C.594
BLOOD TRANSFUSION AND AIDS IN THE CARIBBEAN: A SUCCESS STORY?. Narain, Jai, Hull, Barbara, de Gorville, E.; Caribbean Epidemiology Centre.

Th.C.595
IS THE CURE WORSE THAN THE DISEASE: ANEMIA, MALARIA, BLOOD TRANSFUSION, AND CHILD MORTALITY IN WESTERN KENYA. Lackritz, Eve*; Campbell, C.*; Hightower, A.*; Ruebush, T.*; Were, J.†; *Centers for Disease Control, Atlanta, GA, USA; †Kenya Medical Research Institute, Nairobi, Kenya.

Th.C.596
TRANSMISSION OF HIV-1 THROUGH BLOOD TRANSFUSIONS DESPITE SCREENING WITH HIVCHECK (TM). Naegele, E.*, Hemed, Y.†, Rehle, T.*, v. Sonnenburg, F.‡; *Gesellschaft f. Technische Zusammenarbeit (GTZ), †Ministry of Health of Tanzania, ‡University of Munich, FRG.

Th.C.597
ANTI-HBC TESTING CAN DECREASE THE RISK OF TRANSFUSION RELATED HIV TRANSMISSION BY MORE THAN ONE THIRD. Massari, Veronique C. Le Pont, F., Costagliola, D., Jullien, A., Valleron, A., LePont, F., Costagliola, D.; INSERM U 263, University of Paris Paris, France.

Th.C.598
HIV ANTIGEN TESTS ON SELECTED BLOOD DONORS. Das PC, de Vries AH, McShine RL, Smit Sibinga CTh.; Red Cross Blood Bank Groningen-Drenthe, Groningen, The Netherlands.

Parenteral Transmission in Health Care Workers

Th.C.599
ASSESSMENT OF RISK FOR OCCUPATIONAL HIV-1 INFECTION IN HEALTH CARE WORKERS (HCW) AND FOLLOW-UP OF HCW ELECTING ZIDOVUDINE (AZT) CHEMOPROPHYLAXIS. Fahey B., Beekman, Susan, Wasserman, B., Ledio, J., Henderson, D.; National Institutes of Health, Bethesda, MD, USA.

Th.C.600
HIV INFECTION IN HEALTH CARE WORKERS WHO ARE BLOOD DONORS. Chamberland, Mary*, Petersen, L.*; Grindon, A.†; Busch, M.‡; Ness, P.‖ and the HIV Blood Donor Group; *Centers for Disease Control, Atlanta, † Atlanta Region American Red Cross, ‡ Irwin Memorial Blood Centers, ‖ Chesapeake Region American Red Cross.

Th.C.601
LONGTERM FOLLOWUP OF HEALTH CARE WORKERS WITH POLYMERASE CHAIN REACTION AND ANTIBODY TESTING TO DETECT DELAYED SEROCONVERISON. Littell, Cary; Brown, A.; Sande, M.; UC SF and SF General Hospital, SF, CA, USA.

Th.C.602
EXPOSURE OF HEALTH CARE WORKERS (HCW) TO BLOOD DURING VARIOUS PROCEDURES: RESULTS OF TWO SURVEYS BEFORE AND AFTER THE IMPLEMENTATION OF UNIVERSAL PRECAUTIONS. Francioli, Patrick; Saghafi, L.; Raselli, P.; Centre Hospitalier Universitaire Vaudois, Lausanne, Switzerland.

Th.C.603
BLOOD AND AMNIOTIC FLUID CONTACT DURING OBSTETRICAL PROCEDURES. Panlilio, Adelisa*, Welch, B†, Foy, D†, Parrish, C†, McKibben, P*, Perlino, C.‡, Klein, L.‡, Bell, D.*; *Centers for Disease Control, Atlanta, GA, USA, †Grady Memorial Hospital, Atlanta, GA, USA, ‡Emory University School of Medicine, Atlanta, GA, USA.

Th.C.604
CONTACT WITH BLOOD OF PATIENTS INFECTED WITH HIV AMONG EMERGENCY CARE PROVIDERS (ECPS). Marcus, Ruthanne, Bell, D., Culver, D., and the Cooperative Emergency Department Study Group; Centers for Disease Control, Atlanta, GA, USA.

Vertical Transmission

Th.C.605
PERINATAL HIV TRANSMISSION DESPITE MATERNAL/INFANT AZT THERAPY. Crombleholme, William, Wara, D., Gambertoglio, J., Dattel, B., Sweet, R., Proper, C.; University of California, San Francisco and Stanford University, Stanford, CA, USA.

Th.C.606
PERINATAL TRANSMISSION OF HIV TO INFANTS OF SEROPOSITIVE MOTHERS IDENTIFIED BY PRENATAL SCREENING. Nesheim, S*; Lindsay, M*; Sawyer, Mary*; Jones, D†; Muther, J.; Nahmias,A.*; *Emory University School of Medicine, Atlanta, Georgia, USA; †Centers for Disease Control, Atlanta, Georgia, USA.

Th.C.607
PERINATAL INFECTION WITH HUMAN IMMUNODEFICIENCY VIRUS I (HIV) IN NEWARK, NJ. Oleske, James, Octoby, M.*, Denny, T., Goode, L., Schneck, M., Connor, E.; UMD-NJ Medical School and Children's Hospital of NJ, Newark, NJ; *Centers for Disease Control, Atlanta, GA, USA.

Th.C.608
SEROLOGICAL FOLLOW UP STUDY OF INFANTS BORN FROM HIV—SEROPOSITIVE MOTHERS IN BUENOS ARIES, ARGENTINA. Rickard, Ema*; Canizal, A.*; Muchinik, G.*; De Rosa, M.F.*; Capdevila, A.†; Cahn, P.†; *Instituto de Investigaciones Hematologicas, Academia Nacional de Medicina, Buenos Aires, Argentina; †Hospital Juan A Fernandez, Buenos Aires, Argentina.

Th.C.609
MATERNAL-INFANT HIV-1 TRANSMISSION (MIT) IN BREASTFED HAITIAN INFANTS. Halsey, Neal A.*, Boulos, R.†, Holt, E.*, Coberly, J.*, Kissinger, P.†, Brutus, J.†, Ruff, A.*, Quinn, T.*, Boulos, C.†; *Department of Internal Health, Johns Hopkins University, Baltimore, MD, USA; †The Centers for Development and Health, Port-au-Prince, Haiti.

Th.C.610
MOTHER-TO-CHILD TRANSMISSION OF HIV VIRUSES: A COHORT STUDY IN WEST AFRICA: BURKINA FASO. Prazuck T.*, Malkin J.E.*, Lechuga P.†, Sondo B.‡, Masson D†, Heylynck B.†, Ouedraogo L.A.†, Soudre R.‖, Lafaix Ch.*; *GEEP: Vill.-St-Georges, †CESIS (OCCGF) and Center Muraz, ‡Banfora Hospital, ‖National Comitee Against AIDS.

Th.C.611
HIV-1 SEROLOGY IN INFANTS BORN TO HIV-1 INFECTED MOTHERS IN NAIROBI, KENYA. Datta, Pratibha*, Embree, J.E.†, Maitha, G.*, Muriithi, J.*, Ndinya-Acholo, J.O.*, Kreiss, J.K.‡, Plummer, F.A.*†.; *University of Nairobi, Nairobi, Kenya; †University of Manitoba, Winnipeg, Canada; ‡University of Washington, Seattle, Washington, USA.

Th.C.612
PERINATAL TRANSMISSION OF HIV-1 IN ZAMBIA. Hira, S.*; Mwale, Clement*; Kamanga, J.*; Bhat, G.*; Tembo, G.*; Luo, N.*; Perine, PL†; *University Teaching Hospital, Lusaka, Zambia. †Uniformed Services University of Health Sciences, Bethesda, USA.

Th.C.613
MOTHER TO CHILD TRANSMISSION OF HIV INFECTION. RESULTS OF A FOLLOW UP STUDY. Zuccotti, G.V.; Ravizza, M.*; Fiocchi, A.; Taglioretti, A.*; Lubelli, E.*; Giovannini, M.; V Dep.Pediat.,VI Dep. Obst.Gynecol. University of Milan, San Paolo Hospital, Italy.

Th.C.614
MOTHER-TO-INFANT TRANSMISSION OF HIV: PREDICTIVE VALUE OF VIRUS ISOLATION FROM PLACENTAL TISSUE AND PERIPHERAL-BLOOD MONONUCLEAR CELLS DURING PREGNANCY. Izopet, Jacques*; Berrebi, A.†; Tricoire, J.‡; Herne, P.‖; Puel, J.*; *Laboratoire de Virologie, CHU Toulouse-La Grave; ‡Service de Pediatrie B, Chu Toulouse Purpan; ‖Assn. Le Patriarche St. Cezert, France.

Th.C.615
MATERNAL ANTIBODIES TO GP120 HYPERVARIABLE LOOP REGION MIGHT CONTROL MOTHER-TO-CHILD HIV-1 TRANSMISSION. Rossi Paolo*/†, Moschese V*/†, Tovo PA‡, Broliden PA‖, Wigzell H* and Wahren B‖.; *Karolinska Institutet, Stockholm, Sweden; †University of Rome Tor Vergata, Rome, Italy; ‡University of Turin, Italy; ‖SBL, Stockholm, Sweden.

Th.C.616
VIRUS CULTURE, POLYMERASE CHAIN REACTION AND IN VITRO ANTIBODY PRODUCTION FOR EARLY DIAGNOSIS OF PEDIATRIC HIV1 INFECTION. Verdrell J.P., Nicholas J., Huguet M.F., Serre A., Agut, H., Carbachnon, E., Courpotin C.; Hospital Lapeyronie.

Th.C.617
MATERNAL-INFANT TRANSMISSION OF HTLV-1 INFECTION IN HAITI. Holt, Elizabeth*; Wiktor, S†; Ruff, A*; Boulos, R‡; Blattner, W†; Brutus, JR‡; Kissinger, P†; Adrien, M‡; Boulos, C‡; Halsey, N*.; *The Johns Hopkins University, Baltimore, MD, USA; †NCI, Bethesda, MD, USA; ‡Centers for Development and Health, Port-au-Prince, Haiti Baltimore MD USA.

Th.C.618
PROSPECTIVE STUDY OF HTLV-1 TRANSMISSION FROM MOTHER TO CHILD IN GABON: CLINICAL AND SEROLOGICAL FOLLOW-UP. Delaporte, Eric B.1,2; Peeters, M.1,2, Ville, Y.2, Bedjabaga, L.2, Ossari, S.2, Bertheaux, P.2, Larouze, B.3; 1. Inst. Tropical Medicine, Belgium 2. C.I.R.M. Gason 3. Inserm-V13, Claude-Bernard, Paris.

Natural History: Homosexual and Bisexual Men

Th.C.619
PROGRESSION TO AIDS IN HIV POSITIVE MEN: 5-YEAR FOLLOWUP OF THE SAN FRANCISCO GENERAL HOSPITAL COHORT. Krampf, Walter; Shiboski, S.; Osmond, D.; Bacchetti, P.; Moss, A.; Univ. of California, SF, CA, USA.

Th.C.620
THE SYDNEY AIDS PROJECT: DEVELOPMENT OF AIDS IN A COHORT OF HIV SEROPOSITIVE HOMOSEXUAL MEN. Tindall, Brett*; Cooper, D.A.*; *Natl. Centre in HIV Epidemiology and Clinical Research, Univ. of New South Wales, Australia; and Centre for Immunology, St. Fincent's Hospital, Sydney, Australia.

Th.C.621
RELATIONSHIP BETWEEN AIDS LATENCY PERIOD AND SURVIVAL TIME. Hessol, Nancy A.*; Byers, R.H.†; Lifson, A.R.*; O'Malley, P.M.*; Cannon, L.*; Barnhart, J.L.*; Buchbinder, S.P.*; Harrison, J.S.†; Rutherford, G.W.*; *AIDS Office, SF Dept. of Public Health, CA, USA; †Div. of HIV/AIDS, Centers for Disease Control, Atlanta, GA, USA.

Th.C.622
THE MODELLING OF PROGRESSION TO AIDS: IS IT WISE TO COMBINE DIFFERENT AIDS MANIFESTATIONS?. Schechter, Martin T., Craib, K.J., Le, T.N., Montaner, J.S., Maynard, M., Broughton, S., Voigt, R., O'Shaughnessy, M.*; The Vancouver Lymphadenopathy-AIDS Study, University of British Columbia and St. Paul's Hospital, Vancouver, Canada; *Federal Centre for AIDS, Ottawa, Canada.

Th.C.623
AZT USE IN AIDS-FREE HIV-1 SEROPOSITIVE MEN IN THE MULTICENTER AIDS COHORT STUDY (MACS) 1987-1989. Graham Neil MH, Zeger SL, Kuo V, Jacobson LP, Phair JP, Detels R, Rinaldo CR, Saah AJ.; Multicenter AIDS Cohort Study, Johns Hopkins School of Hygiene & Public Health Dept. of Epidemiology, Bethesda, MD.

Th.C.624
AIDS RISK CAN BE PREDICTED WITH CD4%, NEOPTERIN AND BETA-2-MICROGLOBULIN ONLY ONE (1) YEAR AFTER HIV SEROCONVERSION. Kramer, Alexander*; Biggar, RJ†; Fuchs, D‡; Wachter, H‡; Goedert, JJ†; *Institute of Medical Biometry, University Tubingen, FRG and National Cancer Institute, USA, †National Cancer Institute, Bethesda, Maryland, USA, ‡University Innsbruck, Austria.

Th.C.625
RESIDUAL AIDS-FREE TIME AND CHANGES IN CD4% IN HOMOSEXUAL MEN SEROPOSITIVE FOR HIV-1. Munoz, Alvaro; Hoover D, Carey, V., Detels R, Kingsley L, Graham N, Schrager L, Phair J.; Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Th.C.626
PERCENTAGE OF CD4 CELLS AS PREDICTOR OF PNEUMOCYSTIS CARINII PNEUMONIA IN A COHORT OF HOMOSEXUAL MEN. Rutherford, George W.*; Hessol, N.A.*; Lifson, A.R.*; O'Malley, P.M.*; Buchbinder, S.P.*; Holmberg, S.D.†; *Dept. of Public Health, SF, CA, USA; †Centers for Disease Control, Atlanta, GA, USA.

Th.C.627
EPIDEMIOLOGY AND NATURAL HISTORY OF KAPOSI'S SARCOMA (KS) AND PNEUMOCYSTIS CARINII PNEUMONIA (PCP). Winkelstein, Warren*,Fusaro, R.E.*, Sheppard, H.W.†; *University of California at Berkeley, Berkeley, CA; †California Department of Health Services, Berkeley, CA; USA.

Th.C.628
PROGRESSION OF HIV DISEASE DURING THE EARLY STAGES: ESTIMATING RATES OF DECLINE OF CD4+ T-LYMPHOCYTES. Brundage, J*, Gardner, L,* MCNeil, J,* Mayers, D,* Pomerantz, R,† Redfield, R,* Milazzo, M,† Burke, D,* Birx, D,* Oster, C,‡ Davis, C,‡ Hawkes, C,‡ Harrison, S,‡ Michael, R,‡ Aronson, N,‡ Bales, D,‡ Lennox, J,‡ Craig, D,‡ et al; *Walter Reed Army Inst of Res, Washington,DC ‡SRA Tech,Inc ‡US Army Retrovirus Res Grp.

Th.C.629
EVOLUTION OF LYMPHADENOPATHY IN HIV-1 SEROPOSITIVE HOMOSEXUAL MEN AND INVOLUTION AMONG THOSE WHO DEVELOP AIDS. Friedman, Heidi; Kaslow, R.; Goldsmith, J.; Hoover, D.; Odaka, N.; Odimbie, O.; Detels, R.; *Multicenter AIDS Cohort Study, National Institute of Allergy and Infectious Diseases, National Institutes of Health (NIH), Bethesda, MD, USA.

Th.C.630
EVIDENCE FOR A SEXUALLY TRANSMITTED COFACTOR FOR KAPOSI'S SARCOMA IN A COHORT OF HOMOSEXUAL MEN. Archibald, Chris*; Schechter, M.T.*; Craib, K.J.P.*; Le, T.N.*; Montaner, J.S.G.*; Willoughby, B.*; Douglas, B.*; O'Shaughnessy, M.†; *The Lymphadenopathy-AIDS Study, University of British Columbia and St. Paul's Hospital, Vancouver, Canada. †Federal Centre for AIDS, Ottawa, Canada.

Th.C.631
EXAMINATION OF TIMING OF POTENTIAL KAPOSI'S SARCOMA COFACTOR RELATIVE TO HIV-1 INFECTION. Jacobson, Lisa; Munoz, A.; Dudley, J.; Grufferman, S.; Obrams, I.; Armenian, H.; and Phair, J.; Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Th.C.632
EUROPEAN NON-AGGREGATE AIDS DATA SET: KAPOSI'S SARCOMA STUDY. Couturier, Elisabeth*; Lavoie, G.*; Ancelle-Park, R.*; Brunet, J.B.*; Natl. Correspondants; *WHO Collaborating Centre on AIDS, Paris, France.

Th.C.633
IMMUNESTATUS AS A DETERMINANT OF HUMAN PAPILLOMAVIRUS DETECTION AND ITS CORRELATION WITH ANAL EPITHELIAL ABNORMALITIES. Melbye, Mads, Palefsky, J., Gonzales, J., Ryder, L., Biggar, R.; Danish Cancer Registry, Copenhagen, Denmark.

Th.C.634
INFECTION WITH SYPHILIS AND/OR HIV AMONG INITIALLY ASYMPTOMATIC HOMOSEXUAL MALES, BOSTON, MA, 1985-1989. Underdahl, Jerry P.*, Mayer, K.H.†, Saltzman, S.P.*, Sommers, E.*, Moon, M.*, Moye, J.‡; *Fenway Community Health Center, Boston, MA; †Brown University AIDS Program, Providence, RI; ‡State Laboratory Institute, Boston, MA; USA.

Natural History: Transfusion Recipients and Hemophiliacs

Th.C.635
THE CONDITIONAL INCUBATION DISTRIBUTION AND SURVIVAL IN A GROUP OF TRANSFUSION ASSOCIATED AIDS CASES SEEN IN MEXICO CITY. Volkow Patricia*, Ponce de Leon S†, Calva J†, Mohar A‡; *Hospital PEMEX, Mexico City, Mexico, †Hospital de Nutricion, Mexico City, Mexico, ‡Harvard School of Public Health, Boston, MA.

Th.C.636
HIV PROGRESSION IN RECIPIENTS ACCORDING TO DONOR TYPE. Samson, Susan; Busch, M.; Salk, S.; Garner, J.; Ward, J.*; Perkins, H.; Irwin Memorial Blood Centers, San Francisco, California, USA. *Centers for Disease Control, Atlanta, Georgia, USA.

Th.C.637
LACK OF ASSOCIATION IN ANTI-HIV(+) HEMOPHILIACS BETWEEN DECLINE IN CD4 AND TREATMENT WITH CLOTTING FACTOR CONCENTRATES. Gjerset, George* and the Transfusion Safety Study (TSS) Group; Puget Sound Blood Center, Seattle, WA, USA.

Th.C.638
FALL OF CD4 LYMPHOCYTES IN HIV-1 INFECTED PATIENTS WITH COAGULATION DISEASES. Transfusion Safety Study (TSS) Group* represented by Hilgartner, Margaret W.†; *Participating Institutions in New York, Miami, San Francisco, Los Angeles; †Cornell University Medical Center, New York, New York, U.S.A.

Th.C.639
IN FRENCH HEMOPHILIACS, PROGRESSION TO AIDS IS MORE FREQUENT IN CHILDREN AND IS NOT RELATED TO CMV INFECTION. Laurian, Yves*, Archambault, M.P.*, Verroust, F.†, Peynet, J.*, Dussaix, E.*; *International Hemophilia Training Center, Kremlin-Bicetre, †Centre Air et Soleil, LaQueue les Yvelines, France.

Th.C.640
COMPARISON BETWEEN THE EVOLUTION OF THE HIV POSITIVE HEMOPHILIACS AND TRANSFUSION-ASSOCIATED CASES, BORDEAUX, FRANCE, 1985-1989. Dupon, Michel*, Bismuth, M.J.†, Mselatti, P.†, Lacoste, D.*, Schmitt, A.*, Lacut, J-Y.*; *Centre Hospitalier Regional Universitaire (CHRU), Bordeaux, France, †INSERM, Universite de Bordeaux, France.

Th.C.641
TEN YEAR FOLLOW-UP OF A COHORT OF HI ANTI-HIV SEROPOSITIVE HAEMOPHILIACS. Lee, Christine A, Phillips A N, Elford J, Janossy G, Griffiths P D, Kernoff P B A.; Royal Free Hospital and School of Medicine, London, England.

Th.C.642
CUMULATIVE RISK FOR AIDS AND OTHER HIV OUTCOMES, AND CHANGING PATTERN OF PRIMARY AIDS DIAGNOSIS IN A COHORT OF HEMOPHILIACS IN WESTERN PENNSYLVANIA. Ragni, Margaret V., Kingsley, L.A.; University of Pittsburgh School of Medicine, Hemophilia Center of Western Pennsylvania, Graduate School of Public Health, Pittsburgh, PA, USA.

Th.C.643
WHY THE SLOWER PROGRESSION RATE TO AIDS IN YOUNG HIV-INFECTED PATIENTS?. Phillips, Andrew N., Lee, C.A., Elford, J., Webster, A., Janossy, G., Kernoff, P.B.; Royal Free Hospital & School of Medicine, London, England.

Natural History: Drug Users

Th.C.644
PROGRESSION OF HIV DISEASE IN INTRAVENOUS DRUG USERS. Gorter, Robert; Vranizan, K.; Moss, A.; Brodie, B.; Wolfe, H.; Univ. of California, SF, CA, USA.

Th.C.645
INCREASED RISK OF AIDS IN OLDER INTRAVENOUS DRUG ABUSERS AND RATES OF HIV SEROCONVERSION: 5-YEAR FOLLOW-UP FINDINGS FROM THE NEW JERSEY IVDA COHORT STUDY. Weiss, Stanley H.*; Denny, T.N.†; French, J.‡; Klein, C.W.*; Jaffee, M.A.*; Altman, R.†; et al.; *Depts. of Preventive Medicine and of †Pediatrics, UMDNJ-NJ Med Sch, Mewark NJ; NJ Dept of Health, Trenton, NJ, USA.

Th.C.646
PROGRESSION TO AIDS AND PREDICTORS IN A LARGE COHORT OF INJECTING DRUG USERS WITH ARC TREATED WITH ZIDOVUDINE. Vella, S., Pezzotti, Patrizio, Agresti, M.G., Menniti, F., Guarnotta, G., Rezza, G.; Centro Operativo AIDS, Istituto Superiore di Sanita, Rome, Italy.

Th.C.647
AIDS-FREE TIME AFTER SEROCONVERSION IN INJECTING DRUG USERS AND OTHER RISK GROUP. Rezza, Giovanni; Lazzarin, A; Angarano, G; SiniccoA; Zerboni, R; Aiuti, F; Pristera, R; Salassa, B; Barbanera, M; Gafa, S; Ortona, L Costigliola, ; Pirelli, U; Pezzotti, P.; IMCSA, AIDS Unit, Instituto Superiore Sanita-Rome (Italy).

Th.C.648
THE IMPACT OF FREQUENT INJECTING ON THE IMMUNE STATUS OF INTRAVENOUS DRUG USERS (IDU). Mientjes, Gerard; van den Hoek, JAR; van Ameijden, E; Schellekens, PTA; Roos, M; Coutinho, RA.; Municipal Health Service, Amsterdam, The Netherlands.

Th.C.649
PROGRESSION TO AIDS IN INTRAVENOUS DRUG USERS, COFACTORS AND SURVIVAL. Robertson, J. Roy*; Skidmore, C.A.*; Roberts, J.J.K.*; Elton, R.A.†; *Edinburgh Drug Addiction Study, Edinburgh, Scotland; †Department of Medical Statistics, University of Edinburgh, Scotland.

Th.C.650
BETA-2-MICROGLOBULIN (B2M) LEVELS IN EDINBURGH DRUG USERS. Clarkson, Robert C.*; Flegg, P.J.†; Bird, AG.*; Brettle, RP.† Robertson, JR†; *HIV Immunology Unit, †Infectious Diseases Unit, ‡Muirhouse Medical Group, Edinburgh, Scotland.

Natural History: Women

Th.C.651
INFLUENCE OF GESTATION ON HIV INFECTION. Berrebi A*, Tricoire J.‡, Herne H.‖, Pontonnier G.*; *Service de Gynecologie-Obstetrique, Hopital la Grave; †Service de Virologie, Hopital Purpan; ‡Service de Pediatrie B, Hopital Purpan, Toulouse; ‖Association Le Patriarche, Saint-Cezert, France.

Th.C.652
EFFECT OF PREGNANCY ON PROGRESSION OF HIV INFECTION. Bledsoe, Karen*; Olopoenia, L.*; Barnes, S.*; Delapenha, R.*; Saxinger, C.†; Frederick, W.*; *Howard Univ. Hospital, Washington, D.C.; †NCI, Bethesda, MD, USA.

Th.C.653
HIV INFECTION AS A RISK FACTOR FOR SPONTANEOUS FIRST TRIMESTER ABORTION. Lopita M.L.*, Temmerman M*+, Sinei S.K.F.*, Plummer F.*!, Wamola I.*, Piot P.!; *University of Nairobi, Kenya; +University of Manitoba, Winnipeg, Canada; !Institute of Tropical Medicine, Antwerp, Belgium.

Th.C.654
NATURAL HISTORY OF HIV INFECTION IN FEMALE BENEFICIARIES OF THE ARMY HEALTH CARE SYSTEM. Levin, Lynn I.*; Brundage, J.*; McNeil, J.*; Milazzo, M.†; Oster, C.†; Craig,D.†; McAllister, C.†; Harrison, S.†; *Walter Reed Army Institute of Research, Washington, DC, USA, †SRA Technologies, Inc., Alexandria, Virginia, USA, ‡U.S. Army Retrovirus Research Group.

Th.C.655
PATTERNS OF PREGNANCY AND REPRODUCTIVE MORBIDITY AMONG HIV-INFECTED WOMEN IN THE UNITED STATES ARMY: A RETROSPECTIVE STUDY. Lasley-Bibbs, Vivian; Renzullo, P.; Goldenbaum, M.; Horton, J.; McNeil; J.; Walter Reed Army Institute of Research, Washington, D.C. 20307-5100 USA.

Natural History: Children

Th.C.656
MORTALITY AND INFECTION RATES IN INFANTS BORN TO SEROPOSITIVE MOTHERS: A COHORT STUDY, BRAZZAVILLE, CONGO. Lallemant, Marc*; Lallemant-Le Coeur, S.†; Cheynier, D.†; N zingoula, S.‡; Larouze, B.†; et al.; *Orstom S/Urb, Paris/ Brazzaville, Congo; †IMEA/Inserm U13, Paris, France; ‡Dir. Sante Mat Inf, Brazza, Congo.

Th.C.657
MORBIDITY AND MORTALITY IN THE FIRST 30 MONTHS OF LIFE IN 477 INFANTS BORN TO SEROPOSITIVE MOTHERS IN ZAIRE. Manzila, Tarande*; Nsa, W.*; Kabagabo, U.*; Mosengo, M.*; Binyingo, M.†; Ryder, R.* †.; *Project SIDA, Kinshasa, Zaire; †Cliniques Ngaliema, Kinshasa; ‡CDC, Atlanta, GA, USA.

Th.C.658
MORBIDITY AND MORTALITY IN SUCCESSIVE BIRTH COHORTS OF CHILDREN AND THIER HIV(+) MOTHERS IN ZAIRE. Nsuami, Malanda*; Badi, N.*; Mundele, L.*; Nzobwo, B.*; Kashamuka, M.*; Ryder, R.* †.; *Projet SIDA, Kinshasa, Zaire; †CDC, Atlanta, GA, USA.

Th.C.659
NATURAL HISTORY OF HIV-1 INFECTION IN AFRICAN CHILDREN: A PROSPECTIVE COHORT STUDY IN RWANDA. Lepage, Philippe*, Van de Perre, P.†, Msellati, P.†, Hitimana, D.G.*, VanGoethem, C.*, Kestelyn, P.*, Stevens, A.M.*, Nsengumuremyi, F.*, Serufiliria, A.*, Dabis, F.†; *Central Hospital of Kiglai (CHK), Rwanda, Dept. of Pediatrics, OBS/ GYN & Opthamology; †AIDS Reference Laboratory, Kigali, Rwanda; ‡INSERM U 330, Univ. of Brodeaux II, Bordeaux, France.

Th.C.660
EPIDEMIOLOGY AND NATURAL HISTORY OF HIV INFECTION IN CHILDREN: RESULTS FROM THE ITALIAN MULTI-CENTRE STUDY ON 1,316 SUBJECTS. Tovo, Pier-Angelo, DeMartino, M.; University of Turin,Department of Pediatrics, for the Italian Multicentre Study, Turin, Italy.

Th.C.661
INCUBATION TIME FOR AIDS AMONG HOMOSEXUAL AND PEDIATRIC CASES. Costagliola, Dominique*; Laporte, A†; Chevret, S*; Valleron, A-J*; *Inserm U 263, Universite Paris 7, France, †Division SIDA, Direction Generale de la Sante, Paris, France.

Natural History: Predictions and Markers of Progression

Th.C.662
PROGRESSION OF HIV—DISEASE: STUDY OF 86 INDIVIDUALS BY A NEW STAGING SYSTEM (WHO, 1989). Cahn, Pedro*; Perez, H*; Casiro, A.*; Grinberg, N.*; Muchinik, G.†; Bouzas, M.†; *Hal. Fernandez; †Academia de Medicina, Buenos Aires, Argentina.

Th.C.663
PROGNOSTIC VALUE OF LYMPHNODE BIOPSY IN HIV INFECTION: A LONG-TERM FOLLOW-UP. Vago, Luca*; Antonacci, CM*; Berta, L*; Boldorini, R*; Cinque, P*; Castagna, A*; Cristina, S*; Constanzi, G*; Lazzarin, A*; Moroni, M*; Parravicini, C*; Musicco, M†.; *University of Milan, †ITBA, CNR, Milan, Italy.

Th.C.664
RELEVANCE OF ANTIBODY RESPONSE TO HIV-1 NON-STRUCTURAL PROTEINS FOR UNDERSTANDING THE PATHOGENESIS AND PROGRESSION OF INFECTION. Reiss, Peter[†]; Lange, J.M.A.[‡]; Dekker, J.*; De Wolf, F*; De Ronde, A*; Debouck, C[‡]; Goudsmit, J*; *Human Retrovirus Laboratory and [†]Department of Medicine, Academic Medical Center, Amsterdam, The Netherlands; and [‡]Department of Molecular Genetics, Smith Kline and French Labs, Penn., U.S.A.

Th.C.665
COMPLETE BINDING OF P24 ANTIGEN MAY BE A SUCCESSFUL RESPONSE TO HIV-1 INFECTION. Detels, Roger; Nishanian, P.; English, P.; Stehn, S.; Fahey, J.L.; L.A. Multicenter AIDS Cohort Study (MACS) Center, UCLA Schools of Public Health and Medicine, Los Angeles, California, U.S.A.

Th.C.666
ORAL CANDIDIASIS IN HIV INFECTION: PROGRESSION BY TYPE OF CLINICAL PRESENTATION. Greenspan, Deborah*, Dodd, C.*, Westenhouse, J.*, Greenspan, J.S.*, Feigal, D.W.[†]; *Oral AIDS Center, University of California, San Francisco, CA, USA, [†]University of California, San Diego, CA, USA.

Th.C.667
PREDICTIVE MARKERS FOR AIDS IN CHILDREN WITH HEMOPHILIA. Caussy, Deoraj, Hilgartner, M., Cohen, A., Bray, G., Aledort, L., Goedert, J.; National Cancer Institute, Multicenter Study of AIDS in Hemophilia, Bethesda, MD, USA.

Th.C.668
NATURAL HISTORY OF IMMUNE ACTIVATION IN HIV INFECTION: SERUM BETA-2 MICROGLOBULIN (B2M) AND NEOPTERIN PRIOR TO THE DEVELOPMENT OF AIDS. Fahey, J.L.; Taylor, J.M.G.; Detels, R.; Hofmann, B.; Stehn, S.; Rinaldo, C.; Munoz, A.; Schrager, L.; Huprikar, J.; Graham, N.; Phair, J.M.; Multicenter AIDS Cohort Study (MACS), L.A., CA., U.S.A.

Th.C.669
PREDICTORS OF PROGRESSION TO AIDS IN THE TORONTO SEXUAL CONTACT STUDY. Coates, Randall A.*, Farewell, V.*, Raboud, J.*, Calzavara, L.*, Major, C.*, McLaughlin, B.[†], Fanning,M.*, Shepherd, F.*, MacFadden, D.*, Johnson, J.*; *University of Toronto, Ontario, Canada; Ontario Ministry of Health, Toronto, Ontario, Canada.

Th.C.670
EVALUATION OF HIV P24 ANTIBODY LEVELS, DETERMINED WITH A FLOW CYTOMETRIC IMMUNOREACTIVE BEAD (IRB) ASSAY, IN PREDICTING DISEASE PROGRESSION. Scillian, J.*; McHugh, Thomas*; Wang, J.*; Sheppard, H.[†]; Ascher, M.[‡]; Stites, D.*; *Department of Laboratory Medicine, UCSF, San Francisco, CA, USA; [†]Calif. Dept. of Health Services, Berkeley, CA, USA.

Th.C.671
IN VITRO PRODUCTION, MEMBRANE EXPRESSION, AND SERUM LEVELS OF SIL-2R IN HIV INFECTION. Jackson, Anne L.[†]; Hofmann, B.*; Cumberland, W.*; Nishanian, P.*; Rezai, A.*; Detels, R.*; Fahey, J.L.*; *UCLA, School of Medicine, Los Angeles, California, USA; [†]Decton Dickinson, Mountain View, California, USA.

Th.C.672
EVALUATION OF BETA-2-MICROGLOBULIN AND NEOPTERIN AS PROGNOSTIC MARKER IN HIV DISEASE. Anders Karlsson, Viveca Holmberg, Eric Sandstrom; Dpt of Dermato-venereology Sodersjukhuset Stockholm Sweden.

Th.C.673
DEVELOPMENT OF IMMUNE RESPONSE TO HIV P24 PROTEIN. McRae, Brian*, Goudsmit, J.[†], Sheppard, H.[‡], Lange, J.[‡], Ascher, M.[‡], Allain, J.P.*; *Abbott Laboratories, North Chicago, IL, USA; [†]Academic Medical Center, Univ. of Amsterdam, Amsterdam, The Netherlands; andd [‡]Department of Health Services, Berkeley, CA, USA.

Th.C.674
DETECTION OF HIV-1 GENOMIC SEQUENCES AND DISTINCT CHANGES IN CD4+ AND CD8+CD38+ COMPARTMENT SIZE PRECEDE SEROCONVERSION. Yagi, Mary Jane, Joesten, M., Wallace, J., Bekesi, G.; Dept. Neoplastic Diseases, Mt. Sinai Medical School, New York, NY, USA.

Natural History: Cofactors

Th.C.675
INTERACTION BETWEEN HIV-1 INFECTION AND SMOKING ON CD4 LYMPHOCYTE COUNT. Park, Lawrence P; Munoz, A; Armenian, H; Margolick, J; Giorgi, JV; Ferbas, J; Bauer, K; Kaslow, RA; and Fahey, JL; Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Th.C.676
GENETIC SUSCEPTIBILITY TO PROGRESSION TO AIDS FOLLOWING HIV-1 INFECTION: THE SAN FRANCISCO MEN'S HEALTH STUDY. Louie, Leslie; Newman, B; and King, M-C.; School of Public Health, University of California, Berkeley, CA 94720, USA.

Th.C.677
SERUM COPPER AND ZINC LEVELS PREDICT PROGRESSION TO AIDS INDEPENDENTLY OF CD4 LEVEL. Sorensen Donna, Graham NMH, Odaka N, Brookmeyer R, *Willett W, Polk BF.; Johns Hopkins School of Hygiene and Public Health, Baltimore, MD and *Harvard School of Public Health.

Th.C.678
CHRONIC DEPRESSION PREDICTS CD4 DECLINE OVER A FIVE YEAR PERIOD IN HIV SEROPOSITIVE MEN. Kemeny, Margaret E.*; Duran, R.[†]; Taylor, S.E.[†]; Weiner, H.*; Fahey, J.L.*; *UCLA Sch. of Med., Los Angeles, CA, USA; [†]Dept. of Psychology, UCLA, Los Angeles, CA, USA.

Th.C.679
DOES INFECTION WITH HEPATITIS B VIRUS OR VACCINATION WITH PLASMA-DERIVED HEPATITIS B VACCINE ACCELERATE PROGRESSION TO AIDS?. Buchbinder, Susan*; Hessol, N*; Lifson, A*; O'Malley, P*; Barnhart, L*; Bodecker, T*; Cannon, L*; Rutherford, G*; Hadler, S[†]; *AIDS Office, San Francisco Department of Public Health, San Francisco, CA, USA; [†]Division of Viral Diseases, Centers for Disease Control, Atlanta, GA, USA.

Th.C.680
CMV IS NOT A COFACTOR IN PROGRESSION OF HIV INFECTION. Drew, W.L.*; Garner, Jane[†]; Perkins, H.[‡]; Miner, R.*; *Mount Zion Hospital and Medical Center, San Francisco, CA, USA; [†]Irwin Memorial Blood Bank, San Francisco, CA, USA.

Th.C.681
UPDATE ON COINFECTION WITH HIV & HTLV-1 IN TRINIDAD. Courtenay Bartholomew*, E. Cleghorn+, B. Hull+, K. Batto+, C. Diaz+ and W. Blattner[†]; */+The University of the West Indies/CAREC, Port of Spain, Trinidad [†]The National Cancer Institute, Maryland USA.

Th.C.682
VIRAL CO-FACTORS IN THE DEVELOPMENT OF CLINICAL SYMPTOMATOLOGY OF HIV-INFECTED SUBJECTS. Giraldo, Gaetano*, Beth-Giraldo, E.*, Gallo, R.C.‡, Serwadda, D.‡, Katongole-Mbidde, E.‡, Buonaguro, F.M.*, Tamburini, M.‖; *Ist. Naz. Tumori Fond. Pascale, Naples, Italy; ‡NCI, NIH, Bethesda, MD, USA; ‡Makerere Univ. & Uganda Cancer Ctr., Kampala, Uganda; ‖GPA/WHO, Entebbe, Uganda.

Natural History: Disease Outcomes

Th.C.683
CANCER TRENDS ASSOCIATED WITH INCREASING INCIDENCE OF AIDS. Rabkin, Charles S., Biggar, R., Horm, J.; National Cancer Institute, Viral Epidemiology Section, Bethesda, MD, USA.

Th.C.684
PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY (PML) AND HIV INFECTION, SAN FRANCISCO, 1981-1989. Gillespie, Sheila M.*; Chang, Y.‡; Lemp, G.+; Arthur, R.++; Buchbinder, S.+; Stiemle, A.‡; Baumgartner, J.‡; Rando, T.‡; Neal, D.+; Rutherford, G.+; Schonberger, L.*; Janssen, R.*; *Centers for Disease Control, Atlanta, GA; ‡Univ. of CA, SF, CA; +Dept. of Public Health (SFDPH), SF, CA; ++Johns Hopkins University, Baltimore, MD, USA.

Natural History: HIV-2

Th.C.685
STUDY FOR THE DETECTION OF ANTIBODIES AND FOLLOW-UP OF SEROPOSITIVES SUBJECTS TO HIV AND AIDS PATIENTS. Martín, Regina; Machado, E.; Menéndez, J.; Zamora, E., AIDS Research Laboratory, CUBA.

Th.C.686
CORRELATION BETWEEN IN VIVO HIV-2 REPLICATION MARKERS AND THE CLINICAL STAGE OF INFECTION IN SEROPOSITIVE PEOPLE FROM GUINEA-BISSAU. Canas-Ferreira, Wanda*; Costa, C.*; Pinto, A.S.*; Champalimaud, J.*; Mansinho, K.*; Dias, F.*; Silva, P.A.*; Prieto, E.*; Sousa, R.*; Araujo, C.*; Baptista, J.L.*; *Inst. Hyg. Tropical Medicine, New University of Lisbon, Portugal ‡Ministry of Health, Guinea-Bissau.

Natural History: Survival

Th.C.687
AIDS MORTALITY TRENDS AMONG HOMOSEXUAL/BISEXUAL MEN. Hersh, Bradley, Byers, R; Karon, J; Buehler, J.; Centers for Disease Control (CDC), Atlanta, GA, USA.

Th.C.688
AIDS-FAMILIARITY AND IN-HOSPITAL MORTALITY FOR PATIENTS WITH INITIAL EPISODE OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN VA HOSPITALS (1986-1989). Bennett, C.L.*,‡; Bennett, W.*; Gertler, P.‡; Kanouse, D.‡; Guze, P.A.*; *UCLA School of Medicine; ‡The RAND Corporation, Santa Monica, CA, USA.

Th.C.689
DIAGNOSIS AT DEATH: AN INDICATOR OF FAILURE OR SUCCESS?. Conti, L.A.; LaLota, M.; Lieb, S.H.; Gill, J.; Sims, J.; Witte, J.J.; Florida Department of Health and Rehabilitative Services, Tallahassee, Florida USA.

Th.C.690
SURVIVAL WITH AIDS IN MASSACHUSETTS: 1981-1988. Seage, George, R.*, Oddleifson, S.*, Carr, E.*, Shea, B.‡, Makarewicz, L.‡; *Boston Department of Health and Hospitals, ‡Massachusetts Department of Public Health, Boston, MA, USA.

Th.C.691
SURVIVAL STATUS OF CASES FROM THE N.J. AIDS REGISTRY. Crystal, Stephen*; Schiller, N.*; Altman, R.‡; Costa, S.‡; Massey, J.‡; Beals, J.‡; Merzel, C.*; Dulberg, E.*; *AIDS Research Group, Institute for Health, Rutgers University, New Brunswick, NJ, USA ‡New Jersey Department of Health, Trenton, NJ, USA.

Th.C.692
EPIDEMIOLOGY, COSTS AND UTILIZATION OF PEDIATRIC AIDS IN NYS MEDICAID, 1983-87. Fanning, Thomas*; Cosler, L.*; Gallagher, P.*; Chiarella, J.*; Andrews, R.‡; Turner, B.‡; *New York State Dept of Social Services, Albany, NY; ‡Systemetrics/McGraw Hill, Washington, D.C.; ‡Jefferson Medical College, Philadelphia, PA.

Th.C.693
SURVIVAL FOLLOWING DIAGNOSIS OF AIDS-RELATED OPPORTUNISTIC INFECTIONS IN SAN FRANCISCO (SF). Payne, Susan F; Lemp, GF; Franks, DF; Rutherford, GW; AIDS Office, San Francisco Department of Public Health, San Francisco, CA, USA.

Th.C.694
SURVIVAL EXPERIENCE AFTER TB DIAGNOSIS IN 1452 AIDS CASES: IMPLICATION FOR THE EXPANSION OF THE AIDS CASE DEFINITION. Laroche, Eddy; Stoneburner, R.; Araneta, M.; Adler, J.; The NYC Dept. of Health, NY, NY, USA.

Th.C.695
CUMULATIVE RISK OR MORBIDITY IN 65 PATIENTS INFECTED WITH BOTH HIV AND CRYPTOCOCCUS NEOFORMANS. Clark, Rebecca*, Greer D.*, Diamondstone L.*, Hyslop N.*; *Tulane/LSU ACTU, New Orleans, LA USA.

Th.C.696
THE ROLE OF ZIDOVUDINE IN INCREASED SURVIVAL IN AIDS PATIENTS. *Peters, Barry Stephen, ‡Beck E.J., *Coleman D.G., ‡Moss F., ‖Harris J.R.W.,*Pinching A.J.; Depts of *Immunology, ‡Public Health,‡Respiratory Medicine, ‖GU Medicine, St. Mary's Hospital, London, U.K.

Th.C.697
CHANGING MORBIDITY AND MORTALITY PATTERNS IN BRITISH AIDS PATIENTS. Beck E.J., Peters B.S., Coleman D.G., Harris J.R.W., Pinching A.J.; St. Mary's Hospital and Medical School, London, UK., W2 1PG.

AIDS Surveillance: North America

Th.C.698
COMPLETENESS OF AIDS SURVEILLANCE, UNITED STATES. Bueler, James; Berkelman, R.; Stehr-Green, J.; Leary, L.; Centers for Disease Control (CDC), Atlanta, Georgia, USA.

Th.C.699
CHANGES IN U.S. AIDS INCIDENCE TRENDS. Green, Timothy A., Karon, J., Stehr-Green, J.; Centers for Disease Control, Atlanta, GA, USA.

Th.C.700
NATIONAL SURVEILLANCE FOR PEDIATRIC AIDS IN THE UNITED STATES. Caldwell, Blake, P. Fleming, and M. Oxtoby; Centers for Disease Control (CDC) Atlanta, Georgia USA.

Th.C.701
AIDS SURVEILANCE AMONG AMERICAN INDIANS AND ALASKAN NATIVES. Metler, Russ; and Stehr-Green J.; Centers for Disease Control, Atlanta, Georgia, USA.

Th.C.702
AIDS AMONG HOMOSEXUAL/BISEXUAL INTRAVENOUS DRUG USERS IN THE UNITED STATES. Nwanyanwu, Okey; Stehr-Green, J.; Berkerlman, R.; Centers for Disease Control, Atlanta, Georgia, USA.

Th.C.703
EPIDEMIOLOGY OF AIDS AND HIV AMONG CALIFORNIA WOMEN. Vugia, Duc. J.*; Capell, F.J.; Wilson, M.J.; Mordaunt, V.; California Dept. of Health Services, Sacramento; *California Public Health Foundation, Berkeley, CA, USA.

Th.C.704
INCREASING AIDS CASE REPORTING DELAYS IN LOS ANGELES COUNTY, 1984–1989. Lieb, Loren*; Nahlen, B.†; Wakamastu, P.*; *Los Angeles County Department of Health Services, Los Angeles, California, USA †Centers for Disease Control, Atlanta, Georgia, USA.

Th.C.705
CLASSIC EPIDEMIOLOGICAL MAPPING OF AIDS AMONG SAN FRANCISCO DRUG INJECTORS, 1987-1989. Aldrich, Michael R.*; Payne, S.F.†; Margolis, E.*; Biernacki, P.*; Feldman, H.W.*; *Youth Environment Study (YES), San Francisco, CA, USA; †Department of Public Health AIDS Office, San Francisco, CA, USA.

Th.C.706
THE EPIDEMIC OF AIDS AMONG INTRAVENOUS DRUG USERS (IVDUs) AND THEIR HETEROSEXUAL PARTNERS IN THE SOUTHEASTERN (SE) UNITED STATES. Berkelman, Ruth, Fleming, P., Green, T., Gwinn, M., Stehr-Green, J., Curran, J.; Centers for Disease Control, Atlanta, GA, USA.

Th.C.707
DECREASED INCIDENCE OF REPORTED AIDS CASES, NEW YORK CITY. Thomas, Pauline A.; Hindin, R.; Greenberg, A.; Lopez, E.; Bernard, G.; Weisfuse, I.; New York City (NYC) Department of Health, NY, USA.

Th.C.708
COMPLETENESS OF AIDS CASE REPORTING AND THE SPECTRUM OF HIV-RELATED DISEASE AMONG OUTPATIENTS IN NEW YORK CITY. Greenberg, Alan E.*,†; Evans, R.*; Bryan, E.*; Lopez, E.*; Thomas, P.*, and the NYC Expanded Outpatient Surveillance Project.; *AIDS Surveillance Unit, NYC Department of Health, †Division of HIV/AIDS, CDC.

Th.C.709
THE AIDS PATTERN AMONG CANADIAN ABORIGINALS. Wortman, J.A.; Division of STD Control, Ministry of Health, Vancouver, B.C., Canada.

AIDS Surveillance: Latin America and the Caribbean

Th.C.710
TRANSITION FROM TYPE 1 TO TYPE 2 TRANSMISSION OF HIV IN THE AMERICAS: HOW WIDESPREAD THE TREND?. Gonzalez, Roxane*, Kimball, A.M.*, Zacarias, F*, Zessler, L.*; *Pan American Health Organization, 525–23rd Street N.W. Washington, D.C. 20037.

Th.C.711
FEATURES OF THE INTRAVENEOUS DRUG USERS EXPOSURE CATEGORY AMONG AIDS CASES. BRAZIL 1980-1989. Castilho, Euclides*; Chequer, P.†; Rodrigues, L.†; *Oswaldo Cruz Foundation, Rio de Janeiro-Brazil, †Division of DST/AIDS, Ministry of Health, Brasilia-Brazil.

Th.C.712
EPIDEMIOLOGICAL APPROACH TO PEDIATRIC AIDS CASES INBRAZIL, 1985-1989. Bergamaschi, Denise*; Rodrigues, L.*; Lima, G.*; *Ministry of Health-National Division of STD/AIDS, Brasilia-DF, Brazil.

Th.C.713
PROFILE OF IVDU IN A AIDS REFERENCE CENTER. SAO PAULO, BRAZIL 1988. Gianna, Maria-Clara*; Chequer, P.†; Castilho, E.†; Kalichman, A.*; Pinto,V.*; Rodrigues, L.†; *State Health Department, Sao Paulo-Brazil; †Division of DST/AIDS, Ministry of Health, Brasilia-Brazil; ‡Oswaldo Cruz Foundation, Rio de Janeiro-Brazil.

Th.C.714
EPIDEMIOLOGICAL CHARACTERISTICS OF AIDS IN WOMEN IN RIO DE JANEIRO, BRAZIL. Koifman, Rosalina, Monteiro GTR, Rodrigues, R, Quinhoes EP, Horonha CP; Department of Epidemiology, Public Health Services, Municipality of Rio de Janeiro, Brazil Av. Leopoldo Bulhoes 1480 suite 827, Rio de Janeiro, CEO 21041, Brazil.

Th.C.715
DISTRIBUTION AND TRENDS OF AIDS BY SOCIOECONOMIC STRATA IN MEXICO. Bravo, Enrique G., Magis, C., Salcedo, A., Garcia, M., Lezana, M., Sepulveda, J.; Mexico Ministry of Health, Mexico City, Mexico.

Th.C.716
CLINICAL AND EPIDEMIOLOGICAL FEATURES OF PEDIATRIC AIDS CASES IN MEXICO. Garcia, M.L., Salcedo, A., Bravo. E., Martinez, Juan, Mora, J.L., Valdespino, J.L., Sepulveda, J.; General Directorate of Epidemiology, Ministry of Health, Mexico.

Th.C.717
DEVELOPMENT OF THE HIV/AIDS EPIDEMIC IN THE COUNTRY RANKING 4TH IN NUMBER OF CASES IN THE AMERICAS. Mora, Jose Luis G., Valdespino, J., Garcia, M., Magis C., Salcedo, A., Sepulveda, J.; Mexico Ministry of Health, Mexico City, Mexico.

Th.C.718
UPDATE ON THE EPIDEMIOLOGY OF AIDS IN TRINIDAD. Farley Cleghorn+ K. Battoo+, C. Diaz+, S. Balbosa+, N. Jack+, and W. Blattner*, C. Bartholomew+; +The University of the West Indies/CAREC, port of Spain, Trinidad *The National Cancer Institute, Maryland, USA.

AIDS Surveillance: Africa

Th.C.719
AIDS IN COTE D'IVOIRE: PROGRESSION OF THE EPIDEMIC IN WEST AFRICA. Soro Benoit*, Moreau J*, Gershy-Damet G*, Odehouri K*, Lavreys L†, Lafontaine M-F†, Porter A‡, De Cock KM‡#, Heyward WL#.; *Comite National de Lutte Contre le SIDA; †Hopital Protestant de Dabou; ‡Projet RETRO-CI, Abidjan, Cote d'Ivoire; #Centers for Disease Control, Atlanta, USA.

AIDS Surveillance: Europe

Th.C.720
IMPACT OF THE 1987 REVISION OF THE CDC/WHO CASE DEFINITION ON THE SURVEILLANCE OF AIDS IN EUROPE. Ancelle-Park, Rosemary*; Couturier, E.*; Downs, A.M.*; Brunet, J.B.*; European Natl. Correspondants; *WHO Collaborating Centre on AIDS, Paris, France.

Th.C.721
IMPACT OF THE 1987 REVISED AIDS CASE DEFINITION ON THE DANISH AIDS EPIDEMIC: A FOLLOW UP. Smith, Else*, Mathiesen, L.†, Skinhoj, P.‡, Seefeldt, T.‖, Isager, H.#; *Dept. of Epidemiology, State Serum Institute, Copenhagen; †Dept. of Infectious Diseases, Hvidovre Hospital, Hvidovre; ‡Rigshospital, Copenhagen; ‖Marselisborg Hospital, Arhus; #Odense Sygehus, Odense, Denmark.

Th.C.722
THE EPIDEMIOLOGY OF HIV AND AIDS IN SCOTLAND. Goldberg, David*, Emslie J*, Green S†, Smyth W*, Reid D*; *Communicable Diseases (Scotland) Unit, Ruchill Hospital, Glasgow. †Stobhill General Hospital, Glasgow.

AIDS Surveillance: Oceania

Th.C.723
AIDS AND HIV INFECTION IN AUSTRALIA: A FOURTH PATTERN?. Kaldor, John*; Crofts, N.†; Swanson, C.*; McDonald, A.*; Cooper, D.*; *Natl. Centre in HIV Epidemiology and Clinical Research, Sydney; †Macfarlane Burnet Centre for Med. Research, Melbourne, Australia.

AIDS Surveillance: Opportunistic Infections

Th.C.724
DISTRIBUTION OF OPPORTUNISTIC INFECTIONS IN AIDS CASES BY COUNTRY OR REGION OF BIRTH, UNITED STATES, 1981-1989. Bush, Timothy J.*, Castro, K.G.*, Kreiss, J.K.†, Curran, J.W.*; *Centers for Disease Control (CDC), Atlanta, GA; †University of Washington, Seattle, WA; USA.

Th.C.725
REPORTED AIDS PATIENTS WITH TUBERCULOSIS IN THE UNITED STATES. Cauthen, George M., Bloch, A.B., Snider, D.E.; Centers for Disease Control, Atlanta, GA, USA.

Th.C.726
HIV SEROPREVALENCE IN PATIENTS ATTENDING TUBERCULOSIS CLINICS IN THE UNITED STATES, 1988-90. Hnath, Robert S., McCray, E., Onorato, I.M.; Centers for Disease Control, Division of HIV/AIDS, Atlanta, GA, USA.

Th.C.727
ASSOCIATION BETWEEN MYCOBACTERIAL CULTURES AND HIV INFECTION IN A LARGE MUNICIPAL HOSPITAL. Castro, Kenneth G.*; Metchock, B.G.†; McGowan, J.E.Jr.†; Thompson, S.E.†; Curran, J.W.*; *Centers for Disease Control, †Grady Memorial Hospital (GMH), Emory University School of Medicine, Atlanta, Georgia, USA.

Th.C.728
HIV SEROPREVALENCE IN PATIENTS ATTENDING NEW YORK CITY DEPARTMENT OF HEALTH (NYCDOH) TUBERCULOSIS (TB) CLINICS. Greenberg, Barbara; Weisfuse, I.; Back, S.; Tiwari, I.; Gainey, S.; Adler, J.; New York City Department of Health, NY, USA.

Th.C.729
HIGH RATES OF HIV AMONG MUNICIPAL TUBERCULOSIS (TB) CLINIC PATIENTS WITH INACTIVE AS WELL AS ACTIVE TB. Barry, M Anita*,†; Bernardo, J†; Murray, C*; Coppola, D*; Reela, L*; Werner, B†.; *Boston Dept. of Health & Hospitals; †Boston Univ. Schools of Medicine & Public Health; ‡Mass. Dept. of Public Health Boston, MA,USA.

Th.C.730
TUBERCULOSIS IN HIV INFECTED PATIENTS FROM 1985 TO 1989 AT THE NATIONAL AIDS REFERRAL CENTER—HUGG—RIO DE JANEIRO, BRAZIL. Morais-de-Sa, Carlos Alberto*; Sion, F.S.*; Quinhoes, E.P.*; Ismael, C.*; Eyer-Silva, W.A.*; Signorini, D.J.H.P.*; Cunha-Pinto, J.F.*; Motta-Ferreira, L.E.*; *Natl. AIDS Referral Center, Gaffree & Guinle Univ. Hosp., Univ. of Rio de Janeiro (UNI-RIO), Brazil.

Th.C.731
AIDS AND TUBERCULOSIS IN THE STATE OF RIO DE JANEIRO, BRAZIL. Sanches, Katia*,†; Almeida, E.*; Pinto, M.†; Sole-Cava, A.†; *Pan American Health Organization, Rio de Janeiro; †Rio de Janeiro State Health Secretary; ‡Fluminense Federal UUniv., Rio de Janeiro.

Th.C.732
HIV INFECTION AND TUBERCULOSIS: TUBERCULOSIS TRENDS IN ABIDJAN, COTE D'IVOIRE, 1985-1989. Yesso Gilberte*; Bretton R†; Coulibaly IM†; Coulibaly D†; Barrere B; Gnaore E*; De Cock KM* ‡; *Projet RETRO-CI, Abidjan; †Centres Antituberculeux, Abidjan; ‡Centers for Disease Control, Atlanta, USA.

Th.C.733
TUBERCULOSIS AND HIV INFECTION: A LONGITUDINAL STUDY IN A WEST AFRICA: BURKINA FASO. Malkin, J.E.*, Prazuck, T.*, Simonnet, E.†, Tiendrebeogo, H.‡, Fisch, A.*, Ayeroue, J.‡, Vincent-Ballereau, F.*.; *GEEP: Vill.-St-Georges, †AntiTB Regional Center, ‡OCCCGE Bobo Dioulasso.

Th.C.734
IMPORTANCE OF CEREBRAL TOXOPLASMOSIS AS A PRESENTING FORM OF AIDS IN A SOUTH-EUROPEAN AREA. Casabona, Jordi*, Sanchez, E.*, Graus, F.†, Campillo, M.*, Abos, J.†, Segura, A.*; *AIDS Program, Generalitat de Catalunya, Barcelona, Spain; †Neurology D. Hospital Clinic, Barcelona, Spain.

AIDS Surveillance: Methodologic Issues

Th.C.735
USING INTERNATIONAL CLASSIFICATION OF DISEASES—9TH REVISION (ICD-9) CODED HOSPITAL DISCHARGE DATA TO AUGMENT AIDS SURVEILLANCE. O'Keith, Geneva; Froelicher, E.; Garza, A.; Lieb, L.; Eastman, B.C.; Williams, A.; Los Angeles County Department of Health Services, Los Angeles, CA, USA.

Th.C.736
AIDS CASES DIAGNOSED AS OUTPATIENTS. Modesitt, Steven*; Espenlaub, C.†; Klockner, R.*; Fleming, D.*; Oregon Health Division; †Multnomah Co. Health Div., Portland, OR, USA.

Th.C.737
SPECTRUM OF HIV-RELATED DISEASES AND CONDITIONS AMONG OUTPATIENTS. Buskin, S.*, Hopkins, Sharon*, Chamberland, M.†; *Seattle/King County Department of Public Health, Seattle, WA, USA, †Centers for Disease Control, Atlanta, GA, USA.

Th.C.738
MODELING OF STDs AND HIV: THE VALUE OF STD CONTROL AND SURVEILLANCE IN AIDS CONTROL PROGRAMS. Sokal, David*; Auvert, B.†; *AIDSTECH/FHI, NC, USA; †INSERM, Paris, France.

Th.C.739
THE WHO CLINICAL CASE-DEFINITION OF AIDS IN PATIENTS WITH ACTIVE PULMONARY TUBERCULOSIS: A PROSPECTIVE STUDY. Werneck, Eduardo; Kritski, A.; Cury, D.; Ferraz, C.; Holanda, T.; Galvao-Castro, B.; Instituto de Tisiologia e Pneumologia-UFRJ, Rio de Janeiro, Brazil.

Th.C.740
A CLINICAL CASE DEFINITION FOR HIV INFECTION AMONG UGANDAN PATIENTS WITH KAPOSI'S SARCOMA (KS). Desmond-Hellmann, S.D.*; Mbidde, E.K.†; Kizito, Alex†; Hellmann, N.S.; *University of California, San Francisco, California, USA; †Uganda Cancer Institute (UCI), Kampala, Uganda.

Th.C.741
RETROSPECTIVE REVIEW OF NON-AIDS REPORTS IN LOS ANGELES COUNTY BASED ON THE REVISED 1987 AIDS CASE DEFINITION. Nahlen, Bernard*; Lieb, L.†; Kunz, B.†; *Centers for Disease Control, Atlanta, Georgia, U.S.A; †Los Angeles County Department of Health Services, Los Angeles, California, U.S.A.

Th.C.742
SPECTRUM OF HIV INFECTION IN CHILDREN: RESULTS OF ACTIVE HIV SURVEILLANCE IN 6 GEOGRAPHIC AREAS IN USA. Oxtoby, Margaret J.*, Mascola, L.†, Cooper, B.‡, Hindin, R.‖, Maldonado, Y.#, Parrott, W.§, Moye, J.§*; *CDC, Atlanta, GA;†Los Angeles Dept. of Health, Los Angeles, CA; ‡Texas Dept. of Health, TX; ‖NYC Dept. of Health, NY, NY; #Stanford Univ., Stanford, CA; §Children's Nat'l. Med'l. Ctr., Washington, DC; §*Mass. Dept. Health, MA; USA.

AIDS Surveillance: Attributable Mortality

Th.C.743
MORTALITY DUE TO HIV INFECTION IN ADOLESCENTS AND YOUNG ADULTS. Kilbourne, Barbara W., Chu, S.Y., Oxtoby, M.J., Rogers, M.F.; Centers for Disease Control (CDC), Division of HIV/AIDS, Atlanta, GA, USA.

Th.C.744
IMPACT OF HUMAN IMMUNODEFICIENCY VIRUS EPIDEMIC ON MORTALITY AMONG WOMEN 15-44 YEARS OF AGE, UNITED STATES. Chu, Susan; Buehler, J.; Berkelman, R.; Centers for Disease Control (CDC), Atlanta, GA, USA.

Th.C.745
IMPACT OF THE HIV EPIDEMIC ON THE MORTALITY OF CHILDREN IN CALIFORNIA. Wang, Nancy E.; Duliege, A.-M.; Singleton, J.; Maldonado, Y.; Stanford Univ. Medical Center, California Dept. of Health Service, Stanford, CA.

Th.C.746
MORTALITY AMONG HOMOSEXUAL MALES IN NEW YORK CITY (NYC), 1978-88. Koblin, Beryl; Morrison, J; Taylor, P; Stoneburner, R*; Stevens, C.; The New York Blood Center, *The New York City Department of Health, New York, New York, USA.

Th.C.747
THE IMPACT OF AIDS ON PATTERNS OF PREMATURE DEATH IN CANADA. Wells, George*, Rylett, D.*, Swmenciw, F.*, Nault, P.†; *Laboratory Centre for Disease Control, †Federal Centre for AIDS, Health and Welfare Canada, Ottawa, Ontario, Canada.

Th.C.748
THE EFFECT OF HIV INFECTION ON INFANT AND EARLY CHILDHOOD MORTALITY IN RURAL UGANDA: PRELIMINARY RESULTS. Konde-Lule, J.*; Serwadda, D.†; Musgrave, S.‡; Wawer, M.J.‡; Musagara, M.‖; Sewankambo, N.†; *Makerere University, Kampala, Uganda; †Mulago Hospital, Kampala, Uganda; ‡Columbia University, NY, USA; ‖ACP/Rakai Project, Entebbe, Uganda.

Th.C.749
PREVALENCE AND IMPACT OF AIDS AMONG HOSPITALIZED INTERNAL MEDICINE PATIENTS OF A GENERAL HOSPITAL IN KINSHASA, ZAIRE: CLINICAL SURVEILLANCE DATA. B. Kapita2, M. Nystl, 4, L. Liambi2, F. Behetsl, 3, J. Perriensl, 3,4; 1Projet SIDA; 2Mama Yemo Hospital, Kinshasa, Zaire; 3I.M.T., Antwerp; 4ACGD, Brussels, Belgium.

Th.C.750
INCIDENCE AND MORTALITY FROM HIV INFECTION IN WORKERS AND THEIR SPOUSES AT 2 LARGE KINSHASA, ZAIRE BUSINESSES. Kaseka, Ngungu*; Batter, V.*; Ndilu, M.*; Kamenga, M.*; Safi, E.*; Kambale, R.†; Ryder, R.*/‡; *Project SIDA, Kinshasa, Zaire; †UTEXCO, Kinshasa; ‡CDC, Atlanta, GA, USA.

Th.C.751
AIDS AS AN EMERGING CAUSE OF PREMATURE DEATH IN ITALY. Conti, Susanna, Farchi, G., Greco, D.; Instituto Superiore de Sanita, Rome, Italy.

Th.C.752
AIDS INCIDENCE AND CAUSE SPECIFIC MORTALITY AMONG INTRAVENOUS DRUG USERS IN ROME, ITALY. Davioli, Marina.; Rapiti, E.; Forastiere, F.; Fiume A.; Arca, M.; Perucci, C.A.; Regional Epidemiology Unit, Rome, Italy.

Th.C.753
UNDIAGNOSED HIV-POSITIVE DEATHS. McCormick, Anna; Office of Population Censuses and Surveys and PHLS Communicable Disease Surveillance Centre, London, England.

HIV Seroprevalence in North America

Th.C.754
SENTINEL SURVEILLANCE FOR HIV INFECTION IN PRIMARY CARE OUTPATIENTS IN THE UNITED STATES. Petersen, Lyle R.*; Engel, R.†; Herring, N.†; *Centers for Disease Control (CDC), Atlanta, Georgia, USA †Damon Clinical Laboratories, Needham Heights, Massachusetts, USA.

Th.C.755
SIGNIFICANT INCREASES IN THE ANNUAL NUMBER OF REPORTED HIV-INFECTED PATIENTS IN U.S. DIALYSIS CENTERS FROM 1985-1988. Fayero, Martin S.; Alter M.J. Centers for Disease Control, Atlanta, GA 30333 U.S.A.

Th.C.756
THE TEMPORAL TREND OF INCIDENT HIV SEROCONVERSIONS AMONG YOUNG ADULTS IN THE UNITED STATES ARMY: 1985-89. McNeil, John*; Wann, F.*; Renzullo, P.*; Brundage, J.*; Redfield, R.*; Burke, D.*; Miller R.* and the U.S. Army Retrovirus Research Group.; *Walter Reed Army Institute of Research, Washington, DC, USA; †SRA Technologies, Alexandria, VA, USA.

Th.C.757
ESTIMATED INCIDENCE OF HIV SEROCONVERSION IN ACTIVE DUTY MEMBERS OF THE US AIR FORCE, AUGUST 1988-DECEMBER 1989. Warner, Ronald*; Wolfe, W.*; Mathis, R.*; Wright, E.*; *Epidemiology Division, US Air Force School of Aerospace Medicine, Brooks AFB, Texas, USA.

Th.C.758
TRENDS OF HIV-AB RATES IN CIVILIAN APPLICANTS FOR MILITARY SERVICE SINCE 1985. Gardner Lytt*, Brundage JF*, Goldenbaum MB*, Burke DS*, Miller RN*; Divisions of Preventive Medicine and Retrovirology, Walter Reed Army Institute of Research, Washington DC, USA.

Th.C.759
HIV INFECTION AMONG SERIALLY TESTED ADULT AMERICANS. Cowan David N.*#, Pomerantz RS*, Wann ZF* Goldenbaum M#, Brundage JF#, Miller RN#, Burke DS#; *SRA Technologies, Inc., Alexandria, VA #Walter Reed Army Institute of Research, Washington, DC.

Th.C.760
GONORRHEA AND SYPHILIS TRENDS DURING THE AIDS EPIDEMIC: USA. Moran, John S.; Peterman, T.A.; Gershman, K.A.; Rolfs, R.A.; Nakashima, A.K.; Zaidi, A.; Centers for Disease Control, Atlanta, GA, USA.

Th.C.761
RISK FOR AIDS IN MULTIETHNIC NEIGHBORHOODS IN SAN FRANCISCO: THE AMEN STUDY. Fullilove, Mindy*; Wiley, J.†; Fullilove, R.*; Catania, J.*; Golden, E.* and Hulley, S.*; *UCSF Center for AIDS Prevention Studies (CAPS) and/or Multicultural Inquiry and Research on AIDS, BHPF; †UCB, CA, USA.

Th.C.762
SECOND GENERATION OF HETEROSEXUAL TRANSMISSION OF HIV. Masiero, Janet; Chen, R.; Armour, G.; Sone, C.; Fischl, M.A.; Univ. of Miami Clinical Research Unit, Miami, FL, USA.

Th.C.763
PREVALENCE OF HIV INFECTION AND DISTRIBUTION OF RISK FACTORS AMONG HETEROSEXUALS IN SOUTHEAST NEW ENGLAND. Zierler, Sally; Feingold, L.; Laufer, D.; Carpenter, C.; Mayer, K.; The New England Behavioral Health Study, Brown University, Providence, Rhode Island USA.

Th.C.764
HIV-1 SURVEYS OF PREMARITAL BLOOD SPECIMENS IN A HIGH AIDS INCIDENCE STATE. Altman, Ronald; Shahied, S.; Pizzuti, W.; Brandon, D.; Freund, C.; Dimasi, L.; New Jersey Department of Health, Trenton, NJ, USA.

Th.C.765
HIV-1 SEROSURVEYS OF VARIOUS POPULATIONS IN NEWARK, N.J. Brandon, Donald; Altman, R.; Shahied, S.; Patel, R.; Pizzuti, W.; Robeson, L.; New Jersey State Department of Health, Trenton, NJ, USA.

Th.C.766
USING SEROPREVALENCE AND IMMUNOLOGIC DATA TO ESTIMATE AMBULATORY, LABORATORY AND PHARMACEUTICAL NEEDS OF A LARGELY ASYMPTOMATIC POPULATION. Rautenberg, Ellen L., Weisfuse, I.B.; New York City Department of Health, Division of AIDS Program Services, New York, NY, USA.

Th.C.767
HIV SEROPREVALENCE STUDY OF INVOLUNTARILY HOSPITALIZED MENTALLY ILL HOMELESS: TWO TIME FRAMES IN NEW YORK CITY. Empfield, M.*; Cournos, F.†; Weinstock, A.*; Mayers, M.†; Meyer, I.*; Agosin, B.*; *Creedmoor Psychiatric Center, Queens, New York; †Psychiatric Institute, New York City; †Montefiore Medical Center, Bronx, New York, U.S.A.

Human Sexuality

Th.D.768
PREDICTING RISK BEHAVIOR WITH THE AIDS RISK REDUCTION MODEL (ARRM) IN A RANDOM HOUSEHOLD PROBABILITY SAMPLE OF SAN FRANCISCANS: THE AMEN STUDY. Joseph Catania; Coates, T.; Kegeles, S.; Peterson, J.; Marin, B.; Fullilove, M.; University of California, San Francisco, Center for AIDS Prevention Studies (CAPS), USA.

Th.D.769
SEXUAL BEHAVIOUR IN THE CITY OF LISBON—PRELIMINARY RESULTS. Amaro, Fausto*, Teles, L.†, Dantas, A.†; *Technical University of Lisbon and Bom Sucesso Foundation, Lisbon, Portugal, †Bom Sucesso Foundation, Lisbon, Portugal.

Th.D.770
SEXUAL BEHAVIOR OF A FRENCH POPULATION AND PRECAUTIONS FACING AIDS. Lhomond Brigitte*; Bouhet B.*; Denni B.†; Lagrange H.*; Zorman M.†; P.R.O.M.S.T. *C.N.R.S., †Universite de Grenoble, France.

Th.D.772
SEXUALITY AND AIDS IN THE NETHERLANDS: RESULTS FROM A NATIONAL SURVEY. Sandfort, Theo*; Van Zessen, G.†; De Vroome, E.*; Straver, C.†; Tielman, R.*; *University of Utrecht, Utrecht, The Netherlands, †The Netherlands Institute for Socio-Sexological Research, Utrecht, The Netherlands.

Th.D.773
SEXUAL BEHAVIOR AND KNOWLEDGE ABOUT AIDS IN STUDENTS. Elsing, Christoph, Musial, F., Seifert, B., Erckenbrecht, J. F., Strohmeyer, G.; Heinrich-Heine University, Department of Medicine, Duesseldorf, FRG.

Th.D.774
AIDS KNOWLEDGE AND SEXUAL BEHAVIOR AMONG UNIVERSITY OF PUERTO RICO STUDENTS. Cunningham, Ineke and Mario Rodriguez Sanchez; University of Puerto Rico, Rio Piedras Campus, Rio Piedras, Puerto Rico.

Th.D.775
ADOLESCENT EDUCATION FOR SEXUALITY-A STRATEGY FOR AIDS PREVENTION IN DEVELOPING CULTURES. Shah,Bharat;Thakur,V.; Bhimani,G.;Gilada,I.; Indian Health Organisation, J.J.Hospital,Bombay,India.

Th.D.776
BELGIAN ADOLESCENTS AND AIDS. A SURVEY OF RISK BEHAVIOUR AND PREVENTION. Nieuwinckel, Stefan; Knops, N.; Poppe, E.; Van Hove, E.; *University of Antwerp, Department of Political and Social Sciences, Antwerp, Belgium.

Th.D.777
ANALYSIS OF FACTORS RELATED WITH HIV INFECTION IN 961 FEMALE SEXUAL WORKERS. Uribe Patricia, Hernandez A.M.,Ornelas H.G., Jesus M.R., Chavez P.F.,Sepulveda A.J.; AIDS Information Center. CONASIDA.Mexico City.

Th.D.778
DETERMINANTS OF EFFECTIVE AIDS EDUCATION AND COUNSELING AMONG FILIPINO WOMEN AT HIGH RISK OF HIV INFECTION. Bagasao, TMP.*, Quintos, Ma. Lourdes A.*, Monzon, OT†, Giannone, P.‡ and Asoy, LA*; *Kabalikat ng Pamilyang Pilipino Foundation, Metro Manila, Philippines †Department of Health Research Institute for Tropical Medicine, Manila, Phil.‡Family Health International, North Carolina, U.S.A.

Th.D.779
PROSTITUES, RESEARCH AND EDUCATION: A REPORT BY THE AFFECTED COMMUNITY. Leigh, Carol (prostitute); *National Task Force on Prostitution, San Francisco, California, U.S.A., †COYOTE, San Francisco, California, U.S.A., ‡International Committee for Prostitutes' Rights, Amsterdam, The Netherlands.

Th.D.780
LAW ENFORCEMENT AND THE RISK OF HIV TRANSMISSION AMONG STREET-INVOLVED WOMEN. Clay, Charlton*; Kleyn, J.*; McGough, J.†; Freeman, C.*; Nyrop, K.*; *Alcohol and Drug Abuse Institute, Univ. of WA., Seattle, WA; †The AIDS Prevention Project (Seattle-King County Dept. of Public Health), Seattle, WA.

Th.D.781
EDUCATIONAL VIDEO PROMOTES KNOWLEDGE AND BEHAVIOUR CHANGE AMONG WOMEN IN KIGALI, RWANDA. Muska, S.*, Serufilera, A.*, Allen, S.†, McCarthy, T.*, Tice, J.‡, Lindan, C.‡, Keogh, P.‡.; *Projet San Francisco, Kigali, Rwanda; †National AIDS Program, Kigali, Rwanda; ‡UCSF Center for AIDS Prevention Studies (CAPS), San Francisco.

Th.D.782
AIDS, STD'S AND CONDOMS ACCEPTABILITY IN HIGH RISK GROUPS IN MATADI, ZAIRE. Payanzo, Ntsomo, Mivumbi, Nginge, Kakera, Lwanga; IPN and Universite de Kinshasa, Connaissida, Kinshasa, Zaire Marketing Social/PSI, Kinshasa, Zaire Marketing Social/PSI, Kinshasa, Zaire.

Th.D.783
CONDOM USAGE AND DEMAND AMONG ZAIRE RIVER BOAT TRAVELLERS. Payanzo, Ntsomo, Kakera, Lwanga, Walhmeier, Gregory; IPN and Universite de Kinshasa, Connaissida, Kinshasa, Zaire Marketing Social/PSI, Kinshasa, Zaire Marketing Social/PSI, Kinshasa, Zaire.

Th.D.784
UNPROTECTED VAGINAL AND ANAL SEX AMONG YOUNG SEXUALLY ACTIVE WOMEN. Beirnes, Denise; Planned Parenthood Alameda, SF, CA, USA.

Th.D.785
SEXUAL RISK TAKING AMONG WOMEN AT RISK FOR HIV. Nanda, Deepak*; Endias, R.*, Jaccard, J.†, Minkoff, H.*; *State U. of N.Y. Health Sciences Ctr. at Brooklyn, USA, †State U. of N.Y., Albany, USA.

Th.D.786
SEXUAL AND PHYSICAL ABUSE AS FACTORS IN CONTINUED RISK BEHAVIOR OF WOMEN IV DRUG USERS IN A SOUTH BRONX METHADONE CLINIC. Worth, D.; Drucker, E.; Eric, K.; Pivnick, A.; Montefiore Medical Center/Albert Einstein College of Medicine, Bronx, New York, USA.

Th.D.787
WOMEN'S SEXUAL RISK BEHAVIOR AMONG PARENTERAL DRUG USERS. Ehrhardt, Anke A.; Meyer-Bahlburg, H.; Exner, T.; Gruen, R.; Lorenz, G.; Goetz, R.; El-Sadr, W.; Sorrell, S.; Gorman, J.; HIV Center for Clinical and Behavioral Studies, NY State Pyschiatric Inst. and Columbia Univ. NY, NY, USA.

Th.D.788
CONDOM USE AMONG INTRAVENOUS DRUG USERS. Catanzarite, Lisa[†], Margolis, E.[*]; Biernacki, P.[*]; Feldman, H.W.[*]; [*]Youth Environment Study (YES), SF, CA, USA; [†]Dept. of Sociology, Stanford Univ., Stanford, CA, USA.

Th.D.789
REPRESENTATION AND ANALYSIS OF THE STRUCTURE OF SEXUAL BEHAVIOUR IN THE CONTEXT OF HIV TRANSMISSION. Coxon, A.P.M Davies, P.M; University of Essex, England South Bank Polytechnic, London, England.

Th.D.790
CONDOM USE IN HOMOSEXUAL MEN: COHORT AND CROSS-SECTIONAL STUDIES. Harrison, Janet[*]; Johnson, E.[*]; Doll, L.[*]; Lifson, A.[†]; Bolan, G.[†]; Hessol, N.[†]; Joy, D.[†]; [*]Centers for Disease Control, Atlanta, GA, USA, [†]San Francisco Health Department, CA, USA.

Th.D.791
AIDS KNOWLEDGE AND HIGH RISK BEHAVIOR AMONG GAY BLACK MALES. Minns, Daniel R.; National Task Force on AIDS Risk Reduction San Francisco, California, U.S.A.

Th.D.792
IMPEDIMENTS TO ACCESSING SERVICES FOR BLACK GAY AND BISEXUAL MEN WHO CHOOSE NOT TO BE GAY IDENTIFIED. Russell, Michele; The New York Hospital-Cornell Medical Center, Center for Special Studies,New York, NY, USA.

Th.D.793
BEHAVIOR CHANGES IN BISEXUAL MALES IN BELO HORIZONTE, BRAZIL (1986-1989). Oliveira, Mariza R.; Greco, D.B.; Oliveira, E.L.; Castro, M.J.R.; Carneiro, R.L.G.; Cardoso, M.; Costa, M.F.L.; Immunodeficiency Clinic, Infectious & Parasitic Diseases Service, Faculty of Medicine, Federal Univ. of Minas Gerais, Brazil.

Th.D.794
DEVELOPING AIDS EDUCATION INTERVENTIONS FOR NON-GAY IDENTIFIED MEN HAVING SEX WITH OTHER MEN. Hartfield, Karen[*]; Smith, K.[*]; Perdue, T.[†]; [*]Seattle-King County Department of Public Health, Seattle, WA; [†]Northwest AIDS Foundation, Seattle, WA.

Th.D.795
SEXUAL BEHAVIOR IN BRAZIL: A COMPREHENSIVE COMPILATION OF EXISTING DATA. Pinel, Arletty; Ministry of Health, Brasilia, DF, Brazil.

Th.D.796
CONDOM USE WITH CLIENTS AND PRIVATE PARTNERS AMONG TRANSVESTITES IN ITALY. Covre, Pia[*], Tirelli, U.[*], Serraino, D.[*], Corso, C.[*], Crosato, L.[*], Rezza, G.[†]; [*]Centro di Riferimento Oncologico, Aviano, Italy, [†]Instituto Superiore di Sanita, Rome, Italy.

Th.D.797
RELIABILITY AND VALIDITY OF SELF-REPORTED BEHAVIORS: IMPLICATIONS FOR NATIONAL AND INTERNATIONAL STUDIES. Darrow, William W.; CDC Collaborative Group, Centers for Disease Control, Atlanta, GA, USA.

Perinatal, Pediatric, and Family Issues

Th.D.798
THE EVOLUTION OF DIGNITY: ROLE OF COOK COUNTY HOSPITAL (CCH) SUPPORT GROUP FOR HIV INFECTED WOMEN. Taylor, Deane; Y. Irvin; A. Rodriguez; M. Cohen; M; M. Williamson; Women & Children with AIDS Project, Cook County Hospital Chicago, Illinois 60612 USA.

Th.D.799
HIV POSITIVE WOMEN INFECTED THROUGH INTRAVENOUS DRUG USE IN IRELAND AND THEIR FUTURE PLANS FOR THEMSELVES AND THEIR CHILDREN. Foreman Maeve, Flynn Deirdre, Pomeroy Louise, Foran Deirdre, Ross Dermot, Mulcahy Fiona.; Department of Genito Urinary Medicine, St. James's Hospital Dublin 8 Ireland.

Th.D.800
CONSIDERATION ON MATERNAL FACTORS ACTING ON HIV VIRUS IN VERTICAL TRANSMISSION. Dos Anjos, Rosana Maria Pavia; Carneiro, J.L.G.; Zaccharias, R.E.; Conjunto Hospitaler de Sorocaba, Grupo de Vigilanzia Epidemiologica, Sorocaba, Brazil.

Th.D.801
A STATEWIDE PROGRAM OF IDENTIFICATION AND EARLY INTERVENTION OF HIV POSITIVE WOMEN AND CHILDREN. Grant, Christine M.[*], Coye, M.J.[†]; [*]New Jersey Department of Health, Trenton, NJ; [†]Johns Hopkins University, Baltimore, MD; USA.

Th.D.802
A COMMUNITY BASED FAMILY HEALTH SERVICE AGENCY AS A STRATEGIC SITE FOR PERINATAL AIDS PREVENTION. Belville, Renate[*], LaChapelle, S.[†], Gordon, G.[†], Indyk, D.[*], Shapiro, V.[*], Dewart T.[*]; [*]Mount Sinai School of Medicine, New York, NY; [†]Little Sisters of the Assumption FHX, NY; USA.

Th.D.803
PREGNANT WOMEN'S ATTITUDES ABOUT HIV TESTING. Patricia O'Campo; Kass, N.; Geller, G.; Gielen, A.; Faden, R.; The Johns Hopkins School of Public Health, Baltimore, MD, USA.

Th.D.804
AIDS CONCERNS AND WOMEN'S REPRODUCTIVE INTENTIONS: HIV TESTING AND PREGNANCY CHOICE. Balanon, Angelita; Fordyce, E. James; Stoneburner, Rand.; New York City Department of Health, New York City, New York, USA.

Th.D.805
CLIENT COMPLIANCE WITH PERINATAL AIDS RESEARCH: THE BAY AREA PERINATAL AIDS CENTER (BAPAC) EXPERIENCE. Hauer, Laurie; Shannon, M; Mann, L; Whidden, R; Kahn, W; Butler, T.; University of California, San Francisco General Hospital, California, USA.

Th.D.806
MATERNAL PERINATAL HISTORY: INADEQUATE PREDICTOR OF HIV EXPOSURE. Partridge, John Colin[*], Wong, D.F.[*], Sokal, K.B.[†], Wara, D.W.[*]; University of California, San Francisco, San Francisco General Hospital,San Francisco, CA; University of California, Berkeley, Berkeley, CA; USA.

Th.D.807
NEWBORNS AS RESEARCH SUBJECTS IN AIDS DRUG TRIALS UNDER AMBIGUOUS FEDERAL REGULATIONS. Grodin, Michael A.[*], Mariner, W.K.[*]; [*]Boston University, Boston, Mass., U.S.A.

Th.D.808
FOLLOW-UP STUDY OF A SUPPORT GROUP FOR PARENTS AND CARETAKERS OF CHILDREN WITH HIV INFECTION. Pahwa, M.D., Savita; North Shore Univ. Hospital-Cornell Univ. Med. Coll., Manhasset, NY, USA.

Th.D.809
CAREGIVERS HANDBOOK FOR CHILDREN WITH HIV INFECTION. Gleason-Morgan, Deborah; Kaplan, M.; Los Angeles Pediatric AIDS Network, Los Angeles, CA, USA.

Th.D.810
ISSUES IN PROVIDING SERVICES TO DEVELOPMENTALLY DISABLED HIV INFECTED CHILDREN. Susser, Phyllis L.; Miller, S.; Herbert G. Birch Services, NY, NY, USA.

Th.D.811
CAREGIVERS' PERCEPTIONS OF THEIR SCHOOL AGE CHILDREN WITH PERINATALLY ACQUIRED HIV INFECTION. Crandles, Sheila*, Jean, A.†; *SUNY Health Science Center, Brooklyn, N.Y. USA, †Kings County Hospital Center, Brooklyn, N.Y. USA.

Th.D.812
PERCEIVED DISCRIMINATION IN HEALTH CARE AND EMPLOYMENT AMONG HOMOSEXUAL MEN. Kass, Nancy; Kennedy Institute of Ethics, Georgetown University, Washington, D.C., U.S.A.

Th.D.813
THE PSYCHOSOCIAL NEEDS OF HIV INFECTED MOTHERS. Mok, Jacqueline Y.Q., Cosgrove, J., Hague, R.A.; City Hospital, Edinburgh, Scotland, UK.

Th.D.814
SOCIAL CHARACTERISTICS, FAMILY BEHAVIOUR AND CHILDREN PSYCHOMOTOR DEVELOPMENT ON HIV FAMILIES. Canosa C.A., Picazo A., Jaime E., Herrero A., Lono F., and Canosa Chiquinquira.; Department of Pediatrics. La Fe Childrens Hospital, Valencia, Spain.

Th.D.815
NEW YORK STATE'S RESPONSE TO ELEVATED RATES OF HIV INFECTION AMONG WOMEN GIVING BIRTH. Whalen, Dennis*; Holman, Susan, RN, MS*; Burke, Gary R., M.D.*; Feldman, Ira*; *AIDS Institute, New York State Department of Health.

Th.D.816
INTERACTIVE TRAINING SERIES FOR CAREGIVERS OF HIV INFECTED CHILDREN. Martha W. Riley; Academy For Educational Development, Washington, DC, USA.

Th.D.817
DISTRESS PROFILE OF HIV-INFECTED SINGLE PARENTS: COMPARISONS TO TARGET COUNSELING INTERVENTIONS. Earl, W., Martindale, C.J., Cohn, D.; Denver Disease Control Service, Denver, CO, USA.

Th.D.818
THE ESSENTIAL ROLE OF THE CHURCH IN AIDS CARE, PREVENTION AND CONTROL IN AFRICA. Campbell, Ian*; Rader, A.; Malama, M.; Bodwell, S.; *The Salvation Army Chikankata Hospital, Zambia.

Th.D.819
FAMILY CAREGIVERS OF PWAS: EXPERIENCES WITH HEALTH CARE PROVIDERS. Powell-Cope, Gail M.; University of Washington, Seattle, WA, USA.

Th.D.820
THE SOCIO—CULTURAL DIMENSION OF AIDS IN ZIMBABWE. Mhloyi, Gilford*; Mhloyi M.†; *Dexter Enterprises, Harare, Zimbabwe, †University of Zimbabwe, Harare, Zimbabwe.

Th.D.821
HEMOPHILIA AND HIV: AN ASSESSMENT OF THE PSYCHOSOCIAL NEEDS OF COUPLES. Roy, Charles M.; Regional Hemophilia Clinic, Social Service Dept., Montreal Children's Hospital, Montreal, Canada; and Doctoral Student, Hunter College School of Social Work, New York, N.Y., U.S.A.

Th.D.822
THE ROLE OF KIN IN CARE GIVING FOR PERSONS WITH AIDS IN NEW JERSEY. Schiller, Nina Glick*; Crystal, S.*; Karus, D.*; *AIDS Research Group, Institute for Health, Rutgers Univ., New Brunswick, NJ, USA.

HIV Testing: Social and Policy Issues

Th.D.823
A COMPARISON OF ALTERNATE TEST SITE ATTENDANCE IN TWO CITIES WITH DIFFERENT HIV REPORTING POLICIES. Johnson, Wayne D.*; Sy, F.*; Miller, J.†; *University of South Carolina, Columbia, SC; †Richmond Health Department, Augusta, GA, USA.

Th.D.824
HIV REPORTABILITY IN A SYSTEM WITH EXTENSIVE ANONYMOUS TESTING. Jolly, David H.; Blankenship, E.; Adimora, A.; Petz, W.; Owen-O'Dowd, J.; Randall-David, E.; Meriwether, R.A.; AIDS Control Branch, Raleigh, North Carolina, USA.

Th.D.825
ENSURING PATIENT CONSENT FOR HIV TESTING: AN EVALUATION OF THE IMPACT OF POLICY ON PRACTICE. Capkin, Mark*, Phipps, E.*, Peacock, E.*; *Albert Einstein Medical Center, Philadelphia, Pennsylvania, U.S.A.

Th.D.826
ROUTINE HIV TESTING IN AN ACUTE CARE HOSPITAL INPATIENT SETTING. DeCiantis, Mary Lou*; DeBuono, B.*,†; Scott, H.D.*,†; Carpenter, C.‡; *Rhode Island Dept. of Health, Providence, RI, USA; †Brown Univ., Providence, RI, USA; ‡Miriam Hospital, Providence, RI, USA.

Th.D.827
COMPARISON OF AN HIV ANTIBODY TESTING TEAM VS HOUSESTAFF IMPLEMENTED TESTING AT A MAJOR INNER CITY PUBLIC HOSPITAL. Masterson, Andrew; Kitchens, A.; Graham, V.; Kings County Hospital Center, Brooklyn, NY, USA.

Th.D.828
THE CONTINUOUS FOLLOW-UP OF HIV TESTING BY GENERAL PRACTITIONERS. Massari, V.*; Brunet, J.B.†; Valleron, A.J.*; *INSERM U263, Universite Paris 7, Paris, France; †Direction Generale de la Sante, Paris, France.

Th.D.829
POLICY IMPLICATIONS OF THE ALTERNATIVE TEST SITE PROGRAM EVALUATION. Ramirez, Anna, Truax, S.R.; Office of AIDS, California Department of Health Services, Sacramento, CA, USA.

Th.D.830
CENTRES FOR FREE AND ANONYMOUS SCREENING: A PROSPECTIVE STUDY. Auquier, Pascal*; Reviron, D.*; Connes, H.†; Blanc, A.P.†; Larher, M.P.*; Enel, P.*; *Public Health Unit, Faculte de Medecine, Marseille, France; †Hospital, Aie, France.

Th.D.831
ANONYMOUS TESTING CONSIDERED ESSENTIAL, GOOD FOLLOW-UP RESULTS. Gardner, Linda; Trow, R.; Hassle Free Clinic, Toronto, Ontario, Canada.

Th.D.832
NAPLES GROUP C: CENTER FOR ANONYMOUS HIV SCREENING. Soscia M.*; Gnarini R.*; Izzo E.*; Guidetti E.*; Perrella O.*; Serpelloni G.+; Tarro G.*.; *Ospedale D. Cotugno, Naples, Italy. +Sezione di Screening per HIV, ULSS 25, Verona.

Th.D.833
MANDATORY HIV ANTIBODY TESTING OF IMMIGRANTS IN THE UNITED STATES. Warren, Nancy; Silver, D., Lee, J.; Freudenberg, N.; Hunter College Center for Community Action to Prevent AIDS, New York, NY, USA.

Th.D.834
SOCIAL ISSUES SURROUNDING HIV TESTING: PROVISIONAL DATA FROM THE 1990 NATIONAL HEALTH INTERVIEW SURVEY. Dawson, Deborah A.; Hardy, A.M.; Thornberry, O.T.; U.S. National Center for Health Statistics, Division of Health Interview Statistics, Hyattsville, Maryland, USA.

Th.D.835
DECISIONMAKING ABOUT HIV ANTIBODY TESTING AMONG GAY AND BISEXUAL MEN AND THE GENERAL POPULATION IN LOS ANGELES. Gorman, E.M.*, Yano, E.*, Kanouse, D.*, Berry, S.*, Bye, L.†; *RAND, Santa Monica, CA; †Communications Technologies, San Francisco, CA.

Th.D.836
THE EFFECT OF HIV ANTIBODY COUNSELING AND TESTING ON RISK BEHAVIORS: ARE THE STUDIES CONSISTENT?. Higgins, Donna L.; Galavotti, C.; Johnson, R.; O'Reilly, K.O.; Kugg, D.L.; Centers for Disease Control, Atlanta, GA, USA.

Th.D.837
PSYCHOSOCIAL FACTORS INFLUENCING HIV TESTING. Jaccard, James*; Endias, R.†; Minkoff, H.†; *State U. of N.Y., Albany, USA, †State U. of N.Y., Health Sciences Center at Brooklyn, USA.

Th.D.838
HIV TESTING IN THE UNIVERSITY OF KINSHASA SOCIAL AND POLICY ISSUES. Bertrand, W.E.*; Bomboko, B.†; Moore, M.‡; Hassig, S.*; Kashala, T.D.†; *Tulane University USA; †Ecole de Sante Publique; ‡CDC Atlanta, USA.

Th.D.839
SUPPORT SYSTEM AVAILABILITY OF CLIENTS UTILIZING ANONYMOUS HIV ANTIBODY TEST SITES IN CALIFORNIA. Marelich, William D.; Ramirez, A.L.; Barba, B.; Kizer, K.W.; California Department of Health Services, Sacramento, California, U.S.A.

Th.D.840
A COMPARISON OF COPING RESPONSES BETWEEN GAY MEN WHO KNOW AND DO NOT KNOW THEIR HIV STATUS. Rodriguez, Richard G., Herbert, M., Kemeny, M., Schneider, S., Taylor, S., Dudley, J.; University of California, Los Angeles, CA; USA.

Th.D.841
SOCIAL NETWORK AND STIGMATIZATION AMONG HIV-POSITIVE HAEMOPHILIACS AS COMPARED TO HIV-NEGATIVE CONTROLS. Bjoerner, Jakob*; Gandil, P.†, Andersen, T.†; *University of Copenhagen, Denmark †The Danish Haemophilia Society.

Th.D.842
PSYCHOSOCIAL ADJUSTMENT OF HIV+ AND HIV- HIGH-RISK MEN: IMPLICATIONS FOR TARGETED INTERVENTIONS. Soskolne Varda*; Eyal A.†; Avramov R.*; Bentwich Z.†; Maayan S.*; Engelhard D.*; *Hadassah Medical Organization, Jerusalem, Israel †Kaplan Hospital, Rehovot, Israel.

Human Rights and Discrimination

Th.D.843
MAY A HUMAN SUBJECT WAIVE THE RIGHT TO BE TREATED AS A HUMAN SUBJECT?. Novick, Alvin; Yale University, New Haven, Connecticut, U.S.A.

Th.D.844
SURVEY RESULTS ON HOW TOLERANT, CARING AND COMPASSIONATE CANADIANS ARE TOWARDS THOSE MOST AFFECTED BY AIDS. Garceau, Susan; Health Promotion Directorate, Health & Welfare Canada, Ottawa, Canada.

Th.D.845
HOMOPHOBIA, KNOWLEDGE OF PERSONS WITH AIDS AND AIDS ATTITUDES. Michaels, Stuart*, Gagnon, J.†, Laumann, E.*; *University of Chicago, Chicago, IL USA †State University of New York at Stony Brook, Stony Brook, NY USA.

Th.D.846
PHYSICIAN BREACH OF PATIENT CONFIDENTIALITY AMONG INDIVIDUALS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION: PATTERNS OF DECISION. Schwartzbaum, Judith; Norton, R.W.; Univ. of Tennessee, Memphis, TN USA.

Th.D.847
AN ANALYTIC APPROACH TO DETERMINING THE COSTS TO SOCIETY OF HIV-RELATED DISCRIMINATION. Fishback, Lorraine M.*, Guthrie A.*, Lewin, L.†, Needleman, J.†, Barnow, B.†; *Office of the Assistant Secretary for Health, U.S. Public Health Service, Washington, DC; †Lewin/ICF, Washington, DC; USA.

Th.D.848
DEVELOPMENT AND PRESENTATION OF UNIVERSITY COURSES ON HIV/AIDS POLICY AND LAW. Michael L. Closen and Scott H. Isaacman; The John Marshall Law School, Chicago, Illinois, U.S.A.

AIDS in the Workplace, Schools, and Institutions

Th.D.849
SCHOOL AGED HIV-INFECTED CHILDREN AND ACCESS TO EDUCATION. Haiken, Heidi, Hernandez M., Mintz M.; Boland M. Children's Hospital of New Jersey, Newark, New Jersey USA.

Th.D.850
HIV EDUCATION PROGRAM INVOLVING PRESENTORS WITH AIDS DEMONSTRATES SIGNIFICANT IMPACT ON ADOLESCENTS. Evans, Nancy L.*; Fetro, J.†; *Dept. of Public Health, SF, CA, USA; †SF Unified School District, SF, CA, USA.

Th.D.851
DON'T POINT YOUR LIFE IN THE WRONG DIRECTION. Page, Iris; McCausland, J.; Moore, C.; North York Public Health Dept., North York, Ontario, Canada.

Th.D.852
HIV RELATED BELIEFS, KNOWLEDGE AND BEHAVIOUR IN SECONDARY SCHOOLS OF OUACADOUGOU/BURKINA FASO. Ouedraogo Arouna, Lorenz N.[‡], Zina Y.*, Rehle T.[‡]; *Ministere de la Sante et de l'Action Sociale, Ouagadougou, Burkina, Faso, [‡]Gesellschaft fur Technische Zusammenarbeit (CTZ), Ouagadougou, Burkina Faso; [‡]Gesellschaft fur Technische Zusammenarbeit (CTZ), Eschborn, Federal Republic of Germany.

Th.D.853
KNOWLEDGE OF AIDS IN A GROUP OF SECONDARY SCHOOL STUDENTS. Li P.C.K., Yeoh EK, Leung FY, Ho YF, Lee YH, Chow NY et al.; Hong Kong Dept. of Health, Hong Kong.

Th.D.854
THE OAKLAND SCHOOLS AIDS PROJECT: A MODEL OF PUBLIC AGENCY-COMMUNITY PARTNERSHIP IN JUNIOR HIGH PREVENTION PROGRAMS. Krasnovsky, Flora*; Siegel,D*; Lazarus, N*; Durbin,M*; Kakimoto,D[‡]; Davis,M[‡]; Suminski,G[‡]; *University of California, San Francisco, [‡]Oakland Unified School District, [‡]Alameda County Health Care Service Agency, [‡]American Red Cross; California, USA.

Th.D.855
STRATEGIES FOR EFFECTIVE AIDS EDUCATION IN SCHOOLS. Epstein, Eric R.; Act Up/NY, New York, NY, USA; Saint Ann's School, Brooklyn, NY, USA.

Th.D.856
CHANGING THE AIDS EDUCATION OF NEW YORK CITY YOUTH. Ricks, Philip M; Act Up/NY Youth Brigade Caucus, New York, New York, USA.

Th.D.857
PLAN OF FORMAL EDUCATION ABOUT AIDS DIRECTED TO YOUNG PEOPLE IN COSTA RICA. Paniagua, MaEugenia; San Jose, Costa Rica.

Th.D.858
A GENERATION FREE OF AIDS: DEVELOPING AIDS EDUCATION MATERIALS FOR PUBLIC AND PRIVATE SCHOOLS OF MALAWI. Dupree, John David*; Mkwinda, EN[‡], Kalilani, JA[‡]; AIDSCOM, Washington, DC, USA.

Th.D.859
EDUCATIVE INTERVENTION PACKAGE FOR AIDS PREVENTION FOR YOUNG LATINAAMERICANS. Mora, J.L., Santiago Francisco, Valdespino, J.L., Sepulveda, J.; General Directorate of Epidemiology, Ministry of Health, Mexico.

Th.D.860
SHORT-TERM IMPACTS OF STUDENT-DESIGNED AIDS PREVENTION PROMOTIONAL ACTIVITIES IN A SCHOOL SETTING. Thomas, Rejean*; Otis, Joanne*; Longpre, Daniele*; Provencher, Simone*; Bastien, Robert*; Lonergan, Guy*.; *Departemente de sante communautaire de l'Hopital Charles LeMoyne, Greenfield Park, Quebec, Canada.

Th.D.861
AIDS PREVENTION PROGRAMMS AMONG STUDENTS: INTEREST OF A GLOBAL APPROACH. Estournel, Jean Luc, Leveque, D., Delmas, J., Seguela, M., Fayard, A., Livrozet, J.; MNEF, Gentilly, France.

Th.D.862
AIDS EDUCATION FOR PEOPLE WITH INTELLECTUAL DISABILITIES. Gourlay, Peter; Horsley, P.; Family Planning Association, Victoria, Australia.

Th.D.863
SEXUAL BEHAVIORS AND BEHAVIORAL CHANGES AMONG HIGH RISK COLLEGE STUDENTS. Kotloff, Karen*; Wasserman, S.*; Tacket, C.*; Cowan, J.*; Bridwell, M.[‡]; Quinn, T.[‡].; *University of Maryland School of Medicine, Baltimore; [†]University of Maryland, College Park; [‡]National Institute of Allergy and Infectious Diseases, Bethesda, U.S.A.

Th.D.864
INCREASING AIDS AWARENESS AMONG COLLEGE STUDENTS USING VISUAL ARTS AND STUDENT AIDS ACTIVISTS. Goldstein, Mark A., Van Ness, J., ARMIT, Friis-Hansen, D., Platt, R., Seamans, W.; Massachusetts Institute of Technology, Cambridge, MA, USA.

Th.D.865
ROLE OF THE COMMUNITY COLLEGE: POLICY, EDUCATION AND SERVICE. Redick, Mary, Ph.D.; San Francisco Community College District, California, U.S.A.

Th.D.866
A MODEL INTERDISCIPLINARY UNIVERSITY-WIDE COURSE ON AIDS. Strauss, Ronald; Corless, I.; Luckey, B.; van der Horst, C.; Dennis, B.; University of North Carolina at Chapel Hill.

Th.D.867
AN ASSESSMENT OF AIDS KNOWLEDGE, RISK PERCEPTION AND BEHAVIOR AMONG PUBLIC HEALTH STUDENTS IN SOUTH SULAWESI, INDONESIA. Bustan, Muhammad*; Sy, E.[‡]; Selassie, A.W.[‡]; Noer, N.N.*; *Hasanuddin Univ., Ujungpandang, Soouth Sulawesi, Indonesia; [‡]Univ. of S.C., Columbia, SC, USA.

Th.D.868
EDUCATING THE EDUCATORS: METHODS TO PROMOTE HIV CONTENT IN UNIVERSITY HEALTH CARE PROGRAMS. Katz, Susan; Freudenberg, N.; Lee, J.; Hunter College Center for Community Action to Prevent AIDS, New York, NY, USA.

Th.D.869
MODEL OF PROFESSIONAL SUPPORT FOR AIDS EDUCATORS. Robinson, Margaret, Sargeant, D.; Social Biology Resources Centre, Carlton, Victoria, Australia.

Th.D.870
COMPLACENCY, RISK PERCEPTION AND THE PROBLEM OF HIV EDUCATION. Macdonald, Gordon*; Smith, C.[‡]; Institute for Health Promotion, University of Wales, Cardiff, [‡]Health Promotion Authority for Wales, Cardiff, England.

Th.D.871
EDUCATION AND TECHNOLOGY ABOUT THE CONDOM AND ITS USE. PROJECT RQTS. Torres, Jose*; Garcia Huete, E.[‡]; Anabitarte, H.*; Jaumot, A.; Usieto, R*; Mariscal, J., Sen, J.; *Foundation E.A.S.E., Madrid, Spain; [‡]Universidad Complutense, Madrid, Spain.

Th.D.872
EVALUATION OF AN HIV EDUCATION MODULE INTEGRATED INTO COMPREHENSIVE SCHOOL-BASED HEALTH EDUCATION. Horan, Patricia E.*; DiClemente, R.J.[‡]; Stone, C.V.*; *North Carolina State University, Raleigh, North Carolina, USA [‡]University of California, San Francisco, California, USA.

Th.D.873
WHY AIDS CLINIC PATIENTS DO NOT RETURN TO WORK. McMaster, James R., Greenblatt, R., Yelin, E., Henke, C., Hollander, H.; University of California at San Francisco, San Francisco, CA, USA.

Th.D.874
THE ROLE OF RELIGIOUS/FAITH COMMUNITIES IN HIV PREVENTION AND AIDS SERVICES. Jimenez, Richard*; National AIDS Information and Education Program, Centers For Disease Control, Atlanta, Georgia.

Th.D.875
COPING WITH RELIGIOUS OBJECTIONS TO AIDS EDUCATION. Cole, Linda*; Cole, D.†; *University of California, Berkeley, California, USA; †Occidental College, Los Angeles, California, USA.

Th.D.876
A STUDY OF KNOWLEDGE AND ATTITUDES OF COLLEGE STUDENTS. Dr. A.B. Hiramani; Deputy Director (Research) Central Health Education Bureau (Dte. G.H.S.) Ministry of Health & Family Welfare, New Delhi-110002 (India).

Th.D.877
AIDS INTERVENTIONS, PUBLIC HEALTH AND SOCIAL FACTORS IN THE SUGAR PLANTATIONS OF THE DOMINICAN REPUBLIC. Kreniske, John; HIV Center for Clinical & Behavioral Studies, NY State Psychiatric Institute, Old Westbury, NY, USA.

Th.D.878
SURVEY OF AIDS-RELATED EDUCATIONAL PROGRAMS IN THE WORKPLACE. Humes, Steven*; Miller, R.*; Barr, J.†; Warshaw, L.†; Reinfeld, M.*; *Gay Men's Health Crisis, Inc., New York, NY, U.S.A. †The New York Business Group on Health, Inc., New York, NY U.S.A.

Th.D.879
GROUSE SHOW! AN EVALUATION OF A TOUR OF AN AIDS CABARET IN TERTIARY INSTITUTIONS. Grierson, Jeffery; Misson, A.; AIDS/STD Unit, Health Department Victoria, Melbourne, Australia.

Criminal Justice and the Corrections System

Th.D.880
USEFULNESS OF AN AIDS EDUCATIONAL PROGRAM FOR LAW ENFORCEMENT PROFESSIONALS. King, Terry*, Blake, S., Khardori, N.*, Rabinovich, S., Von Behren, L.A.; Southern Illinois University School of Medicine (SIU), Springfield, IL, USA.

Th.D.881
A CONSORTIUM OF UK VOLUNTARY ORGANISATIONS MAKING LINKS BETWEEN PRISONS AND COMMUNITY SUPPORT/EDUCATION GROUPS. Kelmanson, Andrea*; Jay, M*; Gallwey, J†; Williams, B‡; *National AIDS Trust (NAT), London, England †NAT and Home Office AIDS Working Party, UK ‡Nat Assoc for the Care and Resettlement of Offenders, UK.

Th.D.882
EDUCATIONAL WORK PERFORMED IN THE SOROCABA CITY PUBLIC PRISON. Ramos, F. Tyrso; Dos Anjos, R.M.P.; Conjunto Hospitaler de Sorocaba, Grupo de Vigilanzia Epidemiologica, Sorocaba, Brazil.

Th.D.883
INFORMATION CAMPAIGN FOR THE PREVENTION OF HIV-1 INFECTION IN PRISONERS IN THE PROVINCE OF ROME. Turbessi, Giuseppe; D'Offizi, GP.; Mezzaroma, I.; Luzi, G.; Boccella, P. (*); Aiuti, F.; National Association for AIDS (ANLAIDS), Rome Italy(*) Province of Rome Italy.

Th.D.884
ASSESSMENT OF HIV/AIDS KNOWLEDGE AMONG PRISON OFFICERS IN SCOTTISH PRISONS. Rowlands, A*; Power, K.G.†; Beveridge, L.‡; *HM Prison, Perth, Perth, Scotland. †University of Stirling, Stirling, Scotland.

Th.D.885
ARE INCARCERATED INTRAVENOUS DRUG USERS (IVDU) INTERESTED IN TAKING THE HIV ANTIBODY TEST?. Kegebein, Valerie J.*; Zack, B.†; *Santa Clara County Health Dept., San Jose, CA; †Marin AIDS Support Network, San Rafael, CA, USA.

Th.D.886
TRENDS IN HIV ANTIBODY TESTING AND HOUSING POLICIES FOR INFECTED PRISONERS AMONG U.S. CORRECTIONAL SYSTEMS, 1985-1989. Moini, Saira; Hammett, T.; Abt Associates, Inc., Cambridge, MA, USA.

Th.D.887
SEROPREVALENCE AMONG THE CRIME RELATED POPULATION: PRISONERS & PROSTITUTES. Ravinathan, Ramanathan†; MdMeeran*; Durairaj, V.S.*; Venkateswaran, K.*; Kantharaj, K.*; Jayapaul, K.*.; *Institute of Sexually Transmitted Diseases; Madras Medical College, Madras, Tamilnadu, India.

Th.D.888
LEGAL, ETHICAL AND SOCIAL COMPLEXITIES IN CONDUCTING HIV-RELATED RESEARCH INVOLVING ADOLESCENTS. Sondheimer, DL*, English, A†, Hein, K‡, Novello, A*; *NICHD, Bethesda, MD †National Center for Youth Law, San Francisco, CA, ‡Montefiore Medical Center, Bronx, N.Y.

Th.D.889
PREVALENCE OF HIV ANTIBODY AMONG A GROUP OF PARAPHILIC SEX OFFENDERS. DiGiovanni, C.*,†; Berlin, F.‡; Casterella, Peter‡; Redfield, R.‡; Hiken, M.‡; Falck, A.‡; *National Naval Medical Center, Bethesda, Maryland, †Johns Hopkins Hospital, Baltimore, Maryland, ‡Naval Hospital, Oakland, California, §Walter Reed Army Institute of Research, Washington, DC, USA.

Th.D.890
GENDER AND REGIONAL DIFFERENCES IN HIV-1 ANTIBODY AMONG ENTRANTS TO U.S. CORRECTIONAL SYSTEMS. Brewer, Ford*; Vlahov, D.*; Munoz, A.*; Ullrich, J.*; Narkunas, J†; Castro, K.‡; *The Johns Hopkins University School of Hygiene and Public Health, Baltimore, Maryland, USA, †Centers for Disease Control, Atlanta, GA, USA.

Th.D.891
DEVELOPMENT AND EVALUATION OF EMPOWERMENT MODEL OF AIDS EDUCATION FOR FEMALE INMATES. Richie, Beth*, Rodriquez, I.†, Florio, S.‡, Safyer, S.‡, Lee, J.*, Fruedenberg, N.*; *Hunter College Center for Community Action to Prevent AIDS, CUNY, NY U.S.A. ‡Montefiore/Rikers Island Health Services, New York, NY U.S.A.

Th.D.892
A COMPREHENSIVE PROGRAM OF HEALTH CARE FOR HIV-INFECTED PRISONERS. Dixon, Peter*; DeBuono, B.†; Carpenter, C.*; Laurie, J.‡; Zinner, S.*; Scott, H.§; *Brown University AIDS Program (BRUNAP) and †RI Departments of Health and Corrections (RIDHEC), Providence, Rhode Island, USA.

Th.D.893
PROVISION OF HIV RELATED SERVICES TO PERSONS ENTERING THE PHILADELPHIA PRISON SYSTEM. van de Beek, M.D., M. Louis; Director, Medical Affairs, Policy and Planning, Philadelphia Dept. of Public Health, PA, USA.

Th.D.894
HIV INFECTED PATIENTS' VIEW OF THEIR ROLE IN HEALTH CARE. Gerbert, B.; Sumser, J.; Sebesta, D.; Barnes, D.; UCSF Center for AIDS Prevention Studies, San Francisco, California, USA.

Th.D.895
CENTERS FOR ORIENTATION AND SEROLOGICAL SUPPORT FOR HIV INFECTION (COAS). Reichen, Ingrid*; Serafim, D.*; Rodrigues, L.*; *National Division of STD/AIDS—Ministry of Health, Brasilia-DF, Brazil.

Th.D.896
HIV PERCEPTIONS AND SEXUAL BEHAVIOR CHANGES OF DENTAL HEALTH PROFESSIONALS. Cottone, James A.; Dove, S.B.; The University of Texas Health Science Center at San Antonio, San Antonio, Texas, U.S.A.

Th.D.897
AN INVERSE RELATION BETWEEN NUMBER OF SEX PARTNERS AND CONDOM USE FREQUENCY AMONG MIDDLE ADOLESCENTS: CAUSE FOR CONCERN. DiClemente, Ralph*; Durbin, M*; Siegel, D*; Krasnovsky, F*; Lazarus, N*; *University of California, San Francisco, California, USA.

Th.D.898
EVALUATION OF FIVE NIDA SPONSORED VIDEO AND TRAINING PROGRAMS ON AIDS AND THE IV DRUG USER. Kassiday, Deborah*, Sowder, Barbara†, Ashery, Rebecca†; *T. Head & Company, Inc. Herndon, Virginia USA; †T. Head & Company, Inc., Herndon, Va. USA; National Institute on Drug Abuse, Rockville, Maryland USA.

Th.D.901
DETERMINANTS OF THE PUBLIC'S PRIORITIES FOR ALLOCATING FUNDS SPENT ON AIDS. Berry, Sandra H.; Kanouse, D.E.; Gorman, E.M.; Yano, E.; The RAND Corporation, Santa Monica, CA, USA.

Th.D.902
A PROGRAM OF HOME CARE FOR AIDS PATIENTS: TWO YEARS OF EXPERIENCE. Arrizabalaga, Conception, Garde, C., Ugalde, A., Cia, A., Iribarren, J.A., Arrizabalaga, J.; *Hospital Na Sa of Aranzazu, Servicio Vasco de Salud-Osakidetza, San Sebastian, Spain.

Th.D.903
EVALUATION OF AIDS PEER EDUCATION FOR UNIVERSITY UNDERGRADUATE STUDENTS. Varnhagen, Connie K.; Svenson, Lawrence W.; University of Alberta, Edmonton, Alberta, Canada.

Th.D.904
HIV NURSE CLINICIAN TRAINING PROGRAM. Mertz, Sue A.*; Gates, J.*; Mancuso, B†; Fitzhugh, Z.†; *AIDS Education & Training Center for So. California, Univ. of So. California School of Medicine, †Los Angeles County/Univ. of So. California Medical Center, Los Angeles, California, USA.

Th.D.905
EVOLVING RURAL AIDS EDUCATION PROGRAM: AN ASSESSMENT. Ostergren, Walter, Mieger, C.; Life Planning/Health Services, Dallas, Texas, USA.

Th.D.906
THE DEVELOPMENT OF A DRAMATIC FILM ON AIDS PREVENTION IN UGANDA. Dace Stone*, John Riber*, Faustin Musevni†, Viola Mukasa‡, Francis Rwakaagiri‡; *The Johns Hopkins University/AIDSCOM, †Uganda Television, ‡Experiment in International Living, The Federation of Uganda Employers, Washington, DC, USA.

Th.D.907
HIV POSITIVE SPEAKERS' BUREAU EDUCATES THE COMMUNITY. Arnold, Wendy, Bard, M.; Being Alive, Los Angeles, CA USA.

As you see, the abstracts are oriented horizontally rather than vertically on the page. This orientation and the arrangement of four abstracts to a page allowed more space and less photographic reduction of the abstracts while keeping the size of the book functional. The track designation, presentation numbers, and presentation date of the abstracts appear at the top of each page. We believe that you will find the material easily accessible and readable in this format.

TRACK A: BASIC SCIENCE
SYMPOSIUM: MOLECULAR BIOLOGY OF HIV INFECTION

Th.A.1

CONTROL OF ACUTE AND CHRONIC HIV INFECTION.
Martin, Malcolm A.; Laboratory of Molecular Microbiology, NIAID, National Institutes of Health, Bethesda, MD, USA.

Th.A.2

REGULATORY GENES OF HIV.
Pavlakis, George N.; National Cancer Institute, National Institutes of Health, Bethesda, MD, USA.

Th.A.3

MECHANISM OF HIV tat AND HTLV tax.
Jeang, Kuan-Teh; Laboratory of Molecular Biology, National Institute of Allergy and Infectious Diseases, NIH, Bethesda, MD, USA.

Th.A.4

CELLULAR FACTORS AFFECTING HIV INFECTION.
Gaynor, Richard; UCLA, CA, USA

Th.A.5

STRUCTURE AND FUNCTION OF HIV ENVELOPE.
Sodroski, Joseph; Dana-Farber Cancer Institute, Boston, MA, USA.

Th.A.6

ACCESSORY GENES IN HIV REPLICATION.
Haseltine, William; Dana-Farber Cancer Institute, Boston, MA, USA.

Th.A.9

THE USE OF PCR IN HIV RESEARCH. Sninsky, John; Emeryville, CA, USA.

Th.A.10

A RAPID METHOD FOR DETECTION AND DIFFERENTIATION OF AMPLIFIED HIV-1 AND HIV-2 DNA USING A SENSITIVE CHEMILUMINESCENT DNA PROBE SYSTEM (HPA).

McDonough, Sherrol*; Brown, V.**, Ryder, T.*, Ou, C-Y.**, Schochetman, G.**. *Gen-Probe, Inc., San Diego, California, USA; **HIV/AIDS Division, Centers for Disease Control, Atlanta, Georgia, USA.

Objective: As the occurrence of HIV-2 infection increases among the population, the need for differentiation of HIV-1 and HIV-2 becomes more important. The objective of this work was to apply the Hybridization Protection Assay (HPA) to the differentiation of amplified HIV-1 and HIV-2 DNA.
Methods: HPA using DNA probes directly labeled with acridinium ester, and a simple homogeneous assay format, was applied to the detection of amplified HIV-1 and HIV-2 DNA. HIV-1 and HIV-2 DNA was amplified with 35 cycles of standard PCR using HIV-1 gag-region primers SK38/SK39 or primers representing conserved regions in the vpx gene of HIV-2.
Results: DNA from 25 or more HIV-1 infected cells amplified with HIV-1 primers gave signal significantly above background when hybridized with the HIV-1 DNA probe mix (≥95x). When two amounts of lysate (differing 10 fold) from HIV-2 infected cells were amplified with this primer pair, a low level signal was seen (6x background). HIV-2 DNA in lysate from infected cells was easily detected above background following amplification with HIV-2 primers and hybridization to the HIV-2 DNA probe mix. No cross reactivity was seen when the HIV-2 probe mix was hybridized to DNA from 8000 HIV-1 infected cells amplified with the HIV-2 primer pair.
Conclusions: The amplification of HIV-1 and HIV-2 sequences, followed by detection in the HPA format with the chemiluminescent DNA probes described here, provides a rapid and sensitive means for detection and differentiation of these viruses.

Th.A.11

SILENT HIV INFECTION: A RARE OCCURRENCE IN A HIGH RISK HETEROSEXUAL POPULATION

Sullivan, John L.*; Brettler, D.B.; Somasundaran, M.; Koup, R.A.; Forsberg A.; Brewster F.; Byron, K.S.; Chattopadyay B.
University of Massachusetts Medical School and Medical Center of Central Massachusetts-Memorial, Worcester, MA, USA

Objective: To study the natural history of HIV infection in high-risk sexual partners of HIV infected hemophiliac men.
Method: Sixty female spouses and/or sexual partners of HIV infected hemophiliac men have been followed for one year to five years following seroconversion in the infected male. Assessment for HIV infection has included viral culture and PCR using env and gag primers, whole virus western blot and recombinant env, gag and nef immunoblot, evaluation of T cell subsets.
Results: Of sixty subjects evaluated repeatedly three have demonstrated HIV seroconversion which was accompanied by virus isolation. Thirteen pregnancies have resulted in one infected infant born to a seropositive isolation positive female. In twenty female spouses with more than five years of sexual exposure to an HIV infected male one seronegative female was found to be PCR positive, virus culture negative and nef antibody negative. In no instance was antibody to recombinant nef protein predictive of PCR positivity in the absence of virus isolation. T cell subset evaluations were normal with the exception of those individuals who seroconverted and from whom HIV was isolated.
Conclusion: In a population of sixty high risk female spouses of HIV infected men, silent or latent HIV infection is a rare occurrence. Heterosexual transmission of HIV infection is accompanied by a diagnostic serum antibody response and the ability to isolate HIV.

Th.A.12

RESOLUTION OF WESTERN BLOT-INDETERMINATE AND HIGH RISK SERONEGATIVE BLOOD DONORS BY PCR

Eble, B.*; Busch, M.**; Hurt, M.*; Nason, M.**; Garner, J.**; Guiltinan, A.**; Vyas, G.*; Khayam-Bashi, Hassan*
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OBJECTIVE: Employ polymerase chain reaction amplification (PCR) as a confirmatory assay in order to resolve HIV or HTLV western blot-indeterminate serological results and as a means of screening high-risk seronegative individuals for occult HIV infection.
METHODS: Peripheral blood mononuclear cell preparations from selected Northern California blood donors were lysed and subjected to PCR amplification for HIV gag gene or HTLV pol gene sequences, followed by solution hybridization with appropriate radiolabeled probes. The results of all HIV blot-indeterminate and a random sampling of high-risk seronegative samples were verified by established HIV virus culture methods, and negative PCR results were also verified by HLA coamplification. High-risk seronegatives included sexual partners of seropositive individuals and others.
RESULTS: Of 5 HTLV and 21 HIV blot-indeterminate samples tested, none were positive by PCR. Only one of 21 high-risk seronegative samples was PCR positive for HIV infection. In contrast, all of a panel of 17 HIV seropositives or 15 of 16 HTLV seropositive control samples were positive by PCR.
CONCLUSIONS: The PCR test with HLA coamplification appears useful in confirming the absence of viral infection in the vast majority of blood donors of blot-indeterminate serological status, and in many high-risk seronegative individuals.

Th.A.13 DETECTION OF HIV-1 INFECTED INDIVIDUALS IN A SERONEGATIVE HIGH-RISK POPULATION BY POLYCLONAL B CELL ACTIVATION IN VITRO

Sell, Kenneth*; Yehuda-Cohen, T.*; Slade, B.**; Powell, J.*; Villinger, F.*; McClure, H.***; Ansari, A.*
*Emory University Sch. of Med., **Grady Mem. Hosp., ***Yerkes Primate Center (Atlanta, GA)

Objective: To determine if polyclonal activation of B cells in vitro leads to the secretion of anti HIV-1 reactive antibodies.
Methods: PBMC from a total of 215 individuals from a high-risk patient population at Grady Memorial Hospital were cultured in vitro with pokeweed mitogen (PWM) for 5 days. Serum and supernatant fluids (S.F.) were analyzed for anti HIV-1 reactive antibodies, using the HIV-1 Abbott ELISA kit and the Dupont Western blot kit.
Results: Of the 165 HIV-1 seronegative samples, 30 were found to secrete significant HIV-1 antibody which mostly reacted with HIV-1 env. A high frequency of DNA samples from these 30 individuals was also found to be HIV-1 positive by PCR.
Conclusion: These data suggest that in addition to PCR techniques, polyclonal activation in vitro with PWM provides a simple assay for the detection of occult HIV-1 infection. The immunological and epidemiological implications of this study are readily apparent.

ROUTINE HIV-1 SEROLOGY	NO. POSITIVE BY PWM ASSAY (%)	
Seropositive (50/215)	50/50	(100%)
Seronegative (165/215)	30/165	(18.2%)

Th.A.14 EARLY DETECTION OF HIV INFECTION BY PCR BEFORE SEROCONVERSION IN MULTITRANSFUSED SERONEGATIVE HEMOPHILIACS AND SEXUAL PARTNERS.

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* Unité d'Oncologie Virale, Institut Pasteur, Paris, France; ** Centre Rey-Leroux, 35340-La Bouexiere, France.

Limitations of the available serological tests led us to study by PCR an heterogenous "at risk" population composed of paradoxical seronegative hemophiliacs and of seronegative partners of seropositive patients. We designed a complete set of primers covering the entire genomes of the HIV1 and of the HIV2. They were tested for their specificity and their efficiency and only 36 of them are currently used for our studies concerning the *gag, pol, env, nef1, nef2, vif1, vif2, vpr, vpx*,and *vpu* genes.
The first study included four patients who have now seroconverted,the lymphocytes of whom being harvested during their seronegative period. Three of them are hemophiliacs, the fourth one being a partner of a seropositive hemophiliac. By PCR analysis, we could repoducibly detect the *nef1*, the *vpr* and the *vpu* genes, but not the complete set of HIV genes. This detection was performed one to three years before seroconversion of the patients.
We obtained similar data for the hemophiliacs remaining seronegative and for the partners of seropositives: the *nef, vpr* and *vpu* genes were again more detected than the *gag, pol* and *env* genes. Computation of all the 35 patients indicates the following respective percentages for the gene detection: 77% for *nef1*, 77 % for *vpr* and 74 % for *vpu* (or 85% for *nef1* + *nef2*, 76% for *vpx* +*vpu* and 77% for *vpr*). Control experiments with *in-vitro* HIV infected lymphocytes indicate that all genes could be detected by our PCR technique.
These data, correlated to the clinical/immunological state, are open to several interpretations which will be discussed.

Th.A.15 ENZYME-LINKED IMMUNOSPOT (ELISPOT) AND PCR FOR THE DIAGNOSIS OF HIV INFECTION IN INFANTS

Lee, Francis K*; Ou, C.-Y.**; Nesheim*, S.R.; Jones, D.**; Schochetman, G.**; Nahmias, A.J.* *Emory University School of Medicine and **Centers for Disease Control, Atlanta, GA, USA.

Objective: To evaluate and compare ELISPOT, a new immunological technique, and polymerase chain reaction (PCR) for the early diagnosis of HIV infection in infants.
Methods: Peripheral blood mononuclear cells (PBMC) from 62 infants born to seropositive mothers were prospectively tested for HIV antibody-secreting cells by ELISPOT, and for HIV genetic material by PCR. Test results were related to the infant outcome, as determined by clinical follow-ups and the serologic status at, or over, 18 months of age.
Results: Of this cohort of 62 infants, 14 had become symptomatic, virus-culture positive, or have remained seropositive after 18 months of age. Eleven of these infected were positive by both ELISPOT and PCR; one hypogammaglobulinemic child was PCR+ but repeatedly ELISPOT−, and another infant, who was culture+, was also ELISPOT+ but repeatedly PCR−; the remaining infant in this group was ELISPOT± (due to high background), and was PCR+. Of the 24 children who seroreverted and remained asymptomatic, 21 were negative by both assays. One PCR− child was initially weakly positive by ELISPOT, but was negative on repeated test; the remaining 2 children were both ELISPOT− but PCR+ on initial testing; however, they were PCR− on repeated testing of the same specimens. Of the last group of 24 infants, who were still seropositive, asymptomatic and <15 months of age, 21 had concordant negative results; 1 was positive by both assays; 1 was PCR+ ELISPOT−; the remaining one was PCR+ and ELISPOT±.
Conclusion: Combined use of ELISPOT and PCR provides a very high reliability in identifying infected infants. This combination should offer greater credence to a positive result for an early diagnosis of HIV, which is important in view of the onus that a positive HIV label would mean for an infant.

Th.A.16 MIXED HIV-1/HIV-2 INFECTION IN BRAZIL CONFIRMED BY PCR ANALYSIS

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Objective: Analysis of sera from Brazil in 1989 suggested the presence of HIV-1, -2, and mixed infections within the populace. To further evaluate these observations HIV-1 and -2 PCR analysis was performed on selected sero-reactive persons.
Methods: Peripheral blood mononuclear cells were cultured and HIV proviral sequences amplified by PCR using type-specific primers and probes from the LTR, gag, or protease gene regions. Amplified HIV protease sequences from mixed infections were endonuclease digested and compared to established HIV isolates.
Results: Preliminary serological findings for the Brazilian samples were confirmed using independent sets of primers and probes. Endonuclease digests from mixed infections demonstrated both HIV-1 and -2 sequences that were distinct from other Brazilian specimens as well as the HIV controls.
Conclusions: A combination of culture and PCR findings demonstrated the presence of both HIV-1 and -2 in Brazil. Restriction enzyme analysis of PCR products confirmed mixed HIV-1/-2 infection in 2 Brazilians.

Th.B.17

ZIDOVUDINE THERAPY OF ASYMPTOMATIC HIV INFECTED PERSONS WITH LESS THAN 500 CD4+ CELLS/mm³ - ACTG PROTOCOL 019

Authors - Paul Volberding*, Lagakos,S.**; Koch,M.***; Pettinell,C.****; Myers, M.****;Booth,D.*** and the NIAID AIDS Clinical Trials Group
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Objectives: Determine the safety and efficacy of zidovudine (ZDV) in asymptomatic HIV-infected subjects with CD4+ cell counts below 500/mm³
Methods: Randomized trial of 1338 HIV-infected asymptomatic subjects with fewer than 500 CD4+ cells/mm³ comparing two dosages of ZDV (500 mg daily, 1500 mg daily in 5 doses) to placebo. Efficacy determined by a delay in progression to advanced ARC or AIDS or improvements in immunologic or virologic parameters.
Results: Entry clinical and laboratory parameters were comparable in all treatment groups. Mean treatment duration was 55 weeks. 33 of 428 subjects in the placebo group developed AIDS compared with 11 of 453 in the 500 mg daily ZDV dosage group (p=.001) and 14 of 457 in the 1500 mg group (p=.02). Progression to either AIDS or advanced ARC occurred in 38 placebo subjects, 17 (p=.006) in the 500 mg ZDV group and 19 (p=.05) in the 1500 mg ZDV group. Significant benefit was also shown in CD4+ cell counts and HIV p24 antigen levels. The 1500 mg ZDV group had a significantly higher rate of severe hematologic toxicity (p<.0001). Severe anemia and neutropenia noted in 6.3% and 6.3% in the 1500 mg ZDV grop; in 1.1% and 1.8% in the 500 mg group and in 0.2% and 1.6% in the placebo group. Nausea was the only severe toxicity seen significantly more often in the 500 mg (5%) group than in the placebo group (1%). Study compliance was very good, and loss to follow-up rates were less than 10% in each group.
Conclusions: ZDV in a total daily dosage of 500 mg is safe and can decrease the 1 year progression rate to AIDS in asymptomatic HIV-infected subjects with less than 500 CD4+ cells/mm³.

Th.B.18

LONG TERM EFFECTS OF ZIDOVUDINE THERAPY IN EARLY HIV DISEASE. Results from the Multicentre Canadian Azidothymidine Trial (MCAT).

Ruedy, John; Montaner, J.S.G.; Schechter, M.T.; Le, T.; Fanning M.; Tsoukas C.; Falutz J.; Wells G.; Child, S.; O'Shaughnessy M. and Wainberg M. Canada.

OBJECTIVE: To describe the long term effects of zidovudine (ZDV) therapy in early HIV infection.
METHODS: *Design:* Multicentre, prospective, dose range finding study *Subjects:* 74 HIV positive homosexual men (CDC groups IIB, III and IVC2; CD4 counts > 270). *Intervention:* Following a 3 weeks observation, volunteers were treated with ZDV 600 mg/d for 18 weeks, 900 mg/d for 9 weeks and 1200 mg/d for 9 weeks followed by a washout period of 6 weeks after which they were restarted on 1200 mg/d or the highest previously tolerated dose. *Follow-up:* Clinical and laboratory evaluations were performed at 3 week intervals. *Pharmacokinetics:* AUC, peak and trough for AZT and GAZT were measured at 48 weeks. *Analysis:* A case-control analysis was performed using data from the Vancouver Lymphadenopathy-AIDS Study. Cases were matched (1:1) on the basis of the previously described score using CD4, IgA and hemoglobin (Hgb). Progression to AIDS and changes in laboratory profile were compared between both groups. The same variables were correlated with pharmacokinetic parameters using ANOVA.
RESULTS: Serious adverse reactions related to AZT were infrequent. Seven patients developed severe anemia (Hgb <100 g/L) In all cases, they recovered upon discontinuation of therapy. Case-control analysis showed a significant development of anemia, leukopenia and lymphopenia with selective decrease of CD4 in AZT treated patients. Progression to AIDS was not significantly different in both groups. Pharmacokinetic parameters failed to predict changes in laboratory profile or disease progression in AZT treated patients.
CONCLUSION: Traditional surrogates of disease progression (Hgb, CD4, lymphocytes) were found to be disturbed by prolonged AZT therapy. Changes in these surrogates as well as disease progression were unrelated to serum AZT pharmacokenetics. Progression to AIDS was not significantly different in AZT treated individuals and controls, however, the statistical power was low.

Supported by a grant from National Health and Research Development Programme.

Th.B.19

FUNCTIONAL STATUS AND WELL-BEING IN A PLACEBO-CONTROLLED TRIAL OF ZIDOVUDINE IN EARLY ARC

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*University of California, San Francisco, **San Diego, and ***Los Angeles, CA, USA.

Objective: To examine the impact of zidovudine (ZDV) on functional status and well-being in persons with early ARC.
Methods: Seventy-one subjects were randomized to ZDV 200 mg (n = 35) or placebo (n = 36) as part of ACTG Protocol 016. We measured health status at baseline, 1 month, and every 3 months thereafter. Our instruments were the newly developed MOS-HIV Health Survey, (subscales scored 0-100), and the Quality of Well-being Scale (QWB). Mean time on-study was 53 weeks (S.D. = 26). Treatment effects were calculated using paired and unpaired t-tests.
Results: While there was evidence that ZDV initially reduced health and well-being, this effect did not persist. Using the MOS-HIV Health Survey, at 24 weeks scores on most subscales had improved for the placebo group, while some had declined for the ZDV group; the groups had significantly different changes from baseline in energy (placebo, +10 vs. ZDV, -1; p = .002) and overall health (placebo, +5 vs. ZDV, -6.5; p = .05). At this point, both ZDV and placebo groups had improved mental health and less health distress than at enrollment (paired t-test, p<.0005). Thereafter, subjects on ZDV declined less than those on placebo; at 52 weeks both groups' scores were similar to baseline on all subscales. Using the QWB, there were no significant differences over time in either group.
Conclusion: Our study showed that while ZDV caused little morbidity, it also did not dramatically improve functional status and well-being of those with early ARC. We suggest that future studies include health status instruments as outcome measures, as well as mortality and progression of disease.

Th.B.20

THE EFFICACY AND SAFETY OF A LOWER DOSE OF ZIDOVUDINE IN THE TREATMENT OF PATIENTS WITH AIDS-ASSOCIATED PCP

Fischl Margaret, Parker CB, Pettinelli C, Wulfsohn M, Rasheed S, and the AIDS Clinical Trials Group. Supported by the National Institute of Allergy and Infectious Diseases, Bethesda, Maryland, USA.

OBJECTIVES: To evaluate the efficacy and safety of a lower daily dose of zidovudine (ZVD) in the treatment of advanced HIV disease.
METHODS: A randomized controlled trial was conducted in 524 subjects with a first episode of *P. carinii* pneumonia. 262 subjects received ZVD at an oral dose of 250 mg every 4 hrs (standard dose group) and 262 received ZVD at an oral dose of 200 mg every 4 hrs for 4 wks followed by 100 mg every 4 hrs (low dose group).
RESULTS: The median length of followup was 25.6 mos. 188 deaths (72%) occurred in the standard dose group and 169 (72%) in the low dose group. A statistically better survival was noted for the low dose group (P=0.019). 215 subjects (82%) in the standard dose group and 214 (82%) in the low dose group developed another infection. No significant differences between the two groups in the time to another infection were noted (P=0.56). No significant differences in a mean change from pretreatment CD4 numbers were noted. No differences in p24 antigen changes were noted over time. Serious anemia and neutropenia occurred more frequently and earlier in the standard dose group (P=0.009, P=0.0001).
CONCLUSIONS: A lower daily dose of ZVD was as effective and less toxic than the initially recommended dose.

Th.B.21

RANDOMIZED PROSPECTIVE TRIAL OF TWO REGIMENS OF ZIDOVUDINE (ZDV) IN AIDS AND ARC PATIENTS: 1200 MG/DAY VS 600MG/DAY.

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Objectives: To compare tolerance and efficacy of two regimens of ZDV : full dose (FD) 200 mg every 4 hours and half dose (HD) 200 mg every 8 hours in AIDS and ARC patients (pts).
Methods: From 4/88 to 6/89, 76 pts were randomly assigned to receive either FD, or HD of ZDV. Inclusion criteria were Karnovsky index ≥70%,Hb ≥ 12g/dl,neutrophils (PMN) ≥ 1000/mm^3, CD4 cell count ≥ 100/mm^3. Tolerance and efficacy were assessed monthly and submitted to an intend to treat analysis. Doses were adjusted to hematological values.
Results: At day O, the 2 groups were comparable for HIV infection stage (25 ARC,11 AIDS pts in FD;25 ARC, 15 AIDS pts in HD), risk factors, sex, Hb, PMN and CD4 cell counts. Mean duration of follow-up was 12 months (3-20). Four patients were lost to follow-up. Mean delay before first interruption or dose reduction was 96 ± 115 days in FD and 177 ± 148 days in HD ($p<0.05$). At the end of follow-up,47% FD pts vs 72% HD pts had received ≥75% of the intended dosage ($p<0.05$). Mean values of Hb,and PMN did not differ at day 0, M6, M12 and between FD and HD. Platelets increased in FD and were higher in FD than in HD from M3 to M5 ($p<0.05$). Adverse effects were anemia(FD:13,HD:9),thrombopenia(FD:3,HD:2),neutropenia(FD:9,HD:15),myalgias(FD:1,HD:5). Karnovsky index remained stable and a similar gain of weight (+2.5 kg) was seen at M6 in both groups.A transient increase in CD4 cell count at M3, did not differ between FD and HD. Kaposi sarcoma,opportunistic infections (OI) and death occurred respectively in 1, 13(21 OIs),3 pts FD,and 5, 10(22 OIs),6 pts HD.AIDS developped in 11/25 ARC-FD and in 3/25 ARC-HD ($p<0.01$). This difference was not observed if the 6 first weeks were excluded (4/20 FD vs 2/24 HD).
Conclusion : Thus (1) adverse events were not different between FD and HD pts, (2) however FD pts received a lower percentage of their intended dosage, and reduced or stopped ZDV earlier than HD pts,(3) HD regimen does not seem less effective than FD regimen.

Th.B.22

A RANDOMIZED TRIAL COMPARING ZIDOVUDINE, ALPHA INTERFERON, OR THE COMBINATION IN EARLY HIV INFECTION

Davey, Victoria, Cefali F, Metcalf JA, Masur H, Fauci AS, Lane HC, et al
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Objectives: To compare tolerance and toxicity of administration of zidovudine (Z), alpha interferon (IFN), and the combination of both (Z + IFN) and to determine relative efficacy in delaying progression of HIV disease. **Methods:** HIV-infected patients with ≥ 500 CD4 cell/mm^3, were randomized to oral Z alone (1200 mg qd), s.c. IFN alone (5 X 10^6 units qd with increases as tolerated), or a combination of Z + IFN (600 mg qd and 1.0 x 10^6 units qd, respectively, with IFN dose increases as tolerated). Study endpoints are decline in CD4 count to < 200 mm^3 or < 20% of total lymphocytes or development of an AIDS-defining opportunistic infection (OI). **Results:** Twenty-seven patients have been randomized to Z, 29 to IFN, 28 to Z + IFN. Thirty-five patients have completed ≥ 28 weeks on study. Mean tolerated daily dose(s) at 28 weeks: Z group--1025 mg qd, IFN group--5 x 10^6 units qd, Z + IFN group--600 mg qd and 2 x 10^6 units qd, respectively. Seven patients have withdrawn because of inability to subjectively tolerate the assigned medication (3 Z, 1 IFN, 3 Z + IFN). Common subjective complaints include fatigue (58 % Z, 77% IFN, 84 % Z + IFN), nausea (71 % Z, 18 % IFN, 48 % Z + IFN.), anorexia (29 % Z, 45 % IFN, 40% Z + IFN). In one patient IFN was discontinued for a grade IV SGOT elevation. Most frequent laboratory toxicities were SGOT > 150 units/L (4 % Z, 5% IFN, 20 % Z + IFN), hemoglobin ≤ 12 gm/dl (21% Z, 14 % IFN, 32 % Z + IFN), granulocytes < 1000/mm^3 (4 % Z, 27% IFN, 40 % Z + IFN). No patients have reached study endpoints of CD4 cell count decline, CD4 % decline, or OI development. **Conclusions:** Administration of Z, IFN, or Z + IFN to patients with HIV infection and CD4 counts ≥ 500/mm^3 has produced expected side effects and laboratory toxicities. Study attrition rates for all causes are not markedly different among the 3 groups despite the greater frequency of laboratory and subjective toxicities in the Z + IFN group, suggesting that with careful dose adjustment, the 3 treatment regimens are equally tolerable. Data collected over the next 6 months should allow preliminary analysis of the relative effects of each treatment on study endpoints.

Th.B.23

PHASE II TRIAL OF ALTERNATING AND INTERMITTENT REGIMENS OF ZIDOVUDINE (ZDV) and 2',3'-DIDEOXYCYTIDINE (ddC) IN ARC AND AIDS

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Objective: To determine the efficacy and toxicity of alternating and intermittent regimens of ZDV 200 mg q4h and low dose (0.01 mg/kg q4h) or high dose (0.03 mg/kg q4h) ddC compared with continuous ZDV alone in ARC and AIDS.
Methods: Patients were stratified according to CD4 cell numbers > or ≤ 200 and randomized to one of 7 oral regimens: weekly alternating ZDV and low (A) or high (B) dose ddC; monthly alternating ZDV and low (C) or high (D) dose ddC; intermittent weekly ZDV (E) or high dose ddC (F); continuous ZDV (G). All participants had serum p24 antigen > 70 pg/ml. Study drug dosing is to continue for 52 weeks.
Results: 131 patients (96 ARC, 35 AIDS) were entered: 90 remain active; 41 have discontinued, 8 for ddC toxicity, 2 for ZDV toxicity. Hematologic toxicity was most frequent in the continuous ZDV limb. Peripheral neuropathy occurred in all treatment groups, but was more common in the two high dose ddC weekly regimens, B and F. Preliminary analysis suggests that there may be p24 antigen suppression and sustained CD4 cell enhancement in the alternating limbs (A-D) compared to the intermittent limbs (E,F).
Conclusion: Preliminary analysis suggests that alternating regimens of ZDV and ddC may reduce toxicity and enhance efficacy of either drug alone.

Th.B.24

DECREASED HIV PLASMA TITER IN RESPONSE TO COMBINED LOW-DOSE ZIDOVUDINE AND ACYCLOVIR THERAPY IN CDC CLASS IVA PATIENTS.

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Objective: To measure the virologic response of low-dose zidovudine (300 versus 600 mg/day) with or without acyclovir (4800 mg/day) in CDC class IVA disease.

Methods: Twenty-two CDC class IVA patients enrolled in ACTG protocol 010 received zidovudine Q4H po at either 50 mg (N=5) or 100 mg (N=5) per dose with (N=7 and 5, respectively) or without acyclovir 800 mg Q4H po. Blood specimens were obtained at baseline and at weeks 4, 8, 16 and 24 for plasma HIV titer and serum HIV-p24 antigen (Abbott, Chicago). Comparisons between baseline and week of therapy used Wilcoxon signed-rank analysis with Bonferroni correction and comparison by drug regimen used multivariant analysis.
Results: At baseline 17/22 (77%) were plasma viremic (mean ln titer ± ISD, 2.95 ± 2.55) and 16/22 (72%) were p24 Ag positive. The mean plasma HIV titer declined to 1.26 (P= 0.012) and to 1.15 (P=0.008) at weeks 4 and 8 post-therapy but rose to 1.69 (P=0.60) and 1.60 (P=0.36) at weeks 16 and 24. Mean p24 Ag levels were 116 pg/ml at baseline and 60 pg/ml at week 4 (P=0.068), 50 pg/ml at week 8 (P=0.004), 56 pg/ml at week 16 (P=0.036) and 65 pg/ml at week 24 (P=0.040). The change in plasma HIV titer and p24 Ag were not different between the four zidovudine-acyclovir regimens (P>0.40).

Conclusion: 300 mg daily of zidovudine was as capable as 600 mg daily of significantly lowering both the titer of plasma viremia and the level of p24 Ag. The effect on plasma viremia was not sustained beyond 8 weeks; however, the effect on p24 Ag was sustained for at least 24 weeks. The addition of acyclovir did not enhance the reduction of plasma viremia or p24 Ag. Further clinical trials with low dose zidovudine are warranted.

TRACK B: CLINICAL SCIENCE & TRIALS
ABSTRACT SESSION: PSYCHIATRIC ISSUES IN HIV INFECTION

Th.B.25 COPING RESPONSES AND PSYCHOLOGICAL ADJUSTMENT IN GAY MEN WITH AIDS: A LONGITUDINAL ANALYSIS

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Objective: This study examined the relationship between coping responses of gay men diagnosed with AIDS and psychological adjustment, both cross-sectionally and longitudinally. Methods: Fifty men with AIDS, recruited from the UCLA Multicenter AIDS Cohort Study (MACS), participated at Time 1. A subset of 24 men participated at Time 2, an average of 8 months later. Coping responses were assessed at Time 1 and multiple measures of subjective health status and psychological adjustment were assessed at Time 1 and 2 by questionnaire. Results: Factor analysis of the Ways of Coping scale yielded five coping factors similar to those found in other populations with life-threatening illness. Cross-sectionally, Behavioral Escape-Avoidance accounted for the largest proportion of variance (17%), and was negatively related to adjustment, as was Cognitive Escape-Avoidance, while Active Positive Coping was positively related to adjustment, after accounting for subjective health status. Longitudinally, Behavioral Escape-Avoidance at Time 1 explained 39% of the variance in adjustment at Time 2, after accounting for subjective health status at Time 2. Items related to self-isolation, self-blame, and unhappiness with one's options had particularly strong negative relationships with adjustment. Conclusions: The use of specific coping strategies strongly predicted poor future psychological adjustment in these gay men with AIDS. The identification of a subset of men with AIDS at risk for poor adjustment will facilitate the development of interventions aimed at decreasing psychological difficulties and enhancing quality of life.

Th.B.26 PSYCHOLOGICAL ADJUSTMENT TO HIV INFECTION

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Objective: The preliminary phase of a multicentre prospective study of the correlates of psychiatric morbidity, psychological adjustment to disease and sexual behaviour in homosexual/bisexual HIV positive men is described.

Method: To date 24 asymptomatic HIV+ (CDC II) homosexual/bisexual males have been recruited through hospital outpatient clinics (response rate approx.60%) and have participated in detailed psychiatric and neuropsychological interviews.

Results: 1) 50% of subjects scored within the range of probable psychiatric morbidity on the General Health Questionnaire (28 item) (GHQ). 2) Patterns of psychological adjustment to HIV conformed closely to those described for cancer patients. 3) Significant correlations were found between three subscales of a mental adjustment to disease scale and GHQ scores: Fatalism ($r = .73$, $p < .001$), Helplessness/Hopelessness ($r = .76$, $p < .001$) and Fighting Spirit ($r = -.56$, $p < .01$). 4) Self-reported frequency of condom use for anal intercourse was negatively correlated with the level of psychological symptoms ($r = -.51$, $p = .03$) and subscales from the mental adjustment to disease scale (Helplessness/Hopelessness: $r = -.64$, $p = .004$).

Conclusion: There are significant relationships between mental adjustment to HIV infection, likelihood of psychiatric morbidity and propensity to practice safe sex. The general pattern of coping with HIV is similar to that observed for cancer patients.

Th.B.27 RELATIONSHIPS BETWEEN CD4 LYMPHOCYTES AND PSYCHO-SOCIAL VARIABLES AMONG HIV SEROPOSITIVE ADULTS

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Objective: Determine if psychosocial factors correlate with total CD4, currently the best predictor of disease progression among HIV-infected individuals (HIV+).
Methods: Among 108 males and 8 females (CDC II/III), Pearson correlations were obtained between entry measures of total CD4 and standardized measures of psychiatric symptoms, anxiety, depression, bereavement, hopelessness, social support, hardiness, health attributional style, and stressful life events. Psychiatric diagnoses were obtained by standardized clinical ratings. Total CD4 and emotional distress were assessed three months later. HIV+ on zidovudine were excluded.
Results: Significant correlations were found at entry between total CD4 and both state anxiety and death(s) during the past two years of a spouse or close sexual partner; however, none of the 22 psychosocial factors at entry revealed a significant effect on total CD4 three months later after controlling for the initial immune measures by hierarchal regression.
Conclusion: Among HIV+, psychosocial factors do not directly affect total CD4. Caution is necessary before attributing disease progression to the direct effects of emotional distress on the immune system.

Th.B.28 PSYCHOSOCIAL ADJUSTMENT TO HIV INFECTION: EFFICACY OF DIFFERENT GROUP INTERVENTIONS IN GAY AND BISEXUAL MEN.

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Objective: To establish the level of distress experienced by HIV-infected gay and bisexual men and to assess the efficacy of psychosocial interventions in preventing maladaptive adjustment to living with HIV infection and AIDS.
Methods: Psychosocial inventories were administered to 4 groups of HIV-infected men: (1) participants (pts) in a longitudinal cohort study (LCS) who received no treatment (n=50); (2) RISE pts who underwent self-steward training using meditation as the central discipline; (3) traditional psychotherapy groups (n=29); (4) traditional stress management groups (n=50). All groups were of 10 weeks duration. Pts were measured by the Brief Symptom Inventory (BSI) before and after treatment; LCS pts had the second evaluation after 6 months.
Results: On subscales evaluating levels of depression, anxiety, hostility, interpersonal sensitivity, and phobic anxiety the RISE intervention was more efficacious compared with the other programs ($p<0.05$).
Conclusion: Men who completed the RISE program reported less distress than in other forms of group intervention, and appear to have made more beneficial adjustments to HIV infection.

Th.B.29

AIDS INPATIENTS AND PSYCHIATRIC DISTURBANCES:DIAGNOSTICAL AND THERAPEUTICAL ASPECTS.

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A psychodiagnostical and psychopharmacotherapeutical study was conducted on a population of 40 IVDA and 10 homosexuals, affected by AIDS (CDC: 80% IV group) and hospitalized in the Infectious Diseases Ward. Hamilton Rating Scale for Anxiety (HRSA), Hamilton Rating Scale for Depression (HRDS) and Brief Psychiatric Rating Scale (BPRS) were used in order to evaluate: 1) global incidence of psychiatric disorders, evaluated according to DSM III-R criteria; 2) significant difference between the two groups in terms of presence, intensity and frequency of the symptoms; 3) the validity of specific psychopharmacological therapy administered for anxiety, depression and psychotic disorders.
The results showed: a) the intensity and the incidence of anxiety disorders were higher in IVDA patients (24.2; 90%) than in homosexual patients (19.1; 80%); b) both intensity and incidence of depressive disorders were higher in homosexual patients (26.1; 90%) versus IVDA patients (21.1; 82.5%); c) schizoaffective disorders were present in both groups; d) after a month of psychopharmacological treatment the patients were psychodiagnostically reevaluated with a test-retest procedure: in 70% of the sample with high anxiety levels there was a marked attenuation of the symptoms, whereas a significant improvement of depression scores was evidenced in only 20% of the patients with depressive symptoms. Conclusions: (1) homosexuals are prevalently affected by reactive depression, due to a deeper capacity of insight. (2) Anxiety is elevated in IVDA by their psychic fragmentation based on a pathological structure of personality. (3) The highest levels of schizoaffective symptoms in both groups peaks in the first 7 days of hospitalization; afterwards there is a general improvement. (4) The efficacy of the psychopharmacological therapy for the symptoms of the above mentioned disorders is high.

Th.B.30

A COMPARISON OF SELF REPORTED SUICIDAL BEHAVIORS IN DIFFERENT STAGES OF HIV INFECTION

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Objective: To examine the incidence of suicidal behaviors in patients at different stages of HIV infection.
Method: 155 patients attending a psychiatric outpatient clinic for HIV related problems were surveyed regarding past and present suicidal behaviors. The population surveyed was predominantly Hispanic (54%) and 52% were female. The major HIV transmission risk factors were IVDU (55%) and heterosexual sex partner of person at risk (40%). HIV related diagnoses were AIDS 35%,ARC 22%, asymptomatic HIV+, 29% and HIV- 14%. The HIV disease groups did not differ significantly in race, sex, age or DSM III R diagnoses.The frequencies of past and present suicidal behaviors were examined in these four disease groups.
Results: Patients in all four groups had a high incidence of lifetime and current suicidal ideation. The incidence of suicidal ideation and attempts(by self or in family) was lowest in AIDS patients compared to all other groups.

	AIDS	ARC	HIV+	HIV-	
Suicidal thoughts:	n=54	n=34	n=45	n=22	
in lifetime	54%	82%	78%	68%	p=.015
in past week	11%	26%	31%	23% ns	p=.08
Suicide attempts in past:					
by self	26%	47%	51%	32%	p=.04
by family member	13%	36%	53%	27% ns	p=.08

Conclusion: Organicity and psychological processes such as denial and/or preoccupation with progressive physical illness may cause significant underreporting of psychological distress in AIDS patients which will affect studying psychological factors and providing psychiatric treatment in these groups.

Th.B.31

PHARMACOLOGIC MANAGEMENT OF DELIRIUM IN MEDICALLY HOSPITALIZED AIDS PATIENTS

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Objective: To compare the efficacy of three drug interventions in the treatment of delirium in medically hospitalized AIDS patients, i.e. Haloperidol (a high potency neuroleptic) vs. Chlorpromazine (a low potency neuroleptic), vs. Lorazepam (a benzodiazipene).
Methods: Patients admitted to two AIDS units were screened for presence of organic mental disorders (OMD). Patients meeting criteria for CDC definition (1987) of AIDS and Delirium (DSMIII-R criteria and a score of 12 or more on the Delirium Rating Scale (DRS), were entered into a randomized, double-blind, 7 day treatment protocol comparing haloperidol, chlorpromazine and lorazepam. Patients were rated daily with the DRS and the Mini-Mental State Examination. Neuropsychiatric examination was performed before and after treatment in order to identify predictors of delirium and treatment response.
Results: Preliminary data suggests that low potency neuroleptics are as efficacious as high potency neuroleptics in the management of delirium in AIDS patients. Also, low dosages (equivalent to 200mg of chlorpromazine or less) are sufficient to control delirium. Patients with dementia or pre-existing OMD are most likely to develop delirium.
Conclusion: While the present study is still in progress, clinicians should consider the use of low dose, low potency neuroleptics in the management of delirium in AIDS, and be alert to the development of delirium in AIDS patients with dementia or an other OMD.

Th.B.32

THE EFFICACY OF IMIPRAMINE IN THE TREATMENT OF HIV-RELATED DEPRESSION

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Objective: To test the efficacy of antidepressant medication in the treatment of depressed HIV positive patients. Subsidiary objectives of this study are to determine how improvement in HIV related depression impacts on medical status and rate of progression of illness, suicide risk and other psychiatric morbidity, overall level of functioning, health maintenance behavior and participation in sexual behaviors likely to provoke further spread of the virus.
Methods: This is a 6-week placebo-controlled trial of imipramine with follow-up contact at 3 month intervals thereafter. Inclusion criteria select for adult males and females at all stages of HIV infection who are ambulatory and medically stable and who meet DSM III-R criteria for major depression. Excluded are those individuals found to have dementia or recent alcohol and or substance abuse.
Results: Thirty gay male subjects ranging in age from 23 to 59 have entered the study. Mean peak imipramine dose was 225 mg p o qD and medication was surprisingly well tolerated. Preliminary analysis of study completers shows a significant medication effect on the Beck Depression Inventory and the Hamilton Rating Scale for Depression.
Conclusion: This is one of very few controlled studies on the psychopharmacological treatment of depressed HIV positive individuals. The preliminary results suggest the efficacy and feasibility of medication in HIV related depression.

TRACK C: EPIDEMIOLOGY & PREVENTION

ABSTRACT SESSION: NATURAL HISTORY OF HIV INFECTION

Th.C.33 NATURAL HISTORY OF HIV INFECTION IN A COHORT OF HOMOSEXUAL AND BISEXUAL MEN: CLINICAL AND IMMUNOLOGIC OUTCOME, 1977-1990

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Objective To determine the relationship between duration of HIV infection and clinical and immunologic status in a cohort of homosexual and bisexual men.
Methods From 1978 to 1980, we recruited 6,706 homosexual and bisexual men for studies of hepatitis B; men included in this analysis had well characterized dates of seroconversion (DSC) from 1977-1989. Using Kaplan-Meier analysis, we calculated the cumulative risk of AIDS by duration of HIV infection. We also analyzed additional clinical and laboratory data for men enrolled in our prospective studies by estimated DSC.
Results Based on analysis of 489 men, 1% developed AIDS within 2 years of infection, 8% within 4 years, 20% within 6 years, 37% within 8 years, 51% within 10 years, and 54% within 11 years (95% C.I. = 49-59%). 341 men had an estimated DSC before 1981 and had either developed AIDS or been clinically evaluated within the last 2 years. Of these men, 202 (59%) developed AIDS, 64 (19%) had AIDS-related conditions (ARC), 9 (3%) had asymptomatic generalized lymphadenopathy, and 66 (19%) had no signs or symptoms of HIV infection. Of 73 men without AIDS or ARC whose DSC was before 1981 and on whom T-lymphocyte subsets were available, 6 (8%) had an absolute T4 count <200 cells/mm^3, 29 (40%) had 201-500 T4 cells, and 38 (52%) had >500 T4 cells. The proportion of men with clinical or laboratory evidence of immunodeficiency (AIDS, ARC, or <200 T4 cells) increased from 0% of men with an estimated DSC after 1986 to 80% of men with an estimated DSC before 1981.
Conclusion The risk of immunodeficiency increases with duration of HIV infection, although some men infected for ≥9 years appear immunocompetent.

Th.C.34 NATURAL HISTORY OF HIV INFECTION, A PROSPECTIVE STUDY IN A COHORT OF 162 HIV SEROCONVERTERS.

Pedersen, Court, Gerstoft J, Lindhardt BØ, Lundgren JD, Jensen BL, Dickmeiss E, et al. University of Copenhagen, Copenhagen, Denmark.

Objective: To examine the natural history of HIV infection, and to delineate factors of importance for disease progression.
Methods: 162 HIV seroconverters (less than 12 months between last seronegative and first seropositive sample) were followed for a median of 37 (range 1-131) months. All were healthy (CDC groups I-III) at enrollment. Using Kaplan-Meier methods we analyzed cumulative risks of 1) AIDS, 2) development of a CD4 cell count less than 200 mill/l, 3) recurrence of HIV antigenaemia.
Results: The cumulative risk of AIDS was 2% at one year, 5% at two years, 10% at three years and 17% at four years. The risk of AIDS was significantly higher among individuals who had longlasting primary illnesses (26% at three years) than among individuals with less severe primary illnesses (0% at three years) (p=0.001). The risk of developing a low CD4 cell count was 3% at one year, 10% at two years, 22% at three years and 35% at four years. The corresponding rates for recurrence of antigenaemia were 5%, 12%, 21% and 32%, respectively. Development of a low CD4 cell count was associated with a longlasting primary illness (p=0.006). There were no associations between disease progression and age, risk behaviour or year of seroconversion. Patients who developed AIDS within 5 years of seroconversion had low CD4 cell counts 6-12 months after seroconversion.
Conclusion: Time from HIV seroconversion to AIDS is highly variable. There is an association between the course of the primary infection and the rate of disease progression. Patients who have a rapid disease progression are characterized by an early decline in CD4 cell counts.

Th.C.35 AIDS INCIDENCE TRENDS OVER 5 YEARS IN THE MULTICENTER AIDS COHORT STUDY (MACS)

Visscher, Barbara*; Muñoz, A.**; Jacobson, L.**; Dudley, J.P.*; Chmiel, J.,***; Zhou, S.****; Graham, N.**; Vermund, S.*****; Detels, R.* Multicenter AIDS Cohort Study (MACS): *UCLA Sch of Public Hlth; **Johns Hopkins U.; ***Northwestern U.; ****U. of Pittsburgh; *****NIAID/National Institutes of Health.

Objective: To model the incidence of AIDS over calendar time in a cohort of infected men.
Methods: In 1984-85, 1809 HIV seropositive AIDS-free men were enrolled in the MACS. Data from 6 month visits and continuous reports of CDC-defined AIDS were used to determine the observed incidence by semester, starting in July, 1984 (84-II). The denominators (n_t) were the person-semesters of observation contributed by this cohort before any diagnosis of AIDS. The number of AIDS cases in a given semester t (where t=1 for 84-II, etc.) was modeled as a Poisson variate with mean $n_t I_t$ where $I_t = ce^{a+bt}/(1+e^{c+bt})$. The interaction between center and semester was used to test for differences between geographic sites - Baltimore, Chicago, Los Angeles, Pittsburgh.
Results: The observed incidence rose from 0.7 per 100 person-semesters in 84-II to 4.3 per 100 person-semesters in 86-I and remained almost constant thereafter. The Poisson model using c = .044 provided an appropriate fit (deviance = 46.2, d.f = 37) and the corresponding estimates are a = -3.26, b = 1.45. The table below shows the observed and expected incidence rates (per 100 person-semesters) as well as the % of the cohort taking AZT and/or pentamidine during each semester. Although there were slight differences among the geographic sites, they did not affect the model significantly.

	Calendar Semester:									
	84-II	85-I	85-II	86-I	86-II	87-I	87-II	88-I	88-II	89-I
Observed Rate	0.69	1.71	3.63	4.34	3.43	5.79	4.12	4.75	4.23	4.32
Expected Rate	0.62	1.81	3.29	4.08	4.32	4.38	4.40	4.40	4.40	4.40
Percent on Therapy	0%	0%	0%	0%	0%	0.6%	4.3%	11.4%	17.0%	23.3%

Conclusion: The data support a leveling of the incidence of AIDS in this cohort as early as 1986. No significant geographic differences were noted. Although effective therapy was not used in this cohort until 1987, it may be one of the contributing factors keeping the incidence relatively constant.

Th.C.36 CESSATION OF INTRAVENOUS DRUG USE REDUCES PROGRESSION OF HIV-INFECTION IN HIV+ DRUG USERS

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Objective: To determine, if cessation of drug use and methadone maintenance treatment programs reduce risk of progression of HIV infection in intravenous drug users (IVDU).
Methods: IVDU without antiretroviral therapy, categorized into 1. those remaining enrolled in a methadone program during observation period, 2. former, and 3. persistent IVDU, were prospectively followed at least at semi-annual intervals. The probability of progression from CDC stage II/III to AIDS was calculated using life-table analysis and compared using log-rank test. Predictors for progression were analyzed using a Cox proportional hazard regression model with study entry CD4 numbers as one of the predictor variables to stratify for the time since HIV acquisition.
Results: 355 patients (228 men, 127 women; 95 methadone program, 113 former, 147 persistent IVDU) were followed for a median of 19 months (range: 0.5-65). No significant differences between the three groups were found with respect to initial CD4 numbers, median age, which was 27 years (range: 19-50), or median time interval between first iv drug use and study entry which averaged 7.1 years (1-23). Life-table analysis revealed a significantly lower probability of disease progression both in the methadone group and in former IVDU compared with persistent IVDU ($p<0.05$). Probability of progression to AIDS after 3 years was 24% (95% confidence intervals: 11-36) in the methadone group, 19% (7-31) in former IVDU, and 41% (27-56) in persistent IVDU ($p<0.05$). Multivariate regression analysis showed a relative risk of progression to AIDS of 1.76 ($p<0.05$) in persistent IVDU compared with the two groups who ceased injecting drugs.
Conclusions: Cessation of iv drug use lowers HIV-associated disease progression, which provides a strong argument for expanded drug treatment programs, which include methadone maintenance.

Th.C.37 THE RATE OF DEVELOPMENT OF HIV-1 RELATED ILLNESS IN WOMEN WITH A KNOWN DURATION OF INFECTION

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Objective: To determine the rate and risk factors for the development of symptomatic HIV-1 related disease in women with a known duration of infection.
Methods: A cohort of 123 women working as prostitutes in Nairobi have been followed from the time of seroconversion to HIV-1. Women were evaluated at 3-6 month intervals. At each visit, women were staged using the Centers for Disease Control staging system.
Results: At December 1988, the following HIV related conditions had developed - prurigo nodularis 6.5%, hairy leukoplakia 3.3%, oral candidiasis 13.0%, wasting/diarrhea 3.3%. Five women had died of AIDS-like illnesses. Survivorship analysis showed a very short duration of stage 2 with all women having progressed to stage 3 after 30 months. The median time to development of stage 4 was 37 months and the median time to development of AIDS (Bangai definition) was 40 months. The rate of development of stage 4 was significantly slower than women who were initially stage 3 ($p<.001$, log rank). There was a trend to slower progression in women reporting >50% condom use.
Conclusion: Progression to stage 4 disease and AIDS is significantly more rapid in this group of women than reported from other populations. Further research is needed to identify the reasons for this difference.

Th.C.38 THE PROGRESSION TO AIDS IN THE ITALIAN HEMOPHILIA POPULATION OVER A SIX- YEAR PERIOD.

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Objective: To estimate the progression to AIDS in the Italian hemophilia population and to correlate the outcome with different clinical features.
Methods: Study subjects: all HIV-positive individuals already recruited at the on-going National Registry of Patients with Blood Clotting Disorders. Statistical analysis: the Kaplan-Meier survival analysis was used to estimate the actuarial incidence of AIDS. The seroconversion time was estimated as mid-point between the last negative and the first positive tests, both when the former was known and when it had been arbitrarly chosen as the most appropriate among the following three dates (assumed as most conceivable beginning of exposure): 1980, date of birth or date of the first concentrate consumption.
Results: 409 HIV-positive hemophiliacs have been included in the present analysis, and among them both a last negative and a first positive tests were available for 103. A 20.6% (ISE=7.6) actuarial incidence of AIDS was obtained in the latter group of patients, over a 5.5-year period. A significantly faster progression to AIDS is observed among > 35 yrs. old individuals (37.7%, ISE=24.9%) than those below (18.5%, ISE=8.3%, $p = 0.02$); no statistically significant difference was found between the patients below and above 18 years of age, within the < 35-year age group.
Conclusion: The actuarial incidence of AIDS in the Italian Hemophilia population appears to be similar to what recently described in sizeably comparable cohorts in other areas. Furthermore a strong association between older age (> 35 yrs.) and more rapid progression has been observed, likewise other authors. Differences exist nevertheless between both the overall prevalence rate and the type of hemophilia more severly affected by HIV in Italy and elsewhere. We are currently investigating in further depth whether those differences may affect the progression to AIDS.

Th.C.39 CIGARETTE SMOKING AND INCIDENCE OF AIDS

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Objective: Investigate cigarette smoking as a cofactor for incidence of AIDS.
Methods: Smoking status and other covariates were determined at entry for members of the San Francisco Men's Health Study, a population based cohort of single men ages 25-54 observed bienially since 1984. Using the Cox proportional hazards model we analyzed the association of smoking and incidence of AIDS in HIV infected subjects (N=387) controlling for: baseline CD4+ and CD8+ T cells, thrush, age, and lifetime number of male sexual partners. Relative hazards for T cell counts refer to change in risk per 100 cells.
Results: The relative hazard for smokers compared to nonsmokers was significantly elevated. As previously reported, the relative hazards for thrush and T cells were also elevated.

	Relative Hazard for AIDS	95% Confidence Interval	P-Value
Smoking	1.63	1.08, 2.45	.020
Thrush	1.81	1.02, 3.19	.042
CD4 cells/ul	1.41	1.26, 1.57	<.001
CD8 cells/ul	1.07	1.02, 1.13	.010

A separate analysis of the incidence of thrush yielded a relative hazard of 1.95 ($p<.001$) for smokers compared to nonsmokers. The potential for onset confounding and differential censoring of follow-up times was investigated.
Conclusions: Smoking may adversely effect HIV disease progression independent of T cells and thrush. The association of smoking with incidence of thrush suggests an effect relatively early in the course of infection. The effect of smoking on T cells, as previously reported from this cohort, may possibly account for the association. Controlling for T cells which are known markers of disease progression, addresses the potential confounding of unknown infection times.

Th.C.40 SURVIVAL IN ADULTS AIDS CASES, BRAZIL, 1980-1989.

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Objective: To assess the extent to which the survival of adults AIDS cases in Brazil has been influenced by clinical and epidemiological features.
Methods: Using data from the Brazilian National AIDS registry,analyses were conduct to assess survival as a function of gender,risk group,indicators diseases,among others.Median and mean survival were calculated using product-limit survival functions.The possible independent influence of each variable in the survival was evaluated using Cox regression model.
Results: The mean survival time was 16.9 months for male and 5.8 months for female patients.Among female cases,IVT Users had shortest median survival time(6.5 months).Based on the results of the multivariate analysis,sex,risk, group, and occurrence of tuberculosis were the fators to exert most influence on the survival time.
Conclusion: The mean and the median survival time observed in Brazilian AIDS cases are shorter than those observed in many countries.Before taking in account the quality of local medical care, it is necessary to measure the influence of the delay in the date of diagnosis,considering that the Brazilian AIDS case-definition for surveillance purposes is not very consistent with current diagnostic practice. Since confirmatory laboratory tests are not always available,this delays the date of confirmatory diagnosis. It urges to adopt a such AIDS case-definition able to allow precocius diagnosis.

TRACK C: EPIDEMIOLOGY & PREVENTION

ABSTRACT SESSION: ISSUES IN VERTICALLY TRANSMITTED HIV INFECTION

Th.C.41 ROUTINE VS. TARGETED PRENATAL TESTING FOR HIV

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Objective: To compare Centers for Disease Control(CDC) HIV screening guidelines to routine HIV screening of pregnant women.
Methods: Women attending the Johns Hopkins Obstetrics clinic between 2/87 and 8/88 who acknowledged risk factors for HIV infection were targeted for HIV screening, following recommended CDC screening guidelines. Women without risk factors could request HIV testing, but it was not routinely offered. Due to the high prevalence of HIV infection in this population, the clinic policy was changed 11/88 from a targeted screening to routinely offering HIV testing to all registrants, regardless of risk status. Rubella specimens from women not voluntarily tested were tested anonymously to evaluate the ability of both screening programs to identify HIV+ women.
Results: Between 2/87 and 8/88, 622 women were tested for HIV, 30(4.8%) were HIV+. 228(37%) women were tested voluntarily. 16(53%) HIV+ women were identified by voluntary testing. Between 11/88 and 10/89, 513 women were tested for HIV, 38 (7.4%) were HIV+. 476 (93%) women were tested voluntarily. 35/38 (92%) HIV+ women were identified through voluntary testing. There were no differences in the populations tested related to age, race, marital status and trimester presenting.
Conclusions: CDC screening guidelines for HIV infection based on risk factors alone will fail to identify a substantial number of infected women. A voluntary screening program in this population identified >90% of seropositive women. We conclude that risk factor analysis alone is not effective in identifying HIV+ women. With heterosexual and perinatal spread of HIV infection increasing, routine HIV screening should be offered to all pregnant women.

Th.C.42 PERINATAL OUTCOME IN HIV-INFECTED WOMEN IN UGANDA

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Objective: To determine the effect of maternal HIV infection upon the course and outcome of pregnancy.
Methods: Women of unknown HIV-serological status were sequentially enrolled in the prenatal clinic at Mulago Hospital, Kampala. Maternal serological status was determined, and compared to the frequency of complications during pregnancy and health of the newborn. Analysis was performed by Chi-square and two-sample t-test.
Results: Of 650 women enrolled, 206 (31%) were HIV-seropositive. Women in both infected and uninfected cohorts were demographically similar. HIV-infected women were more likely to suffer at least one complication of pregnancy (47% vs 33%, p=.001), particularly fever (18% vs 12%, p=.05) and urinary tract infection (10% vs 4%, p=.05). Serious complications, including puerperal sepsis (3% vs 2%), were not associated with maternal infection. Infants of infected mothers were less likely to reach term (82.1% vs 93.4%, p<.0001), and were slightly but significantly smaller at birth (2.94±.53 vs 3.13±.51 kg, p<.001). In addition, perinatal death occurred more frequently in newborns of HIV-infected mothers (8% vs 3%, p=.01). When only women without any HIV-consistent symptoms were analyzed, differences in frequency of complications during pregnancy, gestational age, and birth weight remained significantly associated with HIV infection (p≤.06).
Conclusion: HIV-infection during gestation results in measurable untoward effects upon both the mother and her newborn.

Th.C.43 MOTHER TO CHILD TRANSMISSION OF HIV: FIRST IMMUNOLOGIC AND SEROLOGIC FEATURES FROM AN ONGOING COHORT STUDY IN KIGALI, RWANDA.

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Objective : To evaluate immunologic and serologic parameters associated with Mother (M) to Child (C) transmission of HIV.
Methods : Two cohorts of 218 infants born of HIV seropositive (HIV +) M and 218 infants of HIV seronegative (HIV -) M were enrolled at delivery.A blood sample was available from the M and C at 0, 3, 6, 9 and 12 months for serologic analysis by ELISA and Western Blot (WB). T4 and T8 lymphocytes subpopulations count were done by indirect immunofluorescence at 15 days post partum (pp) in M and at 6 months of age in C.
Results : Among HIV+ M at enrollment, 214/215 remained WB+ during the whole study-period and one M had a progressive seroreversion. Among HIV- M at enrollment, 4/216 had a seroconversion (seroC) during the first 3 months pp ; in all cases it was acompanied by a seroC in their newborns. At 15 days pp, 147/201 (71%) HIV+ M had a t4/t8 ratio < 1, versus 20/216 (9%) HIV- M (p<10-8). The evolution of HIV WB positivity in the C born of HIV+ M, during the first year of life is as follows :
Cord blood : 285/285 (100%), 3 months : 178/182 (98%), 6 months : 164/178 (92%), 9 months : 64/105 (61%), 12 months : 10/44 (23%).
An association was observed between a + WB at 12 months and a T4/T8 ratio < 1 at 6 months (p=0.006) but not with a T4/T8 ratio <1 in M at 15 days pp (p=0.59). No specific WB pattern at delivery was associated with a + WB at 12 months in C.
Conclusions: 1. SeroC rate is unusually high in M during the first trimester pp and is associated with a seroC in newborns ; 2. Loss of maternal HIV antibodies is frequently delayed but seems to be achieved at 12 months of age; 3. A reversed T4/T8 ratio at 6 months is a valuable marker of HIV infection in infants; 4. The estimated M to C transmission rate is 34%; 5. No marker at delivery is able to discriminate transmitter from non transmitter M.

Th.C.44 RISK FOR HIV 1 PERINATAL TRANSMISSION VARY WITH THE MOTHER'S STAGE OF HIV INFECTION.

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Objective : Recent European studies have shown an observed incidence of transmission of 30%. However, most of the women belong to CDC groupe II and III and they are conflicting results concerning the relationship between mother's status and rate of perinatal transmission.
Methods : Between october 1985 and december 1989, we conducted a follow up study of 3 groups of HIV positive women .Group 1: pregnant women with delivery (n=132), group 2 : pregnant women with induced abortion (n=146), group 3 : HIV +non pregnant women (n=212). The three groups were studied for risk factors , clinical status, immunological and virological parameters. The outcome of children (with a follow up > 15 months : n : 88) was determined on clinical and virological parameters.
Results :

Maternal status during pregnancy			HIV status in children (>15months) Infected n=29(33%)	Non infected n=54 (62%)	Undetermined n=5 (6%)
CD4	> 150/mm^3	n =73	19 (26%)	51	3
	< 150/mm^3	n =15	10 (66%)	3	2
Ag p 24	negative	n =64	17 (26%)	44	3
	positive	n = 24	12 (50%)	10	2
Viremia	low replication	n = 38	6 (16%)	30	2
	high replication	n =14	11 (78%)	2	1

Conclusion : The incidence of perinatal transmission is higher when HIV positive mothers have CD4 < 150 /mm^3, positive antigenemia p 24 and displayed a high replication rate of HIV in cultures. These women with high risk of transmission have to be informed. Moreover this subgroup of women could constitute a group for therapeutic trials during pregnancy.

Th.C.45 ELEVATED MATERNAL TOTAL AND NEUTRALIZING ANTI-HIV1 ANTIBODY DOES NOT PREVENT PERINATAL HIV1.

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Objective: To determine if total and neutralizing anti-HIV1 maternal antibody protects children from HIV1 infection.
Methods: HIV1 infected mothers' blood collected at delivery was titrated for: anti-HIV1 using EIA and neutralizing antibody. Neutralization was determined by 90% reduction of p24 antigen production in H9 cells challenged with 50 TCID HIV1 that had been preincubated with mothers' sera. Pediatric outcomes were: AIDS, indeterminate (I) for HIV1 antibody positive children younger than 20 months without documented HIV1, and seroreverters (R).
Results: HIV1 EIA reciprocal antibody titers in 16 mothers were: $>10^4$ (2), $>10^5$ (6), $>10^6$ (8). Children included: 2 AIDS of mothers with $>10^5$; 6 I of mothers with $>10^6$ (4), $>10^5$ (2); and 8 R of mothers with $>10^6$ (4), $>10^5$ (3), and $>10^4$ (1) EIA titers. Neutralizing anti-HIV1 titers, in 17 mothers, were: <8 (1), 16 (3), 32 (5), 64 (3), 128 (1), 256 (1), 512 (1), >512 (2). Children included: 4 AIDS of mothers with 32 (2), 64 (1), 256 (1); 9 I of mothers with 16 (3), 32 (2), 64 (1), 128 (1), >512 (2); and 4 R of mothers with <8 (1), 32 (1), 64 (1), 512 (1) neutralizing titer.
Conclusions: Although mothers have neutralizing anti-HIV1 it does not apparently protect newborns. Lower levels of anti-HIV1 EIA antibody are associated with HIV1 transmission. The role of anti-HIV1 in preventing HIV1 requires further investigation.

Th.C.46 IgA SPECIFIC ANTIBODY TO HIV IN INFANTS

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Objective: The early serological diagnosis of HIV infection in infants and the determination of the sequence of development of antibodies to envelope and core proteins.
Methods: We developed an IgA Western Blot method using recombinant antigens (gp160, gp120, gp41, p25). Serum samples were obtained from 23 infants at risk for HIV infection by vertical transmission. Infection was documented by positive polymerase chain reaction and/or culture. Sequential samples were available from 5 infected infants, 5 uninfected infants and 5 controls.
Results: IgA anti-HIV was detected in 8/9 infected infants and absent in the 14 uninfected infants. In the 5 infants from whom we obtained sequential serum samples, antibodies to gp160, gp120 and gp41 were detected as early as the 5th week and p25 was absent. By 12 weeks of age,4/5 had detectable anti p25. The 5th patient was anti p25 positive at 17 weeks. None of the uninfected infants born to HIV positive mothers or the negative controls had detectable IgA antibody to HIV.
Conclusion: IgA anti-HIV by Western Blot is sensitive and specific for the early diagnosis of HIV infection in infants. The detection of IgA antibody against envelope proteins (gp160,gp120, gp41) precedes the detection of antibody to core protein (p25). We are currently extending our cohort of infants and determining the sequence of antibody development to other HIV proteins.

Th.C.47 LACK OF PROVIRAL SEQUENCES IN CHILDREN WHO HAVE LOST MATERNAL ANTIBODY FOLLOWING BIRTH TO HIV (+) MOTHERS

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Objective: To determine whether children who have lost maternal antibody following birth to an HIV (+) mother are infected with HIV.
Methods: Children born to HIV (+) mothers are followed from birth at 4 sites. Those children who have lost maternal antibody were tested for proviral sequences by polymerase chain reaction (PCR) at CDC. Children who lost antibody near the time of death from AIDS were excluded from this analysis.
Results: Among 306 children born to HIV (+) mothers at the 4 study sites, 130 have lost maternal antibody (seroreverted) at a median age of 9 months:

	# children born to HIV (+) mothers	# seroreverters	# PCR (+)/# tested
NYCCSG	90	49	0/48
Emory	112	38	0/23
MMC	36	17	0/16
UMDNJ	68	26	0/ 6
TOTAL	306	130	0/93

61/93 children were tested at least twice by PCR; 19/93 were tested ≥3 times. 0/95 tested were also p24 antigen (-) and all seroreverters have remained antibody (-). Although no children are confirmed PCR (+), 4 initially tested (+). Retest of the same sample or subsequent samples were negative.
Conclusion: While virus (+)/antibody (-) children have been reported, our study indicates that this phenomenon is rare.

Th.C.48 TRANSMISSION OF HIV-INFECTION FROM AN INFECTED INFANT TO HIS MOTHER BY BREAST-FEEDING

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During the existence of nosocomial focuses of HIV-infection in Elista, Rostov-on-Don, Volgograd there were 152 children and 12 mothers found to be seropositive. The children were infected due to using the same syringe on multiple patients. As far as the women are concerned, 2 of them had seropositive sexual partners, 3 women received injections at the same hospitals as the children did. 8 mothers had neither seropositive sexual partners no any other known risk factors. Testing of 31000 adult men (35% of the male population) in Elista revealed no additional HIV-positive person so the risk of the presence of an unknown sex partner for 7 women was very low.
Objective: To estimate the risk of infant-maternal HIV-transmission by breast-feeding.
Methods: The questioning of 123 seropositive infants' mothers.
Results: 11 of 18 women breast-feeding their infants after the children's hospitalization were infected. Among 94 women that didn't breast-feed there were no infected. 7 out of 8 children of the infected women without known risk factors had severe stomatitis with bleeding, and all 11 of them had nipple-cracks. Only 4 seropositive children of seronegative breast-feeding mothers had aphthae, and 2 seronegative women had nipple-cracks. The duration of suckling and the children's age were of no importance.
Conclusion: The significant risk factors of infant-maternal HIV-transmission were the simultaneous presence of aphthae in the infants' mouths and the mothers' nipple-cracks providing the virus blood-to-blood transmission.

TRACK D: SOCIAL SCIENCE & POLICY

ABSTRACT SESSION: HUMAN SEXUALITY AND ISSUES OF SEX WORKERS

Th.D.49 HOMOSEXUALLY AND NONHOMOSEXUALLY IDENTIFIED MALE BLOOD DONORS WHO HAVE SEX WITH MEN: A BEHAVIORAL COMPARISON

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Objective. Describe nonhomosexually identified men who have sex with men.
Methods. From June 1988-September 1989, 200 seropositive male blood donors who had sex with men were interviewed regarding HIV-related risk behaviors. Self-reported sexual identity was measured on a 7-pt. Kinsey scale. Perception of HIV risk was measured on a scale of 1 to 10 with 10 highest.
Results. Although 98% had had sex with men since 1978, 45% identified as homosexual, 30% as bisexual, and 24% as heterosexual. Higher numbers of male than female lifetime partners were reported by 54% of bisexually and 25% of heterosexually identified men. During the previous year, 76%, 61% and 32% engaged in any unprotected anal sex with male partners and 1%, 13%, and 23% with female partners. Of men with male partners in the past year, the percent with any unprotected anal contact was highest for heterosexually identified men (100% vs. 83% homo; 71% bi). Risk scores differed by sexual identity with risk group disclaimers and infrequent sexual contact given as reasons for low risk perception. Heterosexually and bisexually identified men were more likely to live with families and report discomfort with attraction to males.

	Homo	Bi	Hetero	p value
Mean risk perception	3.8	2.8	1.7	<.001
Live with family	25.3%	44.6%	55.6%	<.002
Member gay organization	19.3%	5.5%	2.3%	<.004
Discomfort with male attraction	7.4%	30.4%	60.6%	<.001

Conclusions. AIDS educators must address the identity/behavior dichotomy, the use of sexual identity for risk assessment, and the need to reach nonhomosexually identified men within heterosexual social networks.

Th.D.50 AIDS-RELATED HEALTH BEHAVIOR AND SEXUAL PRACTICES OF GAY MEN IN JAPAN.

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Objective: Though the majority of HIV patients in Japan are Haemophiliacs, the sexual transmission of HIV is increasing. To date, there has been no social research carried out on the sexual transmission of AIDS in Japan. This study looks specifically at Gay Men, exploring their knowledge, attitudes and experience in relation to HIV infection. Both their health beliefs and sexual practices are analyzed.
Methods: The study uses survey techniques. A written questionnaire is currently being administered to 400 Gay Men, mainly in the Tokyo region. Respondents are selected using a snowball sample technique, with Gay organizations such as the Gay Human Rights Association Gay sports clubs and bathouses constituting the sample frame.
Results: Statistical analysis of the results of the survey will be completed by may 1990 and will be presented in graphic form, supplemented by commentary.
Conclusion: This study will provide information hitherto unavailable on the sexual practices and health beliefs of Gay men in Japan in relation to HIV infection.

Th.D.51 Profile of the female prostitution in MEXICO and HIV risk factors.

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OBJECTIVES: To analyze the socio-demographic profile, sexual practices, knowledge and attitudes on AIDS, condom use, and risk factors in female sex workers (FSW).
METHODS: Results of KAB surveys and pilot studies are analyzed in a group of 3,612 FSW in 20 cities in Mexico; studied variables were: sociodemographic characteristics, knowledge and attitudes on AIDS, sexual practices, condom use; blood samples were also taken to detect HIV-1 infection. The cities studied include three of the largest in the country, 9 tourist centers, and others in different regions of the country. Random selection and cluster sampling were used in 3 and 17 cities respectively. Counselling was offered before and after serological results were obtained; participation in the study was voluntary and free; confidentiality of the test results was maintained.
RESULTS: Sociodemographic characteristics: Most of the FSW are young (average age 27), single or separated (85%), with low education levels (14% illiterate, 43% with incomplete elementary studies); they have children younger than 10 years old (72%), and prostitution is their only occupation (56%). Prostitution and sexual practices. Average time as prostitutes is 5.4 years, they have 12 average sexual contacts per week; main meeting sites with their clients are nightclubs (61%) and streets (21%). Frequency of sexual techniques is as follows: vaginal coitus (94%), fellatio (19%), anal coitus (15%) andcombined (18%). Previous STD were referred by 25%. Knowledge and attitudes on AIDS: In general, there is a very low level of knowledge (persistence of myths) compared to general population; nevertheless attitudes are favorable. Condom use: Sixty-one percent referred having used it most of the times during the las 4 months. Study population is receptive to specific educative interventions favoring the increase in condom use. HIV-1 risk factors: Thirteen HIV-1 infected women were detected (0.4%), only 1.4% were intravenous drug addicts; the only two significant risk factors were frequency of condom use (OR=4.7 CI 2.8-6.6 p<0.01) and previous STD (OR=6.2 CI 5.7-7.9 p<0.01).
CONCLUSIONS: The sociodemographic profile of the Mexican prostitutes differs from that seen in the United States or Europe where intravenous drug addiction frequently coexists with prostitution. In Latinamerica FSW are mothers, family heads who temporarily work as prostitutes due to economic factors. Frequency of HIV-1 infection is low. Present conditions favour health educative interventions with FSW participation.

Th.D.52 KAP-STUDY AND HIV-SEROPREVALENCE AMONG PROSTITUTES IN RURAL BURKINA FASO

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Objective: To obtain baseline data and to plantify HIV education programs an HIV-seroprevalence-study combined with a KAP-Study were carried out among prostitutes working at a gold prospecting site in the North of Burkina Faso.
Methods: All 38 known prostitutes on the side were interviewed using a questionnaire and a blood sample was taken from each.
Results: Literacy rate among the women was low . Half of them had been working as prostitutes before coming to the site. Their knowledge on sexually transmitted diseases was minimal. A majority declared to have already heard of AIDS.Its transmission signs and prevention were little known. Condoms were said to be used regularly, though there were difficulties in convincing clients to use them. In the sample,44.7%* were HIV-1 and 23.7%* were HIV-2 positive. Double infection was present in 21.1%*. There was one case(2.6%) of single HIV-2 infection* . HBsAg was present in 21.1%, Anti-HBc in 92.1% and TPHA in 42.1%.
Conclusions: Efforts to inform the women and encourage their continuous use of condoms have to be intensified.
* = confirmed by Western Blot

Th.D.53

PSYCHOSOCIAL PREDICTORS OF INTENDED CONDOM USE AMONG ZIMBABWEAN SCHOOLPUPILS

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Objective: To identify psychosocial predictors of intended condom use among adolescents to develop optimally effective AIDS education approaches for this group.
Method: Respondents were a purposive sample of 635 (388 male, 247 female) volunteers (mean age=18.2, SD=2.2) from urban and rural secondary schools in all Zimbabwean provinces. The association of several predictors-AIDS knowledge, perceived susceptibility to HIV, severity of AIDS, efficacy of HIV-preventive measures, social support for HIV-preventive behaviour, cues to action and barriers to action-with the outcome measure of intended condom use was tested using odds ratios and logistic regression.
Results: 58% of males and 45% of females reported sexual experience. Belief in the efficacy of HIV-preventive steps, perceived social support for HIV-preventive behaviour and absence of barriers to condom use-embarressment about procurement, suggestion, negotiation and use of condoms and sensual and moral concerns-were the major determinants of intended condom use. These results held up when the sample was partitioned by sex and sexual experience.
Conclusion: Educators must allay doubt about condom robustness and efficacy by pictures/films of condom trials, demonstrations of their robustness and by permitting adolescents to handle condoms, fostering perceptions of concerted normative support for condom use, emphasizing that condom use reflects responsibility not promiscuity and reducing anxiety with structured psychotherapeutic techniques and by training youth counsellors and condom providers to reduce client anxiety.

Th.D.54

PREFERRED STRATEGIES FOR SAFE SEX: RELATION TO PAST AND ACTUAL BEHAVIOUR AMONG SEXUALLY ACTIVE MEN AND WOMEN

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Objectives: To determine the preferred sexual strategies for reducing risk of HIV infection among sexually active heterosexual men and women and homosexual men. To compare these preferences to past behaviour, intentions and behaviour at the next sexual encounter, using recent revisions of the Theory of Reasoned Action as a guide.
Methods: Five groups of sexually active respondents were examined: 55 male and 78 female heterosexual University students, aged 17 to 21 years; 85 male (mean age 27.4 years) and 85 female (26.7 years) heterosexuals, and 82 homosexual men (31.2 years), all from the general community. Respondents completed self-administered questionnaires about their past sexual practices, their intended practices for the next sexual encounter, their attitudes and norms about these practices, and their attitudes, norms, past history, and intentions about variables which increase or decrease the risk of HIV transmission by sexual means. Respondents completed and returned a follow up questionnaire about their actual behaviour after their next sexual encounter.
Results: The majority of respondents in all five groups stated their preferred risk-reducing strategy as having sex only in an exclusive relationship; second choice of all groups was to use a condom. Respondents were then categorised into one of five strategies: (a) non-penetrative sex, (b) exclusive relationship plus condom use, (c) exclusivity without condom use, (d) non-exclusivity with condom use, (e) non-exclusivity without condom use. Results of ANOVAs and chi-square tests indicated that all heterosexual groups fell mainly into categories b and c, while homosexual men fell mainly into a and d, although minorities in all groups fell into the least safe category, e. Slippage into a less safe category from intentions to actual behaviour was less when intentions and past practice were congruent. Finally, path analyses indicated that past behaviour and intentions interacted to predict actual behaviour regarding condom use for all five groups.
Conclusions: The sexual strategies of heterosexual men and women in terms of risk of HIV transmission are somewhat different from those of homosexual men, even though all groups state similar ideal strategies. Past behaviour is a strong predictor of actual sexual behaviour, because it acts to stabilise or weaken behavioural intentions. Past behaviour may also influence the extent to which resources for carrying our preferred strategies are available. These results have implications for the use of the Theory of Reasoned Action to predict sexual behaviour, as well as for safe sex education programmes aimed at heterosexuals and homosexuals.

Th.D.55

SEROSTATUS AND RELATIONSHIP FORMATION IN THE GAY COMMUNITY: THE AIDS BEHAVIORAL RESEARCH PROJECT

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Objective: As more gay men are tested for HIV antibody, it is becoming evident that serostatus will influence the nature of formation of primary partner bonds in this community. To investigate this question we compared tested seropositives, tested seronegatives, and those who did not know their serostatus or had not been tested from our ongoing AIDS Behavioral Research Project Cohort. We were specifically interested in the difference in expressed preference among these groups for serostatus of sex partners and romantic relationship partners.
Methods: Subjects were 540 men in the AIDS Behavioral Research project responding to annual surveys since 1984 (McKusick, Coates, Morin, 1990). Subjects responded to mailed surveys regarding sexual behavior, relationship status, HIV antibody testing and stress and coping. Specific variables asked for preference in serostatus when forming relationships for sex, romance, and friendship
Results: 68% of seropositive respondents reported no serostatus preference in partners for sex and 75% had no serostatus preference in partners for romance, compared to 80% of seronegative respondents preferring seronegative partners for sex and 76% of seronegative respondents preferring seronegative partners for romance. There was no significant preference in serostatus for friendship. Respondents who were not tested preferred seronegative partners for sex and romance, but to a somewhat lesser degree than seronegatives. Follow-up interviews with a similar cohort provided reasons and motivations for partner selection based on serostatus.
Conclusion: HIV antibody serostatus has become a factor in preferences for sex and romance partners in the San Francisco gay male community. Seropositive individuals are much less likely to be selected by seronegatives at a time when emotional support and companionship are needed most. Issues of transmission, stigmatization and shared circumstances contribute to this issue.

Th.D.56

SEX AND POWER: YOUNG WOMEN'S SEXUALITY IN THE SHADOW OF AIDS

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This paper reports a qualitative investigation of the sexual practices, beliefs and understanding of young women, including their ideas and experience of risk, danger and control in sexual encounters. The implications of this information for the spread of HIV infection and sex and AIDS education are examined. We have generated a purposive sample based on the variables of age, ethnicity, social class/power, and level of sexual activity of 210 young women between the ages of 16 and 21 located in two inner city areas in the UK (London and Manchester) These women are being studied over a period of two years, using questionnaires, depth interviews and diaries, and data analysis is with a qualitative computer program.

We present an analysis of young women's reported experience of condom use as contraceptive and prophylactic. Detailed data on the ways in which young women can carry condoms, can ask men to use them, or in which they reject, neglect or are denied condom use is utilised for three purposes. First, to explore the varied ways in which young women negotiate sexual encounters, and the relationship between knowledge of risk and safer sex practices. Second, to illustrate the contradictions and tensions in sexual relationships. And third, to argue that the negotiation of heterosexual encounters cannot be understood without taking account of gendered power relations which construct and constrain the choices open to women.

TRACK D: SOCIAL SCIENCE & POLICY

ABSTRACT SESSION: ACCESS TO HEALTH CARE AND MODELS OF DELIVERY

Th.D.57

ACCESS TO CLINICAL TRIALS: THE "ACTU WITHOUT WALLS" CONCEPT

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Objective: To provide access to government-sponsored clinical trials for HIV-infected persons with hemophilia at the comprehensive hemophilia treatment centers (HTC) where approximately 50% of hemophilia patients in the U.S. receive care.

Method: Of the 10 geographic regions (designated by the Department of Health and Human Services [HSS]), under the direction of the National Hemophilia Foundation (NHF), one HTC per each of the ten HHS regions was assigned the responsibility as the regional coordinating center (RCC). Clinical trial information from the National Institute of Allergy and Infectious Diseases (NIAID) is communicated to NHF, and forwarded to the RCCs which share this information with the HTCs in their regions. Data collected at each HTC is sent to the RCC for review by the co-Principal Investigator and/or Research Coordinator prior to submission to the data coordinating center.

Results: This "ACTU Without Walls" concept has proven highly effective in: 1) providing access to research protocols for persons who do not live in close proximity to an ACTU; 2) collecting quality data (error rate < 1%); 3) assuring patient follow-up (0% lost). The success of this system is a direct result of the high degree of cooperation by persons with hemophilia and the strong provider - patient relationship, both of which are characteristic of the HTC network.

Conclusions: 1) Management of HIV-infected persons by their primary caregiver in a setting with which they are familiar plays a major role in patient compliance with research protocols. 2) High quality data can be obtained on a highly decentralized basis provided that adequate training and coordination is available. 3) The "ACTU Without Walls" approach has proven effective and should be more widely used in the conduct of government sponsored trials.

Th.D.58

FEASIBILITY OF EARLY INTERVENTION, COUNSELING AND FOLLOW UP OF HIV POSITIVES IN THE HAITIAN COMMUNITY

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OBJECTIVE: Are early intervention,adequate counseling and follow up feasible in a population reluctant to seek medical care?

METHODS: From 4/88 to 12/89 50 persons (22M,28F)testing HIV+ for Immigration purposes were referred to a Haitian Physician. All underwent counseling in Creole, a brief physical exam and lab evaluation and referral to appropriate clinic. All pts. were encouraged to refer their sexual partners for serologic testing.

Results: 1) 0/50(0%) were aware that therapy existed for HIV.
2) 47/50 (94%) began attending regularly scheduled clinic visits 2 pts. relocated and 1 was lost to follow up.
3) 15/50 (30%) returned with their sexual partner. 15 (30%) stated that their partner had recently died. 5 (10%) were living in Haiti. 15 (30%) were unwilling or unable to contact a sexual partner.
4) 8/9 (89%) HIV+ partners began attending regularly scheduled clinic visits. 1 relocated.

CONCLUSION: Adequate post test counseling and support play a major role in serving a population known to be reluctant to seek medical care. Partner notification occured on a voluntary basis once a proper support system was in place. One staff skilled in the language and cultural background of this population needed four to six hours weekly to build a strong link between that "outside" community and the "inside" hospital system.

Th.D.59

ACCESS, EQUITY, AND SURVIVAL: USE OF ZVD AND PENTAMIDINE BY PERSONS WITH AIDS

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Objective: Earlier studies have concluded that zidovudine (ZVD) and pentamidine produce significant increases in survival among PWAs. Despite the historically high cost and limited availability of ZVD and pentamidine, researchers have not adequately investigated the impact of access to these treatments on survival. This study: (1) examines differences in secular trends in the introduction of ZVD and pentamidine treatments; (2) assesses effects of HIV risk, ethnicity, and ability to pay on the access to these treatments; (3) determines the impact of access to ZVD and pentamidine on survival.

Methods: A total of 2,301 Maryland residents diagnosed with AIDS between 1984 and 1989 were studied. Longitudinal, person-based data from the Maryland AIDS registry, death certificates, health services, health insurance, and clinical trials are linked for this five year period. Logistic regression models are used to measure the likelihood of ZVD or pentamidine treatment, controlling for HIV risk group, sex, race, health status at AIDS diagnosis, source of third party payment, participation in clinical trials, and use of AIDS primary care services. Cox regression models are used to assess secular trends in likelihood of treatment and survival, controlling for these variables of interest.

Results: Disparities were found in the likelihood to receive ZVD and pentamidine, even after controlling for ability to pay. Persons with minority status or history of intravenous drug use (IVDU) were significantly less likely to receive ZVD and pentamidine treatment than their counterparts ($p<.01$). Minority IVDUs were the least likely to have access to these treatments among persons studied. Differences in access to these treatments were further reflected in survival. In 588 PWAs living when ZVD was marketed, median survival among ZVD users ($n=219$) was 480 days after diagnosis, compared to 294 days for non-ZVD users ($n=369$) ($p<.001$). Significant prognostic factors include index diagnosis, HIV risk group, and ZVD use.

Conclusion: While findings of this study support prior reports of increased survival among persons treated with ZVD or pentamidine, there is evidence to suggest a disparity in access to these HIV-related treatments. Equitable provision of AIDS treatments is necessary to ensure that advances in survival are achieved for all segments of the population infected with HIV.

Th.D.60

Medical Care for Intravenous Drug Users with AIDS and ARC: Delivering Services at a Methadone Treatment Program.

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Objective: To examine the utilization of medical services provided for HIV-infected intravenous drug users (IVDUs) on-site at a methadone maintenance treatment (MMT) program.

Method: On-site primary medical care was provided to serve 175 IVDUs in an MMT program at San Francisco General Hospital. Services were provided by the MMT medical staff with assistance from the SFGH AIDS Clinic. For the five month period examined, on average, 65 (37%) of the IVDUs were identified HIV+ patients. Of these 65, 17 (21.3%) had AIDS, 38 (66.3%) had ARC and 10 (12.5%) were asymptomatic. Of the HIV+ patients, 64% were male. Fifty-one percent of these patients were Caucasian, 39% Black, 9% Hispanic, and 1% Asian. A retrospective review of clinic charts classified medical visits by symptom category. Clinic visits for a five month period in 1989 were compared to the same five month period one year earlier.

Results: IVDUs made a total of 684 medical visits during a five month period in 1988. However, for the five month period in 1989, IVDUs made 937 medical visits, a 37% increase in medical visits over 1988. Analysis of the 1989 data showed that of the 937 medical visits, 735 (78.4%) were made by HIV- infected IVDUs. Of the clinic contacts made by HIV+ IVDUs, 58.5% were for treatment of medical symptoms, while 21.6% of visits were for psychiatric symptoms and 22.4% were for substance abuse complications.

Conclusions: HIV+ IVDUs required a far greater proportion of medical services than HIV- IVDUs. HIV+ patients were more likely to require treatment for medical symptoms than for psychiatric or substance abuse problems. Medical services for AIDS and ARC can be provided effectively in a methadone treatment program with assistance from an AIDS clinic. These services appear to be highly utilized.

Th.D.61 A STUDY OF SIX HOME-CARE PROGRAMMES FOR PERSONS WITH HIV-INFECTION IN AFRICA.

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Objectives: To analyze and compare selected home care programmes for persons with HIV-infection and their families in Africa; to discuss the programmes in the context of national AIDS policies and strategies and WHO's Health for All strategy and WHO policy documents; to suggest ways of learning from and sharing the knowledge gained in the home care programmes.
Methods: Six home care programmes in two African countries were assessed using a public health framework and an assessment tool developed for the study. Data was collected through 57 interviews with staff, volunteers, planners and policy makers, observations of 51 patient situations, and through analysis of documentary materials.
Results: When the programmes were compared, the largest differences were identified between hospital and community-based initiatives. The needs of clients and the types of care provided by programmes were identified. These varied according to each programme, and included physical, psychological, family/social, material, environmental, spiritual and educational components. The multidisciplinary team supports the care process in the home, where the family provide the main care. The human, physical and financial resources required for establishing each home care programme were identified, and the effectiveness of each programme assessed.
Conclusion: The experience of 6 home care programmes to date is documented and several principles for successful programme implementation are identified.

Th.D.62 INSURANCE COVERAGE FOR INVESTIGATIONAL DRUGS

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Objective: To study the possibility of providing insurance coverage for investigational drugs to treat life-threatening diseases.
Methods: The study includes an analysis of the various types of investigational drugs available for patients with AIDS or other life-threatening illnesses. These include treatment INDs, group C cancer drugs, and parallel track therapies, for which limited safety and effectiveness data may be available. The study also reviews current policies regarding coverage of investigational therapies by public and private insurors.
Results: FDA has created several new categories of investigational therapies to increase patient access to drugs. However, these categories may be overlapping and are not always clearly defined in regulation. Public and private insurors may not cover drugs that are not approved by FDA for marketing, which may limit patient access to therapies.
Conclusion: Insurance coverage has not kept pace with increased availability of investigational therapies. If the categories of investigational therapies were better defined in regulation by FDA, it could facilitate the development of rational policies to provide insurance coverage for appropriate therapies. Options for insurors might include covering selected categories of investigational therapies, such as treatment INDs, or paying for individual drugs, such as gancyclovir.

Th.D.63 "BUYERS' CLUBS" AND THE LEGITIMIZATION OF THE AIDS TREATMENT UNDERGROUND -- THE PWA (PEOPLE WITH AIDS) HEALTH GROUP AS CASE STUDY

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Objective: To examine the history and development of the AIDS treatment substratum in the context of inferior treatment access systems in the United States.
Methods: The case history of the PWA Health Group (New York City) is documented and investigated in detail, via questionnaire, client and physician interviews, analysis of demographic and sales data, and examination of mainstream and alternative media reports.
Results: The PWA Health Group, a community-based, grassroots organization, assists over 2,000 demographically diverse clients nationwide with direct treatment access, publishes a bi-monthly newsletter, and operates an information hotline. In cooperation with other community-based research and advocacy organizations, the PWA Health Group also gathers, compiles and distributes data regarding the use of not-yet-approved therapies in the treatment of HIV disease. In addition, PWA Health Group representatives participate in ongoing policy debates at the federal level, negotiate with pharmaceutical industry concerns, and through direct action and civil disobedience, advocate for the rights of people with AIDS.
Conclusion: The AIDS treatment underground, as exemplified by the PWA Health Group, is a complex and highly developed system that, in the absence of a responsive federal bureaucracy, provides for the otherwise unmet treatment needs (for both information and access) of a select population of AIDS patients and their physicians. For this group, the underground has become a standard-of-care treatment option, an inexcusable aberration in light of federal healthcare policies that purport to address the treatment needs of the population at large. For those unable to access the underground, however, certain effective AIDS interventions remain illusory.

Th.D.64

ACCESS TO HEALTH CARE FOR HIV INFECTION: A CONSUMERS PERSPECTIVE.

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TRACK A: BASIC SCIENCE
ABSTRACT SESSION: HIV PATHOGENESIS

Th.A.65

HIV PATHOGENESIS. Montagnier, Luc; Institut Pasteur, Paris, France.

Th.A.66

NEUTRALISING MONOCLONAL ANTIBODY AND rCD4 SELECTED HIV-1 VARIANTS

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Objective: Analysis of epitopes important for virus envelope-CD4 binding and antibody-mediated neutralisation.
Methods: Molecular cloned HIV was propagated in the presence of saturating levels of rCD4 or neutralising monoclonal antibodies (mab) specific for the epitopes on gp120 amino-acid (aa) residues 305-321, 430-446 and on gp41 735-752. Resulting virus variants were biologically cloned, proviral DNA extracted, and selected regions of the envelope gene sequenced.
Results: Escape mutants resistant to neutralisation by rCD4 or mabs were selected. The binding affinities of rCD4 and neutralising mabs and the replication kinetics of variants was measured. Changes in aa sequence were detected in the escape mutants.
Conclusions: rCD4 and mabs can select for HIV-1 variants with a reduced sensitivity to neutralisation. Sequencing of such variants identified aa important for rCD4 and mab binding. The selection of such variants in vitro has implications for the use of rCD4 as an antiviral therapeutic agent.

Th.A.67

HIV-1 ENTRY INTO QUIESCENT PRIMARY LYMPHOCYTES: MOLECULAR ANALYSIS REVEALS A LABILE, LATENT VIRAL STRUCTURE

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University of California, Los Angeles, USA

Objective: HIV-1 can infect quiescent human T-lymphocytes and remain in an inactive state until subsequent mitogenic stimulation of the cell. Studies were undertaken to identify the molecular nature of HIV-1 in quiescent primary lymphocytes.
Methods: Quiescent and dividing human peripheral blood lymphocytes were infected with HIV-1, and DNA and RNA analysed by quantitative polymerase chain reaction (PCR) using oligonucleotide primers specific for various regions of the viral genome. These primers could detect discreet steps in reverse transcription and various viral mRNAs.
Results: HIV-1 in quiescent lymphocytes is transcriptionally inactive. Early products of reverse transcription but not full-length viral DNA were seen in quiescent cells.
Conclusions: HIV-1 can enter and initiate reverse transcription in quiescent lymphocytes, but does not reverse transcribe to completion. This viral DNA can persist in quiescent cells as a latent form; however, it is labile. Infection of quiescent cells *in vivo* could result in a "self-restricting persistent infection" by HIV-1 and explain the low percentage of infected cells in the circulation of AIDS patients.

Th.A.68

PHYSICAL MAPPING OF REPLICATIVE AND CYTOPATHIC PROPERTIES OF HIV-1

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Objective: To map viral genes that control in vitro biologic properties of HIV-1.
Methods: HIV-1 isolates (HIV-1_{SF2}, HIVV-1_{SF13}) obtained over-time from the same individual as he progressed from a relatively healthy state to disease were molecularly cloned. Biologically active recombinant viruses were generated between these sequential isolates by DNA manipulations and transfections. Replication kinetics of the recombinant viruses, together with their ability to infect different cell types and to induce cytopathology were examined in vitro.
Results: Compared to HIV-1_{SF2}, the later isolate HIV-1_{SF13} recovered at the time of disease replicated faster and to higher titers in PMC and HUT 78 cells. It is also highly cytopathic and displays a wide host range - productively infecting primary macrophages, B cell lines, the CEM cell line and CD4-negative fibroblastoid cells. Comparison of the nucleotide and predicted amino acid sequences for genes in the 3' region of the two genomes reveal a high degree of homology.

Sequence homologies between genes in the 3' regions of HIV-1_{SF2} and HIIV-1_{SF13}

% Identity	Region					
	rev	tat	gp120	gp41	nef	LTR
Nucleic acid	97.4	98.5	97.1	97.3	97.9	97.5
Amino acid	96.8	96.4	93.9	94.8	95.7	

Within the envelope gene, the CD4 binding region is conserved; minor amino acid differences were noted in the hypervariable and gp41 fusion domain regions. Preliminary studies with recombinant viruses generated between HIV-1_{SF2} and HIV-1_{SF13} indicate that the 3' region controls cellular host range and cytopathicity. Specific genomic changes that determine these biologic properties of HIV are under study.
Conclusion: Studies with sequential isolates from an infected individual indicate that minor changes in the HIV genome can result in the generation of potentially more virulent viral strains.

Th.A.69

BIOLOGICAL CHARACTERIZATION OF A HIGHLY CYTOPATHIC VARIANT OF AN ATTENUATED HIV-2.

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Objective: Naturally occurring and molecularly-derived isolates of HIV-2 have been described which are markedly attenuated in their ability to cause cytopathic effects *in vitro*, to downmodulate CD4 and to establish superinfection interference with cytopathic strains of HIV-1 and HIV-2. In order to determine the basis for this phenotype, we have attempted to derive a cytopathic variant of a noncytopathic HIV-2 (HIV-2ST) and to compare these viruses at a biological and molecular level. Methods: Viral supernatant from Sup-T1 cells chronically infected with HIV-2ST was serially passaged to uninfected cells, and cultures observed for the presence of fusion and cell death. Two independently-derived viral isolates, termed ST/24.1C and ST/24.2C, were obtained. These viruses were compared to the parental HIV-2ST with respect to their ability to produce fusion and killing during infection, to downmodulate the CD4 molecule from the cell surface as determined by flow cytometry, and to establish interference with HIV-2ROD and HIV-1IIIB in coculture assays. Glycoproteins were evaluated by Western blot and immunoprecipitation using human serum and recombinant CD4. In addition, the binding of fluoresceinated CD4 (F-CD4) to the surface of infected cells was assessed by flow cytometry and used to determine both the level of envelope expression and the relative affinities of surface-associated viral envelope for CD4. Results: Compared to parental HIV-2ST, both ST/24.1C and ST/24.2C infected Sup-T1 cells more rapidly and produced a considerable degree of cell fusion and killing during infection. While Sup-T1 cells infected by noncytopathic HIV-2ST exhibited only partial downmodulation of CD4 and remained susceptible to cell fusion when cocultured with IIIB- and ROD-infected cell lines, cells infected by the cytopathic variants of HIV-2ST showed complete downmodulation of CD4 and interfered with other cytopathic viruses. Although the transmembrane envelope glycoproteins of the cytopathic variants was 30 kD, identical to HIV-2ST, the external glycoproteins of both viruses were approximately 10 kD smaller. Binding assays using F-CD4 demonstrated an increased level of surface envelope and a 3-4 fold increase in the relative affinity of CD4 for envelope from the cytopathic viruses compared to noncytopathic parental HIV-2ST. Conclusion: Highly cytopathic variants of HIV-2ST have been derived and appear to differ with respect to their effects on CD4 expression, their ability to establish superinfection interference, the size of their external envelope glycoproteins, and, possibly, their affinity for the CD4 molecule. Molecular cloning of these cytopathic viruses and the production of recombinant chimeras with HIV-2ST, should facilitate the identification of viral determinants relevant to *in vitro* cytopathicity. Moreover, a functional evaluation of expressed envelope glycoproteins from these viruses should determine if differences exist in affinity of envelope for CD4 among different viruses and if these differences are relevant to pathogenesis.

Th.A.70

ANTI-HIV ENHANCING ANTIBODIES DO NOT ALLOW INFECTION OF A CD4-NEGATIVE IgG Fc RECEPTOR-POSITIVE MONOCYTIC CELL LINE

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Objective: To investigate whether FcR-mediated antibody enhancement of HIV infection in the U937 monocytic cell line represents an additional mechanism of HIV infection that does not require CD4.
Methods: A CD4-negative IgG FcR-positive U937 cell line was derived from a CD4-positive IgG FcR-positive U937 cell line. Absence of expression of CD4 was assessed by using anti-CD4 monoclonal antibodies, Northern blot analysis and amplification of RNA by PCR after reverse transcription. Viral infection was assessed by ELISA dosage of p24 antigen and by PCR analysis.
Results: Antibody-dependent enhancement of viral production was obtained in the CD4 positive U937 cell line in the presence of sub-neutralizing concentrations (10^{-5}, 10^{-6}) of sera from HIV seropositive individuals. In contrast, the CD4-negative U937 cell line could not be infected, even in the presence of the enhancing antibodies. Absence of infection was confirmed by PCR analysis, using *gag*, *nef* and *vif* primers and probes. (Sensitivity of PCR allowed detection of HIV in 1/100000 CD4-positive U937 infected cells).
Conclusion: These results strongly suggest that FcR-mediated antibody-dependent endocytosis of HIV does not represent an alternative mechanism of infection that bypasses the requirement for an interaction between HIV and CD4. Further analysis of this model by transfection experiments of the CD4 gene in the CD4-negative U937 cells is under way.

Th.A.71

INHIBITION OF HIV INFECTION *IN VITRO* BY ANTI-CARBOHYDRATE MONOCLONAL ANTIBODIES

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Objective. To examine whether oligosaccharides of HIV could be targets for neutralizing antibodies in vitro.
Methods. Twenty anti-carbohydrate monoclonal antibodies (MAbs) were tested for their ability to inhibit in vitro HIV infection of peripheral blood mononuclear cells, and cell-lines MT4 (lymphocytic) and U937 (monocytic). Infection was evaluated by HIV-antigen detection in culture supernatants and detection of cellular HIV-DNA by polymerase chain reaction. Inhibition of syncytium formation by MAbs was examined by coculture of CEM cells and $HTLV_{III}B$-infected H9 cells. Cellular expression of carbohydrate epitopes was examined by indirect immunofluorescence.
Results. MAbs against three different carbohydrate epitopes were able to block infection by cell-free virus in a concentration dependent manner as well as inhibit syncytium formation. The inhibition of virus infectivity was independent of virus strain ($HTLV_{III}B$ and patient-isolate SSI-002), cell line used for virus propagation or cell type used as infection target. Inhibition was observed when MAbs were preincubated with virus but not when cells were so preincubated before inoculation.
Discussion. The MAbs may define carbohydrate structures expressed on viral glycoproteins, indicating that glycans of the viral envelope are possible targets for immunotherapy and/or vaccine development. The carbohydrate structures in question are not normally expressed by lymphocytes but could be a result of viral induction of latent cellular genes coding for specific glycosyltransferases.

Th.A.72

IN VITRO INFECTION AND GENERATION OF CHRONICALLY HIV-1 INFECTED $CD3^+CD8^+$ T CELLS FROM PERIPHERAL BLOOD LYMPHOCYTES OF HEALTHY DONORS. ANTI-$CD2_{2,3}$ MEDIATED REACTIVATION IS ASSOCIATED WITH VIRUS REPLICATION AND CELL DEATH.

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Objective: To study infection status and virus replication in T-cell survivor populations of HIV-1 infected peripheral blood mononuclear cells (PBMC) after T-cell activation.
Methods: PBMC obtained from healthy HIV seronegative donors by Ficoll-Hypaque separation were cultured in the presence of PHA for 72 hours and subsequently infected with $HIV\text{-}1_{LAV}$. Cells were cultured in IL-2 containing medium in the presence of various stimuli, including PMA, PHA, α-$CD2_{2,3}$ and α-CD3 mAbs. Supernatants were harvested every 2-3 days for reverse transcriptase (RT) and HIV-1 p24 Ag determination. Surface marker antigens of the lines were monitored by cytofluorometry. $CD3^+CD8^+$ populations were separated 2 months after infection by cytofluorometry and cells were prepared for cell proliferation/virus replication assays and for DNA analysis after PCR amplification.
Results: Highest initial peak RT activities were obtained with α-CD2 stimulation of the bulk cultures (day 8-15 post infection). Long term cultures of α-CD2 stimulated PHA-blasts were derived and expanded. These cell populations that survived peak virus replication proliferated in the presence of low level RT background activity and 85-95% of the cells were $CD3^+CD8^+$ and 1-4% $CD3^+$ $CD4^+$. Amplification of HIV-1 proviral sequences by PCR revealed the presence of HIV DNA in both $CD8^+$ and CD8 subsets. Anti-$CD2_{2,3}$-mediated activation of $CD3^+8^+$ sorted cells resulted in high levels of virus replication associated with cell proliferation and cell death without syncytium formation.
Conclusion: Activation via $\alpha CD2_{2,3}$ of PBMC infected in vitro with HIV-1 results in the generation of chronically infected $CD3^+CD8^+$ lines that can be efficiently expanded. HIV replication is seen upon cell reactivation via $\alpha CD2_{2,3}$ mAb and is associated with $CD8^+$ cell death in the absence of syncytium formation.

TRACK A: BASIC SCIENCE

ABSTRACT SESSION: ANTIBODY IMMUNITY IN HIV INFECTION

Th.A.73 RELATIONSHIP BETWEEN HIV-1 DISEASE STAGE, TITER OF ANTI-P24 ANTIBODY (a-P24), AND P24 ANTIGEN: A MULTICENTER AIDS COHORT STUDY (MACS).

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OBJECTIVE: To investigate the serum levels of antigen/antibody for HIV-1 P24 viral component among HIV-1 infected/diseased homosexual men.
METHOD: Anti-P24 Titration: A competitive ELISA using recombinant HIV-1 P24 antigen (Abbott labs) was used and titers were expressed as the reciprocal of endpoint dilutions. P24 Antigen: Solid phase, antigen capture ELISA (Abbott Labs) using polyclonal HIV antibodies was employed. Subsets of participants of two MACS Centers (total cohort of 2256 homosexuals) were studied. The stage of the disease was determined using the CDC definitions.
RESULTS: 282 patients in Classes II/III, IVa, and IVc were tested for a-P24, stratified by low ≤400 and high >400 CD4. The proportion of subjects with low CD4 who showed no a-P24 (mostly IVc), low a-P24 titer < 575 and high a-P24 titer >575 were 58%, 57% and 32% respectively. P24 antigen testing was performed on 221 patients. Only 30% of "antigen negative" subjects were a-P24 negative, while low titer <575 and high titer >575 was detected in 83% and 94% of these patients respectively. A total of 90 seroconverters tested for a-P24 prospectively. Forty-nine (69%) had a-P24 persistently, 8(9%) were negative, 11(12%) had transient detectable a-P24, 9(10%) were negative but developed a-P24 later. No difference in ▲CD4 in these groups was observed.
CONCLUSION: Anti-P24 titer of 575 was the median titer of the Class II/III patients. Low CD4 count was associated with absence of a-P24 while high CD4 was associated with high a-P24 titers (P=0.04). HIV-1 P24 antigenemia was associated with the absence of a-P24, and high titers were associated with the absence of HIV-1 P24 antigen (P=0.0001).

Th.A.74 ANTIBODY RESPONSES TO SELECTED PEPTIDES OF HIV-1 gp160 IN IMMUNIZED OR HIV-1 INFECTED INDIVIDUALS

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Peptides were synthesized to represent HIV-1 gp160: the V3 region (AA ~306-320, 14 sequence variant peptides) reactive with neutralizing and syncytium-inhibiting antibodies, the CD4 binding region (AA ~414-453, 30 peptides), and the immunodominant region (AA ~595-609, 2 peptides). Peptide purity was confirmed by reverse phase HPLC. BSA conjugates of these peptides were evaluated by EIA for reactivity with antibodies in the serum/plasma of 1) 11 volunteers immunized with HIVAC-1e (vaccinia HIV-1 gp160, IIIB recombinant virus), followed by boosting with purified gp160 of HIV-1 (IIIB) produced in baculovirus; 2) seroconversion panels representing four individuals; and 3) 15 Class II/III patients with HIV-1 infection. No reactivity was observed with CD4 binding region peptides. All seroconversion and Class II/III samples, and 1/11 vaccinees reacted with the immunodominant epitope. V3 region peptides reacted with samples from 14/15 Class II/III and 4/4 seroconversion patients, and 1/11 vaccinees. The vaccinee serum reacted only with the V3 peptide sequences of IIIB and LAV, and neutralized IIIB. Other V3 peptides were more reactive with infected patient samples. Of the 14 Class II/III patients that recognized V3 peptides 14/14, 13/14, 9/14, and 2/14 recognized the V3 peptide sequences of MN, Z3, NY5, and IIIB respectively. The vaccinee responses may be predominantly to conformational epitopes, since 8/11 vaccinees sera contained antibodies reactive in whole viral lysate EIA.

Th.A.75 PRODUCTION OF HUMAN MONOCLONAL ANTIBODIES AGAINST THE V3 LOOP OF gp120

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Objective: To generate human monoclonal antibodies (HumAb) against a neutralizing epitope of HIV-1 (MN) gp120.
Methods: Peripheral blood lymphocytes (PBL) were transformed by Epstein-Barr virus (EBV) as per PNAS, 86, 1624, 1989. Cultures were screened for antibody to a synthetic 24-mer peptide from the V3 region of MN gp120 (amino acids 306-328). Positive cultures were cloned repeatedly by doubling dilution. Two positive cultures were fused with the SHM-D33 heteromyeloma and cloned at 1-100 cells per well. Antibody specificity was determined by ELISA and radioimmunoprecipitation (RIP) using the 24-mer, MN or IIIB lysates.
Results: An average of 1.5% of microtitre wells (containing 8 x 10^4 PBL per well) derived from cells of 12 asymptomatic HIV-infected individuals produced antibodies to the 24-mer. Two positive wells produced stable lymphoblastoid cell lines synthesizing IgG HumAb which, by RIP, were specific for gp120 of MN but not IIIB. Heteromyelomas were produced by fusion of these two lines with SHM-D33. The biologic activities of these HumAb are under investigation.
Conclusions: Cell lines producing IgG HumAb to a neutralizing epitope of the gp120 protein of MN have been produced by EBV transformation and by fusion of EBV-transformed cells to a heteromyeloma cell line. These HumAb are specific for the MN strain of HIV.

Th.A.76 A NEUTRALIZING HUMAN MONOCLONAL ANTIBODY (HMab) IDENTIFIES AN EPITOPE WITHIN THE PUTATIVE CD4-BINDING DOMAIN (CD4-BD) OF HIV-1 gp120

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Objective: To use HMabs to characterize epitopes of HIV-1 gp120 that are immunogenic during natural infection and are functionally important.
Methods: N70-1.5e is one of three IgG1 gp120-specific HMabs produced by EBV transformed cell lines derived from an HIV-1-infected patient. Antibody specificity was determined by ELISA, Western blot, RIPA, and dot blot assays. Neutralizing activity of N70-1.5e against 4 laboratory strains and 3 primary isolates was assessed in H9 cells and peripheral blood mononuclear cells, respectively. Epitope mapping included assays for sCD4 competition and antibody binding to peptides covering different regions of gp120.
Results: N70-1.5e reacted with gp120 of several US and African strains but not with 2 Haitian strains (RF, AL). Purified N70-1.5e HMab neutralized HTLV-IIIB and Z84 isolates at 1 ug/ml but did not neutralize RF and AL isolates. The antibody also neutralized 2 of 3 primary HIV-1 isolates including HIV-1JRCSF which is similar in sequence to MN (a virus believed to be representative of 80% of US HIV-1 strains). sCD4 blocked binding of N70-1.5e to gp120 in both ELISA and RIPA. N70-1.5e reacted by ELISA only with a synthetic peptide covering the CD4-BD of gp120 (a.a.413-437).
Conclusion: These data indicate that the CD4-BD is a target for antibody neutralization, which is a finding we have previously made using murine Mabs. Antibodies to the CD4-BD may in part explain the broad neutralizing activity in most patient sera. HMabs such as N70-1.5e may be useful for passive immunotherapy of HIV-1 infections.

Th.A.77

DEVELOPMENT OF AN IgG-1 HUMAN MONOCLONAL ANTIBODY THAT NEUTRALIZES HIV1 INFECTIVITY AND BINDING AND REACTS WITH A CELL SURFACE ANTIGEN EXPRESSED BY HIV1 INFECTED CELLS.

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Objective: Production of human monoclonal antibodies (HuMoAbs) reactive with HIV1 antigens to study and treat the disease caused by the virus.
Methods: Patient PBM transformed by Epstein Barr Virus (EBV) in oligoclonal cultures. Indirect immunofluorescence (IF) was used to screen for IgG antibodies reactive with HIV-IIIB infected HT-H9 cells; positive EBV transformants fused with the HMMA2.11TG/0 fusion partner; and hybridomas producing antibody cloned. Neutralization of binding and infection were evaluated using a viral binding assay, assessed by IF which was read out using polyclonal human sera, immediately and after weeks of culture.
Results: One of 915 transformants produced an IgG antibody reactive with infected HT-H9 cells and was fused. Of 384 hybridomas screened, 15 (4%) produced antibody. The F105 IgG-1 HuMoAb reacts with cell surface antigens on HIV1 infected HT-H9 cells. IF with supernatant gives 50-60% positivity on chronically infected cells compared to 80% reactivity with positive sera diluted 1:100 (Negative Control Serum <7%). F105 does not react with uninfected HT-H9 cells, other T cell lines or PHA blasts. F105 reacts with Triton-X disassociated virus on nitrocellulose dot blots but not on western blots. Hybridoma supernatant completely inhibits viral binding and infectivity in a capture/infection assay. F105 does not react with virions on the cell surface in the immediate post binding period but does react after infection and surface antigen expression.
Conclusion: The HuMoAb F105 reacts with a conformationally determined epitope on HIV-1 virions to prevent viral binding and infection. It is probable that binding sites migrate or cap on the viral coat when binding with cell surface receptors (CD4). This HuMoAb will be useful in studying the immune response to HIV1 infection and may prove therapeutically useful.

Th.A.78

TWO IMMUNODOMINANT DOMAINS OF THE HIV-1 TRANSMEMBRANE GLYCOPROTEIN, GP41, BIND ANTIBODIES WHICH ENHANCE HIV-1 INFECTION IN VITRO

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Objective: To identify and map human monoclonal antibodies to HIV-1 which enhance HIV-1 infection *in vitro*.
Methods: Human monoclonal antibodies (huMAb) were made by either fusion with a murine myeloma cell line P36 x 36 AgV1 or transformation of human PBMC with Epstein-Barr Virus. The ability of antibodies to enhance HIV-1 infection via a complement-dependent mechanism was determined using an MT-2 cell microinfection assay. Enhancing domains were mapped using synthetic peptides in ELISA and competition assays.
Results: Four huMAb which enhance HIV-1 infection *in vitro* were isolated. Three of these huMAb bound to AA579-613 of the HIV-1 gp41 (Los Alamos sequence numbering). The fourth huMAb bound to AA644-663 of the HIV-1 transmembrane protein. These two peptides blocked enhancement mediated by either the huMAb or human polyclonal anti-HIV serum. These two domains are highly conserved between all known HIV-1 sequences as well as SIV and HIV-2 sequences.
Conclusion: Two linear domains of the gp41 transmembrane glycoprotein which bind antibodies conferring complement-mediated, antibody-dependent enhanement of HIV-1 infection *in vitro* have been described. It seems prudent in the light of HIV-1 vaccine failure in chimpanzees to investigate deletion of these peptides from candidate HIV-1 vaccine formulations and determine whether such vaccines might be more effective in preventing HIV-1 infection of immunized animals.

Th.A.79

IDENTIFICATION OF GP41 DETERMINANTS RECOGNIZED BY ANTIBODIES IN CYTOLYTIC ASSAYS.

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Objective: To identify sequences within HIV-envelope recognized by antibody from HIV seropositive donors and to demonstrate lysis of target cells bearing these sequences by CD16⁺ cells from HIV seropositive donors.
Methods: MHC-mismatched lymphoblastoid cells (LCL) pulsed with synthesized peptides from gp41 were added to fresh peripheral blood mononuclear cells from HIV⁺ donors in a 4-hour-^{51}-Cr release assay. Effector cell type was determined by inhibition of cytolysis with antibodies recognizing CD3, CD4, CD8, CD16, and human Ig. HIV specific determinants were finely mapped with synthetic peptides of 8 to 25 residues in length. The reactivity of a panel of 25 sera from HIV⁺ donors was tested in an ADCC assay to determine the prevalence of responses to these specific determinants.
Results: PBMC from HIV⁺ donors were able to lyse LCL pulsed with synthesized peptides of 25 residues from several regions of gp41. Cytolysis was mediated by CD16⁺ cells and was inhibited by anti-human Ig. Two determinants responsible for the recognition and lytic process were identified within the envelope sequence 566-590 (LQLTVWGIKQLQARILAVERYLKDQ). Similarly, 9/25 sera reacted in an ADCC assay to target cells pulsed with this 25 amino acid peptide. 3/9 sera also reacted with the smaller peptide LQARILAVERYLKDQ. Reactivity with this 25 residue peptide did not correlate with the clinical stage of the donor.
Conclusions: Fresh circulating CD16 cells from seropositive donors act as "armed" natural killer cells and can recognize and lyse target cells pulsed with synthesized peptides from gp41. Sera from these donors can recognize the same target cells in an ADCC assay. Thus, certain linear antibody epitopes that may regulate HIV replication in vivo can be defined in this manner.

Th.A.80

BIOLOGICAL PROPERTIES OF CD4 IMMUNOADHESINS

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Molecular fusions of CD4, the receptor for HIV, with immunoglobulin (termed CD4 immunoadhesins) possess both the gp120-binding and HIV-blocking properties of recombinant soluble CD4(rCD4) and certain properties of IgG, notably long plasma half-life and Fc receptor binding. We show that a CD4 immunoadhesin can mediate antibody-dependent cell-mediated cytotoxicity (ADCC) of HIV-infected cells, although unlike natural anti-gp120 antibodies it does not allow ADCC of uninfected CD4-expressing cells which have bound gp120 via the CD4 on their surface. In addition, CD4 immunoadhesin, like natural IgG molecules, is efficiently transferred across teh placenta of a primate, whereas rCD4 is not. These observations have implicatins for the therapeutic application of CD4 immunoadhesins, particularly in the area of perinatal transmission of HIV infection.

TRACK B: CLINICAL SCIENCE & TRIALS

SYMPOSIUM: CLINICAL TRIALS WITH NEW ANTI-RETROVIRALS

Th.B.81

CLINICAL STUDIES WITH ddI. Dolin, Raphael; Infectious Disease Unit, University of Rochester Medical Center, Rochester, NY, USA.

Th.B.82

CLINICAL STUDIES WITH ddC. Merigan, Tom; School of Medicine, Stanford University Medical Center, Stanford, CA, USA.

Th.B.83

ANTI-RETROVIRAL DRUGS AS SINGLE AGENTS AND IN COMBINATION THERAPY. Yarchoan, Robert; National Cancer Institute, National Institutes of Health, Bethesda, MD, USA.

Th.B.84

RECOMBINANT SOLUBLE CD4 AND DERIVATIVES. Corey, Lawrence; University of Washington, Seattle, WA, USA.

Th.B.85

INTERFERONS. Lane, H. Clifford; Laboratory of Immunoregulation, National Institutes of Health, Bethesda, MD, USA.

Th.B.86

IMMUNE BASED THERAPIES FOR HIV INFECTION. Schooley, Robert; Massachusetts General Hospital, Boston, MA, USA.

TRACK B: CLINICAL SCIENCE & TRIALS

SYMPOSIUM: UPDATE IN HEMATOLOGY AND ONCOLOGY

Th.B.89

SIGNIFICANCE AND MANAGEMENT OF IMMUNE THROMBOCYTOPENIA IN HIV INFECTION. Oksenhendler, Eric; Department of Clinical Immunology and Hematology, Hopital Saint-Louis, Paris, France.

Th.B.90

USE OF HEMAPOEOTIC GROWTH FACTORS. Mitsuyasu, Ronald; UCLA Medical Center, Los Angeles, CA, USA.

Th.B.91

KAPOSI'S SARCOMA AS A SEXUALLY TRANSMITTED DISEASE. Peterman, Tom; Centers for Disease Controls, Atlanta, GA, USA.

Th.B.92

PRESENTATION AND MANAGEMENT OF KAPOSI'S SARCOMA IN CENTRAL AFRICA. Bayley, Anne C.; University of Zambia, Lusaka, Zambia.

Th.B.93

NEW DIRECTIONS IN THE TREATMENT OF HIV-RELATED NON-HODGKIN'S LYMPHOMA. Kaplan, Lawrence D.; San Francisco General Hospital, University of California, San Francisco, CA, USA.

Th.B.94

PREMALIGNANT AND MALIGNANT LESIONS ASSOCIATED WITH HUMAN PAPILLOMAVIRUS INFECTION.
Palefsky, Joel; University of California, San Francisco, CA, USA.

TRACK C: EPIDEMIOLOGY & PREVENTION
ABSTRACT SESSION: TRANSMISSION OF HIV INFECTION

Th.C.97

NON ULCERATIVE SEXUALLY TRANSMITTED DISEASES (STD) AS RISK FACTORS FOR HIV INFECTION.

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Objectives: To identify risk factors associated with HIV infection among prostitutes in Kinshasa, Zaire.
Methods: Among 493 HIV (-) prostitutes followed prospectively for a mean duration of 11 months (with monthly STD checkups and HIV testing every 3 months), a case control study was conducted. Cases (n=42) were women seroconverting during the follow-up and controls (n=93) were randomly selected women, who remained HIV(-), matched for frequency and duration of follow-up. The 4 month "window" period from 5 months to 2 months prior to seroconversion of cases, was compared to the concurrent period of controls, for incidence of STD and sexual exposure.
Results: During 3978 women-months of observation, 42 women seroconverted (an annual incidence of 11%). Seroconvertors were younger than HIV(-) women (24 yr vs 26 yr, p=.03), but did not differ in oral contraceptive use (4% vs 5%) or pregnancy occurrance (11% vs 13%). During the "window" period, cases had a significantly higher incidence of purulent cervicitis (24% vs 10% p=.001), leukocytes on vaginal smear (31% vs 9% p=.002), gonorrhoea (52% vs 19% p<.001), chlamydial infection (29% vs 6% p<.001) and trichomoniasis (43% vs 18% p<.001). The incidence of ulcers was similar (5% vs 4%), but the ulcers among cases were vaginal, while those among controls were vulvar. The mean number of contacts/week (5.1 ± 3.8) and levels of reported condom use, did not differ among cases and controls, except for those who reported 100% condom use with both clients and steady partners (1 (2%) case and 13(14%) controls p<.001). By multivariate analysis, the adjusted odds ratio for HIV seroconversion was 3.5 (p=.005) for gonorrhoea, 3.2 (p=.05) for chlamydial infection and 2.7 (p=.03) for trichomoniasis.
Conclusion: Non ulcerative STD were a risk factor for HIV infection. Because of their higher prevalence and incidence than genital ulcers, they may represent a much higher population attributable risk in the transmission of HIV.

Th.C.98

RISK FACTORS FOR HIV-1 INFECTION IN PREGNANT WOMEN IN MALAWI.

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OBJECTIVE: To assess the prevalence and associated risk factors for HIV-1 infection in pregnant women attending an antenatal clinic.
METHODS: 1482 pregnant women presenting for routine care to the antenatal clinic of a large urban hospital in Malawi were interviewed to assess risk factors for HIV-1 infection in the previous 3 years.
RESULTS: 320/1482 (21.6%) women were HIV-1 seropositive. The following risk factors were associated with HIV-1 infection:

			UNIVARIATE		LOGISTIC REGRESSION	
	HIV+	HIV-	OR	p-value	OR	p-value
Partner not husband	38%	25%	1.84	<.001	1.72	<.001
Husband w/partners	19%	10%	1.99	<.001	1.88	<.001
Husband's education	59%	39%	2.26	<.001	2.30	<.001
Primiparity	28%	21%	1.47	.007	1.48	.01
Scarification	47%	41%	1.29	.05	1.21	NS
Hx of syphilis	6%	3%	2.28	.004	1.84	.05
Hx of PID	5%	3%	2.19	.01	1.93	.05
Hx of genital ulcers	7%	5%	1.41	NS	1.07	NS
Hx of genital warts	6%	2%	3.19	<.001	3.07	<.001

CONCLUSIONS: In this high prevalence group of non-selected urban women HIV infection was independently associated with multiple sexual partners and high SES. History of warts, unlike ulcers, was strongly associated with HIV infection. Warts may represent an important co-factor for HIV transmission.

Th.C.99

CONTRACEPTIVE USE AND HIV INFECTION AMONG WOMEN ATTENDING FAMILY PLANNING CLINICS IN NAIROBI, KENYA

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Objectives: To investigate the relationship between HIV infection and contraceptive use among women not believed to be at high risk for HIV.
Methods: Between Oct. 1989 and Jan. 1990, consenting women attending two Nairobi family planning (FP) clinics were screened for HIV and other sexually transmitted diseases (STD), interviewed, and examined including culture for other STD. HIV status was determined by ELISA and Western Blot. Odds ratios (OR) and 95% confidence intervals (CI) were calculated.
Results: In preliminary analysis of an ongoing study, 39/726 were HIV+ve (5.4%; 95%CI 3.7-7.0). 36 +ves with complete information were compared with 587 -ve women. The prevalence of current FP method was: oral contraceptive (OC) 24/36 (67%) among HIV+ve, 339/587 (58%) among HIV-ve [OR=1.5,95%CI 0.7-3.0]; depo-provera 2/36 (6%) among HIV+ve, 44/587 (7%) among HIV-ve [OR=0.7,95%CI 0.2-3.1]; intrauterine device 6/36 (17%) among HIV+ve, 69/587 (12%) among HIV-ve [OR=1.5,95%CI 0.6-3.7]; condom 1/36 (3%) among HIV+ve, 23/587 (4%) among HIV-ve [OR=0.7, 95%CI 0.1-5.3]; use of other modern methods was negligible. Cervical ectropion (CE) was more common among OC users (11%) than non-users (6%) (p=0.03). Multivariate analyses controlling for age, marital and educational status, sexual behavior, partner circumcision, STD and CE, did not materially alter these findings.
Conclusions: These interim results show no strong association between FP method and HIV status. We confirmed an association between CE and OC.

Th.C.100

HETEROSEXUAL TRANSMISSION OF HIV: FOLLOW-UP OF A EUROPEAN COHORT OF COUPLES

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Objective: To assess acceptability and evaluate efficacy of safe-sex counselling in serologically discordant couples.
Methods: Since March 1987, 403 couples were recruited from 7 European countries. Data for HIV+ subjects (Index Case) and their heterosexual partners are collected every 6 months and counselling was offered at each interview. The partners presenting risks for HIV infection other than sexual contact with the Index Case were excluded. Analysis of data at inclusion has demonstrated several risk factors for male-to-female transmission (Index Case with full blown AIDS, recent history of STD, practice of anal sex, female partner over 45 years), and for female-to-male transmission (Index Case with full blown AIDS, sexual contacts during menses). Follow-up of couples will be presented.
Results: Among the 403 couples, 49 (12.1%) were lost to follow-up and for 115 (28.5%) follow-up data are not yet available. For 69 couples (17.1%), the partner was HIV+ at the first interview. For the 170 remaining couples, mean duration of follow-up is 12 months (range 3-31). 62 couples (36.5%) had stopped the sexual relationship (10 Index Case have died). 108 couples still have sexual relationship. Of these, 52 (48.1%) do not use condoms systematically, 48 couples (44.4%) use it systematically, and for 8 couples no data on condom-use are available. 6 partners seroconverted, none of whom always used condoms.
Conclusion: 1. Only half of the discordant couples still having sexual intercourse always use condoms. 2. No seroconversion occurred in couples systematically using condoms. 3. Since seroconversion might play a role in the volontary follow-up of couples, and since data are still unavailable for half of the discordant couples included, the high rate of seroconversion observed must be interpreted with caution.

Th.C.101 THE RELATIVE EFFICIENCY OF FEMALE-TO-MALE HIV SEXUAL TRANSMISSION

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Objective: To examine the relative efficiency of female-to male heterosexual transmission of HIV among couples in San Francisco.
Methods: We enrolled 41 male sexual partners of 38 HIV-infected women in 1985-1989. HIV serological tests and detailed risk factor interviews were administered to both partners. Transmission rates were examined using conditional maximum likelihood and binary regression techniques.
Results: Over 80% of the sample was white; their ages ranged from 21 to 52. Risk group of the women was almost equally divided among intravenous drug use, transfusion recipients, previous infected male partners, and no identified risk. One male partner (2.4%) was infected (95% CI= .4-13%). This couple reported over 1000 unprotected penile-vaginal contacts over the last seven years, and over 100 episodes of vaginal and penile bleeding.

The male-to-female transmission rate for 219 couples (female partners of infected men) recruited in the same way over the same time was 20% (95% CI= 15-16%). The odds ratio comparing male-to-female with female-to-male transmission (adjusting for number of contacts) is 12.31 (95% exact CI=1.9-519.9). This difference remained significant after controlling for other known risk factors (p=.004).
Conclusions: Female-to-male transmission is less efficient than male-to-female transmission in this sample. Whether this can be attributed to entirely to biological mechanisms of transmission, to sample specific phenomena, or other factors remains to be determined in larger population-based samples where geographic variations can be considered.

Th.C.102 HIV RECOVERY FROM SEMEN: MINIMAL IMPACT OF CLINICAL STAGE OF INFECTION AND MINIMAL EFFECT ON SEMEN ANALYSIS PARAMETERS

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Objective: We investigated the role of stage of infection on presence of culturable HIV in semen.
Methods: Specimens from 18 asymptomatic patients and 18 patients with AIDS were separated into seminal cells and plasma, then co-cultured with phytohemagglutinin-stimulated lymphocytes.
Results: HIV was isolated from peripheral blood lymphocytes in 100% of patients who had cultures, from 9/25 (36%) semen specimens from asymptomatic patients, and from 7/30 (23%) specimens from AIDS patients. CD4+, CD8+, CD4+:CD8+, total lymphocytes, and total white blood cell counts were not significantly different between men with HIV-positive and culture-negative semen. Of 16 positive specimens, 11 were positive in the cellular fraction, 5 were positive in seminal plasma, and 3 were positive in both. Among asymptomatic patients, there was no correlation between HIV recovery from semen and pyosemia, abnormal sperm morphology, or semen analysis.
Conclusions: Shedding of HIV in semen occurs in asymptomatic patients and, despite sensitive culture methods, may be independent of the clinical stage of infection or findings on semen analysis. Culture may help identify seropositive men who are at high risk for sexual transmission of HIV.

Th.C.103 CRACK USE PREDICTS INCIDENT HIV SEROCONVERSION

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Objective: To examine the relation of CRACK use to HIV risk factors and HIV seroconversion among seropositive (SP) and seronegative (SN) intravenous drug users (IVDUs) in New York City.
Methods: From 6/85 - 12/88 576 methadone maintained IVDUs enrolled in a prospective study of HIV infection had serial interviews regarding socio-demography, HIV risk behaviors and CRACK use since 1978 and tests for HIV antibody (Ab).
Results: CRACK use started in 1985 and was reported by 97/576 (17%): 44/238 (18%) SP and 53/338 (16%) SN. From 1987-88 HIV Ab developed in 17/338 SN (5.0%, 1.74 per 100 person-yrs). Seven of 17 (41%) seroconverters used CRACK compared to 53/321 (16%) in remaining SN (P<.02, 2-tailed Fisher's exact).

CRACK users, in contrast to all others, were 71% female (P<.001), young (mean age 23, P<.004) and had <12 yrs. school (67%, P<.01). Prior to using CRACK (1983-85), 52% injected cocaine. During 1986-88, an additional 20% of CRACK users began cocaine injection. Crack users were more likely to inject in shooting galleries (P<.02). Prostitution by females was reported by 14% of non-CRACK users and 35% of CRACK users (P<.001): 25% prior to CRACK use and 10% initiating it during the period of CRACK use. A history of IVDU sex partner(s) was related to subsequent CRACK use (P<.001).

Multivariate analysis revealed that CRACK use was independently predicted by female sex, concurrent prostitution, concurrent cocaine injection and an antecedent IVDU sex partner, and that CRACK use predicted HIV seroconversion.
Conclusion: HIV seroconversion is related to CRACK use by IVDUs. Young female IVDUs are at highest risk for CRACK use and should be targeted for HIV prevention programs.

Th.C.104 NOSOCOMIAL TRANSMISSION OF HIV IN ROMANIA

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Objective: To determine the risk factors and geographic spread of HIV infection among children in Romania
Methods: Collection of serum for HIV testing from representative samples of children under 7 years of age with history of recent hospitalization, collection of serum from mothers of these children, detailed medical history from hospital records including history of blood or plasma transfusion and injections.
Results: Risk factors for HIV infection of children less than 7 years of age included previous hospitalization with microtransfusion (10cc/kg) of whole blood or plasma and/or intramuscular or intravenous injections in the hospital during the period of suspect transmission. Retrospective examination revealed that whole blood used for transfusion or pooled for plasma production was not being screened during the period of suspect transmission, that at least 8 blood donors during this period had antibody to HIV, and that sterilization techniques had been compromised by breaches in technique, especially during times of power shortage. Transmission is thought to have occurred in hospitals in at least 4 of the 41 districts in Romania.
Conclusion: This is the second report of a large scale nosocomial transmission of HIV associated with improper sterilization of needles and syringes, and points to the vulnerability of hospitals which intensively use parenteral medications yet have poor sterilization technique.

TRACK C: EPIDEMIOLOGY & PREVENTION

ABSTRACT SESSION: DISTRIBUTION AND DETERMINANTS OF RISK BEHAVIORS

Th.C.105 DISTRIBUTION AND DETERMINANTS FOR RISK BEHAVIORS OF HIV INFECTION AMONG YOUNG ADULTS IN ZAIRE, A "KAP" STUDY

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Objective : The purpose of the study was to determine the distribution and the determinants for risks behaviors of HIV infection among young adults in Zaire.
Methods: A self-administered questionnaire was given to randomly selected College students in kinshasa. The selection was meant to be representative.
Results: 1480 students responded to questionnaires.They were 23 years old in average, and for the most part catholic. Forty four percent received at least one medical injection in the last twelve months. 4 % received a blood transfusion in last ten years. Eighty four percent had already had sex, and 50 % expressed satisfaction after their first sexual encounter, 4 % were ashamed and regretted it. The main reason for not having sex was religion; 37 % had 2 & 3 partners sexuels in the last five years. Twenty one percent had a history of STDs, during the past five years. Nineteen percent have had sex for money, and 29% had been paid to have sexual contact with a partner other than a prostitute; 31 % reported to have visited prostitutes, at least once a month for 37 % of them, mainly because of lack of partner and sexual lead; 48 % of the students do not visit prostitutes in order to avoid STDs, and 30 % for religious reasons. Sixty four percent practice vaginal intercourse, always, 33 % practice sometimes oral intercourse, 19 % practice sometimes anal intercourse, 17 % practice sometimes intercourse during menarche. While, 20 % of the students do not feel any pleasure while having sex.
Conclusion : Religion seen to be one of the main determinants for not having sex and for not visiting prostitute. However, physical need and the lack of partner seem to be major determinant for seeing prostitutes. However, the fear of STDs seem to be an important determinant to avoid partner with multiple partners. Money seem also to be important for engaging in sex. Education should be designed for University Students taking into account those behaviors and determinants.

Th.C.106 HIV TRANSMISSION KNOWLEDGE, BELIEFS ABOUT PERSONAL RISK OF AIDS AND CONDOM USE IN THE U.S., FRANCE, AND U.K.

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Objective: To compare patterns and levels of transmission knowledge and beliefs about AIDS risk in three countries and compare associations of knowledge and belief with condom use during vaginal intercourse, anal intercourse among men, and initiation of condom use.

Methods: Interviews with national probability samples in the three countries resulted in approximately 1950 respondents in each.

Results: Responses to fourteen knowledge items result in two factors, misinformation (reliability=.78-.84) and accurate information (reliability=.56-.70). Factor loadings are similar across national samples. U.S. respondents identify more true transmission routes ($X2=16, df=8, p<.01$) but also more false transmission routes ($X2=63, df=14, p<.01$). Knowledge levels do not correlate well with condom use.

Seven belief items do not form a homogeneous factor. However, several are related to condom use. Fear of AIDS is related ($p<.01$) both to using condoms during vaginal intercourse and to initiating use of condoms by persons in all three countries, but the association is stronger ($p<.05$) in the U.S. and France. Knowing someone diagnosed with AIDS is related to condom use by men having anal intercourse with men, but only in the U.S. Similarly, uncertainty about developing AIDS once infected is related to use of condoms in the U.S. only. Beliefs about AIDS fatality are unrelated to condom use in all three countries.

Conclusion: Knowledge of AIDS transmission does not directly correlate with condom use or initiation of condom use. Fear of AIDS is related to both, but differs in magnitude across national boundaries. The widely cited association between safer practices and knowing someone with AIDS may be restricted to men having sex with men in the U.S.

Th.C.107 HIV-1 Behavioral and sociological risks and condom use in gay men in Mexico.

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1 Ministry of Health, Mexico. 2 Harvard School of Public Health.
3 The Population Council, INOPAL, MEXICO.

OBJECTIVE.- To estimate behavioral and sociological risk factors for HIV seropositivity and condom use in gay and bisexual men in Mexico.

METHODS.- Data about knowledge, attitudes and practices (KAP) about AIDS were collected for 715 men; interviews took place in gay gathering places such as bars, discos and parks in 6 cities in May 1988. Blood samples were collected in site, to determine HIV infection through ELISA and Western Blot methods. Anal Insertive Receptive Behavior (IRB) in the 4 months prior to the survey was reported; categories ranged from exclusively insertive to exclusively receptive with mixed behaviors in the middle, or no activity. Condom use was defined according to its use in the last sexual intercourse. Multiple Logistic Regression Analysis was conducted.

RESULTS. Seropositivity rates varied among cities from 3% to 26%. Variables associated with seropositivity in bivariate analyses ($p< .05$) included age, education, city, No. of partners, IRB, Having had gonorrhea and/or syphilis, had sex with a Person with AIDS (PWA), and sex in bath houses. In the multiple logistic regression models, controlling for education, city, and IRB, the following variables were independently related to seropositivity: City, IRB, Syphilis, Sex with a PWA and sex in bath houses. The independent risks associated with IRB by category were for No or almost no activity (1.0), Only Insertive (3.0), Mostly Insertive (4.9), Both 1/2 times or more (6.0), Mostly Receptive (3.3) and Only Receptive (0.9). The condom use rate was 30%. In bivariate analysis education, city, IRB, Gonorrhea and syphilis were significantly associated with use but in the multivariate analysis only city and IRB remained significant.

CONCLUSION.- Geographical differences in HIV seroprevalence imply an early stage on the epidemic in most of the country. Variations in patterns of IRB explain part of the city differences in seroprevalence. The main risk for HIV infection is not exclusively receptive anal sex, but those with mixed IRB; this association may be explained by the partner pools (sociologically). Higher condom use rates are in cities were AIDS prevention programs started earlier, but the overall level implies little protection against a rapid growth of HIV infection.

Th.C.108 RELAPSE FROM SAFER SEX: THE AIDS BEHAVIORAL RESEARCH PROJECT

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Objective To determine the extent and correlates of relapse from safe sex.
Methods This reports data from a 5-year prospective study of gay men in San Francisco. In the 1988 wave of data collection, 71% (n=575) of the original cohort continued to respond to the survey. Independent variables included psychosocial measures taken at intake in 1984 as well as agreement with 11 reasons for having unprotected anal intercourse during the previous year.

Findings As of 1988, only 2.3% of the sample reported unprotected anal intercourse with a non-monogamous partner (high risk sex) at every wave, while 19.0% reported relapse after having only safe sex at a previous wave. Reporting in 1984 that unprotected anal intercourse was a favorite sexual act (OR= 2.1; 95% CI 1.07, 4.14) and social support for taking health-related risks (OR 1.13, 95% CI 1.03, 1.24) significantly distinguished the men who were at lower risk for all five waves from men who relapsed by 1988. In 1988, men in monogamous relationship were significantly more likely ($p < .01$) to report having unprotected anal intercourse because they were "in love" or that they "had the same HIV status as their partner", while men not in relationships were more likely to report being "turned on", being "inebriated during sex" or "not having condoms available when sex occurred".

Conclusion An exclusive concern with the initial adoption of safe sex methods among gay men has become somewhat dated: interventions must now be designed to prevent relapse from initial sexual risk reductions.

Th.C.109 RECENT CHANGES IN BEHAVIOUR AND PRACTICES IN RELATION TO THE HIV EPIDEMIC IN RAKAI, UGANDA

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Objective To define changes in behaviour and practices made in response to knowledge of the HIV epidemic.
Methods 21 clusters of 40 households each were randomly selected, (9 trading center clusters and 12 rural). All consenting adults answered a Knowledge, Attitudes and Behaviours (KAB) interview (n=1304). In addition, 35 focus groups discussions were conducted to obtain detailed information on sexual behaviour changes.
Results: In the KAB survey, 86% knew of sexual transmission and 83% believe that changes in behaviour can reduce risk of AIDS. 78% reported changing their behaviour: among the individuals who reported change, 95% said they had none or only one sex partner, 5% had fewer partners, and 1% were using condoms. Focus groups confirmed some findings such as near universal knowledge of sexual transmission: however, substantial change to lower risk behaviour was limited to rural focus groups and was not found in trading centers. Rural focus groups reported almost no use of condoms.
Conclusion People in Rakai have high levels of knowledge and have made some changes but focus groups reveal that much risky behaviour still persists.

Th.C.110 CONDOM USE AND SEXUALLY TRANSMITTED DISEASES(STDs) AMONG COMMERCIAL SEX WORKERS(CSWs) UNDERGOING A HEALTH EDUCATION(HE)/INTERVENTION PROGRAM ON AIDS IN THE PHILIPPINES

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OBJECTIVES: 1) To obtain baseline information on prevalence of HIV and other STDs among CSWs. 2) To correlate condom use and STD prevalence.
METHODS: Baseline information on STD prevalence and condom use were obtained on a cohort of 680 female CSWs prior to initiation of an ongoing 2-year HE/intervention program on AIDS. History about condom use was obtained as part of a detailed interview about the subjects' knowledge, attitudes and sexual behavior. Standard microbiologic/serologic examinations were done on endocervical secretions/sera for the demonstration of STD pathogens. STD prevalence was then related to condom use.
RESULTS: Of 680 females evaluated, 479 demonstrated STD pathogens: single organisms in 404 and multiple organisms in 75. The pathogens seen were N. gonorrheae (143), C. trachomatis (97), T. vaginalis (29), C. albicans (27), Syphilis (18), HSV-2 (16), G. vaginalis (8), HIV (1). Non-specific vaginitis were diagnosed in 168 and genital warts were seen in 22.
Condom use was elicited from 222/235 subjects. Among condom users, 152 (68.5%) were diagnosed to have STDs. There was no relation between the frequency of condom use and the prevalence of STDs. Correct condom use and condom breakage are being analyzed separately.
CONCLUSIONS: STD pathogens were commonly seen among CSWs undergoing HE/intervention program on STDs and AIDS. The frequency of STDs among the condom users may reflect inadequacy of histories obtained or such factors as correct condom usage/condom breakage. This information has been utilized in the development of an ongoing HE/intervention program on STDs and AIDS.

Th.C.111 INCIDENCE OF HETEROSEXUAL PAIRINGS ASSOCIATED WITH RISK OF SECONDARY HIV TRANSMISSION: POPULATION-BASED ESTIMATES

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Objective: To assess the potential in California (CA) for sexual transmission of HIV from intravenous drug users (IVDU) and male bisexuals (MB) to segments of the heterosexual population with no other risks for infection.
Methods: We used probability sample telephone survey methods to select and interview 6,673 CA adults. One-year sexual histories and risk status of respondents and their sex partners were used to identify heterosexual pairings involving a MB, male IVDU (MIVDU) or female IVDU (FIVDU). Incidence of MB, MIVDU and FIVDU pairings is projected to the adult population of CA and compared for respondent subgroups; sexual contact rates are also derived.
Results: An estimated 409,208 persons annually, or 2.00% (95% CI=1.69-2.38%) of CA adults, risk exposure to HIV through sexual contact with a MB (0.46%, CI=0.32-0.67%), MIVDU (0.91%, CI=0.70-1.17%) or FIVDU (0.63%, CI=0.46-0.86%). Combined incidence of MB, MIVDU and FIVDU pairings differed by age and marital status, but not by region or race/ethnicity. Compared to persons ≥45 yrs, those 18-44 yrs were five times as likely to be involved in a MB/MIVDU/FIVDU pairing (OR=5.05, CI=2.3-7.9). Incidence increases with age among unmarried (single and "coupled") persons 18-44 yrs; compared to married persons, odds of a risky pairing among those not married increased from 2.11 (CI=1.1-3.1) for 18-24 yrs to 2.60 (CI=1.4-3.8) for 25-34 yrs and 3.09 (CI=1.4-4.8) for 35-44 yrs. Episodes of unprotected vaginal and anal sex in MB/MIVDU/FIVDU pairings averaged 56.3 and 1.3 per year, respectively.
Conclusion: Sexual mixing between primary AIDS risk groups and low risk heterosexuals may be a significant source of secondary HIV infections in CA. Incidence rates increase into mid-adulthood among unmarried persons, reflecting removal through marriage of low risk potential sex partners.

Th.C.112 HETEROGENEITY AND FLUCTUATIONS IN HOMOSEXUAL BEHAVIOR: IMPLICATIONS FOR MODELING THE AIDS EPIDEMIC

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Objective: Heterogeneity in mathematical models is mostly restricted to variation in sexual partner change. Less attention is paid to variation in sexual role behavior. We assume the existence of 4 sexual subgroups based on the preference for:1)no anal intercourse;2)anal insertive only;3)anal receptive only;4)both ins and rec. Without turnover and given that HIV is acquired through anal receptive intercourse only, group 1 and 2 remain uninfected and HIV is spread within group 4 and between 4 and 3. If turnover is fast and random the group-structure will have only a minor effect on the spread of HIV. We examine this type of heterogeneity on its consequences for mathematical models. Methods: A cohort of 750 homosexual men in Amsterdam was questioned about their sexual behavior on 8 consecutive six months intervals during 1985-1988. Bloodsamples were taken simultaneously. Data are analysed with turnover analysis. Results: Our data show a large variation in role behavior; a slow and non random turnover; some groups more consistent than others; HIV group-prevalence and -incidence dependent from turnover rates and subgroup. Interval 1 and 2 are presented as an example.

Group by interval and serostatus

	t1			t2		
	n	%	%HIV+	n	%	%HIV+
1 NO	79	11	9	157	27	20
2 INS	127	18	14	102	17	22
3 REC	78	11	35	80	14	40
4 BOTH	439	61	41	254	43	45

Turnover table between t1 and t2

t2	1	2	3	4
	%	%	%	%
1	78	10	5	7
2	32	47	3	18
3	38	2	49	11
4	14	13	12	62

Conclusion: Preference based sexual subgroups and turnover rates should be considered when modeling the HIV epidemic among homosexual men.

TRACK D: SOCIAL SCIENCE & POLICY

PANEL DISCUSSION: HUMAN RIGHTS AND SYSTEMS OF JUSTICE

Th.D.113

THE UK DECLARATION OF THE RIGHTS OF PEOPLE WITH HIV AND AIDS: VOLUNTARY ORGANISATIONS JOIN TO DEFEND HUMAN RIGHTS

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Objective: a group of voluntary organisations concerned with AIDS and HIV is seeking to raise awareness of the human rights dimensions of the treatment of people with AIDS and HIV in the UK and internationally.
Methods: a working group, convened by the NAT, established a list of shared concerns which have been related systematically to international commitments entered into by the UK Government.
Results: a Declaration has been published which lists rights under the headings of: privacy; liberty and security of person; freedom of movement; work; housing, food, social security, medical assistance and welfare; freedom from inhumane or degrading treatment; equal protection of the law and protection from discrimination; to marry; to found a family; and education. The Declaration relates these rights to the International Covenants on Civil and Political Rights; the International Covenant on Economic, Social and Cultural Rights (1976); the European Convention on Human Rights (1953); and the European Social Charter (1965), all of which the UK Government has ratified.
Conclusion: there is a need to increase the protection afforded under UK law to people affected by HIV and AIDS, especially against unjustified discrimination. An international convention on the rights of people affected by HIV could usefully extend and reinforce the rights already established, especially if it could address issues such as the arbitrary, discriminatory and unnecessary policy towards visitors with HIV, which has led to calls for non-attendance of this and other international AIDS conferences held in the USA.

Th.D.114

AIDS AND HUMAN RIGHTS IN CZECHOSLOVAKIA.

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Th.D.115

AIDS, HUMAN RIGHTS AND DISCRIMINATION IN MEXICO.

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Objective: To describe what kind of human rights are frequently violated in AIDS related conditions. Explain the function of sociopolitical, legal and cultural factors in shaping such aggravating. Methodology: In-depth interviewing, opinion polls in-live research, documentary testimonial and subject analysis. Results: 1) This analysis shows that PWA and HIV infected human rights are frequently violated, specially: a) in labor environment; b) medical and hospital services; c) mass media; d) family and social surrounding. 2) Lack of social policies benefating HIV affected, which lead in violations. 3) Nonexistent discriminatory laws and at the same time the presence of legal emptiness which turns on human rights violations of PWA and HIV infected. Conclusions: A longer period of time and a wider universe are needed to specify action alternatives including law projects and reforms in force law, and directed to PWA and HIV infected human rights protection.

Th.D.116

HIV SEROPOSITIVITY IN SPANISH PRISONS.

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Objective is to know the prevalence of HIV, hepatitis B and syphilis infection among the spanish prison population, so as the risk factors which do determine it. In order to administer preventive or curative treatment.
Methodology. A transversal study has been performed all over the spanish prison population, in Mars 1989 which accepted voluntarily to take part in the mentioned study (27.023 prisoners). 7,4% of the cases were lost because of methodological problems and 13% more rejected the blood tests, although not the sociosanitary interview. The studied population is 19.946 persons (93%-males and 7% females).
Results: 1) The global prevalence of HIV infection is 30% (30% males and 26% females). 2) People under 30 years have figures of 37%, meanwhile the ones of people older than 30 go down to 15% (Prison Population, PP= 69%<30 years). 3) Major prevalence when lower level of studies. 4) Major prevalence when lower economic earnings. 5) Unemployed people had higher figures than working people: 41% and 21%, (PP= 43% and 45%, respectively). 6) Higher figures among those who came in prison very young. 7) Greater figures among relapsing offenders: 47,7% 4 or more entries in prison and 21,1% 3 or less (PP= 35% 4 or more entries in prison). 8) Major infection prevalence among IVDU in relation directly proportional to the frequency and the administered dose: 66,9% in users of more than 2 grams/ day (PP= 44,5% declared to have been users on some occasion of drugs, being the medium time of consumption 4-5 years). 9) Anti-HBc prevalence among infected by HIV is 82,1%. FTA test (syphilis) was positive among 11,9% of the seropositives to HIV.
Conclusions: The socioeconomic standard mentioned so as the penitentiary typology make evident that the high prevalence of HIV infection is due almost in particular to the high proportion of IVDU in prison.

Th.D.117 ISSUES IN AIDS RELATED LEGISLATION:HEALTH CONTROL VERSUS HUMAN RIGHTS

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Objective: Legislation is likely to be the most conflictual area of sociopoltical response to AIDS.The need for international consensus was highlighted by the experience of a case study.
Method:as a test case we were involved in countermanding a legislation in one of the states in India,demanding compulsary isolation of an individual with HIV infection.
The legal processes triggered by such a confrontation are highlighted.
Conclusion: International consensus and guidelines for health legislation with reference to HIV positivity is an impending need to prevent alarmist,uninformed and insensitive legislative responses by individual governments.

Th.D.118

THE IMPACT OF HIV INFECTION ON HOMOPHOBIA IN THE U.S.

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TRACK D: SOCIAL SCIENCE & POLICY

ABSTRACT SESSION: PERINATAL, PEDIATRIC, AND FAMILY ISSUES

Th.D.121 POOR SUSTAINABILITY OF BIRTH CONTROL UTILIZATION AND CONSEQUENT HIGH FERTILITY RATES IN A COHORT OF 249 HIV(+) ZAIRIAN WOMEN AWARE OF THEIR SEROSTATUS AND FOLLOWED FOR 30 MONTHS POST-PARTUM

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Objective: To measure the use and effect on fertility rates(FR) of BC techniques freely provided to a cohort of HIV(+) and HIV(-) mothers informed of their HIV serostatus during the immediate post-partum period.
Methods: 249 HIV(+) and 310 age-matched HIV(-) women were enrolled shortly before delivery in 1986-87. Following pre and post-test HIV counselling, a birth control program providing free, service was made available immediately post-partum. BC use and general FR were determined for the 938 person-years during which study women have been followed through 12/89
Results: Table 1. Acceptance of BC by maternal HIV serology and by year.

	1988		1989	
% Accepting (used)/3 mos./yr)	HIV(+)	HIV(-)	HIV(+)	HIV(-)
Condoms	14%	2	15	2
Spermicides	0	1	0	2
Pill	1	2	0	6
Depo Provera	1	0.3	1	1
Rhythm	6	2	4	1
IUD	0	0.3	0	1
Abstinence	1	0	1	0
TOTAL	23	8	20	12
General Fertility Rate/1000	80.9	89.1	243	366

Table 2. Refusals of BC by maternal serostatus

	HIV(+)	HIV(-)
Unwilling to inform husband of HIV results	6%	0
Husband refused to accept BC	3	10
Wanted more children	7	31

Conclusions: Despite being made aware of their serostatus, its consequences on future children and the availability of free BC services, the majority of HIV(+) women were unwilling to sustain BC use. Use of BC by HIV(+) women had no demonstrable effect on their general FR which was similar to that found in HIV(-) women.

Th.D.122 COMMUNITY IMPACT OF MATERNAL HIV-1 INFECTIONS ON INFANT AND CHILDHOOD SURVIVAL IN A HAITIAN SLUM 1976-1989

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Objective: To evaluate trends in seroprevalence of HIV-1 in pregnant women and the community impact of maternal HIV infection on survival of children.
Methods: From 1986-1989 women attending prenatal clinics in Cite Soleil were screened for antibodies to HIV-1. Infant mortality was estimated by conducting fertility and survival histories in women from 1976 through 1987 and by longitudinal followup of infants in 1988-1989.
Results: 9.6% of 5,011 pregnant women screened from 1986 through 1989 were HIV-1 seropositive. Prevalence rates increased from 8.8% in 1986 to 10.3% in 1988, but may have declined in 1989 (8.2%). The infant mortality rate (IMR) decreased from 23.6% in 1976 to 8.5% in 1982 following preventive and therapeutic health care services. Since 1985 the IMR increased progressively to 11% in 1989.
Conclusions: Maternal HIV-1 infections have had a significant negative impact on childhood survival in this population.

Th.D.123 TREATING THE NON-INFECTED SIBLING: AN AIDS DILEMMA

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Objective: To assess the entire family dynamics and to offer individualized services to the non-infected siblings.
Methods: The clinic is currently following 90 children: 29 are in foster care, 20 with relatives and 31 are living with their biological mothers. Seven families have relocated and three have been lost to follow-up. In depth psycho-social interviews were administered to all parents. In order to assess the impact of living with an HIV infected sibling and parent this study focused on the siblings of the 19 families with an infected child. There are a total of 29 siblings in this group ranging in age from 7 months to 20 years. Parents have discussed the family illness with only 5 of the 29 siblings.
Results: Parents report a variety of behavioral and academic problems in the non-infected children. These problems entail running away from home, academic failure, truancy, aggressiveness and severe depression. In addition, there are issues dealing with the impending death of a loved one, an unusual need to over-protect and difficulty establishing long term heterosexual relationships.
Conclusion: The HIV infected child and parent have often been the primary focus of intervention and support, however through our experiences with families we have found that the HIV diagnosis has a serious impact on the emotional stability of the family unit, especially on the non-infected siblings. These children are often forgotten in the turmoil this illness creates.

Th.D.124 ADULT CHILDREN OF PERSONS WITH AIDS: ISSUES AND TREATMENT

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Objective: The objective of this paper is to: 1) identify psychological themes and behaviors expressed by adult children of Persons With AIDS (PWA's) and 2) to identify counseling strategies specific to this population.
Method: Information presented will be based upon descriptive data collected through five years of clinical experience working with adult children of PWA's. Case examples are offered to illustrate adaptive and maladaptive behaviors and treatment approaches.
Results: Psychosocial manifestations include: 1) social isolation and secondary stigmatization, 2) a sense of betrayal or parental "fraud", 3) resurfacing of familial concerns, and 4) a reassessment of values and lifestyle choices. Substance use issues may also exist in adult children of PWA's with or without a parental history of self-injecting drug use. Treatment goals include promoting adaption, providing support and facilitating the grieving process.
Conclusion: Counseling services addressing the needs of adult children of PWA's are essential to promote adaptive coping in this special population.

Th.D.125

CLINICIANS' ATTITUDES ABOUT THE AGGRESSIVENESS OF TREATMENT FOR NEWBORNS AT RISK FOR AIDS: AN ETHICAL ISSUE IN THE NICU.

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Objective: To investigate attitudes about treatment for newborns in neonatal intensive care units (NICUs) who are at risk for AIDS.
Methods: Questionnaires were distributed to physicians, nurses, and ethics committee members in NICUs at six hospitals in New York City; 247 responded. Treatment recommendations were elicited about hypothetical cases.
Results: A significant proportion of respondents would recommend less aggressive treatment for non-HIV related conditions for infants at risk for HIV. For example, given otherwise identical clinical case descriptions, if an infant were critically ill due to chronic kidney disease, maintenance dialysis would be recommended by 89% of the respondents for an infant with no known HIV risk but only 52% would recommend dialysis for an infant whose mother has AIDS ($p < .0001$). If an infant had duodenal atresia, virtually all respondents would recommend intestinal surgery for an infant with no known concurrent condition, but only 75% would recommend such surgery if a diagnostic test were available and respondents knew that an infant was infected with HIV ($p < .0001$).
Conclusion: Testing and the identification of critically ill neonates as at risk for AIDS may affect professional decision-making. To assure treatment recommendations that are in patients' best interests, ethical issues concerning the relevance of HIV status for treatment choices need to be carefully examined.

Th.D.126

PEDIATRIC AIDS HOSPITALIZATIONS IN NEW JERSEY

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Objective: To determine correlates of inpatient utilization for all children with AIDS hospitalized in New Jersey during 1987.
Methods: All New Jersey hospital discharge abstracts from 1987 were scanned for AIDS diagnoses and matched to the state AIDS Registry to find those corresponding to children under 13 with AIDS. Abstracts were found for 318 admissions of 74 children with AIDS. Lengths of stay and costs per visit and per year were analyzed by sex, age, race/ethnicity, discharge status, severity of illness, payer, and hospital. Pediatric measures were compared with those for adolescents and adults.
Results: Medicaid covered 78.9% of pediatric AIDS admissions. Average length of stay was 14.09 days; cost per stay, $8,636; total days hospitalized for the year, 60.96; and total cost for the year, $37,110. Severity and discharge status were good predictors of resource utilization. Utilization was lower for Hispanics than for whites and lower for privately insured patients than for those covered by Medicaid. Hospitals treating the largest numbers of patients had the least inappropriate utilization. Per admission pediatric AIDS utilization was comparable with that for New Jersey's adolescents and adults with AIDS but, because of more frequent admissions, higher than the 36.25 day, $21,269 annual averages for the latter.
Conclusion: Hospital experience and the availability of reimbursable ambulatory and home services can reduce inappropriate utilization.

Th.D.127

AIDS ORPHANS IN KINSHASA, ZAIRE.

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Objectives: To determine the impact premature maternal mortality has had on children whose mothers have died of HIV/AIDS (AIDS orphans).
Methods: Since 1986 475 newborn infants of 466 HIV(+) women and 616 newborn infants of 606 matched HIV(-) women have been followed. Within this cohort, a nested case-control study has been conducted in which cases (n=20) were AIDS orphans and controls were living children of similar age (+ one week) as case children but with a living HIV(+) mother [control I] (n=20) and living children of similar age with an HIV(-) mother [control II] (n=20).
Results: On 1/1/90 25(5.3%) of the 475 infants born to an HIV(+) mother had become an AIDS orphan and 5 of these children had already died. None of the 616 infants with HIV(-) mothers had become orphans.

	Case	Control I	Control II
CHILD: Mean age at time orphaned(mos.)	18.7	NA	NA
Mean No. months orphaned	14	NA	NA
Acquired perinatal HIV infect.(%)	15	10	NA
Clinic visits missed (%)	21	4	2
Absent at time home visit (%)	28	0	0
Mean age non-parental guardian(yrs.)	48.4	NA	NA
Mean No. children under guardian's responsibility (range)	8.9(3-17)	NA	NA
MATERNAL: Mean age(yrs.) at death or 1/1/90	30	31	29
Mean No. living children on 1/1/90	3.7	3.8	3.5
Mean No. dead children	1.3	0.5	0.4
Mean duration breast-feeding (mos.)	6.6	15	15
Had AIDS at death or on 1/1/90(%)	80	25	NA
PATERNAL: Father died (%)	25	10	0
Father became guardian at death mother(%)	35	NA	NA

Conclusions: Premature maternal death from HIV infection and lack of a suitable guardian contributed to the higher rates of missing scheduled clinic visits, early weaning and poor adult supervision seen in cases. The high prevalence of HIV(+) women of child-bearing age and their high fertility rate suggests that the number of AIDS orphans and the under-age-five mortality rates for children with HIV(+) mothers will increase.

Th.D.128

ADOPTION AS A LIFE PLAN FOR HIV-POSITIVE CHILDREN

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*Leake and Watts Children's Home Inc., Yonkers, NY, USA
**Bronx Lebanon Hospital, Bronx, NY, USA.

Objective: To demonstrate that, by means of innovative recruitment and supportive services strategies, families can be identified which will adopt HIV-positive children.
Methods: A historical data base describing the HIV-positive children placed with foster families by Leake and Watts' pioneering AIDS specialized foster boarding home program was constructed. Longitudinal case records were extracted for 90 children placed from 1986 through 1989, by means of periodic case folder reviews. Service provision measures were correlated with outcomes (i.e., termination of natural parents' rights and adoption), controlling for the child's final HIV status and other individual and family characteristics.
Results: As a result of innovative recruitment techniques, the intensive provision of supportive services to foster families, and the relatively generous monthly foster care stipend established by the State of New York, over half the HIV-positive children placed with foster families were, or are in the process of being, adopted -- most frequently by the same family with which the child was originally placed for foster care.
Conclusions: Whenever possible, HIV-positive children (and other children with similar treatment needs, like "crack babies") should be placed with foster families rather than in an institutional or group setting, because foster family placement can lead to adoption in a majority of such cases.

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TRACK B: CLINICAL SCIENCE & TRIALS

POSTER DISCUSSION: NUTRITIONAL ASPECTS OF HIV INFECTION

Th.B.200 NUTRITIONAL STATUS OF HIV+ PATIENTS DURING THE EARLY STAGES OF DISEASE

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*Stanford University, Stanford, CA, USA, **San Francisco General Hospital, San Francisco, CA, USA,

Objective: To improve our understanding of the malnutrition of AIDS patients, monthly nutritional assessment (NA) has been determined on HIV+ patients early in the disease.
Methods: Twenty-six HIV+ men from ACTU studies were recruited. Group I had 19 men (13 CDC Group II and 6 CDC Group IVA) and were followed for 16 months (mo). Group II contained 7 men (3 CDC Group IVA and 4 CDC Group IVC) and were followed for 5 mo. Body weight (BW), percent (%) body fat, and laboratory data were collected monthly. Food records were collected 3/yr. Significance set at $p<0.05$.
Results: NA of Group I (mean age 36±2 yrs, Body Mass Index (BMI) of 26±1kg/m^2) fell within the normal range at the start of the study. No significant change in NA parameters were noted until mo 12 with a decrease in total protein (76 to 72 g/L). By mo 16 decreases were seen in BW (83 to 80 kg), BMI (26 to 25 kg/m^2) and %body fat (17 to 14%). NA of Group II (mean age 37±3 yrs, BMI 24±1kg/m^2) showed serum albumin and total protein in normal limits and no change over 5 mo. These sicker patients had HCT and Hgb concentrations below normal throughout the study. Lymphocyte count was low and decreased further (0.9 to 0.7 10^9/L). Mean calorie intake was below requirement for Group I and decreased during the 16 mo study. Vitamin B6 and zinc did not meet RDA for either group.
Conclusion: We conclude that decreases in BW, % body fat and BMI may be the earliest indication of decreased nutritional status in HIV+ patients and may be an indication for nutrition intervention.

Th.B.201 DIETARY INTAKE IN AIDS, AIDS-RELATED COMPLEX AND ASYMPTOMATIC SEROPOSITIVE HIV PATIENTS.

SEATON, Timothy, Dworkin, B., Wormser, G.
New York Medical College, Valhalla, New York.

A major manifestation of AIDS is the development of cachexia. This likely results from a multifactorial interplay of poor diet, malabsorption and altered metabolism. To assess the role of nutrient intake, we performed an analysis of a 72 hour diet record in clinically stable patients with AIDS (N=18), ARC (N=12) and asymptomatic HIV seropositive controls (N=13). Total calorie intake was 39.1±13.2 kcal/kg/day in AIDS versus 34.6±7.8 kcal/kg/day in ARC or 31.9±17.7 kcal/kg/day in HIV seropositive cases (all p=NS). Mean protein intakes were similar among the groups and exceeded RDA guidelines. Dietary vitamin and mineral analysis revealed that 88% of AIDS, 88% of HIV seropositive and 89% of ARC patients were ingesting less than 50% RDA for at least one nutrient. The mean number of deficiencies per patient were 1.8±1.3 in AIDS, 3.8±3.5 in ARC and 2.9±2.5 in HIV only cases ($p<0.05$ AIDS versus ARC). Anthropometric measurements did not correlate with protein-calorie intake. Conclusion: Protein-calorie intake in stable AIDS, ARC, and HIV seropositive patients meets RDA standards and is similar among the groups. These data lend support to the importance of malabsorption or altered metabolism in the development or persistence of cachexia in AIDS. However, vitamin and mineral intakes may be inadequate, potentially leading to further compromise of organ functions.

Th.B.202 DIETARY INTAKE, NUTRITIONAL STATUS, AND IMMUNOLOGIC FUNCTION IN PATIENTS WITH HIV INFECTION.

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Nutritional status is a major determinant of HIV survival (Am J Gastro 84:1288, 1989). To investigate etiologic factors, relationships among dietary intake, nutritional status, and immunologic function were determined using food records obtained for 537 patient days at 89 intervals from 55 favorable performance status (completely ambulatory) HIV-infected pts with (43%) or without (57%) AIDS. Factors potentially influencing nutrient intake were exclusions: intractable diarrhea requiring medication, severe GI symptoms, CNS infection, or ascites. Considering all pts, weight loss was related to albumin level; pts with albumin >4 g/dl were 102.1% Usual Body Weight (UBW) vs albumin <3.5 g/dl at 93.7% UBW, $p<0.05$. Overall, mean caloric intake appeared adequate (2124 kcal/dl); nonetheless, 78% of pts required counseling for identified nutrient deficiencies. Nutritional status was somewhat worse for AIDS vs HIV groups (mean UBW 93.7vs98.4% and albumin 3.85 vs 4.07 gm/dl, respectively). Mean caloric intake (kcal/kg/d), surprisingly, was greater in the AIDS group (2276±636 vs 1986±613, respectively). When expressed as requirements relative to usual rather than actual body weight, caloric intake was significantly lower for HIV vs AIDS pts, (kcal/d as % of 30 kcal/kg UBW/d) 89.4±4.4 vs 103.3±5.3, respectively, $p<0.05$). Serum albumin was closely correlated with immunologic function (CD4 level, R=0.764, $p<0.0001$). In summary, determination of nutrient intake in a population largely free of confounding GI problems demonstrates a relative caloric deficiency in HIV pts. The strong relationship between nutritional status and immunologic function suggests that dietary intervention be considered early in the disease course.

Th.B.203 EVALUATION AND THERAPY OF MALNUTRITION IN ENTEROPATHOGENIC AIDS

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Objective: The high frequency of gastrointestinal pathology depicts so called enteropathogenic AIDS in which malnutrition may influence the course of disease. This study defines microbiological, biochemical, immunological and anthropometric aspects of malnutrition that require nutritional therapy.
Methods: Actual and ideal weight, hight, body's area, triceps (TSF) and subscapular (SSF) skin fools, midarm (MAC), arm muscle (AMC) and wrist circumference, together with bioelectrical impedance (BI) were calculated in relation to the incidence, type and severity of enteric infections and stage of HIV disease. We treated enteric infections with antibiotics and corrected protein and calorie deficiency designing specific individual diets.
Results: 92 (48%) enteropathogenic AIDS of 191 HIV infected patients included in the study had enteric infections (one or more) and 19 (9.9%) had gut localization of neoplasia. The pathogens most frequently recovered were Candida (80.4%), Salmonella (9.8%), HSV (9.8%), Cryptosporidium (8.7%), CMV (8.7%), Giardia (6.5%). Reduced anthropometric indices and BI well correlate with microbiological, biochemical and immunological parameters.
Conclusion: Antimicrobial and nutritional therapy with supply of nutrient, vitamins and minerals can restore and maintain weight and energy in AIDS patients enhancing resistance to GI opportunistic infections.

Th.B.204 INCREASED ENERGY EXPENDITURE AND LEAN BODY MASS IN HIV INFECTED PATIENTS.

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Hôpital Bichat - Claude Bernard, Paris, FRANCE

Objective Is body weight loss in stable HIV-infected patients caused by increased Resting Energy Expenditure (REE)?

Methods : REE was measured by indirect calorimetry in 29 malnourished HIV patients : 9 ARC, 20 AIDS (28 men, 1 woman). Patients with fever or uncontrolled opportunistic infections were excluded. Lean Body Mass (LBM) was determined from the measure of skinfold thickness in four different sites. Twelve normal subjects (6 men and 6 women) and 12 anorectic patients (AN) served as normoponderal and underweight controls.

Results : In all three groups, REE was highly correlated with LBM ($p < 0.01$). However, when expressed with respect to LBM, REE was specifically increased in HIV patients ($p < 0.01$) :

	HIV	AN	N
% Ideal Body Weight	74	65	101
REE (kcal/kg LBM/day)	36.5±4.6	29.6±6.	29.4±2.6

Conclusion : An increase in REE may be responsible for the progressive wasting of HIV-infected patients, even in the absence of evolutive opportunistic infection.

Th.B.205 HYPOVITAMINEMIA B-12 IN HIV INFECTED PATIENTS.

Riera Anna, Romacha A, Cadafalch J, Gimferrer E. Servels de Medicina Interna i Hematologia. Secció Patología Orgànica. Unitat Toxicomanies. Programa Sant Pau-CITRAN. Hospital de la Santa Creu i Sant Pau. UAB. Barcelona. Spain.

It has been reported that some HIV Infected patients have low vitamin B-12 (B-12) levels.

OBJECTIVE. To assess the changes in B-12 and folic acid status in HIV infected patients.

MATERIAL AND METHODS. We have studied 60 HIV infected patients, admitted in the Internal Medicine Department during a period of 4 months. 44 were drugaddicts, 10 were homosexual, and 6 had other risk factors.

Serum B-12 and red cell folate (RCF) levels were measured. Patients with low B-12 were investigated in order to explain the low levels. Studies included Deoxyuridine Suppression Test in bone marrow (d-UST), assay for serum anti-intrinsic factor, anti-parietal cell antibodies and intrinsic factor in gastric juice. Schilling test and other gastric and intestinal studies were performed. As well, a therapeutical response to parenteral Cobalamin was tested.

RESULTS. RCF was normal in all cases but one. Low B-12 levels were found in 10 patients (16,7%). Patients with Hypovitaminemia B-12 had greater hematologic alterations but only in one case the d-UST showed a B-12 deficient pattern. A Schilling test perfomed in 6 patients was consistent with ileal malabsorption in all cases. The Hb levels increased in 3 out of 7 patients who completed the treatment.

CONCLUSION. Low B-12 levels were found in a high percentage of HIV Infected patients. Ileal malabsorption appears as one explaining factor of hypovitaminemia B-12. Some cases showed an hematological reponse to Cobalamin treatment.

Th.B.206 TRACE METAL AND VITAMIN DEFICIENCIES IN AIDS.

Malcolm, John A.* ; Tynan, P.F.* ; Sutherland, D.C.*; Dobson, P.* ; Kelson, K.* ; Carlton, J.*
*Department of Clinical Immunology, Royal Newcastle Hospital, Newcastle, Australia.

Objective: To examine the prevalence and significance of trace metal and vitamin deficiencies in AIDS.
Methods: Twenty nine patients were studied, 6 with ARC and 23 with AIDS. Mean age was 36 years (SD=12.0, range 21 to 69 years). Vitamin and trace metal levels and a range of other biochemical variables were examined. Associations were sought between deficiencies and history, and clinical and nutritional status.
Results: Only 1 patient had no abnormality. All others had at least one low serum zinc level (mean=8.7 umol/l, SD=3.04; NR=12-18). Concurrent serum albumin concentration (mean=37.3 gm/l, SD=6.15) was weakly correlated (r=0.40). There was no correlation with beta-2 microglobulin (r=0.13), nor with CD4 count (r=0.03). Zinc levels were not associated with clinical nutritional status, but in most cases levels rose with improvement in nutrition and treatment of AIDS complications. Vitamin A levels were elevated in 5/24 and low in 7/24 (lowest level 0.31 umol/l, NR=1.05-2.50). Vitamin D was normal in 14 cases, including all 7 with low vitamin A. Vitamin B12 was low in 4/5 cases, without intrinsic factor blocking antibodies. Thiamine was low in 2/16 cases. Deficiencies were not clearly related to disease stage.
Conclusion: Trace element deficiencies are common in AIDS and likely to be important. Data on copper and selenium levels and formal clinical nutritional assessments will be presented.

Th.B.207 LIPID ABNORMALITIES IN HIV INFECTION

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Wilford Hall USAF Medical Center, Lackland Air Force Base, Texas.

Objective: AIDS is characterized by a chronic wasting process resulting in severe cachexia. Non-HIV related cachexia is associated with serum hypertriglyceridemia and variable decreases in serum cholesterol. Animal models suggest these lipid abnormalities are mediated by Tumor Necrosis Factor (TNF) alpha. To understand the HIV wasting process we measured lipid levels in patients enrolled in the USAF HIV Natural History Study.
Methods: The study group consisted of 482 patients at various stages of HIV infection. Lipid levels were evaluated and grouped by CD4 lymphocyte count.
Results:

LIPOPROTEIN LEVELS BY CD4 COUNT

CD4	n	Total Cholesterol	Lipoprotein Subfractions HDL	LDL	Triglycerides
800+	138	179.9±2.9	39.5±1.0	113.8± 2.6	137.6 ± 7.3
601-800	114	177.3±3.0	37.0±1.0	114.9± 2.6	132.9 ± 6.5
401-600	117	170.3±3.4	34.8±0.9	110.9± 3.2	124.8 ± 5.4
201-400	62	*164.7±5.1	36.7±1.6	104.4± 4.4	133.75±12.0
0-200	51	*153.6±5.7	*29.6±1.4	96.8±11.7	*226.2 ±30.5

(Mean±SE) *p<0.05 by ANOVA

-Grouping by Walter Reed stage produced similar results.

Conclusion: This study demonstrates a significant increase in serum triglycerides and significant decreases in total and HDL-cholesterol levels with progressive HIV infection. This pattern circumstantially supports the role of TNF in mediating the AIDS wasting process. Future studies will correlate TNF levels, anthropomorphic studies, and longitudinal follow-up.

TRACK B: CLINICAL SCIENCE & TRIALS

POSTER DISCUSSION: NUTRITIONAL ASPECTS OF HIV INFECTION

Th.B.208

THREE MONTH EVALUATION OF A CONTROLLED HIGH CALORIE/PROTEIN INTAKE IN AIDS PATIENTS.

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OBJECTIVE: Since malnutrition is widespread in AIDS patients, this study aimed to evaluate the efficacy of a high calorie/protein intake in HIV seropositive patients with 5-10% weight loss and poor appetite over a 3 month period.

METHOD: We introduced 23 male patients fulfilling the AIDS criteria with a mean age of 31.6 years and mean initial weight 59,2 Kgs. We controlled a high calorie/protein intake with either - a liquid oral supplement or home total enteral nutrition. We measur the following parameters initially and at 10 day intervals for 3 months: Body Weight (BW), Body Mass Index (BMI), Upper mid arm circumference (AC), Triceps Skinfold Thickness (TSF), Total Proteins (TP), Albumin(ALB), Prealbumin (PRE), and Transferrin (TRF). After three months 16 patients continued therapy.

RESULTS:

	NO PATIENTS	MEAN INCREASE	NO PATIENTS	MEAN DECREASE
BW	12	4,8 Kgs.	4	2,1 Kgs.
BMI	12	1,5	4	0,6
AC	12	1,4 cms.	4	1,4 cms.
TSF	12	1,4 mms.	4	1,0 mms.
PT	8	7,5 g/L	8	3,5 g/L
ALB	8	2,0 mg/%	8	4,7 mg/%
PRE	8	7,2 mg/%	8	10,4 mg/%
TRF	6	0,9 mg/%	6	0,3 mg/%

CONCLUSION: The increase in the parameters studied indicated the efficacy of early nutritional intervention in these patients. This effect may be important in increasing cell mediated immunity and reducing infections. Decreased values correlate with disease progression and opportunistic infections, reinforcing the need for effective nutritional intervention.

Th.B.209

METABOLIC DISTURBANCES IN AIDS: THE ROLE OF CIRCULATING INTERFERON ALPHA (IFNa) AND TUMOR NECROSIS FACTOR (TNF) IN THE HYPERTRIGLYCERIDEMIA OF AIDS.

C Grunfeld, MY Pang, W Doerrler, JK Shigenaga, DP Kotler and KR Feingold. University of California, San Francisco, CA, USA and Columbia College of Physicians and Surgeons, New York, NY.

AIDS is characterized by increased serum triglycerides (TG), elevated circulating levels of cytokines and depletion of body cell mass (wasting). It is thought that cytokines mediate the metabolic disturbances of infection. We measured triglyceride and cytokine levels, triglyceride clearance and lean body mass in patients with AIDS, subjects with HIV infection but without AIDS (HIV+), and seronegative controls (CON). IFNa was significantly elevated in AIDS ($p<.001$ vs CON). In contrast, TNF levels were not elevated in AIDS. There was no relationship between circulating IFNa or TNF and wasting. There was a significant correlation between serum IFNa and TG in AIDS and HIV+ ($r=.45$, $p<.002$). There was no relationship between IFNa and serum cholesterol ($r=.04$, NS). There was no correlation between TNF levels and serum TG. The clearance of TG-rich particles was decreased in AIDS. An even more significant correlation was found between IFNa levels and TG clearance in AIDS and HIV+ ($r=.71$, $p<.001$). These studies suggest that IFNa, which has previously been shown to modulate lipid metabolism *in vivo* and *in vitro*, may produce the increased serum TG found in AIDS by decreasing the clearance of TG-rich lipoproteins.

Th.B.210

EVALUATION OF THE EFFECTIVENESS OF MEGESTROL ACETATE AS INDUCER OF APPETITE, WEIGHT GAIN AND IMPROVED NUTRITION IN ARC PATIENTS

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Objective: To determine the changes in nutritional, immunological and clinical status induced by an 8 week course of [illegible] mg/day Megestrol Acetate (MA) in ARC patients with weight loss greater than 5% when [illegible] not patients are on AZT.

Methods: Community-based, double blind, placebo/MA cross-over design with a baseline period and two 8 week random treatment sequences separated by 4 week washout. Sequential clinical [illegible] dietary recall, anthropometry, total body impedance (TBI), nutritional biochemical and immunological evaluations were done.

Results: 27 male subjects met admission criteria. Eleven are enrolled or have completed the study. Dropouts except for one (noncompliance) are unrelated to MA/placebo intake. Karnofsky performance scales have improved in 2 of 11 subjects; increases in food intake in 9 of 11 (mean 14[illegible]% Recommended Dietary Allowances); weight gain in 7 of 11 subjects, with mean gains in weight, adiposity and lean body mass of 2.3, 1.0 and 1.2 kg respectively. All subjects were anergic to [illegible] skin tests at baseline and two subjects developed a cutaneous response (greater [illegible] 2 mm) to at least one antigen during the study. No marked changes in nutritional biochemistries have been noted so far.

Conclusion: This study [illegible] improvement in all spheres has been noted at some point in study subjects. [illegible] have developed a complication of HIV infection.

Partially funded by the U. of [illegible] Taskforce on AIDS and Bristol-Myers USPG.

Th.B.211

A RETROSPECTIVE STUDY ON THE EFFECT OF MEGACE ON BODY WEIGHT IN HIV PATIENTS, WHO HAD LOST MORE THAN 5% BODY WEIGHT: ITS EFFICACY AND ITS LIMITATION AS A FORM OF TREATMENT FOR WEIGHT LOSS.

W. Chen*; S. Brown*; B. Gazzard*; L. Howard*, *Westminster Hospital London.

OBJECTIVE: To evaluate the effect of Megace on body weight in HIV patients with or without gastrointestinal disturbance.

METHOD: Twenty-five patients, who had lost more than 5% body weight, given Megace (40-169mg) were weighted and reviewed 3 months prior to treatment and monthly thereafter.

RESULT: 3 patterns of weight change were observed: A, consistent weight-gain over 4 months (more than 5% of pre-treatment body weight); B, transient weight-gain followed or preceded by weight-loss; and C, no weight gain or continuing weight-loss.

Patients with gastrointestinal symptoms (diarrhoea, oesophagitis or severe abdominal pain) were seen in only 1 out of 8 in group A (this patient had giardiasis and responded to Metronidazole); 8 of 10 (80%) in group B; and 5 of 7 (72%) in group C. Treatment of the underlying gastrointestinal disease produced significant weight gain (more than 5% body weight) in 3 patients.

Patients with visceral Kaposi's sarcoma (2) or MAI infection (2) were only seen in group C.

CONCLUSION: Megace can produce consistent weight gain in patients without gastrointestinal disease, visceral Kaposi's sarcoma or atypical mycobacterium infection. Successful treatment of underlying gastrointestinal disease also produces weight gain in patients who had previously not responded to Megace.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER DISCUSSION: AIDS IN THE CORPORATE WORKPLACE

Th.D.212 AIDS-EDUCATION AND PREVENTION IN THE WORKPLACE IN UGANDA

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*Federation of Uganda Employers, Uganda.
** Director, AIDS Control Programme, Uganda.

OBJECTIVE: The available data show that 85% of AIDS cases in Uganda is between 15 years to 55 years. This is the age that is in meaningful employment. In the absence of the drug nor vaccine against AIDS, in an effort to curtail the spread of AIDS, the employer has to devise means of letting the available information on AIDS and counselling reach the employees.

METHOD: AIDS-EDUCATION and Prevention in the workplace in Uganda is being done in stages by FUE. The initial stage involved recruiting and training of Staff and the procurement of logistics. Then the training of Trainers in selected Companies who in turn trained peer educators in their respective Companies. These educators spread the information and distributed materials like posters and condoms.

RESULTS: By multiplier effect, information has reached most of the workers in the selected Companies and beyond. This has demystified myths that people initially associated with AIDs.

Th.D.213 HIV INFECTIVITY PROGRAM ON TAP AIR PORTUGAL

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*Health Department(Director A.Sa - Leal), Tap Air Portugal,Lisboa,Portugal

At present, HIV infectivity in workplace is not only a medical problem since it concerns as well social, political, cultural, ethical and legal aspects.
Any approach of workplace HIV infectivity must involve an increase in preventive measures in order to avoid new seropositives and protect against discrimination.
The principles of Tap Air Portugal HIV infectivity prevention program respect these aspects, bearing in mind the peculiar risk groups of a commercial airline population.
The program includes a primary prevention approach involving education, formation and information on HIV infectivity and secondary prevention activities centered on periodic or admission medical exams and on the epidemiologic survey actions.
Occupational Health Services have a primordial position to promote health. Dealing with a permanent population the programed activities have a better chance of success.

Th.D.214 WHY DO PERSONS WITH HIV-RELATED ILLNESS STOP WORKING?

Yelin, Edward H; Greenblatt, R; Hollander, H; McMaster, J.
University of California, San Francisco, USA.

Objective: To determine the risk factors (RF) for work disability (WD) among persons with HIV-related illness (HIV). WD is defined as total cessation of employment among those working at onset of illness. The RF analyzed include: symptoms and diagnoses of HIV, demographics, and the physical requirements and flexibility of the job held at onset.
Methods: Sampling: All consenting persons attending the UCSF AIDS Clinic during a random sample of clinic sessions between October 1988 and September 1989 (n=193). Data collection: Structured telephone survey about the RF, work status at onset and on date of interview (INT). Data analysis: Cox proportional hazards model to estimate impact of RF on time to WD.
Results: Eighty-six % of persons with HIV (n=166) worked prior to onset: 40% (n=77) worked at INT, a decline of 54% in the proportion working. Hours worked/week declined by 59% to reflect the 93 with WD and the 21 with reduced hours. Among all working at onset, 10% stopped working by 100 days after first symptom, 28% by 1 year, 67% by 4 years, and 100% by 10 years. The proportional hazard (PH) associated with each RF for WD follows (ns=not significant: + = higher rate of WD; - = lower rate of WD): Age, gender, race, diagnosis of ARC, HIV risk status, duration of job: PH=0=NS; diagnosis of AIDS: PH= +2.73; physically demanding work: PH=+1.09 for each of 11 measures; member of labor union: PH = -.76; flexible work rules: PH =-.93 for each of 9 measures.
Conclusions: The nature of the job held at onset of HIV affects the work disability rate, with those in physically demanding jobs more likely to leave work, those in unions and with flexible work rules less likely. Referring persons with HIV to jobs conducive to maintaining employment may slow the onset of WD, especially if done before the illness is classifiable as AIDS.

Th.D.215 TRAINING MANAGERS AND SUPERVISORS ON THE "LAW OF AIDS" IN THE UNITED STATES

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A key factor in the American civil rights revolution of the sixties and early seventies was not just the passage of federal and state anti-discrimination legislation but corporate America's response to those legal mandates and proscriptions. To properly recognize the rights of HIV-infected employees, as well as to prevent expensive and time-consuming work stoppages and litigation, it is essential that corporations design training programs for managers and supervisory personnel which include at least a summary review of the "law of AIDS" in the United States. Such program modules should feature pro-active discussions of the 1973 Federal Rehabilitation Act (including the often complex principles of "reasonable accommodation" as well as the Arline and Chalk decisions), applicable state and local handicap statutes, privacy statutes, defamation and other potentially relevant tort laws, any applicable laws against sexual preference and/or medical condition discrimination, ERISA and wrongful termination law. Such programs have proven on several occasions to be invaluable to those few corporations implementing them, both in terms of crisis control and, more importantly, crisis prevention. Surveys indicate, however, that only a small percentage of American corporations have implemented HIV-related policies, and far fewer have trained managers on how to respond to HIV in the workplace. Based on the numbers of Americans (most of whom are also now active employees) who are HIV-infected and who are projected to become ill in the next several years, and given the clear and demanding requirements of the ADA, it is, more than ever, essential that companies train their managers on the law of AIDS.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER DISCUSSION: AIDS IN THE CORPORATE WORKPLACE

Th.D.216 AN EVALUATION OF A WORKPLACE AIDS EDUCATION INTERVENTION PROGRAM FOCUSING ON HIV KNOWLEDGE LEVELS AND ATTITUDES TOWARD GAY MEN AND PEOPLE WITH AIDS

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Objective: The effectiveness of the Whitman-Walker Clinic's "AIDS in the Workplace" intervention program was evaluated.
Methods: Prior to attending the "AIDS in the Workplace" workshop developed and presented by staff members of the Whitman-Walker Clinic (D.C.'s primary community-based AIDS service agency), 289 federal and privately-employed workers in Washington, DC completed a 26-item pre-test survey to measure their HIV knowledge and attitudes toward persons with AIDS and gay men. A separate group of 285 subjects completed the same questionnaire after attending the workshop.
Results: Demographic analyses (chi-squares) showed that the pre- and post-test groups did not differ significantly in regards to gender, race, education or age. Comparisons of knowledge and attitude scores (t-tests) suggested that the intervention led to significant improvements in knowledge about HIV/AIDS ($p<.05$). In addition, post-test subjects exhibited a significantly more positive and compassionate attitude towards gay men and persons with AIDS ($p<.05$). Male subjects and those with less than a college education demonstrated the most improvement from the intervention, regardless of the race or age of the subjects ($p<.05$).
Conclusion: The intervention appears to be an effective means of improving knowledge and attitudes. Follow-up surveys of workshop participants should be conducted to evaluate the long-term impact of this program.

Th.D.218 LARGE INCREASE IN HEALTH CARE UTILIZATION BY HIV INFECTED EMPLOYEES AT A COMMERCIAL BANK IN KINSHASA, ZAIRE

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*Projet SIDA, Kinshasa, Zaïre, **Massachusetts Institute of Technology, Cambridge, Massachusetts, USA, ***Banq Comm Zaire, Kinshasa, Zaire

Objective: To evaluate the impact of HIV infection on health care utilization at large service corporation in Zaire.
Methods: We used a previously identified cohort of HIV positive (ELISA/Western Blot) employees (n=90) at a large bank in Kinshasa and selected a seronegative control cohort of equal size, individually matched by age, sex and employee grade. Their medical records for 1987 and 1988 were retrospectively abstracted. Data collected included all prescriptions for medications, which were then grouped into 9 therapeutic categories; diagnostic tests performed; outpatient visits; days hospitalized and days medically excused from work.
Results: HIV positive employees had higher consumption in all categories. Significant increases were observed for total medications (31%), antidiarrheals (280%), antibiotics (160%), vitamins (39%), laboratory and diagnostic tests (34%), outpatient visits (34%), days hospitalized (5200%), and work absences (710%).
Conclusion: By law, health care benefits are provided to employees and their immediate families by all large corporations in Zaïre. These benefits universally constitute a large percentage of labor costs; in some companies, though not this one, they are greater than wages. In many Zaïrian companies, HIV prevalence is already high (6.3% in this bank) and AIDS is the leading cause of death (53% of all deaths over the last two years in this bank). Our results show that HIV infection is associated with significant increases in health care consumption and therefore with significantly increased corporate spending on health benefits. Further studies are needed in different sectors of the economy and to examine other costs to industry of HIV infection not directly related to health care.

Th.D.219 AIDS PREVENTION IN BRAZILIAN ENTERPRISES

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Context: Nearly 20million individuals work in the approximately 3 million enterprises in Brazil. These individuals are predominantly in the age group 18-48, in which the majority of AIDS cases in the country falls. This fact led the STD/AIDS Division of the Ministry of Health in Brazil to start out actions targeted at the said group.
Objective: To promote and evaluate educational activities for the prevention of AIDS in the enterprises and to reduce discrimination in regards to the AIDS carrier in the work setting.
Evaluation: within Brazilian enterprises with over 100 employees, 10.000 enterprises were randomly selected. To these, the Division sent a questionnaire aiming at abtaining information on how prevention and control of AIDS was being carried out. The questionnaires returned--just under 7 000-- showed that (a) the majority of the enterprises are uninformed about the national legislation on AIDS, and (b) the enterprises lack educational materials on AIDS.
Intervention: The STD/AIDS Division produced educational materials for health promotion related to AIDS for the enterprises. The said materials were used in forming tutors and multipliers (a total of 156) from all states, who, in their turn, will train tutor and multipliers in the enterprises within a 3-year term.

Th.D.220 THE IMPACT OF WORKPLACE AIDS EDUCATION ON ATTITUDES TOWARD PEOPLE WITH HIV/AIDS

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Objective: To measure the impact of workplace AIDS education on employee knowledge and attitudes about people with AIDS and people at risk for HIV infection.

Methods: We developed a two-hour curriculum, augmenting our standard "AIDS 101" curriculum with additional materials on AIDS-related prejudice, discrimination, and homophobia. The curriculum was presented to 162 municipal employees in 1989. A brief questionnaire tested AIDS knowledge and attitudes before and after the training.

Results: Employees answered 76% of knowledge questions correctly before and 90% correctly after the training. Before the session, 31% of employees believed "gays are the cause of the AIDS epidemic," 50% said they had "little sympathy for IV drug users who get AIDS," and 34% said they "would not want to work with a person with AIDS." After the training, these percentages decreased to 16%, 46%, and 19% respectively. The most negative attitudes were toward IV drug users with AIDS; these attitudes showed the least change.

Conclusion: Although factual knowledge about HIV/AIDS may be high among municipal employees, negative attitudes persist toward people with AIDS and those most at risk for HIV. Education can significantly reduce these negative attitudes, but myths and stereotypes about IVDUs deserve special attention.

Th.D.221 THE "OPEN-BOX" CONDOM POLICY IN THE WORKPLACE IN AFRICA: EFFECTS ON ATTITUDES AND PRACTICES

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OBJECTIVE: To test whether making condoms easily, reliably, and anonymously available to employees in workplaces in Dar es Salaam, in the absence of active promotion or counseling, leads to changed attitudes and practices in regard to sexual behavior of urban African men and women.
METHODS: Starting in mid-1988, several international agencies introduced condoms into the workplace by placing open boxes of condoms on desks, in bathrooms, and in health clinics. Other than a general lecture/discussion on AIDS, no promotion or counseling was undertaken. In January 1990, an anonymous self-administered questionnaire in Kiswahili was issued to all Tanzanian employees at four workplaces. The questionnaire focused on attitudes and practices concerning condoms. Focus groups are planned to confirm findings from the questionnaires.
RESULTS: Preliminary results indicate that most employees are using condoms for extramarital relationships, but not for premarital ones. Many use condoms despite harboring misconceptions about them. Less than 5% use condoms for family planning purposes.
CONCLUSION: Simply displaying and maintaining open boxes of condoms in various areas around urban workplaces may lead to significant increases in safe sexual practices in Africa at low cost.

Th.D.222 STILL ON THE JOB; THE ARMY'S EXPERIENCE WITH THE WORKPLACE MANAGEMENT OF THE HIV+ SOLDIER

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Objective: Examines the effect of the Army's AIDS policy on the military worksite.
Methods: Thirteen HIV+ soldiers were followed from diagnosis (late 1986, early 1987) until late November 1988. Initially diagnosed in Europe, these male soldiers and their commanders were interviewed pre-transfer to a US post (T1), one year later (T2), and again nine months later (T3). Interviews were also conducted with mental health personnel assigned to the case. The issues examined: 1) job performance; 2) adaptation to the diagnosis; 3) work-site adjustment; 4) effect of mandated reassignments; 5) management concern of unit leaders.
Results: HIV+ soldiers concerns: 1) effect of the diagnosis; 2) career restrictions, work role and continued performance, and 3) diagnostic confidentiality. Commanders concerns: 1) Poor soldier performance, 2) lack of co-worker acceptance, and unmanageable medical psychological problems.
Conclusion: Information available to commanders did not address day-to-day management issues. Commanders felt they lacked the skills to balance the demands of the HIV+ soldier with the demands of other soldiers. Educational needs for both HIV+ and HIV- soldiers and their leaders are discussed.

Th.D.223 WORKPLACE TRAINING IN AN INTERNATIONAL NON-GOVERNMENTAL ORGANISATION

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OBJECTIVE: To describe AIDS workplace training in a multicultural international organisation, including policy development, in which non-discrimination and integration of AIDS activities into staff's on-going work are stressed.
METHODS: Using extensive interviews and consultation with staff members from all regions of the world, a workplace training pack and policy were developed. All staff were trained in fundamentals of AIDS using a slide series and self-questionnaire. Case studies formed the basis of discussions about AIDS at work and HIV infection in international delegations. The potential impact of AIDS on existing programmes of the organisation was assessed.
RESULTS: Attendance at training sessions was high, and staff expressed a high level of understanding of and satisfaction with the training. The organisation is developing strategies for AIDS within its existing programmes. A non-discriminatory workplace policy has been accepted by consensus.
CONCLUSION: Workplace training in international organisations is essential in order to encourage all staff to act in a non-discriminatory way towards fellow employees, many of whom run a high risk of HIV infection. Multi-cultural workplace training can be effective in enabling staff to include AIDS activities in their work. A workplace policy is essential in international organisations for both staff and delegates.

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Drug Development

Th.A.225 MOLECULAR DYNAMICS SIMULATIONS OF HIV-1 PROTEASE MONOMER AND BINDING OF INHIBITORS TO THE DIMER IN SOLUTION

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Objectives. The goals of this investigation were to simulate motions of one of the 99-residue subunits of the HIV-1 protease homodimer and to analyze binding of inhibitors to the active dimeric enzyme.
Methods. The X-ray crystallographic structure of HIV-1 protease determined by Wlodawer et al. [Science, 245, 616-621 (1989)] was modified slightly to correspond to the exact sequence of the enzyme from the SF2 isolate. Simulations of motion of this trial structure after energy minimization in vacuo or in water on a time scale of hundreds of ps at 300 and 400 K were performed using CHARMM (Chemistry at HARvard Molecular Mechanics).
Results. For the monomer in solution at 300 K, residues destined to form the dimeric interface displayed larger excursions from their original positions and flexed more than did other surface residues or those in the core. Generally, the overall rate of divergence from the original structure decreased more with time at 300 K than at 400 K. Simulations of inhibitor binding to the dimer in vacuo mostly gave structures in which the ends of the flaps rotated 90° and some covered the same volume seen in a crystal structure of an enzyme-inhibitor complex [Miller et al., Science, 246, 1149-1152 (1989)], with only the ends of the flaps interchanged.
Conclusions. Reorientation of interfacial residues from their positions in the monomer of HIV-1 protease can occur on a subnanosecond time scale. The flaps of HIV-1 protease are sufficiently flexible to close in a variety of ways to accommodate a number of different structures of substrates and inhibitors. Analysis of these results is being used in drug design.

Th.A.226 INHIBITORS OF HIV PROTEASE

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OBJECTIVE: Design, synthesis and biological evaluation of protease inhibitors as potential therapeutic agents for the treatment of HIV infection.
METHODS: An analysis of the primary cleavage sites in 'gag' and 'gag-pol' suggested a series of small synthetic substrates for the virus encoded enzyme. The design of inhibitors involved the concept of transition-state analogues. The potency of inhibitors against HIV-1 and HIV-2 proteases was determined in a colourimetric assay for N-terminal proline and their antiviral activity was measured in HIV-1 (strain RF) infected C8166 cells.
RESULTS: A protected heptapeptide was found to be the optimal substrate. Inhibitors contain a Phe.Pro transition-state moiety in which the carbonyl group of the scissile bond has been replaced by a hydroxyethylene function. Systematic modification of lead structures afford potent enzyme inhibitors (IC_{50} 1nM) which have good antiviral activity (IC_{50} 1-50nM). Polar groups were introduced in an attempt to enhancne water solubility but these modifications reduced both enzyme inhibitory and antiviral activity.
CONCLUSION: Potent inhibitors of HIV protease with good antiviral activity have been identified. Optimal activity was obtained with non-polar compounds. These substances have potential as therapeutic agents for the treatment of AIDS.

Th.A.227 A FLUOROQUINOLONE(DR-3355) PROTECTS HUMAN LYMPHOCYTE CELL LINES FROM HIV-1-MEDIATED CYTOTOXICITY.

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Objective : To analyze the function of the l-isomer of ofloxacin(DR-3355) to protect HIV-1-infected human lymphocyte cell lines.
Methods : The d-isomer(DR-3354) or l-isomer(DR-3355) of ofloxacin was added to the medium in which HIV-1-infected CEM cells were inoculated. Viable cell number, viability, HIV antigen-positive cells, and CD4 surface antigen were monitored. Viable cell number and viability were measured by trypan blue dye-exclusion. HIV antigen-positive cells were determined by indirect immunofluorescence microscopy using serum from an HIV-1-infected asymptomatic carrier. The transition of CD4 surface antigen of infected cells was analyzed by flow cytometry.
Results : Infection of the human lymphocyte CEM cell line with the HIV-1 results in complete cell death. But, l-isomer of ofloxacin, DR-3355 protected the infected cells from HIV-1-mediated cytolysis. The d-isomer(DR-3354) was about 50-fold less effective than the l-isomer. The surviving CEM cells do not express viral antigens, and have lost CD4 surface antigens. Uninfected CEM cells treated with DR-3355 did not alter CD4 expression. As expected, HIV-1 infection of pre-treated cells led to a complete loss of viability. Essentialy, the same results were obtained for MT-4 cells except for higher HIV antigen positibity.

Th.A.228 INHIBITION OF HIV REPLICATION AND CYTOPATHICITY IN VITRO BY SYNTHETIC SOLUBLE MELANINS

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Objective: To study the antiviral activity of a variety of synthetic soluble melanins against HIV-1 and HIV-2 *in vitro*.
Methods: Soluble melanins were synthesized by spontaneous oxidation of L-dopa, L-dopamine, norepinephrine and 5-hydroxytryptamine, and by chemical oxidation of L-tyrosine. Their antiviral activities were studied using MT-2, H9, and phytohemagglutinin-stimulated human T cells with HTLV-III_B, HTLV-III_{RF}, and HIV-2_{ROD} viruses. The ability of melanins to block gp120-CD4 binding was assessed by flow cytometry. Syncytium inhibition was measured by mixing MT-2 cells with chronically-infected H9 cells. Immunofluorescence asssay, reverse transcriptase assay and vital dye uptake were used as measures for infection end-point.
Results: All melanins blocked infection with cell-free virus and interfered with HIV-induced syncytium formation and cytopathic effects. Effective concentrations of 0.3-10 ug/ml had no cell toxicity. L-tyrosine and L-dopa melanins also prevented the HIV-1 surface glycoprotein, gp120, from binding to its receptor, CD4, on the surface of target cells.
Conclusions: Soluble melanins are potent inhibitors of HIV *in vitro* and possibly should be considered for therapeutic development.

Th.A.229 ANTI-HIV ACTIVITY OF PORPHYRINS AND PHTHALOCYANINES IN VITRO

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Objective: To assess the anti-HIV effect of porphyrin and phthalocyanine derivatives for development of possible new anti-HIV drugs.
Methods: MT-4 cells or SUP-T1 cells, (2×10^4 cells) were infected with HIV-1 at 10 to 20 $TCID_{50}$. Then HIV-infected cells and non-infected counterparts were cultured in the presence or absence of various concentrations of compounds for 5 or 7 days at 37C. The cellular activity was measured by the color reaction of tetrazolium salt.
Results: 1) Poly-sulfate substituted phthalocyanines such as phthalocyaninetetrasulfonic acid tetrasodium salt-Ni or -Cu (ED_{50}=1.0ug/ml, 3.1ug/ml respectively), phthalocyanine-3,4',4'',4'''-tetrasulfonic acid tetrasodium salt-Cu (ED_{50}=0.5ug/ml), and Reactive Blue 15 (RB-15)(ED_{50}=1.5ug/ml) were found to be most potent in suppressing HIV cytotoxicity. Three Porphyrins, Hemin, Chlorophyllin-Tetrasodium salt-Cu, and Biliverdin also inhibited cytopathogenicity of HIV-1 on MT-4 cells up to 73% at 8.3ug/ml, 56% at 16.7ug/ml, 62% at 22.0ug/ml. However, dosage levels of these porphyrins slightly higher than the effective dosages were toxic to cells. 2) Phthalocyanines mentioned in 1) inhibited the HIV-1 associated reverse transcriptase activity (ED_{50}=0.2 to 0.5ug/ml). 3) The RB-15 prevented syncytium formation when SUP-T1 (1×10^6 cells) and H9/HTLV-III_B (0.2×10^6 cells) were cultured with 100ug/ml RB-15 for 18 hrs.
Conclusion: New class of anti-HIV agents (porphyrins and phthalocyanines) have been identified. Further studies on the molecular mechanism of the action are in progress to develop more effective anti-HIV agents.

Th.A.230 PAPAVERINE HYDROCHLORIDE: EFFECTS ON HIV REPLICATION AND T-LYMPHOCYTE CELL FUNCTION

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Objective: It was previously reported that the replication of viruses such as cytomegalovirus and measles were sensitive to papaverine (PAP). In this report the effect of PAP on HIV replication and T lymphocyte cell function were investigated.
Methods: MT-4 cell line was infected with HIV strain HTLV-IIIb with $TCID_{50}$ of .002-0.005/cell for 1 hour. The cells were then incubated in the presence or absence of PAP (1-30uM). At selected times post-infection HIV replication was assessed by determining reverse transcriptase activity and HIV P24Ag of culture supernatants. For T cell function, peripheral blood mononuclear cells (PBMC) from normal donors were subjected to PHA or CMV Ag in the presence or absence of PAP (1-30uM). At selected times after culture initiation the proliferative response of PHA and CMV Ag was determined by ^{3}H-thymidine uptake, and the interferon (IFN) gamma and IL-2 responses by radioimmunoassay.
Results: PAP significantly inhibited HIV replication in a dose dependent manner by more than 99%. PAP's effect on the PHA induced proliferation was inhibited while CMV Ag induced proliferation appeared enhanced, particularly at 1-10 uM range. PAP enhanced PHA IFN response at doses of 1-10 uM and CMV Ag IFN response at doses of 1-3 uM. Higher doses were inhibitory. PAP did not affect IL-2 levels.
Conclusions: PAP inhibits HIV replication and had a differential effect on T cell activation. It needs to be determined whether lower doses of PAP that are immune enhancing would enhance AZT-induced inhibition of HIV replication.

Th.A.231 THE SYNTHESIS, BIOLOGICAL EVALUATION, AND STRUCTURE ACTIVITY OF AMIDO PHOSPHOCHOLINES AND RELATED ANALOGS AS ANTI-HIV-1 AGENTS

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Objective: The aim of this research is to develop and synthesize ether lipid analogues as anti-HIV-1 agents which inhibit viral assembly at the plasma membrane. The development of agents acting via mechanisms other than the inhibition of reverse transcriptase should act complementary to AZT and will be tested for such cooperativity.
Methods: A series of well defined and novel thio and amido ether lipids containing either a phosphocholine or a quaternary nitrogen functionality have been synthesized and evaluated for their anti-HIV-1 activity using a syncytial plaque assay.
Results: Structure-activity studies have identified (±)-3-octadecanamido-2-ethoxypropan-1-ol phosphocholine as the most active analogue (ID_{50} = 0.16 uM). In addition, this concentration is 84 times lower than the ID_{50} value determined for CEM-SS cell growth inhibition. Combination studies of this analogue with AZT have shown a greater than additive effect, with subsequential lowering of toxicity.
Conclusion: Based upon these results synthetic modifications of the ether lipids and AZT have been undertaken and will be discussed.
Partial support NIH grant # CA42216.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.232 EFFECTS OF GLQ223™ ON SYNTHESIS AND ACCUMULATION OF HIV AND CELLULAR PROTEINS IN ACUTELY INFECTED T CELLS, IN VITRO

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Objective: To evaluate the effects of GLQ223™ treatment on synthesis and accumulation of HIV and cellular proteins in acutely infected T cells in vitro.
Methods: Transformed T cells (VB cell line) were acutely infected with HIV-1_{DV} and treated with GLQ223™ or, in some experiments, with the protein synthesis inhibitor cycloheximide (CHX). The prevalence of infected cells was determined by HIV p24 immunohistochemistry. Cells were pulsed with radiolabelled amino acids at various times post-infection and synthesis and accumulation of viral and cellular proteins were evaluated by tricholoracetic acid precipitation and scintillation counting or by gel electrophoresis and fluorography of total cell lysates or radioimmunoprecipitates from cell lysates.
Results: GLQ223™ treatment reduced the amount of HIV p24 antigen in culture supernatants at doses which did not comparably alter total cellular protein synthesis by infected or uninfected cells. In contrast, CHX treatment produced corresponding decreases in both HIV p24 levels and total cellular protein synthesis at all concentrations tested. After pulsing with radiolabelled amino acids, fluorography of total cellular proteins and radioimmunoprecipitates of HIV proteins from cell lysates revealed dose-dependent decreases in synthesis and accumulation of viral but not cellular proteins, under the treatment conditions tested. All immunoprecipitated HIV proteins were comparably affected. HIV p24 immunohistochemistry confirmed the inhibitory effect of GLQ223™ treatment on viral antigen expression, with dose dependent decreases in prevalence and intensity of p24 expression seen in treated cultures.
Conclusions: GLQ223™ treatment of acutely HIV-1_{DV} infected cells resulted in preferential dose-dependent inhibition of HIV antigen expression. The molecular mechanisms which underlie these apparent selective inhibitory effects are under investigation, but do not appear to be attributable to the type of generalized inhibition of (both viral and cellular) protein synthesis seen with CHX.

Th.A.233 EFFECTS OF GLQ223™ ON HIV AND CELLULAR RNA SPECIES FROM ACUTELY INFECTED T CELLS

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Objective: Evaluation of the effects of GLQ223™ treatment on HIV-1 and cellular RNA species from acutely infected T cells.
Methods: Transformed T cells (VB cell line) were acutely infected with HIV-1_{DV} and treated with GLQ223™. At various times post-infection, RNA from paired non-infected and HIV-infected cultures was extracted. After electrophoresis, total extracted RNA (predominantly rRNA) was visualized by ethidium bromide staining and HIV RNA was detected by Northern blot hybridization. In some experiments, isolated RNA from infected or uninfected, GLQ223™ treated or untreated cells was subjected to mild aniline treatment. In other studies, isolated RNA from GLQ223™ untreated, infected or uninfected cells was subjected to in vitro GLQ223™ treatment.
Results: At 24-48 hours post-inoculation, there were no differences appreciable by ethidium bromide staining in amounts or character of RNA extracted from comparable numbers of cells in infected and uninfected, GLQ223™ treated or untreated cultures. Northern blot analysis showed concentration dependent decreases in characteristic HIV RNA species detectable in RNA from treated infected cultures, while no changes in mRNA for a representative cellular gene were noted. Following aniline treatment of RNA isolated from GLQ223™ treated cells, a diagnostic 410 base fragment derived from 28S rRNA was seen, consistent with known effects of trichosanthin (the active ingredient in GLQ223™) and related compounds on rRNA. In vitro GLQ223™ treatment of isolated RNA derived from HIV-infected, non-GLQ223™ treated cells resulted in degradation of HIV RNA species as assessed by Northern blot, with an apparent relative preferential degradation of HIV RNA species compared to other RNA species tested.
Conclusions: GLQ223™ inhibits HIV replication in acutely infected cells. Direct and indirect effects affecting synthesis of viral proteins, and synthesis, processing and/or stability of viral RNA may contribute to the mechanisms responsible for the observed antiviral effects.

Th.A.234 IMMUNOADHESIN-ANTIBODY HYBRIDS FOR AIDS THERAPY

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The human immunodeficiency virus (HIV) uses the cell surface protein CD4 as a receptor for infection. Cells expressing CD4 are mainly T helper lymphocytes, which are decreased in number after infection. This impairs the host's immunity, leading to development of the acquired immunodeficiency syndrome (AIDS). Although an antibody response to HIV is mounted by the infected individual, for unknown reasons it does not halt the course of events leading to disease. In an attempt to create more potent agents, soluble CD4 and CD4-immunoglobulin molecules, also known as immunoadhesins, have been generated; they neutralize HIV by binding to its envelope protein, gp 120, in vitro. Clinical trials are under way.

We describe the generation of immunoadhesin-antibody hybrids to confer the specificity for gp 120-expressing cells on cytotoxic T lymphocytes of any specificity.

A mouse hybridoma cell line that secretes IgG1 antibodies to human CD3 was transfected with the gene that encodes a fusion protein consisting of human CD4 and the mouse $\gamma 1$ constant region. The transfectoma cell lines obtained secrete monospecific antibodies to CD3 as well as the immunoadhesin-antibody hybrids.

After isolation of the hybrid molecules from the mixture produced by our transfectomas, we expect any human cytotoxic T lymphocyte loaded with these molecules to be capable of killing gp 120-expressing cells.

Th.A.235 THE SULFATED SUGAR ALPHA-CYCLODEXTRIN SULFATE (A-CDS) IS A POTENT ANTI-HIV AGENT, HAS MARKED SYNERGISM WITH AZT, AND EXHIBITS LYMPHOPROLIFERATIVE ACTIVITY.

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Objective: To determine if A-CDS exhibits anti-HIV activity and acts synergistically with AZT.
Methods: A-CDS was evaluated for its inhibitory effect on HIV-1_{BRU} (LAV-1) replication and compared with other sulfated sugars like sodium pentosan polysulfate (PPS) and beta-cyclodextrin (B-CDS). Normal human peripheral blood mononuclear cells were used as target cells for infection and were exposed to the drugs pre and postinfection. Virus replication was tested by reverse transcriptase and p24 antigen tests and toxicity to the cells was measured by the trypan blue exclusion test.
Results: All three drugs had distinct anti-HIV activity wherein A-CDS was the most potent. A-CDS, B-CDS, and PPS were also tested for their inhibitory effect on reverse transcriptase reaction in vitro. PPS inhibited the reverse transcriptase reaction at 4.0 ug/ml and above whereas B-CDS and A-CDS did not. The drugs were not cytotoxic, and PPS and B-CDS exhibited higher lymphoproliferative activities than A-CDS. When tested for their anti-HIV synergism with AZT all drugs showed profound synergism. Only additive effects were observed between sulfated sugars.
Conclusion: A-CDS due to its potent anti-HIV activity, marked synergism with AZT, lymphoproliferative action and lack of cytotoxicity may serve as a valuable agent in the treatment of AIDS.

Th.A.236 SULFATED POLYMERS ARE POTENT INHIBITORS OF HIV REPLICATION AND GIANT CELL FORMATION

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Objective: Since sulfated polysaccharides, e.g. dextran sulfate, are potent inhibitors of HIV *in vitro*, we investigated several synthetic sulfated polymers, namely sulfated polyvinyl alcohol (PVAS) and copolymers of acrylic acid with sulfated vinyl alcohol (PAVAS), for their anti-HIV activity.
Methods: Anti-HIV activity was determined 5 days post-infection by a tetrazolium-based viability assay in MT-4 cells. Giant cell formation, virus antigen expression and virus adsorption were determined in different cell lines (MT-4, CEM, MOLT-4 and HUT-78) and analyzed by laser flow cytofluorography.
Results: The 50% inhibitory concentrations (IC_{50}) of PAVAS (mw: 5,000, 10,000, 20,000) and PVAS (mw: 20,000, 40,000) (degree of sulfation : 24%-80%) for HIV-1 and HIV-2 replication in MT-4 cells ranged from 0.2 to 0.4 µg/ml. Comparable IC_{50} of PAVAS and PVAS of these compounds were obtained for HIV antigen expression in CEM cells. The IC_{50} of PAVAS and PVAS for giant cell formation was about 2 µg/ml, whereas dextran sulfate had an IC_{50} value of 25-30 µg/ml. The sulfated polymers completely blocked HIV-1 adsorption at a concentration of 4 µg/ml.
Conclusion: PAVAS and PVAS are highly potent inhibitors of HIV replication and HIV-induced giant cell formation *in vitro*. They block virus adsorption to the cells.

Th.A.237 INHIBITORY EFFECT OF CHINESE HERBAL MEDICINES ON HIV-1 INFECTION IN VITRO

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Objective: To screen for HIV-1 inhibitory activity in Chinese herbal medicines which are known to be non-toxic in clinical use.
Methods: Each of 56 Chinese herbal extracts was tested in vitro to determine the toxic dose on cultured T cells. Sub-toxic doses of the medicines were then examined for HIV-1 inhibitory activity against the HTLV-IIIB isolate in H9 cells and 5 primary isolates in peripheral blood mononuclear cells. Those extracts with activity in the infectivity assay were subsequently studied for inhibition of syncytium formation between HIV-1 infected Molt-4 cells and CD4+ HBP-ALL T cells.
Results: Ten of 56 herbal extracts were found to have dose-dependent inhibitory activity on HIV-1 infection in vitro, with 50% and 90% inhibitory doses (ID_{50} and ID_{90}) shown in the Table.

Extracts	#1	#8	#21	#30	#32	#35	#39	#41	#44	#49
ID_{90} (ul)	0.84	0.38	2.30	1.70	0.66	1.70	5.60	2.70	0.65	0.53
ID_{50} (ul)	0.15	0.14	1.80	0.26	0.45	0.41	1.00	0.34	0.23	0.24

No cellular toxicity was seen at the doses shown above. Five (#1, 8, 32, 35, and 44) of these herbal extracts also exhibited $\geq$ 90% inhibition of syncytia at subtoxic doses.
Conclusion: Chinese herbal extracts appear to be a rich source of potential anti-HIV drugs. More extensive screening should be conducted. Those extracts with antiviral effect are being studied to define the active ingredients as well as their mechanisms of action.

Th.A.238 MECHANISM OF ACTION OF INHIBITION OF HIV INFECTION BY SULPHATED POLYANIONS

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OBJECTIVE: To study the mode of action of sulphated polyanions (SP) in inhibiting HIV infection in vitro.
METHODS: Anti-HIV activity was detected by inhibition of cytopathic effect and HIV antigen production by MT4 cells. Immunofluorescence and flow cytometry were used to study inhibition of anti-CD4 Mab binding. Binding of whole CD4, truncated CD4 and virion gp120 (gifts from SKF, A. Dalgleish and MRC, London respectively) to SP were analysed by SDS-PAGE.
RESULTS: The most potent inhibitors of HIV infection in vitro were dextran-sulphate-500kDa. (DS-500) and pentosan sulphate (ID50 = 10 and 1ug/ml respectively). DS - 500KDa. polyvinyl sulphate and polyanethole sulphonate blocked the binding of anti-CD4 Mabs. and the hierachy of inhibition (OKT4C/E > OKT4A/B) suggested that the SP binding site is closely associated with but not identical to the gp120 binding region of CD4. None of the SP bound to rgp120. The binding of SP to rCD4 varied from <10% (Chondroitin-6-S and pentosan sulphate) to 35% (DS-500KDa. and Carrageenans)and was found to be similar for the two-domain and four-domain molecules.The inability of pentosan sulphate to inhibit Mab binding and its low level binding to rCD4 despite a high potency of HIV inhibition strongly suggested a different mechanism of action to other SPs. SPs are currently being examined for their effect on HIV infection of monocytes and macrophages. Preliminary results indicate poor efficacy partly due to increased toxicity for these cells.
CONCLUSION: The main mechanism of HIV inhibition by most SPs involves SP binding to a site close to the gp120 binding region of CD4, thereby disrupting gp120-CD4 interaction. However Pentosan sulphate inhibits HIV infection by CD4- independent mechanism.

Th.A.239 THE EXPRESSION OF HIV INTEGRASE AS A FUSION PROTEIN IN E. COLI

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Objective: To clone and express the HIV integrase (endonuclease) as a possible target for the action of novel antiviral compounds.
Methods: The plasmid pBT.1, containing the major Sst I fragment of the HIV-1 genome, provided the source of the integrase ($p34^{pol}$) sequence for amplification by the polymerase chain reaction (PCR). Clones habouring the amplified product were detected using non-radioactive probes and sequenced directly for confirmation of copy fidelity.
Results: The $p34^{pol}$ gene of HIV, generated via PCR, has been cloned and expressed as the carboxy-terminal region of a composite polypeptide incorporating the IgG-binding domains of the staphylococcal protein A. The fusion was constructed to facilitate purification of the integrase, for which there is presently no functional assay. In addition, a factor Xa recognition site has been introduced, allowing cleavage of the purified fusion protein to yield the authentic amino-acid sequence of integrase.
Conclusions: The work reported here outlines the approach taken to obtain purified integrase for use in the development of an in vitro assay to assess the effects of prospective antivirals on the integration of HIV DNA.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.240 DEVELOPMENT OF RIBOZYMES THAT CLEAVE HIV mRNA

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Objective: To develop HIV mRNA-targeted ribozymes with optimized structures for RNA cleavage in vitro and in vivo.
Methods: We have taken an inhibitory antisense gene, AR2, derived from the region of the HIV provirus containing the first coding exon of tat (see Rhodes & James, accompanying abstract) and have introduced a "hammerhead" ribozyme sequence (see Haseloff & Gerlach, Nature 334:585-91,1988) by oligonucleotide-directed mutagenesis. The ribozyme gene was cloned into the transcription vector, pBluescript. Radioactively labelled ribozyme, transcribed in vitro, was annealed to sense-strand RNA by boiling and snap-cooling. RNA cleavage was monitored by PAGE following incubation at 37 - 50°C in a Magnesium-containing buffer. A nested set of deletions was made in both the 3' and 5' regions of flanking complementarity using exonuclease III and mung bean nuclease. The parental ribozyme and some of the deletion derivatives were transferred into Jurkat cells using amphotropic retroviral vectors.
Results and Conclusions: We have obtained cleavage of HIV-derived RNA in vitro by an artificial ribozyme at physiological temperatures. While the parental ribozyme had regions of flanking complementarity of approximately 60 nucleotides, deletion derivatives with shorter regions of complementarity with the substrate possessed better catalytic properties. As one increases the degree of ribozyme-substrate complementarity, there is presumably a trade-off between the increase in negative free energy change following ribozyme-substrate binding and the increase in positive free energy change following ribozyme-product dissociation. It is possible that the RNA-binding proteins of the eukaryotic nucleus will differentially affect these processes and so we are now repeating the investigation in cells using retrovirally-introduced ribozyme genes.

Th.A.241 EFFECT OF 2'3'-DIDEHYDRO-3'-DEOXYTHYMIDINE (d4T) ON p24 ANTIGENEMIA IN PATIENTS WITH AIDS OR ARC.

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In a phase I dose-escalation trial, twenty patients (four groups of five) received 2, 4, 8, or 12 mg/kg/day of the thymidine nucleoside analog, d4T, a potent inhibitor of HIV replication in vitro. Sixteen patients completed ≥10 weeks of dosing. Serum p24 antigen was detectable at entry in nine patients (range, 85-1393 pg/ml). In eight of these nine patients, p24 antigen became undetectable (<40 pg/ml) within two to five weeks of treatment at each dosing level including 2 mg/kg/day, the lowest dose tested.

The original dosing regimen has been continued in only one of these eight patients, and his serum p24 levels have remained undetectable during 34 weeks of treatment. In the remaining seven p24 antigen-positive patients in whom treatment was interrupted because of adverse events, serum p24 antigen levels rapidly rose to high levels within four weeks after stopping therapy. For three of these latter patients restarted on d4T at a modified dose, p24 antigen again became undetectable on a lower dose of drug. Adverse events in the twenty patients have included nausea (2), anemia (2), neutropenia (1), chemical hepatitis (6), and paresthesias (7).

While d4T successfully reduces p24 antigenemia, it also induces toxicity which has been largely reversible in the dose ranges tested. The protocol has been modified to one of dose de-escalation to further determine tolerance and effect on HIV p24 antigenemia.

Th.A.242 REPORTER GENE SIGNAL ACTIVATION BY HIV-1: ADAPTATION FOR ANTIVIRAL DRUG SCREENING

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Objective: Development of an anti-HIV-1 drug screening system based on expression of the lacZ (β-galactosidase) gene under control of the HIV-1 5' long terminal repeat (LTR).
Methods: HeLa T4+ cells were transfected by electroporation with 200 μg of the plasmid pLRON (containing lacZ as a reporter gene under the control of the HIV-1 5'LTR), distributed into 96-well microtiter plates and then inoculated with 10-fold dilutions of HIV-1 (HTLV-III_B strain) in the presence or absence of zidovudine (AZT). Reporter gene expression was monitored by fluorescent signal generated when 4-methylumbeliferyl-D-galactoside (MUG) was cleaved by β-galactosidase.
Results: Infection with concentrated HIV-1 produced an increase in β-galactosidase signal of 31.1 ± 9.1 times over background; stepwise reduction was observed with 10-fold dilutions of input virus stock. Dose-related reductions were observed with the addition of AZT.
Conclusion: HeLa T4+ cells containing the plasmid pLRON show increased β-galactosidase gene expression when infected with HIV-1; such expression is suppressed by AZT. This system may be adapated to form the basis of a rapid and quantitative anti-HIV-1 drug screen and assay for HIV-1.

Th.A.243 ANTI-HIV-1 COMBINATION EFFECTS OF ANTISENSE OLIGONUCLEOTIDE (S-dC-28) WITH AZT, INTERFERON ALPHA (IFN) AND DEXTRAN SULFATE-8000 (DS)

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Objective: To determine the in vitro anti-HIV-1 effects of combining S-dC-28 (a phosphorothioate oligodeoxycytidine 28 mer) with other anti-HIV agents AZT, IFN and DS which have different modes of action.
Methods: MT4 cells were exposed to HIV-1 at 37°C for 1 hr, washed, and the cells were suspended in fresh RPMI-1640 medium and distributed to 24-well plates. Test compounds alone or in combination were then added. Inhibition of HIV-1 replication was measured by P24 core antigen ELISA and RT assay after 4-day incubation. The data were quantitatively assessed with the median-effect principle using a computer software of Chou & Chou (1987).
Results: ED_{50} for inhibiting HIV-1 replication were 0.041 uM for S-dC-28; 0.007 uM for AZT; and 9.5 U/ml for IFN. Synergism, additivism and antagonism are quantitatively assessed with combination indices (CI) which values are <1, =1, and >1, respectively. The averaged CI values for ED_{75} to ED_{95} for S-dC-28 + AZT (5:1) are 1.39-1.17 indicating slight antagonism; for S-dC-28 + AZT (25:1) are 1.35-1.17 also indicating slight antagonism; for S-dC-28 + IFN (1:200) are 0.91-0.78 indicating slight to moderate synergism; and for S-dC-28 + DS (1:8) are 0.99-0.94 indicating slight synergism.
Conclusion: With regards to anti-HIV-1 effect in vitro, S-dC-28 interacts weakly with three agents tested: slightly antagonistic with AZT and slightly synergistic with IFN or DS. Despite lacking strong synergistic effect, the dose-reduction indices indicate somewhat lower doses of each drug can be used in combination to achieve a given effect with decreased cytotoxicity.

Th.A.244 HIV-1 REPLICATION IS REDUCED BY ANTISENSE-RNA EXPRESSION

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Objective: Intracellular expression of antisense-RNAs targeted to viral sequences have been shown to exert anti-retroviral activity (e.g.: RSV). Here we address the question wether HIV-1 antisense-RNA expressed transiently or in stable transfectants is capable of inhibiting HIV-1 replication.
Methods: An antisense-RNA expression plasmid targeted against the 5'-leader/gag region of HIV-1 was tested for antiviral activity in a transient assay by co-microinjection together with non-defective proviral DNA into the nucleus of human epitheloid cells (SW480) and in stably transfected human T-lymphoid cell lines (Jurkat), which express antisense-RNA constitutively. In both systems HIV-1 replication was monitored by measuring the concentration of virus specific antigens in culture supernatants (ELISA) and by determining the ratio of infected cells by indirect immunofluorescence.
Results: In both systems reduction of HIV-1 replication specific for antisense-RNA expression was measured. Transiently the inhibition is in the range of 70% as compared with the co-microinjected expression plasmid or proviral DNA alone. In cells with constitutive antisense-RNA expression the inhibitory effect is maximal (70%-75%) approximately 7-10 days post infection but decreases in the further course of infection and is no more detectable 3 weeks upon infection.
Discussion: HIV-1 replication can be reduced in tissue culture cells by intracellular antisense-RNA expression. The co-microinjection assay is suitable for testing the antiviral potency of a series of altered antisense-RNA expression plasmids. Strong inhibitor plasmids in this assay shall be analyzed after stable transfection into human $T4^+$ cell lines.

Th.A.245 INHIBITION OF HIV REPLICATION IN CELL CULTURE BY ENDOGENOUSLY SYNTHESIZED ANTISENSE RNA.

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Objective: To determine whether antisense RNA could inhibit HIV replication and, if so, which HIV mRNA sequences provide the best targets for inhibition by antisense RNA.
Methods: A nested set of five antisense genes were derived from the HIV-1 IIIB provirus in the region of the first coding exon of the *tat* gene and another from the 5' non-coding region. The antisense genes were cloned into the retroviral vector, IRV.NeoSV, and introduced into Jurkat, HeLa T4, U937, CEM and H9 cell by amphotropic transduction. The presence of antisense RNA in the transduced cells was monitored by sense-specific Northern analysis and the secondary structures of the RNAs predicted using the Michael Zuker's FOLD program. The Transduced cells were challenged with HIV-1 strains IIIB, RF, MN and SF2. Virus replication was followed using a p24 ELISA.
Results: We found that two of the antisense genes tested significantly reduced viral replication, one (AR2) by over 70% during the first week post-infection. An analysis of our results suggests that the more successful antisense RNAs contain sequences that are complementary to the initiation AUG codons of the *tat* and *env* genes and that lie within single-stranded loops of the predicted secondary structure of the antisense RNA. Later, there was a significant recrudescence of viral replication. This was not caused by the replication of sequence variants of HIV since escape virus was inhibited to the same extent as parental virus when used to challenge fresh Jurkat.AR2 cells. Indeed, antisense inhibition was remarkably insensitive to natural sequence variation between the challenge virus strains.
Conclusion: Endogenously synthesized antisense RNA of appropriate primary and secondary structure can markedly inhibit the replication of HIV-1 strains in cell culture.

Th.A.246 PHOSPHATE-METHYLATED HIV-1 TAR LOOP DNA SEQUENCES HAMPER VIRUS SPREAD PRE- AND POST-INTEGRATION

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Objective: To examine the effect on HIV replication of phosphate-methylated (pm) antisense and sense oligodeoxynucleotides of 20 nucleotides in length, derived from the HXB2 TAR loop sequence.
Methods: C8166-cells were infected with different HIV strains (HX10, HTLV-IIIB, HTLV-IIIRF, LAV-2, RUT) in the presence of pm oligodeoxynucleotides at different concentrations. After 5 days the cultures were examined for the presence of syncytia, p24 expression, circular unintegrated viral DNA (cUVD) and total viral DNA. The effect of the constructs on HIV-LTR gene expression was tested by the chloramphenicol acetyl transferase (CAT) assay 48 hrs after transfection of H9 tat cells with pC15-CAT.
Results: Syncytium formation and p24 expression of the cloned HIV-1 variant HX10, was completely inhibited with both the antisense and the sense constructs at low concentrations (2 and 4 μg/ml respectively). Concentrations of 20 μg/ml of pm antisense and sense DNA were required to block replication of an uncloned HTLV-IIIB stock or HTLV-IIIRF which has a single mismatch in the hybridizing sequence. Replication of viruses with either 2 (RUT) or more (LAV-2) mismatches could not be blocked below oligodeoxynucleotide cytotoxic concentrations (40 μg/ml). As judged by the accumulation of unintegrated DNA the pm antisense construct appeared to block HIV replication, both pre- and post-integration, whereas the pm sense construct acted primarily post-integration. The inhibitory effect on viral expression was confirmed by the inhibition of HIV-LTR directed CAT-activity in the presence of the constructs.
Conclusion: The pm antisense and sense TAR loop oligodeoxynucleotides efficiently inhibit virus infectivity, although a high level of nucleotide matching may be required.

Th.A.247 INHIBITION OF HIV-1 REPLICATION IN $CD4^+$ T CELLS BY POKEWEED ANTIVIRAL PROTEIN CONJUGATED TO MONOCLONAL ANTIBODY AGAINST CD4.

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Objective: Pokeweed antiviral protein (PAP) is a 30,000 kD MW protein from pokeweed plants which inhibits replication of certain plant and mammalian viruses. We asked whether PAP would inhibit replication of HIV-1 in $CD4^+$ T cells and if PAP targeted to $CD4^+$ cells by conjugation with mAb to CD4 would be more effective.
Methods: PAP and PAP conjugated to mAb against CD4 (G17.2) were tested for their ability to inhibit HIV-1 replication in $CD4^+$ T cells. p24 levels in supernatants were measured by ELISA and intracellular HIV-1 proteins were quantitated by RIP and SDS PAGE.
Results: PAP, at $5x10^3$ pM, inhibited HIV-1 production in $CD4^+$ cells by 50% whereas the inhibitory $dose_{50}$ (ID_{50}) for p24 production was only 5 pM for PAP-anti-CD4. In contrast, the ID_{50} for proliferation of $CD4^+$ cells was approximately 1000 times greater. Intracellular HIV-1 antigen levels were also diminished in cells treated with PAP-anti-CD4. Stimulation of PBL from HIV-1 seropositive individuals with mAb to CD3 resulted in induction of high levels of HIV-1, and this HIV-1 production was inhibited by at least 90% in the presence of 0.5 pM PAP-anti-CD4.
Conclusion: PAP conjugated to mAb against CD4 is up to 1,000 times more effective than unconjugated PAP at inhibiting HIV-1 production in both in vitro infected $CD4^+$ T cells and in stimulated, latently infected PBL from seropositive donors. The anti-CD4 has a therapeutic index of approximately 1000 and thus PAP-anti-CD4 shows potential for treating HIV-1 infections.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.248 CD4-*PSEUDOMONAS* EXOTOXIN INHIBITS HIV REPLICATION SYNERGISTICALLY WITH REVERSE TRANSCRIPTASE INHIBITORS IN LYMPHOCYTE CULTURES AND SPECIFICALLY KILLS INFECTED MONOCYTE/MACROPHAGE AS WELL AS LYMPHOCYTE CELL LINES.

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Objective : CD4(178)-PE40 is a genetically engineered hybrid protein consisting of the HIV gp120 binding region of CD4 linked to active domains of *Pseudomonas aeruginosa* exotoxin A. This protein selectively kills HIV-1 infected human T-cell lines (IC50 appr. 100 pM) and inhibits HIV-1 spread to uninfected cells. In this study we analyzed the *in vitro* anti-viral activity of CD4(178)-PE40 combined with AZT or DDI as well as activity of CD4(178)-PE40 on other HIV infected cell types.
Methods and Results: Using a coculture of chronically HIV-1 infected H9/HTLVIIIB and uninfected A3.01 cells we observed strong synergistic activity between CD4(178)-PE40 and AZT in blocking HIV spread, as assayed by protection from virus-induced cell killing and inhibition of p24 production. A similar synergistic antiviral activity of CD4(178)-PE40 and DDI was observed in *in vitro* HIV-1 infected peripheral blood lymphocytes, as judged by decreased p24 release. As for other cell types, CD4(178)-PE40 selectively inhibited host protein synthesis and directly killed (IC50 0.5-1.0 nM) chronically HIV-1 infected human U1 monocyte/ macrophage cells, resulting in significantly reduced HIV RT and p24 production. Moreover, the hybrid toxin was comparably potent on cells expressing either HIV-1 or SIV gp160 envelope glycoproteins, as judged by protein synthesis inhibition in cells infected with recombinant vaccinia virus vectors (IC50 20-40 pM).
Conclusions: CD4(178)-PE40 is a highly potent and selective agent for killing HIV-infected human lymphocytes and monocyte/macrophages and acts synergistically with AZT or DDI to protect uninfected lymphocytes in HIV infected tissue cultures.

Th.A.249 STRUCTURE-FUNCTION RELATIONSHIP OF CD4-PE HYBRID TOXINS

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Objective: We wished to evaluate the structure-function relationship of hybrid toxins composed of CD4 and Pseudomonas exotoxin A (PE) in order to optimize specificity and potency. Furthermore, we were interested in the kinetics of internalization as well as the mechanism of membrane translocation in gp160/120 expressing cells.
Methods: We have constructed and expressed in E. coli four different CD4-PE hybrid toxins. Their affinity to gp120 and their enzymatic activity (ADP ribosylation) was assayed in vitro. Their specificity and potency was assessed in transformed CHO cells expressing gp160/120. The kinetics of the internalization mechanism was studied in two phases: Cell binding and initial endocytosis, and inhibition of protein translation. The pH requirements for the low pH-induced membrane translocation of toxin was characterized by using NH_4Cl-treated cell cultures and TX-114 partitioning.
Results: CD4-PE constructs containing two Ig-related domains of CD4 were superior in gp120 binding to those with only one domain. The length of the PE portion (PE40 or PE43) had no influence on the ADP ribosylation activity. However, in cell assays the versions with larger PE sequences (PE43) proved more potent. In CHO cells, the binding of the toxin and the initial endocytosis was completed within one hour. The complete internalization resulting in an inhibition of protein translation, however, took about three to six hours. The last step in the internalization process, translocation into the cytoplasm, which is pH dependent could not be inhibited by the addition of NH_4Cl. Studies of the low pH-induced hydrophobicity change of the hybrid toxin showed that in contrast to the native PE this transition takes place under relatively weak acidic conditions.

Th.A.250 THE INTERACTION OF RECOMBINANT SOLUBLE CD4 (sT4) AND GP120 IN NORMAL HUMAN AND AIDS PATIENT PLASMA

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Objective: To develop techniques to detect the association of sT4 with gp120 in human plasma and investigate the effects of various agents, eg. host antibody to gp120 and heparin, on that association.
Methods: A sandwich style ELISA assay was developed for detection of sT4/gp120 complex in spiked buffer and plasma. Immunoaffinity resins made from polyclonal antisera to either of the components were used to recover sT4/gp120 complex from spiked normal human plasma samples. Following SDS/PAGE the presence of complex in the recovered sample was detected by immunoblotting with IgG to the other component. Typical concentrations used in plasma spiking experiments were 1.0 µg/ml sT4, which is within the range of plasma concentrations achieved in clinical trials of sT4 administered by intravenous infusion, and 10-100 ng/ml gp120.
Results: Using the ELISA, complex could be detected in samples spiked to final concentrations of gp120 and sT4 as low as 10 ng/ml and 50 ng/ml respectively. In spiked buffer, heparin only partially interfered with the detection of gp120, but totally blocked the formation of sT4/gp120 complex. Sodium citrate did not interfere with the detection of either gp120 or sT4/gp120 complex by ELISA. sT4/gp120 complex could be isolated from normal human plasma using either affinity matrix, but host antibody to gp120 blocked the immunoaffinity isolation of gp120 from AIDS patient plasma. Host antibodies to gp120 also blocked the formation of sT4/gp120 complex in patient plasma, but did not interfere with the recovery of preformed sT4/gp120 complex using the immunoaffinity matrix directed against sT4. It was also observed that sT4 recovered using this matrix from the plasma of patients given sT4 by intravenous infusion was capable of binding recombinant gp120 ex vivo.
Conclusions: sT4 and recombinant gp120 associate to form a complex in buffer and in human plasma. Heparin interferes with the formation of sT4/gp120 complex. Host antibodies to gp120 interfere with the formation of sT4/gp120 complex in AIDS patient plasma but do not cause the dissociation of preformed complex. sT4 recovered from AIDS patient plasma following clinical administration retains the ability to form a complex with recombinant gp120.

Th.A.251 WHOLE BLOOD DISTRIBUTION AND QUANTITATION OF RECOMBINANT SOLUBLE CD4 (sT4) IN HIV-INFECTED PLASMA BY SINGLE AND DOUBLE MONOCLONAL BASED ELISAs DIRECTED TO sT4 V1 AND V4 REGIONS

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Objective: To determine the whole blood distribution of recombinant soluble CD4 (sT4), and develop monoclonal based ELISAs directed to both sT4 functional (V1) and C-terminal (V4) regions for clinical pharmacokinetic (PK) and metabolic studies of sT4 in plasma.
Methods: ^{125}I-labeled and unlabeled SK&F sT4 were spiked into citrated and noncitrated human blood, and radioactivity in blood, sera and plasma was determined. SK&F sT4 levels in HIV-infected plasma were determined by sandwich ELISAs with gp120 (V1) domain specific Leu3A as the capture antibody, and biotin-conjugated secondary antibodies of rabbit polyclonal anti-sT4 (Leu3A ELISA) or C-terminal (V4) domain specific OKT4 (Leu3A/OKT4 ELISA).
Results: At 10 to 1000 ng/ml sT4 in whole blood, at least 80% and 70% of radiolabel was present in plasma and sera, respectively; blood cell/plasma distribution was not affected by incubation at 37°C for 2 hours. After 2 hour, 37°C incubations of sT4 in normal or HIV-infected plasma, electrophoretic autoradiography showed no sT4 degradation or complexation of radiolabel to plasma proteins, and no sT4 loss was observed by Leu3A ELISA. The Leu3A ELISA also showed that snap-frozen clinical PK plasma samples (0.1 mg/kg i.v.) were stable for 9 months at -30°C. Specificity of OKT4 for the sT4 V4 region was confirmed by no ELISA response when a truncated sT4 lacking the V4 region was employed as the antigen. ELISA sensitivity in plasma is 0.14 and 1.5 ng/ml for Leu3A and Leu3A/OKT4 ELISAs, respectively. For 0.21 to 1000 ng/ml sT4 in normal and HIV-infected plasma, Leu3A ELISA within-run CV was less than 11%, C-ratio ranged from 82% to 101%; reproducibility on clinical PK plasma samples assayed on 2 separate days showed a mean difference of 9.4%.
Conclusions: SK&F sT4 is metabolically stable in normal and HIV-infected plasma, and sT4 in plasma accounts for at least 80% of total sT4 or sT4 antigens in systemic circulation. No endogenous interference from HIV-infected plasma on the ELISAs is observed. These ELISAs have adequate sensitivity and reproducibility for current sT4 clinical PK and metabolic studies

Th.A.252 INHIBITION OF THE INFECTIVITY OF HIV 1 BY DIFFERENT RECOMBINANT FORMS OF CD4.

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Objective. To characterize anti-HIV properties of recombinant soluble CD4 and CD4-178-DTA, a recombinant protein containing the gp120-binding region of CD4 linked to the A-fragment of diphteria toxin. The construction of a new recombinant CD4 mutant form with adhesion properties.
Methods. Molecular cloning for recombinant polypeptide producing, computer analysis. The chimeric proteins were produced by a E.coli expressive system and were cultured with HIV1 and HIV2 infected and uninfected MT4 and H9 cells for 48 hours. Toxicity was assessed by pulsing cells with tHI-amino acids for 24 hours.
Results. Both recombinant proteins bind gp120 and block HIV infection of T-cells. The hybrid toxin selectively kills T-cells chronically infected with HIV with ID50 values as low as 50 picomolar. In addition we found in gp120 -binding site of CD4 the amino acid sequence R-GE typical for the adhesion site (RGD). We suppose that interaction between CD4 and gp120 is similar to interaction between the adhesins and their receptors. So the substitution Ala for Gly in gp120-binding site of CD4 can increase the binding constant between this mutant CD4 and gp120. We obtained this mutant CD4 and are studing its anti-HIV activity.
Conclusion. rsCD4 synthesized in bacteria and CD4-diphteria toxin hybrid protein specifically kill HIV infected lines of T-cells.

Th.A.253 ANTI-HIV-1 ACTIVITY OF CD4 SYNTHETIC OLIGOPEPTIDES

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Objective: The aim of this study was to investigate the anti-HIV-1 activity of CD4 oligopeptides which represent the supposed binding site of HIV-1 gp 120.
Methods: Two oligopeptides (37-53 and 37-55) spanning the CD4 V1J1 domain were synthesized by solid phase techniques. They were selectively modified by the addition of two blocked cysteines at both termini and purified by HPLC. Their ability to inhibit de novo infection of H9 and C8166 cells was assayed using cell-free virus and cocultivation with chronically infected cells, respectively.
Results: Both the 19-mer and the 21-mer appeared active in inhibiting HIV-1 replication in H9 cells (electron microscopy, p24 and reverse transcriptase production) if added to cultures at the same time with a high virus multiplicity. Inhibition was virtually 100% at an oligopeptide concentration of 15 ug/ml. By converse, production of syncythia in C8166 cells was affected only by the 21-mer at a relatively high concentration (~100 µg/ml). No sign of cytotoxicity was observed up to 300 µg/ml.
Conclusion: It seems that CD4 oligopeptides are effective in vitro in inhibiting infectivity of exogenously added cell-free HIV-1. Only the 21-mer, however, is also capable to affect syncythia formation. This may imply that a critical level of structural complexity is needed to condition biological activity. Chemical modifications are currently being sought to increase the therapeutic index of our oligos while relating their binding affinity to a baculovirus expressed form of gp 160.

Th.A.254 SELECTIVE KILLING OF PERSISTENTLY HIV 1-INFECTED CELLS BY DIMYRISTOYLPHOSPHATIDYLCHOLINE LIPOSOMES CONJUGATED WITH CD4(68-94) PEPTIDE

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Objective: We previously reported selective killing of persistently HIV 1-infected cells by liposomes containing fragment A (Fr.A) of diphtheria toxin[1]. Here we examined the selective killing activity of liposomes not containing Fr.A against the persistently HIV 1-infected cells.
Methods: Liposomes, which were prepared from dimyristoylphosphatidylcholine (DMPC), phosphatidylserine (PS), cholesterol (CH) and phosphatidylethanolamine, and conjugated with a CD4(68-94) peptide carrying inhibitory activity against HIV-1 replication[2], were examined for the effect on the viability and growth of the persistently HIV 1-infected cells (MOLT-4/HTLV-IIIB).
Results: Liposomes composed of DMPC, PS and CH were found to have killing activity against MOLT-4/HTLV-IIIB, but not against MOLT-4. The most suitable lipid composition was DMPC-PS-CH(5:1:2, molar ratio). Conjugation of the liposomes with CD4(68-94) peptide significantly increased this activity.
Conclusion: DMPC liposomes conjugated with CD4(68-94) peptide selectively killed the persistently HIV 1-infected cells in vitro without Fr.A. These findings present a new approach against AIDS and may be of therapeutic value.

1) Ikuta,K. et al. Jpn. J. Cancer Res. 78, 1159-1163, 1987.
2) Hayashi,Y. et al. Arch. Virol. 105, 129-135, 1989.

Th.A.255 THE PYRIMIDINE NUCLEOSIDE 3'-DEOXY-3'-FLUOROTHYMIDINE (FLT) INHIBITS THE REPLICATION OF FELINE ONCO- AND LENTI-RETROVIRUSES IN VITRO AND IN VIVO.

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Objective: To evaluate the ability of FLT to inhibit the replication of feline onco- and lenti-retroviruses, the feline leukemia virus (FeLV) and feline immunodeficiency virus (FIV), in vitro and in vivo.
Methods: The inhibitory effects of FLT were evaluated in vitro by the FeLV and FIV fluorescent focus reduction assays. The EC50 (50% antiviral effective concentrations) of FLT was compared to that of AZT in vitro. Two FeLV-viremic healthy cats were treated orally for 8 weeks with FLT at 30 mg/kg per day.
Results: FLT was found to inhibit both FeLV and FIV in vitro. The EC50's against FeLV for FLT and AZT are 1.33 uM and 0.11 uM respectively whereas the EC50's against FIV are 0.07 uM and 0.83 uM respectively. One cat was given a single dose of 2 mg/kg of FLT orally to determine the FLT plasma concentrations obtained and the clearance of the compound. This dose yielded a plasma concentration of 42 uM by 2 hours and the plasma half-life (T 1/2) was 195 minutes. Two healthy chronically FeLV-viremic cats that received FLT showed a 10% reduction of the FeLV antigen positive leukocytes in the peripheral blood by 4 to 6 weeks. Quantitative capture ELISAs for FeLV p27 antigen showed a 3 fold reduction of p27 antigenemia by 6 weeks. Severe myelosuppression (anemia and leukopenia) was noted in both cats by 4 weeks.
Conclusion: FLT inhibits both onco- and lenti-retroviruses of cats and is able to reduce the FeLV replication in chronically infected pet cats. FLT inhibits the replication of HIV in vitro and should be studied in humans.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.256 MURINE RETROVIRUS-INDUCED IMMUNODEFICIENCY DISEASE: COMPARATIVE EFFECTS OF AZT AND LIPOSOMAL AZT MONOPHOSPHATE.

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Objective: The LP-BM5 murine leukemia virus produces a disease in C57BL/6 mice with many features of AIDS (MAIDS) and has been shown to be responsive to treatment with zidovudine (AZT). Treatment of mice with 100 mg/kg/day by intraperitoneal (i.p.) injection prolonged survival while 10 mg/kg/day was less effective. Macrophages are heavily infected with LP-BM5. Method: To direct larger amounts of drug to macrophages, we encapsulated [^{3}H]AZT monophosphate in liposomes and determined tissue and plasma levels at various times over a 48hr period. After infection with LP-BM5, AZT (100, 31.6 or 10 mg/kg/day in divided bid doses), liposomal AZT-monophosphate (L-AZT-MP) (10, 3.9, 1 and 0.39 mg/kg/ day, single dose every other day) or controls were injected i.p. Results: Tissue and plasma levels of L-AZT-MP were manyfold higher than those observed after AZT administration in a equimolar dose. Tissues rich in monocyte/macrophages retained the most drug. Tissue levels of L-AZT-MP were substantial 24 to 48 hours after a single dose of 10 mg/kg while AZT produced significant tissue levels for only 4 to 6 hours. In the MAIDS animals after 33 weeks, the largest number of surviving mice was in the 10 mg/kg/day L-AZT-MP group (67%); in the 100 and 31.6 mg/kg/day AZT group survival was much lower (7% and 23%) while the empty liposome control group had 28% surviving. Conclusions: Our results suggest that treatment with L-AZT-MP every other day is considerably more effective than treatment twice daily with AZT even at doses 10 times higher. L-AZT-MP may be useful as a treatment for the macrophage reservoir of HIV.

Th.A.257 INFREQUENT DOSING OF 9-(2-PHOSPHONYLMETHOXYETHYL)ADENINE (PMEA) RESULTS IN AN INCREASED ANTIRETROVIRAL EFFECT *IN VIVO*

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Objective: To examine the effect of different treatment schedules of 9-(2-phosphonylmethoxyethyl)adenine (PMEA) and 3'-azido-2',3'-dideoxythymidine (AZT) on their anti-retrovirus activity in Moloney murine sarcoma virus (MSV)-infected newborn NMRI mice.
Methods: PMEA and AZT were evaluated for their inhibitory effects on MSV-induced tumor formation and associated death in NMRI mice. Mice were treated with total PMEA doses of 100, 50, 25 or 12.5 mg/kg. The doses were given on either day 0 (the day of virus inoculation), or spread over two days (days 0 and 3), or four days (days 0, 2, 4 and 6), or seven days (days 0, 1, 2, 3, 4, 5 and 6).
Results: When PMEA was given as a single dose of 100 mg/kg (day 0), MSV-induced tumor formation was completely suppressed. Spreading this dose over 2, 4 or 7 administrations resulted in a marked decrease in the antiretroviral effect of PMEA. The same phenomenon was observed with lower PMEA doses (50, 25 and 12.5 mg/kg): thus, the more frequent the administration of PMEA, the lesser its antiretroviral effect. No such phenomenon was observed when varying the frequency of AZT administration.
Conclusion: PMEA becomes more active as an antiretroviral agent when administered less frequently. This unique property of PMEA, together with its high *in vivo* efficacy makes it particularly attractive as a therapeutic modality for the treatment of retrovirus infections, including AIDS.

Th.A.258 QUANTITATIVE ANALYSIS OF ANTIVIRAL EFFICACY IN THE SCID-hu MOUSE BY POLYMERASE CHAIN REACTION

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The heterochimeric SCID-hu mouse is constructed by engrafting human hematolymphoid organs into the immunodeficient C.B17 scid/scid mouse. In a time- and dose-dependent manner, intravenous injection of HIV into these mice results in reproducible infection of the human organs, as detected by in situ hybridization, immunohistochemistry, and direct viral isolation. In addition, viremia may be detected in the peripheal blood of greater than 95% of animals by RNA PCR. Given these qualitative assays, it is possible to assess the prophylactic efficacy of antiviral compounds against HIV in the SCID-hu mouse. A quantitative assay for virus load would facilitate the ability of such compounds to suppress chronic HIV infection of SCID-hu mice. We have therefore developed a set of conditions by which peripheral viremia can be quantitated by PCR. Viral RNA is prepared from plasma, reverse transcribed, and then amplified. PCR products are then detected with synthetic DNA probes that are coupled with chemiluminescent acridinium esters (Gen-Probe, Inc., San Diego, Ca.). The assay is quick, sensitive, specific, and nonisotopic; titration curves are linear over a 4-log order dilution range of target molecules. Using this method, the level of peripheral viremia in HIV-infected SCID-hu mice has been measured as a function of time in the presence and absence of specific antiviral therapy. This assay should be readily adaptable to the large-scale screening of antiviral efficacy in the SCID-hu mouse. It may also be of use in the demonstration of efficacy in man.

Th.A.259 PREVENTION OF GP120-INDUCED NEURONAL DAMAGE IN THE DEVELOPING RAT BRAIN BY PEPTIDE T: A GOLGI STUDY.

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Objective: In vitro studies with murine hippocampus have shown that the HIV envelope glycoprotein, gp120, induced neuronal death. Peptide T has been shown to prevent this neuronal death (Brenneman et al, Nature, 335,639, 1988; Drug Dev. Res. 15,361 1988). The goal of this study was to evaluate the in vivo effects of gp120 and peptide T on the morphology of cortical neurons in the developing rat brain as seen with Golgi-impregnation.
Methods: Neonatal Sprague-Dawley rats were injected daily (s.c.) from days 1-28 with 100 µl of the following: gp120 (0.3 nM), peptide T (3 µM), gp120 (0.3 nM) and peptide T (3 µM) or saline. On day 29 the animals were killed and their brains fixed by intracardial perfusion with formalin. Coronal sections were stained with the Rapid-Golgi method. Morphological evaluation was carried out on seven animals from each group.
Results: Compared with the saline-injected controls, cortical pyramidal neurons from the gp120-injected animals showed widespread dystrophic changes including dendritic spine loss, and coarse, thickened dendrites with grossly abnormal spines. The extent of dendritic branching in such neurons appeared reduced. Neurons from rats injected with gp120 and peptide T (with the exception of one subject) and peptide T alone had the same morphological features as the neurons of saline-injected animals.
Conclusion: Results show that in the developing postnatal rat brain gp120 exerts significant neurotoxicity; concommitant administration with peptide T blocks the damaging effects of gp120. The gp120 effects on neuronal morphology may be the basis for the cognitive deficits seen in pediatric AIDS. These findings suggest that peptide T could be useful as a therapeutic agent to prevent the neurologic sequelae resulting from neonatal HIV infection.

Th.A.260 PHARMACOKINETICS OF 3'-FLUORO-3'-DEOXYTHYMIDINE (FDT),3'-DEOXY-2',3'-DIDEHYDROTHYMIDINE (D4T) AND 3'-AZIDO-2',3'-DIDEOXY-5-METHYLCYTIDINE (AzddMeC) IN MONKEYS

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Objective: To characterize the pharmacokinetics and bioavailability of FDT, D4T and AzddMeC in rhesus monkeys.
Methods: Monkeys were administered 60 mg/kg FDT, D4T or AzddMeC intravenously and orally. Monkeys were given 33.3 mg/kg FDT and D4T subcutaneously. Serial blood samples were obtained. Cerebrospinal fluid (CSF) and urine samples were taken 1 h after dosing. Nucleosides were assayed by HPLC.
Results: After FDT total clearance averaged 0.88 ± 0.11 (mean ± SD) L/h/kg and volume of distribution was 0.90 ± 0.05 L/kg. After D4T clearance and volume of distribution were 0.69 ± 0.15 L/h/kg and 1.03 ± 0.08 L/kg, respectively. Following AzddMeC clearance was 2.19 ± 0.12 L/h/kg and volume of distribution was 1.20 ± 0.53 L/h/kg. Oral bioavailability of FDT, D4T and AzddMeC was incomplete averaging 0.58 ± 0.37, 0.42 ± 0.15 and 0.21 ± 0.08, respectively. A similar extent of absorption was seen after subcutaneous administration of FDT and D4T. FDT and D4T penetrate the cerebrospinal fluid with CSF:serum concentration ratios ranging between 0.09-0.18 1 h after drug administration. AzddMeC did not penetrate the cerebrospinal fluid, however, a major metabolite did.
Conclusion: FDT, D4T and AzddMeC exhibit similar disposition characteristics.

Th.A.261 SCREENING FOR ANTIRETROVIRAL AGENTS AGAINST SIV *IN VITRO*

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Simian immunodeficiency virus (SIV), which causes an acquired immunodeficiency syndrome in macaques, is a lentivirus that is morphologically, antigenically, genetically, and biologically similar to the human immunodeficiency virus (HIV). Because of these similarities, the SIV model represents a unique opportunity for *in vitro* and *in vivo* testing of antiretroviral agents. Since antiretroviral agents may exhibit different properties in different cells *in vitro*, more than one cell line may be necessary to evaluate the efficacy and modes of action of an antiretroviral agent. We have developed an *in vitro* drug screening system that can be modified to use any isolate of SIV and any permissive B or T cell line. Using this screening system, we tested antiretroviral agents for their ability to inhibit SIV replication. Four different assays for determining viral antigen inhibition were conducted and the results of these assays were comparable. Several of the antiretroviral agents tested completely inhibited SIV replication. The selectivity indexes of the tested compounds suggest that 3'-azido-3'-deoxythymidine (AZT), 3'-azido-2',3'-dideoxyuridine (AZdU), and 3'-fluoro-3'-deoxythymidine (FdT) are the most efficacious antiretroviral agents against SIV. As information becomes available from clinical trials using these drugs in HIV-infected individuals, an examination of the predictive value of the SIV model will be possible.

Th.A.262 ANTI-HIV-1 ACTIVITY OF 3'-AZIDO-2',3'-DIDEOXYTHYMIDINE (AZT) IN PRIMARY MONONUCLEAR PHAGOCYTES.

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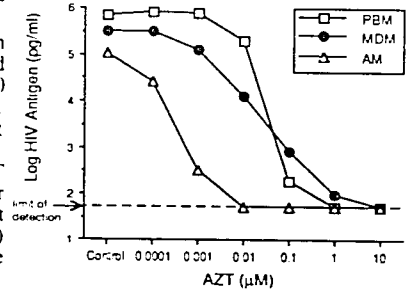
Objective: AZT has been reported to have greater anti-HIV-1 activity in fresh blood monocytes than in monocyte-derived macrophages which have differentiated in vitro. The activity of AZT in fresh tissue macrophages has not been well defined. We therefore compared the anti-HIV-1 activity of AZT in peripheral blood monocytes (PBM), monocyte-derived macrophages (in vitro differentiated), and alveolar macrophages (in vivo differentiated).
Methods: PBM, monocyte-derived macrophages (MDM) and alveolar macrophages (AM) were obtained from healthy HIV-seronegative donors, purified by adherence to plastic and cultured in 10% human serum. PBM and AM were infected with the macrophage-tropic HIV-1BaL strain within 2 hours of harvest. MDM were allowed to mature for 14 days prior to infection. The multiplicity of infection was varied from 0.05-5. HIV-1 replication was measured by p24 ELISA. AZT toxicity was assessed by cell number, cell protein, and respiratory burst capacity (H_2O_2 release).
Results: The results of three experiments are shown in the adjacent figure. Similar results were obtained for each cell type in several experiments. The ED90 was 0.06 uM in PBM, 0.007 µM in MDM, and 0.0006 µM in AM. AZT was not toxic at concentrations < 10 µM.
Conclusions: These studies show: 1) that AZT inhibits HIV-1 replication in primary mononuclear phagocytes at low concentrations, and 2) that macrophages, both in vitro differentiated (MDM) and in vivo differentiated (AM), are more sensitive to AZT than PBM.



Th.A.263 IN VITRO STUDY OF DRUG-SENSITIVITY OF HIV STRAINS ISOLATED FROM PATIENTS WITH AIDS OR ARC BEFORE AND AFTER THERAPY WITH AZT AND/OR 2',3'-DIDEOXYCYTIDINE (ddC).

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Objective: Study of HIV strains which developed drug-resistance may make it possible to identify more specific viral targets and to develop more effective therapeutic strategies. Four pairs of HIV-1 strains isolated from patients before and after therapy were analyzed for a possible mechanism of development of the drug-resistance.
Methods: Two pairs of HIV strains isolated from two pts (0018 and 0036) pre-therapy and after >six months of AZT therapy, and two pairs of HIV strains isolated from two pts pre-therapy and one year therapy with alternating AZT/ddC therapy were examined for sensitivity to dideoxynucleosides.
Results: Although pre-AZT HIV was sensitive to AZT, post-AZT HIV was refractory to AZT. Nevertheless, we found that AZT-triphosphate (AZTTP) was formed in virtually the same amount in cells infected by pre- and post-AZT HIV. Reverse transcriptase obtained from HIV isolated pre- and post-AZT was similarly sensitive to AZTTP. Post-AZT HIV was still sensitive to ddC and 2',3'-dideoxyinosine (ddI) but less sensitive to 3'-azido-2',3'-dideoxyadenosine (AZA) and 3'-azido-2',3'-dideoxyguanosine (AZG). In contrast, no apparent change in the sensitivity to AZT and ddC between pre- and post-AZT/ddC HIV was detected as assessed by HIV cytopathic effect inhibition and gag expression assays using ATH8 and MT2 cells as target cells.
Conclusion: The results suggest that drug resistance does not necessarily develop during 1 year alternating AZT/ddC therapy. The mechanism of AZT resistance remains unclear at this point, and additional studies are needed.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.264 EFFECT OF AZIDOTHYMIDINE (AZT) IN COMBINATION WITH DOUBLE STRANDED RNA (POLY I: POLY C) ON HUMAN IMMUNODEFICIENCY VIRUS REPLICATION IN T CELLS AND MONOCYTE-MACROPHAGES.

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Objective: To compare the effect of AZT in combination with Poly I: Poly C (pI pC) on MT4 cell line and monocyte-macrophages (M/M) infected with HIV.
Methods: HIV cytopathic effect in MT4 cells infected with HTLV-IIIB was evaluated using the reduction of MTT (Tetrazolium assay) procedure. M/M cultures were prepared from peripheral blood monocytes purified by adherence. On day 7, cells were infected and drugs were added alone or in combination: AZT (0, 0.0025, 0.025 and 0.25 μM) and pI pC (0, 1, 10 and 100 μg/ml). On day 27, drugs were removed, MT4 cells were added in half of the wells, and cultures were continued for a further 7 days. P 24 antigen production was measured at intervals by ELISA (Diagnostic Pasteur).
Results: Negativation of HIV replication was not observed either in MT4 cells or in M/M treated with pIpC alone. Suppression of HIV replication by AZT in MT 4 cells was not modified by combination therapy. In contrast, addition of pI pC at concentrations above 10 μg/ml enhanced inhibition of HIV replication by AZT. No toxicity of drugs for M/M was evidenced at the concentrations used.
Conclusion: Synergistic effect of combination therapy of AZT with poly I: poly C was only evidenced in monocyte-macrophage cultures. Monocyte-macrophages cultures seems to be a more sensitive model for in vitro testing of antiretrovirals in combination with biological response modifiers.

Th.A.265 ANTIRETROVIRAL EFFECTS OF GLYCEROPHOSPHOLIPID STEREOISOMERS OF AZT ON HIV REPLICATION IN HT4-6C CELLS.

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Objective: Macrophages are an important target for anti-HIV therapies. We previously reported the synthesis of sn-3 phosphatidylAZT (pAZT), a phospholipid prodrug of azidothymidine (AZT, zidovudine) which was active in HIV-infected cells. pAZT can be targeted to macrophages in vivo. We wished to determine if the sn-1 derivative is also effective in HIV-infected cells since most of the cellular phospholipases are stereospecific for sn-3 phosphoglycerides. Methods: We synthesized sn-1, sn-3, and racemic dipalmitoylglycerophosphoAZT from the corresponding isopropylidene glycerols by coupling with AZT-monophosphate followed by deblocking and acylation of the hydroxyls of glycerol with palmitic anhydride. Lipid vesicles containing 10 mole % of the pAZTs were incubated with HT4-6C cells after infection with the LAV-1_{BRU} strain of HIV in a plaque reduction assay. Results: sn-3 pAZT reduced plaque formation by 50% (ID_{50}) at 2.1 uM versus 2.2 uM for the sn-1 derivative while racemic pAZT had an IC_{50} of 2.7 uM. None of these differences were statistically significant (n=3). Conclusions: Contrary to expectations, the sn-1 and sn-3 derivatives of pAZT were equally effective in reducing HIV replication of HT4-6C cells. This is a surprising result since most cellular phospholipases are thought to be specific for the sn-3 glycerophospholipids. Intact pAZTs have no intrinsic activity against HIV reverse transcriptase (RT). Therefore, the sn-1 pAZT must be degraded in the cell by enzymatic processes which are still uncharacterized before being converted to AZT-triphosphate, the inhibitor of RT.

Th.A.266 MECHANISM OF INHIBITION BY CARBOVIR TRIPHOSPHATE OF HIV REVERSE TRANSCRIPTASE AND HUMAN DNA POLYMERASES, COMPARED WITH THE ACTION OF AZT TRIPHOSPHATE AND DIDEOXYNUCLEOSIDE TRIPHOSPHATES.

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Carbovir (carbocyclic 2',3'-didehydro-2',3'-dideoxyguanosine; NSC 614846) is a potent inhibitor of HIV replication which is presumed to exert its effect by the same mechanism as other dideoxynucleosides, such as ddA, ddC or AZT, *i.e.* at the level of HIV reverse transcriptase (RT). These compounds may interfere with viral replication by blocking the enzyme's ability to copy either the RNA template (reverse transcription) or the complimentary DNA strand. In either case the drug may interfere with chain elongation by reversibly competing with the natural nucleoside triphosphates (TP) or by terminating chain growth after insertion into the DNA chain. We have developed a method which uses a natural RNA template to evaluate and compare directly the effect of different drugs on reverse transcription. In addition, we have optimized conditions for evaluating the inhibition of DNA-directed DNA synthesis.

Carbovir-TP is a very potent inhibitor of HIV RT using 16S *E. coli* rRNA primed with a DNA oligomer. Inhibition was similar to that observed with AZT-TP and the model ddNTP's, ddGTP, and ddTTP on this template. Carbovir-MP is inserted into the growing DNA chain by HIV RT with subsequent chain termination. Like Carbovir-TP, AZT-TP and the two ddNTP are also substrates for this enzyme with comparable K_m's. In contrast, when the DNA-directed activity of HIV RT is evaluated, Carbovir-TP is a much less potent inhibitor of the enzyme than the other compounds, and very high concentrations (1 mM) are needed before incorporation of Carbovir-MP into the growing chain can be detected. AZT-TP incorporation can be detected at much lower concentrations (<5 μM).

The toxicity of potential anti-viral drugs may be evaluated by examining their effect on host cell enzymes. Host cell polymerases which use DNA templates are especially resistant to Carbovir-TP when compared to the effect of AZT-TP on these cellular targets. The K_i for Carbovir-TP with DNA polymerase α is 22 μM; polymerase β, 320 μM; polymerase γ, 23 μM; and primase, 57 μM.

Th.A.267 HALOGENATED CONGENERS OF 2',3'-DIDEOXYPURINE NUCLEOSIDES ACTIVE AGAINST HIV IN VITRO: A NEW CLASS OF LIPOPHILIC PRODRUG.

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Objective: Lipophilicity of 2',3'-dideoxypurine (ddP) nucleosides is generally low and their penetration into the central nervous system is not likely to be efficient. Generation of lipophilic antiretroviral drugs may have direct clinical relevance to the therapy of HIV infection.
Methods: Four 2-amino-6-halo-ddP and four 6-halo-ddP were synthesized and tested for in vitro activity to suppress the infectivity, cytopathic effect, gag protein expression, and DNA synthesis of HIV in various cells. Octanol-water partition coefficients and enzymatic deamination kinetics were defined.
Results: Of the above compounds, 2-amino-6-fluoro- and 2-amino-6-chloro-ddP possessed in vitro anti-HIV activity comparable to that of 2',3'-dideoxyinosine (ddI) and dideoxyguanosine (ddG). The comparative order of lipophilicity was: 2-amino-6-iodo > 2-amino-6-bromo > 2-amino-6-chloro > 2-amino-6-fluoro > ddG > ddI, while the relative rate of deamination by adenosine deaminase (ADA) was: ddA, 2-amino-6-fluoro >> 2-amino-6-chloro > 2-amino-6-bromo > 2-amino-6-iodo. In the presence of 2'-deoxycoformycin, a potent ADA-inhibitor, all 6-halo ddP analogs failed to exert in vitro antiretroviral effect.
Conclusion: All eight 6-halo 2',3'-dideoxypurine nucleosides were active against HIV in vitro and were substrates for ADA. In addition, all compounds except 6-fluoro ddPs were more lipophilc than 2',3'-dideoxynucleosides (AZT included) presently under clinical trials. These nucleosides represent a potential new class of lipophilic prodrugs for ddI and ddG.

Th.A.268 NOVEL 6-SUBSTITUTED ACYCLOURIDINE DERIVATIVES AS HIGHLY SPECIFIC INHIBITORS OF HIV-1

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Objective: To develop an effective chemotherapy for AIDS, novel 6-substituted acyclouridine derivatives were synthesized and examined for their inhibitory effects on HIV *in vitro* and their pharmacokinetics *in vivo*.
Methods: 1-[(2-Hydroxyethoxy)methyl]-6-phenylthiothymine (HEPT) and its derivatives were examined for their inhibitory effect on the replication of several strains of HIV-1 and HIV-2 in various T4 lymphocyte cultures including peripheral blood lymphocytes (PBL). Their pharmacokinetic behavior following oral administration to rats was also investigated.
Results: HEPT and three of its analogues proved to be potent and selective inhibitors of HIV-1, but did not inhibit the replication of HIV-2. HEPT and its analogue, termed HEPT-S, achieved 50% inhibition of HIV-1-induced cytopathogenicity in MT-4 cells at a concentration of 6.5 and 1.6 μM, respectively. The compounds were also inhibitory to HIV-1 in PBL. Pharmacokinetic studies indicated that the plasma drug concentration of 22.8 μM was achieved with HEPT-S at a dose of 20 mg/kg.
Conclusion: HEPT and its analogues are unique compounds and should be further pursued for their therapeutic potential in the treatment of AIDS.

Th.A.269 SYNTHESIS AND INHIBITION OF HIV-1 AND HIV-2 ACTIVITY BY NAPHTHALENEDISULFONIC ACID SPACER DERIVATIVES

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Objective: Synthesis and evaluation of naphthalenedisulfonic acid derivatives for anti-HIV-1 and anti-HIV-2 activity.
Methods: Anti-HIV activity was determined by measuring inhibition of (1) HIV-1 and HIV-2 cytopathogenicity (2) HIV-1 giant cell formation and (3) HIV-1 reverse transcriptase (RT) activity.
Results: Significant anti-HIV activity is observed in spacer derivatives of 4-amino-5-hydroxy-2,7-naphthalenedisulfonic acid. ED_{50} values of 39μg/ml and 7.8μg/ml (HIV-1) and 43μg/ml and 37μg/ml (HIV-2) were obtained for the aliphatic and aromatic spacer derivatives respectively. Both compounds have CD_{50} values > 100μg/ml. In the giant cell formation assay, ID_{50} values are 24μg/ml and 32μg/ml for the aliphatic and aromatic spacer compounds respectively. In the RT assay, a new long chain amide derivative displayed the most potent activity (ID_{50}=50μg/ml) which was comparable to suramin (ID_{50}=42μg/ml), the reference RT inhibitor used in the experiment. The most active derivatives show 100% inhibition of HIV-1 and HIV-2 cytopathogenicity at doses that are non-toxic to the host cells.
Conclusion: Analogs of 4-amino-5-hydroxy-2,7-naphthalenedisulfonic acid show significant anti-HIV activity and should be further studied as agents for potential anti-AIDS therapy. (Supported by Scholar Award No. 700065-5-RF from the American Foundation for AIDS Research)

Th.A.270 THE EFFECTS OF 5'-HYDROGENPHOSPHONATES AND 5'-METHYLPHOSPHONATES OF PYRIMIDINE NUCLEOSIDES AGAINST HIV-1 REPLICATION IN VITRO.

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Objective: To evaluate in vitro anti-HIV activity of 5'-hydrogenphosphonates (HP) and 5'-methylphosphonates (MeP) of pyrimidine nucleosides and to determine their structure-activity relationships and selectivity.
Methods: The inhibitory effects of the compounds on HIV-1 replication were evaluated by HIV-1 P24 core antigen ELISA and their cytotoxicity was measured by XTT-microculture tetrazolium assay in MT4 cells. EC_{50} (50% antiviral effective concentrations) and IC_{50} (50% inhibitory concentrations of cell growth) were calculated by the median-effect principle using a computer software.
Results: Fifteen 5'-hydrogenphosphonates and eleven 5'-methylphosphonates of pyrimidine nucleosides were tested. Several compounds were found to be potent and selective inhibitors of HIV replication. The compounds and their corresponding EC_{50}'s and IC_{50}'s (in uM) are: ddT-HP, 0.084, 3400; AZT-HP, 0.075, 2500; 3'-F-dThd (FLT)-MeP, 0.38, 4600; FLT-HP, 2.2, 12600; and ddC-HP 0.95, 2300. As a control compound, AZT gave 0.006, 210.
Selectivity indices (IC_{50}/EC_{50}) were 40595; 33560; 15333; 5736 and 2442, respectively. The selectivity index for AZT was 35000.
Conclusion: This study showed that ddT-HP, AZT-HP, FLT-MeP, FLT-HP and ddC-HP were potent and selective inhibitors of HIV-1 replication in vitro. These compounds should be further explored for possible clinical trials for AIDS.

Th.A.271 ANTI-HIV ACTIVITIES OF NOVEL NUCLEOSIDES ANALOGS: ACYCLIC AND TRICYCLIC BASE NUCLEOSIDES.

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Objective : Nucleosides analogs are the most effective agents in the treatment of HIV infections. Because toxicity and viral resistance have been described, two series of new nucleosides derivatives, acyclic nucleosides and tricyclic base nucleosides, were screened against HIV1.
Methods : First, mitogenic and toxic effects of the 13 compounds were evaluated using Methyl-Thymidine incorporation test in three cellular types : normal PBL, MT4 and U937. Acyclonucleosides were then tested on MT4 and MT2 cell-lines in tissue culture plates (24-wells). Cells were infected in vitro with 350 cpm/10^5 cells (0,1 TCID50) or 35 cpm/10^5 cells (0,01 TCID50) of HIV1 (LAV1).Tricyclic nucleosides were screened at 350 cpm/10^5 cells (150 TCID50 in MT4 and 7 TCID50 in MT2). Cells were incubated simultaneously with various concentrations of each agent and HIV1. Antiretroviral activity was evaluated by measure of syncitium formation and Reverse Transcriptase (RT) activity. Experiments were performed at least in triplicate.
Results : The five acyclonucleosides did not present any mitogenic like effect. At 10^{-4}M, the 2-amino-6-chloro(1-propanol-2-yl)-9-purine dibromohydrate exhibited cellular toxicity in U937 cells. None of these molecules demonstrated potent inhibiting activities against the viral replication and expression. Furthermore, two-drug combinations of ddC or AZT and acyclonucleosides did not inhibit HIV1 synergistically. Two of eight tricyclic derivatives showed little cytotoxicy (DL50 > 500mg/ml) : 3-β-D-ribofuranosyl-9H-9-oxo pyrimido (2,1-i) purine and 6-(1-β-D-ribofuranosyl-2-amino-3-imidazol)-2-pyrimidine.The five tricyclic derivatives tested did not modify or inhibit significantly viral infection and expression.
Conclusion : Acyclic and base tricyclic nucleosides analogs are not effective in reducing HIV infection and production. Because cellular toxicity of acyclonucleosides was weak, screening new derivatives of this serie is now on progress.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.272 ANTIVIRAL ACTIVITY OF ACRIFLAVINE AND OTHER ACRIDINE ANALOGUES AS MEASURED IN VIVO IN FRIEND LEUKEMIA VIRUS CARRYING MICE AND IN VITRO ON HIV-1 INFECTED CELLS

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In vivo, DBA/2 mice inoculated with Friend's leukemia virus, were treated by i.p. route during 7 days with acriflavine-hydrochloride (ACF-HCl), or the neutral form of ACF (ACF-N) or by proflavin (PF), acridine (ACD), aminacrine (AAC) or tetrahydro amino acridine (THA) hydrochlorides and acridine yellow (ACD-y). Their viremia was measured by transferring their plasma to normal mice and counting in these recipients, the number of spleen focus forming units (SFFU): PF treatment inhibited the SFFU formation as efficiently as AZT. ACF-HCl was compared to ACF-N by 4 administration routes: i.p., i.v., s.c. and gastric (p.o.). ACF-HCl and ACF-N were inactive by s.c. and i.v. routes and identically efficient by i.p. route. At their optimal dose (12mg/kg), they were 10 times more efficient than AZT applied as control. By p.o. route ACF-HCL was moderately efficient while ACF-N was inactive. In vitro incubation with ACF of MT4 cells does not prevent HIV-1 induced cytopathic effect, but in HIV-1 productively infected H9 and U 937 cells, ACF treatment induces a reverse transcriptase activity inhibition much more intense than the cytostatic effect. These preliminary results suggested ACF a powerfull antiretroviral activity in vivo which is 10 times stronger than that of AZT and, in vitro, on monocytic U937 line cells HIV production (retrotranscriptase). ACD, AAC, THA and ACD-y are totally inactive. We hypothetize than the molecule charge is essential in acriflavine action.

Th.A.273 SYNTHESIS OF A SERIES OF TETRAHYDRO-IMIDAZO[4,5,1-jk][1,4]-BENZODIAZEPIN-2(1H)-ONES AND -THIONES WITH POTENT AND SELECTIVE IN VITRO ANTI HIV-1 ACTIVITY

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Objective: Develop a potential anti-AIDS candidate from an initial lead compound (R14458) which is structurally distinct from the dideoxynucleosides such as AZT, DDI, and DDC but has moderate and specific activity against HIV-1.

Methods: Several analogues of the title ring system were synthesized and tested for their ability to inhibit the cytopathicity of HIV-1, and for their inherent cytotoxicity, in an MT-4 cell line.

Results: Chemical syntheses were developed and utilized to obtain a series of compounds related to R14458. This allowed the establishment of some structure activity relationships and ultimately the synthesis of a compound, R82913, with anti HIV-1 potency 30,000 times greater than the original lead. Furthermore, the concentration at which R82913 is 50% inhibitory to HIV-1 (1.5 nM) in the MT-4 assay is 100 and 3000 times lower than that required of the dideoxynucleosides DDC and DDI, respectively.

Conclusion: This synthetic program has resulted in a variety of active compounds distinct from the dideoxynucleosides. The potency, as well as the relative lack of cytotoxicity of some compounds in this series, makes them potential candidates as anti-AIDS drugs.

Th.A.274 INHIBITION OF HEPATITIS B VIRUS (HBV) REPLICATION IN HBV-PRODUCING HEPATOMA CELLS BY 2',3'-DIDEOXYNUCLEOSIDES IN VITRO.

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Objective: Many HIV-infected individuals are co-infected with HBV. The HBV infection is an increasingly serious problem among homosexuals and intravenous drug abusers. The life cycle of hepadnaviruses involves a step of reverse transcription similar to that of retroviruses. We therefore asked if antiretroviral DNA-chain terminating 2',3'-dideoxynucleosides (ddNs) could suppress replication of HBV in vitro.
Methods: HBV-producing HEP-G2-hepatoblastoma-derived cells, 2.2.15, were cultured in the presence or absence of various concentrations of ddNs. High molecular weight DNA and total RNA were extracted from the cells and assessed for synthesis of extrachromosomal HBV DNA and viral RNA by Southern and Northern blot hybridization techniques, respectively.
Results: ddNs including 2',3'-dideoxyinosine (ddI) and 2',3'-dideoxyguanosine (ddG) exhibited a potent inhibitory effect in suppressing replication of HBV by as much as 97% as assessed by the amounts of extrachromosomal HBV DNA in 2.2.15 cells. Northern blot analyses revealed no apparent difference in the quantity of pregenomic RNA expressed in those cells. In addition, the length of time cells were exposed to drugs was more important than when the drug was added to the culture.
Conclusion: 2',3'-Dideoxynucleosides were active against replication of HBV in HBV-producing hepatoblastoma cells in vitro. Our observation that the amount of RNA was not reduced by these drugs suggests that ddNs suppress replication HBV, most likely at the reverse transcription step. These data may have a clinical relevance to therapy for HIV and HBV infections.

Animal Models

Th.A.275 IMMUNE ACTIVATION AND IMMUNE DEFICIENCY CHANGES DURING A LONGITUDINAL STUDY OF SIV INFECTION

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Objective: To determine the changes in serum markers of immune activation in lymphoid subsets during the course of SIV infection in rhesus monkeys.
Methods: 2 groups of 4 rhesus macaque monkeys were infected with SIV and tested at approximately monthly intervals for 9 and 18 months. Beta-2 microglobulin (B2M) and neopterin were measured by RIA in serum obtained on the same day as blood for cellular phenotyping by flow cytometry.
Results: Neopterin rose markedly at 2 weeks and subsided by 1 month, but remained elevated during SIV infection. Monkeys with higher neopterin levels also had lower CD4 T cell levels. B2M did not rise early in SIV infection but did increase over time. CD4 T cells fell early in infection and showed several patterns of further fall. CD8 T and NK cells varied but did not have a consistent pattern. B cells, however, began to increase after about 5 months and reached levels approximately twice baseline.
Conclusion: Immune activation in SIV was evident in the serum neopterin increases and later rises in B2M and B cell levels. The correlation between immune activation changes and the course of immune deficiency in SIV infection will be reported.

Th.A.276

A NEW IMMUNODEFICIENCY VIRUS ISOLATE FROM A WILD CAPTURED CHIMPANZEE: SIVcpz-ant-1

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Objective: Actually, only 2 chimpanzees, naturally infected with a novel HIV-related virus have been described. Both animals originated from Gabon and from one a novel retrovirus "SIVcpz" was isolated. The aim of this study was to better define the prevalence of this virus in chimpanzees; to obtain new isolates and to further characterize SIVcpz and its relatedness with other known HIV/SIV isolates.

Methods: Sera from chimpanzees that had not been experimentally exposed to HIV/SIV's and with no history of inoculation with human blood products, were tested for HIV antibodies with commercial HIV-1 tests (Elisa, western blot). Virus was isolated from peripheral blood lymphocytes from the chimpanzee, cocultivated with normal (HIV-negative) human blood lymphocytes. Isolates were characterized by growth characteristics on different continuous cell lines (T-cells, macrophages), western blot, radio-immunoprecipitation and nucleic acid hybridization.

Results: Among 34 chimpanzees tested for HIV antibodies, one showed antibodies to HIV-1 (presence of core and env antibodies). A retrovirus was isolated and refered to as SIVcpz-ant-1. Antigenically, both available SIVcpz isolates seemed to be closer to HIV-1 than to HIV-2, SIVagm, SIV_{MND} and SIV_{MAC}. Several of the viral proteins of the SIVcpz isolates differ in molecular weight from the known corresponding HIV/SIV proteins. The outer membrane proteins had higher molecular weights (155-185 kD). The major core protein of the SIVcpz-gab-1 and SIVcpz-ant-1 isolate differs in molecular weight (p25.5 and p27 respectively). Both SIVcpz isolates did not induce severe cytopathic effects in human and chimpanzee lymphocytes. From nucleic acid experiments, there appears to be an homology, albeit limited, between SIVcpz and HIV-1 at the gp120 level.

Conclusions: Naturally infected chimpanzees with SIVcpz may not be uncommon. The characterization of these viruses can help to better understand the natural history and evolutionary relationship of the HIV/SIV group of viruses.

Th.A.277

INVESTIGATIONS INTO THE GENETIC AND IMMUNOLOGICAL BASIS FOR THE LACK OF PATHOGENESIS OF SIVagm IN ITS NATURAL HOST, THE AFRICAN GREEN MONKEY (AGM)

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Objective: To determine the reasons for the lack of pathogenesis of SIVagm in order to better understand the mechanisms of pathogenicity of HIV.
Methods: Isolation, molecular cloning, genome sequencing and protein analysis. Evaluation of the anti-viral immune response, intracellular control of viral expression and viral genome variation in vivo.
Results: A variety of SIVagm strains have been isolated from naturally infected AGM. Their genomes contain the typical lentivirus genes gag, pol, env, vif, vpx, tat, rev and nef, but not vpu and vpr. SIVagm isolates reveal a novel type of intragroup divergence with an unusually high degree of variability in pol and high diversity in the rev and tat genes. There is no obvious genetic sequence of HIV missing in SIVagm that can be held responsible for the pathogenicity of HIV. The humoral and cellular immune response mechanisms of AGM to SIVagm are, in general, less vigorous than in HIV infected humans. Intracellular suppression of SIVagm expression appears to be very effective. Furthermore, preliminary evidence suggests that in vivo variation of injected molecularly cloned SIVagm strains is limited, reducing the threat from immunological escape mutants.
Conclusion: The apathogenicity of SIVagm is neither due to the obvious absence of a specific gene nor to a particularly effective immune response in AGM. Presently available evidence suggests that vigorous intracellular virus suppression may contribute to the apathogenicity of SIVagm.

Th.A.278

INDUCTION OF IL-6 IN SIV/SMM-PBj INFECTION: EVIDENCE FOR A CYTOKINE MEDIATED DISEASE.

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Objective: Determination of cytokine levels and IL-6 mRNA in 3 species of macaques (Rhesus n=8, Cynomolgus n=4, and Pigtailed n=4) following infection with the SIV/SMM-PBj clone; correlation with disease pathogenesis.
Methods: Cytokine levels in the 16 monkeys (4 Rhesus survivors) were determined by IL-6 (B9 bioassay confirmed by neutralization), IL-1ß (Elisa), THF (Elisa and RIA), IL-2 (Elisa). mRNA levels for IL-6 and SIV were determined by RNA extraction from tissues and analysis of total RNA on northern blots by hybridization to radiolabeled cDNA probes.
Results: There was a distinctive cytokine pattern in those animals that suffered rapid death (n=12) (7-10 days) after infection with the SIV clone. The primary monokine increases were in IL-6 with a 100-1000 fold increase in serum levels. Similar data was obtained with all species with the greatest increases in the pigtails.

IL-6 levels	day 0	day 2	day 6	day 7	day 8(death)
U/ml	25±10	42±4	3524±4050	14,000±	52,500±
(Pigtail)				1514	2788

Surviving Rhesus monkeys (n=4) mean IL-6 levels only increased to 140±45 U/ml and subsequently normalized. No increases were seen in serum TNF levels and only 2-3 fold increases in IL-1ß. The IL-6 levels paralleled the disease progression and peaked at the time of death. Primary lymphoid tissue from pathologically involved areas had marked increases in IL-6 mRNA, with evidence of the concurrent presence of SIV.
Conclusion: The serologic and molecular data suggest that SIV/SMM-PBj induces expression of IL-6 resulting in the pathologic abnormalties and ultimate death of these species of monkeys.

Th.A.279

MALIGNANT LYMPHOMAS IN SIV INFECTED CYNOMOLGUS MONKEYS.

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Objective: To study pathogenic effects of simian immunodeficiency virus (SIV) in cynomolgus monkeys (Macaca fascicularis).
Methods: Monkeys were injected i.v. with SIV_{SM} (courtesy of H. McClure, P. Fultz, Yerkes, Atlanta, GA, USA) and monitored for clinical symptoms, antibody response to SIV, CD4/CD8 lymphocyte ratios and pathology of biopsy and/or autopsy material.
Results: All (24) monkeys developed signs of SIV infection and all examined (15) also signs of progressive immunodeficiency. Malignant lymphomas were observed in 30% (7/24) of the SIV infected monkeys 5 to 13 months after inoculation with SIV. All 7 lymphomas were rapidly growing, of lymphoblastic/immunoblastic histology, of B cell origin and with extra nodal, disseminated growth. Most tumors showed marked infiltration by T-lymphocytes and macrophages with occasional cells showing immunohistochemical reaction for SIV. Two tumor cultures were established which were shown to be of B cell phenotype (karyotyping in progress).
Conclusion: The present results indicate that SIV induced immunodeficiency in cynomolgus monkeys also mimics HIV infection and AIDS in humans with regard to increased lymphomagenesis.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.280 LOCALIZATION OF SIV ANTIGEN AND RNA IN THE CNS OF MACAQUES WITH SIV ENCEPHALITIS

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Objective: To detect and localize SIV in the central nervous system of rhesus macaques with "SIV encephalitis".
Methods: Six rhesus monkeys with histologic evidence of "SIV encephalitis" were examined by immunohistochemistry and in situ hybridization to localize SIV core protein (p27) and RNA and to phenotype the cellular infiltrates in the CNS. Tissues examined included parietal cortex, cerebellum, spinal cord, and choroid plexus.
Results: SIV core antigen (p27) was identified in cerebral white matter in all 6 animals where it was localized to infiltrates of macrophages and multinucleated giant cells. In addition, p27 antigen was detected in 2 of the samples of cerebellum, 2 samples of choroid plexus, and 2 of the spinal cords. One animal had viral antigen detected in all sections of the CNS. In the two animals with immunohistochemical staining in the choroid plexus, viral antigen was localized to rare mononuclear cells and vessels in the plexus stroma. Vessels associated with macrophage/giant cell infiltrates in the brain were antigen-positive as were occasional vessels not associated with lesions. In situ hybridization for SIV RNA confirmed the immunohistochemical localization of SIV to macrophage/multinucleate giant cell infiltrates and vessels as well as occasional mononuclear cells in the stroma of the choroid plexus. No viral antigen or nucleic acid was detected in matched tissues from two uninfected control animals. Immunophenotyping of the cellular infiltrates revealed that they consisted primarily of monocyte/macrophages and occasional T cells which were predominantly CD8 positive. Macrophages and T cells were also present in the stroma of the choroid plexus and intimately associated with the vessel walls in the CNS of SIV infected macaques but not uninfected macaques.
Conclusion: Simian immunodeficiency virus induces neuropathologic disease in rhesus monkeys similar to that associated with HIV. As in HIV-associated neurologic disease, virus can be localized to infiltrates of monocytes and multinucleate giant cells. Vessels are apparently involved, but it is not clear what cells are infected. These data support the concept that the choroid plexus, and cerebral vasculature may be sites of entry for infected macrophages into the CNS.

Th.A.281 PERSISTENT PRODUCTIVE INFECTION OF RHESUS MACAQUES BY DIFFERENT STRAINS OF HIV-2

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Objective: To develop an animal model of persistent HIV-2 infection using preselected susceptible animals and virus strains with high replicating ability.
Methods: Eight rhesus macaques were inoculated with 3 different HIV-2 strains (UC2, UC3, and UC7) isolated from peripheral blood mononuclear cells (PBMC) of patients from the Ivory Coast. The PBMC of these animals had been found susceptible to the viruses in vitro. Clinical status, serum antibody, T4/T8 ratios, and virus production by the animals' PBMC were monitored at 4-week intervals. Sequential virus isolates were biologically characterized and compared with the original inocula.
Results: All animals seroconverted within 4 weeks of infection but remain free of clinical symptoms, with normal T4/T8 ratios after a maximum period of 52 weeks. Virus was readily isolated from the PBMC of 3/4 animals inoculated with UC3, 1/3 animals inoculated with UC7, and the one animal that received UC2. Thus far, host range, cytopathicity, and neutralization studies indicate little or no differences between the initial inocula and the sequential isolates from these animals.
Conclusion: These in vivo studies indicate that rhesus macaques can be persistently infected with certain strains of HIV-2 and can serve as potentially useful animal models to study HIV infection, therapy, and vaccine development.

Th.A.282 A FELINE MODEL OF THE AIDS DEMENTIA COMPLEX (ADC)?

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Objective: To determine the applicability of Feline Immunodeficiency Virus (FIV) infected cats as an animal model of HIV-induced AIDS Dementia Complex.
Methods: Cats used in this study were naturally infected with the recently discovered lentivirus, FIV, and tested positive for FIV infection and negative for the feline leukemia oncornavirus (FeLV) infection by the ELISA technique. Clinical neurologic examinations, electrophysiologic testing, clinical pathologic screening, and a routine necropsy were performed.
Results: Although most cats were normal on clinical neurologic examination, abnormally slow motor and sensory nerve conduction velocities and abnormalities in evoked spinal cord potentials (ESCPs) were detected in some cats. The first negative peak of the ESCP, when recorded at the interarcuate space between L_1 and L_2 lumbar vertebrae, is produced by summation of action potentials in primary afferent neurons that ascend the spinal cord without synapse. Compared to ESCPs of normal cats, the first peak was variably decreased to essentially absent. Loss of the first peak of the ESCP suggests that there is selective fiber dropout in the peripheral nerve, dorsal roots, and/or ascending spinal cord pathway.

Microscopically, there was evidence of demyelination in the dorsal (posterior) columns of the spinal cord. Dorsal and ventral nerve roots of the spinal cord contained intact axons with prominent vacuolar changes in their myelin sheaths similar to the vacuolar myelopathy associated with HIV infection. There also appeared to be selective fiber loss as evidenced by decreased density of nerve fibers in numerous fascicles. Examination of the brain and spinal cord revealed mononuclear cell accumulations consistent with a mild nonsuppurative encephalomyelitis. Peripheral nerves showed no evidence of obvious lesions.
Conclusion: These findings represent preliminary results in a limited number of cases of FIV infection. However, the similarity of signs, symptoms, and lesions associated with FIV and HIV infection, taken together with the FIV virion's similarities with HIV, suggest that FIV infection of SPF cats shows great potential as an animal model of HIV nervous system infection.

Th.A.283 IMMUNOLOGY OF FELINE IMMUNODEFICIENCY VIRUS (FIV) INFECTION

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Objective: To study immunologic changes toward development of AIDS in cats infected with feline immunodeficiency virus (FIV).
Methods: Peripheral blood lymphocytes of FIV infected cats were assayed for Con A blastformation and IL-2 production. In vivo antibody production of infected cats to SRBC were evaluated.
Results: Eight asymptomatic carrier (AC), 11 ARC and 2 AIDS cats all showed significant decrease ($P<0.01$) in the Con A stimulation index of peripheral blood lymphocytes. The decrease paralleled the advance of the disease, and significant difference in the stimulation indices were also noted between AC and ARC ($P<0.01$), and between ARC and AIDS ($P<0.05$). When peripheral blood lymphocytes from 6 AC cats, showing approximately 50% decrease in Con A stimulation index, were evaluated for IL-2 production and human rIL-2 dependent proliferation, both parameters were lower than those in uninfected healthy controls. The primary IgG antibody response of 4 AC cats to SRBC were significantly reduced with normal IgM response. The secondary antibody production, however, showed similar response to that of normal animals.
Conclusion: Cats infected with FIV show T cell immunodeficiency characterized by lowered IL-2 production and IL-2 dependent proliferation, as well as impairment of IgM-IgG switching in the primary antibody response. This system may provide an excellent animal model for screening of anti-HIV drugs.

Th.A.284

MOLECULAR CLONING OF THE JAPANESE ISOLATES OF FELINE IMMUNODEFICIENCY VIRUS (FIV)

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Objective: Since there is only one FIV isolate in U.S. (Petaluma) which was totally sequenced, the second FIV isolate which was sequenced is necessary to know the general relationship of FIV to other lentiviruses and the pathogenicity of FIV.
Methods: Two strains of FIV, TM-1 and TM-2 were isolated and molecularly cloned full-genomically, and were characterized by restriction endonuclease mapping and nucleotide sequencing analyses.
Results: Restriction endonuclease maps of TM-1 and TM-2 are very similar each other, and quite different from that of previous isolate in U.S., Petaluma. However, nucleotide alignment showed that 80-90% identities in regions of entire gag-pol and partial env between TM-2 and Petaluma. In LTR, nucleotide sequence is highly conserved (over 80% identity) between TM-2 and Petaluma, except that NFkB binding-like motif and an alternative TATA-like sequence in Petaluma were not observed in TM-2. Noteworthily, a recombinant molecular clone derived from TM-1 is replication-competent in feline cells, and progeny virions are infectious for feline T-cell line.
Conclusion: Japanese isolates of FIV were demonstrated to be highly related to, but slightly diverged from U.S. isolate. An infectious clone for feline T-cell line might be useful in studies on molecular basis of FIV-infection and in animal model for AIDS.

Th.A.285

ELIMINATION OF RETROVIRUSES FROM CATS USING ALLOGENEIC MARROW TRANSPLANTATION

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OBJECTIVE: To determine whether allogeneic marrow transplantation (BMT) combined with marrow from immunized donors or zidovudine (AZT) therapy could eliminate retrovirus from cats experimentally-infected with feline leukemia virus (FeLV).
METHODS: Nine FeLV-infected specific-pathogen-free cats were transplanted—3 cats (Group 1) received marrow and WB from immunized (with formalin inactivated FeLV) sibling donors, 3 cats (Group 2) received AZT (15 mg/Kg TID X 90 days) and marrow and WB from immunized sibling donors, and 3 cats (Group 3) received AZT and marrow and WB from non-immunized sibling donors. All 9 BMTs were performed following 6 x 1.67 Gy fractions of total body irradiation delivered over 3 days by a 6 MeV linear accelerator.
RESULTS: Five of the 9 cats were free of FeLV (as determined by indirect immunofluorescence for p27 in peripheral leukocytes and platelets) for varying periods of time post BMT. Two of these cats (one from Group 2 and one from Group 3) died of septicemia at days 92 and 83 post BMT. Both were IFA negative and cocultivation of their marrow did not detect latent FeLV. Polymerase chain reaction (PCR) using primer pairs that hybridize to the FeLV-LTR revealed that one cat was latently infected whereas retrovirus was not detected in marrow from the second cat.
CONCLUSIONS: 1) AZT does not interfere with normal post-BMT hematologic engraftment, 2) total body irradiation significantly reduces the quantity of FeLV in infected cats, and 3) graft-vs-host disease may provide a graft-vs-retrovirus effect.
Since so many more lymphohematopoeitic cells are infected in cats with FeLV infection than in HIV infection of people—90% versus 0.001%—it is noteworthy that a combination of marrow ablation, adoptive transfer of immunity, and AZT therapy was successful in eliminating FeLV from cats.

Th.A.286

TISSUE DISTRIBUTION OF FIV AND RELATIONSHIP TO PATHOGENESIS IN CATS AND COMPARISON WITH THE SIV MODEL

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Objective: FIV is a T-lymphotropic lentivirus associated with AIDS-like disease in cats. The main objective of this study was to determine tissue distribution of FIV as well as histopathology in diseased animals. These findings were compared with our data from SIV-infected macaques and related to *in vivo* pathogenesis.
Methods: Cats, experimentally or naturally infected with FIV, were observed for the development of feline AIDS. Lymphoid, gastrointestinal, brain, and kidney tissues were collected at necropsy. Tissue distribution of FIV was assessed by the *in situ* hybridization method using ^{35}S-labeled FIV DNA probe. Histopathology was also performed. Various tissues from SIV-infected animals with fatal simian AIDS were also collected and analyzed for SIV-infected cells by the same procedure.
Results: Mononuclear, and in some cases, also parenchymal cells from kidney tissues of diseased cats contained high levels of viral transcripts. In SIV-infected macaques, most of the SIV RNA was found in lymphocytes or macrophages from intestinal, brain, and spleen tissues. In addition, various other cell types showed presence of viral nucleic acids. Similar results were obtained with tissues from FIV-infected cats. Histopathological lesions in the intestinal tract of both cats and monkeys were similar and resembled those seen in AIDS patients.
Conclusion: Histopathologic findings and tissue distribution of FIV in diseased cats revealed that this is a useful experimental model for the study of disease progression in human AIDS. In addition, the procedures used for these studies can be applied to the analysis of chemotherapeutic strategies and vaccine approaches aimed at limiting disease and preventing infection.

Th.A.287

SUSTAINED INCREASES IN CEREBROSPINAL FLUID QUINOLINIC ACID IN RHESUS MACAQUES INFECTED WITH SIMIAN IMMUNODEFICIENCY VIRUS: RELATIONSHIP TO NEUROLOGIC SIGNS

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AIDS patients may develop dementia, motor and psychiatric disturbances and at post mortem exhibit brain atrophy, white matter pallor and infiltrates of multinucleated giant cells. We have found increased concentrations of the endogenous neurotoxin, convulsant and kynurenine pathway metabolite, quinolinic acid (QUIN), in the cerebrospinal fluid (CSF) of HIV-1-infected patients and implicated QUIN in the pathogenesis of AIDS dementia complex (*Ann. Neurol.*: 26 (1989) 275-277). Macaques infected with simian immunodeficiency virus (SIV) may also develop neurologic abnormalities and serve as an animal model of AIDS-related CNS illness.
Objective: To investigate whether CSF QUIN content is increased in SIV-infected rhesus macaques.
Methods: QUIN was measured by gas chromatography/mass spectrometry using [^{18}O]-QUIN as internal standard in CSF and L-kynurenine (L-KYN) was measured in plasma of non-infected control macaques and SIV-infected macaques at various clinical stages of disease.
Results: In controls, CSF QUIN was 21.8±2.6 nmol/L (n=24). In asymptomatic SIV-infected macaques, CSF QUIN was 127.6±22.9 nmol/L (n=4). However, in SIV-infected macaques with clinical SAIDS and neurologic signs (n=6), CSF QUIN concentrations ranged from 800 to 11,000 nmol/L. Over time, increases in CSF QUIN generally paralleled the progression of both systemic and neurologic disease. Plasma L-KYN concentrations were also increased in all virus positive macaques.
Conclusions: Increased CSF QUIN and plasma L-KYN concentrations are consistent with increased L-tryptophan catabolism through the kynurenine pathway, possibly secondary to activation of indoleamine-2,3-dioxygenase. Increased QUIN may contribute to the neurologic abnormalities of AIDS by acting either as a neurotoxin or via disruption of functions mediated via NMDA receptors.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.288 THE EFFECT OF HIV-1 INFECTION ON SPECIFIC IMMUNE RESPONSES IN RABBITS

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Objective: HIV-1 infection of rabbit cells has been demonstrated *in vitro* and *in vivo*. Although HIV-1 could be detected in rabbits for as long as 1 year post-infection, no pathogenic effects attributable to viral infection were observed. The current study was designed to determine whether HIV-1 infection influenced rabbit responses to immunization with specific antigens.
Methods: One week following immunization with heat-killed BCG (HK-BCG) and tetanus toxoid (TT), rabbits were infected with HIV-1. For 6 months, serum antibody levels to TT were monitored by ELISA, and cell mediated immune (CMI) responses to HK-BCG were monitored by PPD skin tests. After 6 months the animals were challenged intravenously with HK-BCG, sacrificed and lungs weights and volume of cells obtained by lavage determined.
Results: The serum antibody titers to TT in the HIV-1 infected rabbits were diminished as compared to those of appropriate controls. The dermal CMI responses to PPD were also significantly reduced in the HIV-1 infected animals. Physical and histologic examination revealed a marked absence of an immunologic response in HIV-1 infected animals, as determined by the lack of granulomatous type lesions in the lungs, and the presence of comparatively moderate to strong granulomatous responses in the lungs of control animals.
Conclusion: These data demonstrate that, under the conditions described, HIV-1 induces suppression of specific immune responses in rabbits.

Th.A.289 A murine model of CNS infection in AIDS.

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Objective: A murine AIDS, characterized by profound immunosuppression associated with increased susceptibility to infection, develops in C57BL/6 mice inoculated with LP-BM5 murine leukemia viruses (MuLVs) [a mixture containing a defective genome, the critical component for disease induction, and helper ecotropic and mink cell focus-inducing (MCF) viruses]. This model was used to characterize CNS infection and to evaluate the therapeutic potential of antiviral agents.
Methods/Results: Primary brain tissue cultures [ca. 95% astrocytes (glial fibrillary acidic protein+) and 5% of microglia (isolectin B4+) and oligodendrocytes (galactocerebroside+)] from mouse neonates were found to be susceptible in vitro to both ecotropic and MCF helper MuLVs. The presence of budding and viral particles (located in extracellular space and cytoplasm) was also shown by electron microscopy. To determine the CNS infection in vivo, mouse neonates were inoculated i.p with 0.02 ml of LP-BM5 MuLVs containing $10^{4.5-5.6}$ XC plaque forming units (PFU) per ml of ecotropic and $10^{2.5-3.2}$ mink cell focus forming units per ml of MCF viruses. Approx. $10^{5.2}$ PFU of ecotropic MuLV per 10^7 cells were found in brain tissue cultures from 2 wk old mice. Further, in preliminary tests, the recovery of both ecotropic and MCF viruses was reduced when infected animals were treated (1mg/kg, i.p.) with a lipophilic nucleoside analogue, 5'-(1,4-dihydro-1-methyl-3-pyridinylcarbonyl) -3'-azido-3'-deoxythymidine (HPAZT). Conclusions: LP-BM5 MuLVs can replicate in cells from CNS in vivo and in vitro. This suggests that MAIDS may serve as a model for the neuropathogenesis of HIV infection. Further, this murine model may be suitable for the evaluation of anti-viral therapy against the CNS infection.

Th.A.290 GLOMERULOSCLEROSIS IN TRANSGENIC MICE EXPRESSING HIV-1 GENES

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Objective: Development of a transgenic mouse model of HIV disease.
Methods and Results: Transgenic progeny from three founder mice bearing chromosomally integrated copies of HIV-1 proviral DNA (derived from pNL4-3 and rendered noninfectious by deletion of *gag/pol* sequences) developed renal disease characterized by focal segmental glomerulosclerosis. In two lines, proteinuria was detected at 14-18 days of age and death, resulting from renal failure, occurred at 30 to 40 days of age. Progeny in a third line developed a milder form of nephropathy and continue to survive at six months of age. All lines expressed HIV-1 RNA in the kidney (2kb and 4.4kb species) and expressed variably in other tissues. The highest levels of HIV-1 RNA and protein expression were in muscle, skin and thymus. Immunoblotting using AIDS patient serum has revealed variable amounts of 41kD, 17kD and 14kD protein species in these tissues. Glomerular disease, as well as tubular and interstitial disease, has been chronicled by histology and electron microscopy. These examinations, the absence of circulating anti-HIV antibodies, and fluorescent immunostaining for IgM, IgG and C3 deposition in the kidney failed to support an autoimmune etiology for the pathology.
Conclusions: Similar levels of HIV-1 gene expression in the kidneys of all three lines and specific immunostaining of glomeruli in tissue sections using AIDS patient serum suggests that HIV-1 gene expression in the glomerular epithelium may be responsible for the renal pathology. The nephropathy observed is identical to renal disease described in some HIV-positive patients.

Th.A.291 GENERATION OF TRANSGENIC MICE CARRYING HIV TAT AND NEF GENES

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In an attempt to understand the functions of HIV gene products in vivo, we have generated transgenic mice which carry various copy numbers of HIV tat and nef genes under the control of the HIV LTR using standard microinjection techniques. We have generated 8 transgenic founders carrying the tat gene construct. Founders have reached the age of 6 months with no apparent phenotype. We have also generated 2 transgenic founders carrying the HIV nef gene construct. These animals have reached the age of 2 months without evident phenotype. We are in the process of breeding to determine the transmission rate of the tat and nef genes and to generate lines of homozygotic animals. Expression profile of the HIV gene products will be assayed in various tissues using northern or S1 analysis. In addition, immunohistochemical analyses will be carried out using specific antibodies for each gene product. These transgenic animals will allow us to assess the biological functions of each HIV gene product individually without the involvement of other viral gene products. Our ultimate goal is to determine the interactions between the tat and nef gene products by crossing transgenic animals.

Th.A.292 HIV INTEGRATION IN A CELL-FREE SYSTEM

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Objective: To develop an *in vitro* system in which the HIV integration reaction is faithfully reproduced, then to use this system to study the molecular mechanism of the reaction.
Methods: Extracts from acutely-HIV-infected cells were incubated in a defined solution with plasmid or bacteriophage target DNA molecules. Recombinant products were detected by gel electrophoresis and Southern blotting, or by polymerase chain reaction (PCR). The structure of the recombinants was determined by cloning and sequencing.
Results: Incubation of HIV-infected cell extracts with plasmid or bacteriophage DNA targets resulted in the formation of recombinant molecules that could be detected by gel electrophoresis and Southern blotting. Molecular clones of several recombinant molecules were analyzed. The sequences of the junctions between viral and target DNA in each case showed all the distinctive characteristics of proviruses isolated from infected cells. Thus the *in vitro* recombinants appear to be the products of authentic HIV integration. Integration occured without apparent specificity for target sequence. No high-energy cofactor was required, implying that the DNA breaking and joining steps required for integration are energetically coupled. When HIV-infected cell extracts were fractionated by gel-exclusion chromatography, the enzymatic activities required for integration were recovered with the viral DNA, implying that the HIV integration may be mediated by a nucleoprotein complex.
Conclusion: Authentic HIV integration can occur in a cell-free system. This provides the foundation for a complete biochemical characterization of this pivotal step in the viral life cycle.

Th.A.293 CHARACTERIZATION OF ACUTE HIV INFECTION IN THE PBMC-RECONSTITUTED SCID MOUSE

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Objective: To investigate the SCID mouse reconstituted with human peripheral blood mononuclear cells (PBMC) (Mosier, et al.) as an animal model of HIV-1 infection.
Methods: SCID mice were reconstituted by intraperitoneal (IP) injection of $10\text{-}50 \times 10^6$ PBMC from human donors seronegative for Epstein-Barr virus. Presence of human immunoglobulin (Ig) was determined by EIA. SCID-human chimeric mice were injected IP with 100 to 10,000 tissue culture infectious doses (TCID) of cell-free HIV. Mice were sacrificed 1 to 6 weeks after infection and the presence of HIV assessed by detecting P-24 in plasma or direct tissue lysates, and by culture of tissues.
Results: Human immunoglobulin (Ig) appeared in the serum by two weeks following reconstitution. Human Ig levels ranged from 12 to 17 mg/ml. Mice infected with >100 TCID of HIV had virus cultured from thymus, spleen, lymph nodes, bone marrow and peripheral blood by the sixth week after infection. In animals receiving higher doses of virus, P-24 could be detected directly in plasma and tissue lysates by 2 weeks after infection. At the same time 50-5000 TCID of HIV per 10^6 cells could be recovered by standard techniques (Ho et al) from the spleen cells of infected PBMC-reconstituted SCID mice.
Conclusion: PBMC-reconstituted SCID mice are readily infectable with HIV-1 by IP injection of cell-free virus. HIV replication occurs throughout the lymphoreticular system in the transplanted human PBMC. The PBMC-reconstituted SCID mouse is an appropriate model in which to study therapies aimed at inhibition of HIV replication.

Th.A.294 XENOCHIMERIC SCID MICE AS A POSSIBLE MODEL FOR HUMAN ANTIVIRAL IMMUNITY

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Objective: To investigate the use of xenochimeric SCID mice as an in vivo model for human T and B cell immune responses to HIV antigens.
Methods: Male and female SCID mice, 6 to 12 weeks old, were used. One to 3×10^7 human peripheral blood lymphocytes, obtained from Ficoll-Hypaque density gradients of HIV seronegative and cytomegalovirus (CMV) antibody positive donors, were injected intraperitoneally. Spleen cells from groups consisting of at least 4 mice were combined and analyzed 1 to 12 weeks post-injection for their ability to proliferate to CMV after 5 days of culture. Splenocytes were analyzed by flow cytometry for the presence of human lymphocyte and monocyte markers.
Results: No human monocytes, T or B cells were found when spleen cells from mice injected with human cells 1, 2, 3 or 4 weeks previously were analyzed. When spleen cells from mice injected with human cells 6 to 13 weeks previously were used, a range of 12% to 55% CD4+ cells were found. In these experiments, <10% CD8+ and insignificant levels of B cells or monocytes were identified. Cells bearing the human T cell receptors were found. Spleen cells from mice injected with human cells immune to CMV proliferated to CMV antigens (SI = 17). Similar proliferative studies after immunization of SCID mice with recombinant gp120 and other HIV antigens are in progress.
Conclusion: Xenochimeric SCID mice may be a useful in vivo model for studying immune responses of human cells to HIV and other viral antigens.

Th.A.295 DEVELOPMENT OF AN ANIMAL MODEL TO STUDY HIV INFECTION OF HUMAN HEMATOPOIETIC PROGENITOR CELLS.

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Given indirect evidence that HIV may infect early hematopoietic precursors in man, we have sought to develop an animal model by which to examine infection of such cells experimentally. The heterochimeric SCID-hu mouse is constructed by transplantation of human fetal hematolymphoid tissue into the immunodeficient C.B17 scid/scid mouse. Previous studies have demonstrated that the implanted human lymphoid organs can be infected by HIV. Transplantation of human fetal thymus together with small fragments of fetal liver into SCID mice have results in the presence of human T cells in the peripheral circulation for 6-14 months without injection of fetal liver cells. Histological examination of these grafts shows that the thymus has a normal architecture and distribution of thymocytes, and also contains a structure similar to bone marrow containing blast cells, myelomonocytic cells, and megakaryocytes. When cultured in the methylcellulose colony assay, the cells from these grafts produce CFU-GEMM, CFU-GM, and BFU-E colonies of human origin. These findings suggest that there are early progenitors which can give rise to committed progenitors and mature cells of many lineages including T cells, myelomonocytic cells, and erythrocytes even 6-12 months after transplantation. Grafts with HLA mismatched combinations of fetal thymus and liver were analyzed to deterimine the origin of the T cells and progenitor cells that they contain. The results show that the T cells and progenitor cells originate from the liver donor in most cases. Thus, an animal model for long term maintenance of human multilineage progenitor cells has been developed. The interaction of HIV with these cells may be studied after acute infection.

Th.A.296

CHARACTERIZATION OF HIV-1 INFECTED CELLS WITHIN THE HUMAN LYMPHOID ORGANS OF THE SCID-hu MOUSE

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Little is known about the cell types initially infected within lymphoid organs. The heterochimeric SCID-hu mouse is constructed by transplantation of human fetal hematolymphoid tissues, including thymus, liver, and lymph node, into the immunodeficient C.B17 scid/scid mouse. These organs are infected after intra-thymic, intra-nodal, or intravenous inoculation of HIV. Infected cells in thymus or lymph node can be analyzed by in situ hybridization with 35S-labelled RNA probes which hybridize to the 3' end of the viral transcript. In this study, we sought to define the phenotype of these infected cells. In the thymus, more infected cells were observed in the medulla than in the cortex. Most of the infected medullary thymocytes were CD4+ but a small number of infected cells were CD8+. The infected cells in lymph node were anlyzed by a combination of antibodies against CD45, CD3, CD4, and CD8, by histochemistry (non-specific esterase), and by in situ hybridization. The results show that not only T cells but also tissue macrophages can be infected by HIV in vivo. This animal model thus offers the first opportunity to experimentally analyze the effects of acute HIV infection on different cell populations within human lymphoid organs in vivo.

Related Retroviruses

Th.A.298

MONOCLONAL ANTIBODIES TO SIV ENVELOPE PROTEINS

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Objective : To characterise the biological propeties of mAbs to SIV envelope and to define antigenic differences between SIV and HIV strains.
Methods : Mice were primed with recombinant vaccinia virus vAbT 253 expressing the envelope gene of SIVmac251, and boosted with SIV-infected C8166 cells. Hybridomas were screened by ELISA. MAbs were characterised by Western blot (WB), radioimmune precipitation, immunofluorescence (IF) on fixed and unfixed cells, and by neutralization, using SIVmac251 antigens.
Results : A total of 18 mAbs have been characterised. They are IgGI or IgG2a subclass. ELISA titres of ascites range from $10^{2.4}$ to $10^{5.6}$ against SIVmac251 antigen. In this assay most mAbs also bind to SIVmf, at least 6 bind to SIVsm7 and 2 to the CBL-21 strain of HIV-2. Ten mAbs precipitate surface glygoproteins of SIVmac251, 11 bind to gp160 and gp120 in WB and 5 bind to transmembrane glycoprotein. Two mAbs do not react with denatured antigen. IF indicates that all 18 mAbs bind to viral antigen on the surface of SIV-infected cells. None of 5 mAbs so far tested neutralize infectivity of SIV.
Conclusion : Eighteen mAbs reacting with either gp120 or gp41/32 of SIVmac 251 are described. They reveal at least 1 epitope which is shared between 3 SIV and one HIV-2 strain and another epitope unique to SIVmac251. These mAbs will now be mapped to precise regions of SIVmac251 glycoproteins.

Th.A.297

T CELL FUNCTIONS AND PHENOTYPES IN SCID-HU MICE

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The heterochimeric SCID-hu mouse is constructed by the transplantation of human fetal lymphoid tissue into the congenitally immunodeficient C.B17 scid/scid mouse. Previous studies have demonstrated that SCID-hu mice can be infected by HIV and that antiviral compounds can inhibit HIV in these mice. The objective of this study was to characterize the phenotypes and functional capabilities of human lymphocytes in SCID-hu mice. Flow cytometry and sensitive functional assays were used for this purpose. Nearly all human cells in the peripheral blood of SCID-hu mice express CD3 and T cell receptor α/β chains. The CD4/8 ratio of human T cells was approximately 2.5 and these cells did not express the activation antigens CD25 or CD69, indicating that GVH responses are not occurring in SCID-hu mice. Human B cells were not detectable in SCID-hu blood although many mice had >100 μg/ml of human immunoglobulin in their sera. Engrafted human lymph nodes and thymus tissue maintained normal architecture and cellularity. Human thymocytes or peripheral blood cells in SCID-hu mice maintained normal responses to PHA, Con A, anti-CD3 antibodies, or allogeneic stimulator cells in vitro for >5 months after transplantation. Studies are currently in progress to determine if active or passive immunization of SCID-hu mice can inhibit HIV in vivo. These studies demonstrate that functionally competent human lymphocytes persist in SCID-hu mice and that this model may be useful to define human immune responses that inhibit HIV in vivo.

Th.A.299

INTERFERENCE OF SIVagmTYO-7 GP130 WITH HUMAN CD-4

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Objective: The interaction of purified external glycoprotein (gp130) of a Simian immunodeficiency virus (SIV) isolated from an African green monkey (agm) with CD-4 on human MOLT-4 clone 8 cells and soluble CD4 (sCD4) was investigated.
Methods: gp130 was purified to homogeneity and iodinated to a specific activity of 10 μCi/μg protein. ^{125}I-gp130 was incubated with CD-4 bearing MOLT-4 clone 8 cells for various times, at different temperatures and pH. The effect of dextran sulfate (Mr 500 000), heparin and sucrose on gp130-CD4 interaction was investigated. Furthermore the binding epitope on CD-4 for gp130 was characterized by inhibition studies with anti CD-4 monoclonal antibodies (α-CD4-mab) Leu3a, OKT4a, 30F16H5 and OKT4. Similarly, the inhibition activity of sera from AIDS patients and thesus monkeys immunized with gp130 as well as with sCD4 was examined. The dissociation constant (K_d) of gp130 and 30F16H5 to CD-4 were determinated by scatchard plot analysis.
Results: Binding was best at 37°C, pH 5.5 and at 2 h incubation and could be partially inhibited by heparin and dextran sulfate. Potent binding inhibition of ^{125}I-30F16H5 to CD4 occurs by dextran sulfate (≈ 25% at 250 μg/ml). For all substances no cell toxicity could be observed at tested concentrations. gp130 binding is strongly inhibited by Leu3a, OKT4a and 30F16H5. Excellent binding inhibition was obtained with serum from a natural SIV infected agm, antisera from gp130 vaccinated rhesus monkeys, and sCD4. Antisera obtained from AIDS patients showing high titers against HIV-1 gp120 also inhibited binding of SIV gp130, but with 50% lower efficiency. K_d of SIV gp130-CD-4 was found to be 2×10^{-10} M which was 10 times higher than reported for HIV-1 gp120-CD-4 binding. K_d of ^{125}I-30F16H5 was determinated to be 1.8×10^{-10} M. When binding of ^{125}I-gp130 to CD-4 was inhibited by 30F16H5, 50% binding inhibition was obtained at equimolar ratios.
Conclusions: Binding of SIVagm gp130 to the human CD-4 depends on conditions similar to those found to influence HIV-1 gp120-CD-4 interaction, probably acts at the same epitope, but it binds stronger than HIV-1 gp120 to CD4. High binding competition was measured for sCD4.

Th.A.300 ANTIBODIES TO $SIV_{mac(K1)}$ ENVELOPE-DERIVED SYNTHETIC PEPTIDES IDENTIFY SHARED ANTIGENIC DETERMINANTS FROM RELATED PRIMATE IMMUNODEFICIENCY VIRUS ISOLATES

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Objective: We raised antisera in rabbits against seven synthetic peptides analogous to regions within $SIV_{mac(K1)}$ gp120 and gp32 envelope glycoproteins to determine if these antisera would neutralize viral infectivity and also if they would crossreact with envelope glycoproteins from $HIV\text{-}2_{ST}$, HIV-1, $SIV_{AGM(tyo\text{-}1)}$, and other SIV strains of unknown sequence from African green monkeys by Western blot analysis.
Methods: Peptides were assembled by solid phase methodology and coupled to Keyhole Limpet Hemocyanin for immunization of rabbits. Western analyses were performed using detergent-solubilized viral antigen and neutralization of viral infectivity was determined by a dye exclusion assay.
Results: All antisera recognized the parent envelope glycoprotein by Western analysis, but none were able to neutralize $SIV_{mac(K1)}$ infectivity in vitro. However, four of the antisera recognized $HIV\text{-}2_{ST}$, and antisera directed against a peptide representing the carboxyl terminus of SIV_{mac} gp120 was able to bind gp120 from $HIV\text{-}2_{ST}$, $SIV_{AGM(tyo\text{-}1)}$, and an $SIV_{AGM(vervet\text{-}2)}$ of unknown sequence. None of the antisera recognized the HTLV-IIIb envelope.
Conclusion: Although none of the peptides selected represented neutralizing determinants, those representing sequences which were greater than 75% homologous to the corresponding domains within either HIV-2 or SIV_{AGM} retroviruses induced crossreacting antisera. Antisera against the SIV_{mac} gp120 carboxyl terminal peptide, which is highly conserved amongst known HIV and SIV isolates, also detected envelope from an SIV_{AGM} of unknown sequence. These data demonstrate the potential utility of anti-peptide sera as tools to identify shared antigenic determinants in the serological typing of related immunodeficiency viruses of undetermined sequence.

Th.A.301 MOLECULAR STUDIES OF PATAS VIRAL ISOLATES FROM SENEGAL.

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Objective: To define molecularly these unknown isolates from Erythrocebus patas.
Methods: Cell culture, Southern blot analysis, polymerase chain reaction, restriction enzyme analysis, cloning and sequencing.
Results: Besides macaques, mandrills, African green monkeys and sooty mangabeys, Patas is another group of monkeys from Africa. We have shown that patas are the carriers of another simian immunodeficiency virus. Hirt supernatant from Molt4C18 cells infected with the 4 viral isolates from patas - 89005, 89008, 89020 and 89022 has been successfully amplified by polymerase chain reaction in certain regions of gag, pol and env by using the primer couples from consensus sequences of SIV_{mac}, SIV_{sm} and $SIV_{agmTy\text{-}0}$ genome. Restriction analysis of these amplified fragments has revealed that most of these fragments carry different restriction sites than SIV_{mac} (positive control throughout our studies). Feeble hybridization to SIV_{mac} probe was observed under low stringency conditions and no signals were seen under high stringency conditions in gag pol and env regions.
Our cell culture studies and radioimmuno precipitation assays have further separated patas viruses from other existing groups. The patas viral genome from isolate 89008 has been cloned and a detailed analysis and the sequencing is underway. Direct sequencing of the PCR amplified fragments is also currently being performed.
Conclusion: The cell culture studies, radioimmuno précipitation assay, Southern blot assays, restriction enzyme analysis of PCR amplified fragments have shown that patas viral isolates are at least divergent from SIV_{mac}, SIV_{sm} and $SIV_{agmTy\text{-}0}$. Cloning and sequencing experiments, which are underway, will dileanate further the divergence of this group from the existing ones.

Th.A.302 HTLV-I AND HTLV-II INFECTION IN U.S. BLOOD DONORS IS ASSOCIATED WITH DIFFERENT RISK FACTORS

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Objective: To determine the respective prevalence of HIV-1, HTLV-I and HTLV-II in U.S. blood donors and assess risk factors.
Method: Screening of 484,000 Blood donors for HTLV-I/II and HIV antibodies was performed at 5 transfusion centers. HTLV-I seropositivity was confirmed by a combination of western blot and RIPA. DNA from blood mononuclear cells of HTLV-I/II seropositive donors was analyzed by a combination of PCR and restriction enzyme digestion to amplify and distinguish genomic sequences in the tax/rex, pol, gag p19 and env gp21 regions of HTLV-I or II. Demographic data were collected for most of the seropositive donors.
Results: HTLV-I/II seroprevalence (0.043%) was three times higher than HIV (0.013%). PCR revealed that 40% of 53 HTLV-I/II seropositive donors were HTLV-I infected and 53% were HTLV-II infected. Molecular heterogeneity by PCR reactivity in HTLV II from different regions was observed. HTLV-I infected donors were mostly male (68%) while HTLV-II infected donors were mostly female (71%). HTLV-I infection was associated with an endemic region (13/21, 62%) while HTLV-II was mostly associated with IV drug abuse (15/28, 54%), p=0.02.
Conclusion: HTLV-I/II infection was more prevalent than HIV in blood donors. The prevalence of HTLV-I and HTLV-II was similar, but associated with different risk factors. HTLV II showed more molecular heterogeneity.

Th.A.303 HTLV-I AND HTLV-II SEROPREVALENCE AMONG OUTPATIENTS AT A SAN FRANCISCO PUBLIC HOSPITAL

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We measured antibodies to HTLV-I/II among clinic and emergency room patients at a public hospital in San Francisco. Unlinked serum and plasma were tested by HTLV-I ELISA (Dupont) and recombinant $p21^e$ Western blot. HTLV-I and HTLV-II were presumptively differentiated on the basis of the relative intensities of the p19 and p24 bands on Western blot (Wiktor et al., NEJM, in press). Of 1376 samples tested, 10 (0.7%) and 45 (3.3%) had antibodies to HTLV-I and HTLV-II, respectively.

		NUMBER POSITIVE (%)		
GROUP	N TESTED	HTLV-I	HTLV-II	BLOT INDET.
Males	780	7 (0.9%)	30 (3.8%)	11 (1.4%)
Females	582	3 (0.5%)	15 (2.6%)	7 (1.2%)
Age <30	276	1 (0.4%)	3 (1.0%)	2 (0.7%)
30-59	782	7 (0.9%)	36 (4.6%)	16 (0.2%)
60 or older	289	1 (0.3%)	2 (0.7%)	0 ---
Medical Clinic	604	3 (0.5%)	13 (2.2%)	8 (1.3%)
Ob/Gyn Clinic	105	0 ---	1 (1.0%)	0 ---
Emergency Room	594	5 (0.8%)	26 (4.4%)	10 (1.7%)
Neighbor. Clin.	72	0 ---	2 (2.8%)	1 (1.4%)

These data suggest low-level endemic HTLV-I infection. High rates of HTLV-II infection among middle-aged patients and in the emergency room may be explained by intravenous drug abuse.

Th.A.304 RAPID SEROLOGICAL DETERMINATION OF HTLV-I/II ANTIBODIES.

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Objective: To develop a rapid, sensitive, and specific serological test to detect the presence of HTLV-I/II antibodies.
Methods: Filter units, impregnated with HTLV-I virus lysate, which permit rapid serum flow-through while capturing antigen-specific antibodies; detection of immune complexes with Protein-A colloidal gold; enhancement of immune complex detection with anti-Protein A colloidal gold; serum samples tested included i) 108 healthy blood donors, ii) 107 healthy blood donors whose serum was repeatedly reactive on a screening HTLV-I ELISA, but not on confirmatory Western Blot (WB) or radioimmunoprecipitation assays (RIPA), iii) 20 HTLV-I carriers, iv) 18 HTLV-II carriers.
Results: Thirty-eight sera, from individuals known to be HTLV-I or HTLV-II carriers, were tested. (These 38 sera were previously characterized for the presence of HTLV-I/II antibodies by ELISA, by WB and/or RIPA, and by PCR amplification for specific HTLV-I or HTLV-II sequences in DNA isolated from peripheral blood mononuclear cells.) The rapid test detected HTLV-I/II antibodies in the serum of 19 (95%) of 20 HTLV-I infected individuals. In contrast, only 6 (33%) of 18 sera from HTLV-II infected individuals reacted. Enhancement of the reaction with anti-Protein A colloidal gold allowed the detection of antibodies from one additional HTLV-I and 7 HTLV-II infected individuals. Of 107 sera which were repeatedly reactive by a screening ELISA but not confirmed by WB or RIPA, 17 (15.9%) were reactive in the rapid test, and an additional 8 were reactive using the enhancement procedure. Eleven of these 25 reactive sera had known reactivity with HTLV-I p19, and 2 of these 25 reactive sera had known reactivity with HTLV-I p24. Of 108 sera from healthy blood donors which did not react on screening HTLV-I ELISA, 3 (2.7%) reacted in the rapid test, and an additional 4 (3.7%) were reactive using the enhancement procedure. Total time for the performance of this rapid test for individual samples is 5 minutes.
Conclusions: This new rapid assay is sensitive for the detection of HTLV-I antibodies in infected individuals, and detects cross-reactive antibodies in a subset of HTLV-II infected individuals. The rapidity and ease of performance of the test may make this a useful screening assay for the primary detection of HTLV-I antibodies.

Th.A.305 AN OVERVIEW OF THE DEPARTMENT OF DEFENSE (DOD) HTLV-I/II TESTING EXPERIENCE: THE FIRST YEAR

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Objective: To characterize the Human T-Lymphotropic Virus (HTLV-I/II) infected patient population for the DOD.
Methods: Repeatedly reactive sera were subsequently tested by Western blot (WB) and or Radioimmunoprecipitation (RIPA). The presence of antibody to p24 and gp46 (or gp61/68) was considered diagnostic for infection.
Results: To date a total of 52 DOD health care beneficiaries have been diagnosed as HTLV-I/II infected. 30 (58%) are volunteer blood donors, 3 (6%) are referrals from civilian blood donor centers, 10 (19%) are referrals from DOD hospitals, and 9 (17%) are dual infected with HIV-1. Of the 33 blood donors, 61% (20) are males (average age 33) and 39% (13) are females (average age 31). 18 of the 33 blood donors were detected during the last half of FY 89 (1 Apr 89 to 30 Sep 89) during which a total of 92,381 units were tested resulting in a prevalence of 0.2/1000 in the DOD blood donor pool. Of the hospital referrals, 50% (5) are males and 50% (5) are females. The average age of each group was 41. Of the dual infected cohort, 8 are males and 1 is female. These were diagnosed from a group of 1043 HIV infected patients for a prevalence of 8.6/1000.
Conclusion: The prevalence of HTLV-I/II within the DOD blood donor population is similar to that reported in the civilian community. However there is an extremely high rate of HTLV-I/II among HIV-1 infected individuals.

Th.A.306 USE OF PCR AMPLIFICATION FOR DIAGNOSIS OF HTLV-1 AFTER BLOOD TRANSFUSION

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OBJECTIVE : To confirm HTLV-1 infection after whole blood transfusion in two patients who seroconverted in ELISA but presented indeterminate western-blot.
METHODS : Serial samples of 2 patients seronegative for HTLV-1 (ELISA and western-blot) receiving multiple whole blood transfusions were studied by ELISA (Abbott and Dupont), western-blot (WB) (Dupont). Affinity purified anti-human IgG, IgM conjugates were used in WB. PCR amplification using 2 primer pairs (SK 43/44 and SK 54/55) was done with 1µg DNA extracted from peripheral blood lymphocytes obtained 4 and 2 months post-transfusion. PCR products were analysed by southern blot with oligonucleotide probes labeled with ^{32}P.
RESULTS : Seroconversion was detected in ELISA 149 days post-transfusion in the first patient and 60 days after a negative result in the second. The western-blot remained indeterminate with antibodies to p19 and gp46 and no antibody to p24. PCR was repeatly reactive for the two patients with the two primer pairs.

	WESTERN-BLOT						PCR*	
	p19		p24		gp46		SK54/55	SK43/44
	IgM	IgG	IgM	IgG	IgM	IgG		
1st patient	+ day 149 --> 324	+	-	-	-	+ day 239--> 324	+	+ day 120
2nd patient	-	+ day 60	-	-	-	+ day 60	+	+ day 60

* KWOK et al. Blood 1988, 72, 1117-1123.
CONCLUSIONS : Anti-p19 are the first antibodies appearing in our two seroconverters. In case of indeterminate western-blot, PCR is very useful to confirm HTLV-1 infection.

Th.A.307 DEVELOPMENT AND CHARACTERIZATION OF AN HTLV-I, II ANTIGEN CAPTURE ELISA

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Objective: To develop an antigen capture ELISA for the detection of HTLV-I, II p24 antigen.
Methods: A murine monoclonal antibody was developed which demonstrate specificity for the core (p53, p24) protein of HTLV-I, II. The antibody was coated onto 96 well microelisa plates to form the capture phase of the assay. Antigen incubation was at 37° for two hours. A polyclonal, biotinylated human anti-HTLV-I antibody was added, incubated, and color developed with TMB/H_2O_2 substrate. Total assay time required was five hours.
Results: The assay was shown to be sensitive to 18 pg/ml of HTLV-I p24 antigen. Culture supernatant from HTLV-I positive cell lines (HUT 102, MT-2, C5/MJ) were all positive. In addition, supernatants from HTLV-II cell lines (MOB, MOT) were positive, as was culture supernatant from simian T-cell leukemia virus (STLV-I) positive cells. Supernatants of cultured peripheral blood lymphocytes (PBL) derived from tropical spastic paraparesis (TSP) and adult T cell leukemia (ATL) patients were also positive. Culture supernatants from HIV-1, SIV, C. trachomatis, CMV, Herpes I and II, and PHA-P stimulated normal human PBL were all negative.
Conclusion: We have developed a sensitive and specific ELISA antigen capture for HTLV-I, HTLV-II, and STLV-I p24 core antigen. The assay can be used to replace reverse transcriptase assays in the confirmation of tissue culture HTLV-I,II and STLV-1.

Th.A.308 ESTABLISHMENT OF HTLV-I IMMORTALIZED RAT CELL LINES.

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Objective; HTLV-I positive human cell lines are known to be easily infected by HIV-1. To develop animal models of AIDS or HIV-1 infection, we tried to establish HTLV-I producing rat cell lines.
Methods; WKA, LEW, F344 and ACI rats were used. The spleen cells from these rats were co-cultured with mitomycin-C (MMC) treated ATL cells without IL2. Immunofluorescent assay, Southern blotting and Northern blotting were used to detect viral protein, proviral DNA and viral messages.
Results; We established 7 HTLV-I immortalized rat cell lines, namely ARS-1, TARL-2, TART-1, WKA-S1, F344-S1, LEW-S1 and ACI-S1. These cell lines, especially ACI-S1, showed nuclear lobulation as was seen in ATL cells. They showed monoclonal proviral integration and viral messages but viral proteins were hardly detected. TARS-1, TART-1 and WKA-S1 were transplantable into newborn syngeneic rats. HTLV-I carrier rats were established by inoculation of MMC treated TARS-1. Attempts to infect HIV-1 to these cell lines have not been successful.
Conclusion; HTLV-I immortalized rat cell lines were established, but they showed little HTLV-I production. Infection of HIV-1 to these cell lines was not succeeded.

Th.A.309 **IFA CONFIRMATION OF HTLV-I/II ANTIBODIES**

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Objective: Previous studies (5th Consortium for Retrovirus Serology Standardization) have shown indirect immuno-fluorescence assay (IFA) can be used to confirm the presence of HTLV-I antibodies. This study was designed to show that IFA could be used to confirm the presence of HTLV-II antibodies.
Method: 20 well categorized samples were purchased from Serologicals, Inc. These 20 samples were assayed blindly for the presence of either HTLV-I and/or HTLV-II with the Pharmacia VIRGO HTLV-I/II IFA. **Results:** Pharmacia VIRGO HTLV-I/II IFA confirmed that 100% of the samples (20/20) contained HTLV-II antibodies. While some of these samples exhibited reactivity to the HTLV-I cell substrate, the level of reactivity with the HTLV-II cell substrate is at least four-fold higher than reactivity with the HTLV-I cell substrate (e.g., an HTLV-I endpoint titer of 1:40 and an HTLV-II endpoint titer of ≥ 1:320). PCR results from four independent investigators also confirmed that 100% of the samples were infected with HTLV-II. Western immunoblot showed the presence of gp65 on 16 samples. The results of the licensed EIA kits are as follows: Abbott detected 90%; Cellular Products 85%; and DuPont 80%. **Conclusions:** In this sample population the study indicates that IFA can be used to confirm HTLV-II antibodies. The ease of use and availability of IFA makes it a more suitable method than RIPA or PCR for the confirmation of HTLV-I/II antibodies.

Th.A.310 TYPE-SPECIFIC IDENTIFICATION OF HTLVs BY POLYMERASE CHAIN REACTION (PCR)[1]

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Objective: Development of Polymerase Chain Reaction (PCR) to distinguish between HTLV-I and HTLV-II infection in patient cells
Methods: PCR was performed in crude cell lysate using group specific primer pairs from selected regions of the HTLV genome. Reaction products were analyzed by solution hybridization with type specific ^{32}P labeled probes, followed by electrophoresis on 8% polyacrylamide gels and then autoradiography. Conditions for PCR were optimized for each primer pair to minimize background and maximize sensitivity. Confirmation of the specificity of the PCR products were also performed by digestion with specific restriction enzymes.
Results: PCR was performed on a cohort of blood donors (total 27) and clinical referrals (total 16) from the Department of Defence (DOD) health care beneficiaries. Eight of the blood donors were PCR reactive of which six were determined to have HTLV-I proviral infection and two were detected as HTLV-II positive. Ten of the donors, being non-diagnostic by western blot were confirmed negative by PCR. Eight of the donors were negative by PCR as well as by serological analysis. In the clinical referral patients nine were PCR reactive, of which eight were HTLV-I positive and one was HTLV-II positive. Seven individuals were PCR negative. PCR results in these patients were concordant with their serology.
Conclusion: PCR with the appropriate primer sets and specific probes provides a sensitive and specific method for typing HTLVs.

[1] The PCR process is covered by U.S. Patents Nos. 4,683,195 and 4,683,202 assigned to Cetus Corporation and licensed by PE Cetus.

Th.A.311 EVALUATION OF THREE COMMERCIAL SCREENING TESTS FOR HTLV-I ANTIBODIES IN A DEVELOPING COUNTRY

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Objectives: To evaluate the performance of HTLV-I antibody screening tests in the laboratory of a developing country.
Methods: A panel of 136 sera, 67 of which were HIV-1 antibody positive, was screened for HTLV-I by ELISA (Abbott Laboratories and Cambridge BioScience), by a particle agglutination test (Fujirebio Inc.), and by immunofluorescence (IF) IF reactive samples were confirmed by Western Blot and by radioimmunoprecipitation assay.
Results:

TEST	SENSITIVITY	SPECIFICITY
Fujirebio	100%	96
Cambridge	100%	89
Abbott	91%	100

Conclusion: Although 100% specificity was found with the Abbott test, it missed one of the positive specimens. In contrast, the Fujirebio and Cambridge methods detected all the positives but also resulted in some false -positive reactions. These results show that screening assays for HTLV-I antibody are not equal in performance and that positive results must be confirmed, especially when attemping to assess HTLV-I prevalence in a developing country.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.312 EVALUATION OF SIX ENZYME IMMUNOASSAYS (EIA) FOR DETECTION OF ANTIBODY AGAINST HUMAN T-LYMPHOTROPIC VIRUSES TYPES 1 AND 2 (HTLV-1/2)

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Objective: To evaluate the reliability, sensitivity and specificity of 6 HTLV-1/2 compared to Western blot (WB) and RIPA using sera from Haitian patients.
Methods: Sera from 1100 pregnant Haitian women were evaluated for HTLV-1/2 seropositivity using 6 different EIA Kits. The kits used were from Abbott, Cambridge Bioscience, Cellular Products, Dupont, Organon Teknika, and Olympus-UBI. Each kit was used according to the manufacturer's specifications. Sera that were found to be positive with any kit were repeated in duplicate and analyzed by WB (Dupont). Sera were considered positive for HTLV-1/2 by WB if immunoreactivity to gag proteins (p19, p24) and env proteins (gp 46, gp 61/68) were present. Sera were considered indeterminate if they did not satisfy these criteria but had immunoreactivity to at least one gene product. All indeterminate sera were analyzed by RIPA for env proteins.
Results: There were 58 HTLV-1/2 antibody positive samples and 27 indeterminate samples for a prevalence of 5.3%. Sensitivities of the 6 assays ranged from 98.3% to 100%, and specificities ranged from 98.4% to 100%. All five kits that had less than 100% sensitivity failed to detect the same sample. Positive predictive values ranged from 78.1 to 100% and the negative predictive values were from 99.9% to 100%.
Conclusion: All six tests were reliable, and sensitivities were comparable despite the different viral material used in each test. The Dupont assay had the highest sensitivity and the Abbott assay had the highest specificity. One recombinant and another peptide assay had relatively low positive predictive values (78.1 and 85.1%), suggesting that these assays do not currently provide an additional advantage in screening for HTLV-1/2.

Th.A.313 MUTATIONAL ANALYSIS OF THE HTLV-I TAX PROTEIN

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Objective: We have undertaken a mutational analysis of the HTLV-I Tax protein. Our goal is to examine the role of phosphorylation and zinc-binding of Tax on transactivation of the HTLV-I LTR.
Methods: Oligonucleotide-directed site mutagenesis was employed to analyze the amino acids of interest. Each of the 25 serine residues were changed to alanine. The same techniques were used to introduce structurally conservative changes in amino acids comprising the two putative zinc-binding domains in tax.
Results: We have identified two serine residues which are essential to the transcriptional trans-activational function of Tax. On the basis of the mutants designed to examine the putative zinc-binding domains, we can rule out a requirement for at least one of the potential domains.
Conclusions: Phosphorylation of the amino acids s10 and s274 may be needed for Tax function. The significance of the mutations in amino acids which are potentially involved in zinc-binding will be discussed.

Th.A.314 PCR ANALYSIS OF INTRAVENOUS DRUG USER SAMPLES REACTIVE WITH HTLV-I AND HTLV-II

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Objective: To use PCR analysis for confirmation and serotyping of intravenous drug user (IVDU) samples with serologic evidence of infection with HTLV-I/II.
Methods: Samples were screened initially by HTLV-I EIA (Genetic Systems). Reactive samples were analyzed by HTLV-I Western Blot and radioimmunoprecipitation. DNA preparations from selected samples were amplified using primer pairs located within conserved regions of tat (159 bp) and pol (185 bp). Serotypes were determined by restriction analysis and sequencing of the amplified products.
Results: We previously reported the high prevalence (20.1%) of HTLV-I reactive samples detected in IVDUs in Seattle. By HTLV-I Western Blot and RIP, these samples were positive (39/50) or indeterminate (11/50). PCR analysis for tat and pol was performed on 32 samples :

Serology	No.	tat+/pol+	tat+/pol-	tat-/pol-
Positive	12	9	1	2
Indeterminate	8	2	2	4
Negative	12	0	0	12

All positive samples were typed as HTLV-II.
Conclusion: These results emphasize the need for caution in interpreting indeterminate serology results for HTLV-I in high risk groups, and they confirm the prevalence of HTLV-II in this IVDU population.

Th.A.315 USE OF SYNTHETIC PEPTIDE BASED EIAs TO DISTINGUISH HTLV-I FROM HTLV-II INFECTION.

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OBJECTIVE: To develop a convenient and reliable method to distinguish HTLV-I from HTLV-II infection.
METHODS: Multiple overlapping peptides from gp46, the external portion of HTLV-I and HTLV-II envelope proteins, were synthesized and characterized. Peptides representing highly antigenic epitopes from each virus were identified. Two synthetic peptide EIAs (HTLV-I and HTLV-II) were developed and tested with panels of repeatably reactive sera previously screened by a licensed HTLV-I viral lysate EIA.
RESULTS:

Sample Identity	Confirm. Method	n	HTLV-I Peptide EIA % Positive	HTLV-II Peptide EIA % Positive
HTLV-I	PCR	44	95.5	0
HTLV-I	WB/RIPA	135	89.6	5.9
HTLV-II	PCR	29	10.3	96.6
HTLV-II	WB/RIPA	199	3.5	78.4

CONCLUSION: Synthetic peptide EIAs can differentiate HTLV-I from HTLV-II infection with a sensitivity greater than or equal to that of PCR and with a reliability greater than that of WB.

Th.A.316 RISK FACTORS FOR PCR-DETERMINED HTLV-I AND HTLV-II INFECTION IN NORTHERN CALIFORNIA BLOOD DONORS

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OBJECTIVE: Identify HTLV virus-type in HTLV antibody-positive individuals and correlate the occurrence of each virus with suspected risk factors.
METHODS: We performed HTLV-type specific polymerase chain reaction (PCR) amplification for pol gene sequences on 16 randomly selected HTLV seropositive blood donors in Northern California and have evaluated risk-factor questionnaire data for 14 of these to date.
RESULTS: From October 1988 through July 1989, 42 of 89,611 (4.7 per 10,000) blood donors at Irwin Memorial Blood Center had confirmed seropositivity to HTLV by ELISA, western blot, and/or RIPA. PCR determinations indicated that 11 samples had HTLV-II reactivity, that 4 had HTLV-I reactivity, and that 1 sample did not react with probes to either virus. Risk factors for HTLV-II and HTLV-I reactivity were determined hierarchically. Mean ages were 40 and 44, and the male-to-female ratio was 1:7 and 0:3, for HTLV-II and HTLV-I respectively. HTLV-II positives had used IV drugs (N=2), had sex with intravenous drug abusers (IVDA) (N=4), or had parenteral blood exposure (N=2). HTLV-I positives had contact, either breastfeeding (N=1) or sexual (N=2), with Japanese or Caribbeans.
CONCLUSIONS: HTLV-I and HTLV-II infection are prevalent at a ratio of approximately 1:3 among HTLV-seropositive California blood donors, and that more women than men are infected. HTLV-II infection appears to be associated with intravenous drug use or sex with IVDA, while HTLV-I infection is linked to endemic areas.

Th.A.317 EVALUATION OF SENSITIVITY IN THE DETECTION OF HUMAN T LYMPHOTROPIC VIRUS I (HTLV-I) ANTIBODIES: IS WESTERN BLOT (WB) USEFUL FOR CONFIRMATORY TESTING?

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Objective: To evaluate the sensitivity of different commercially available tests for the detection of antibodies to HTLV-I (anti-HTLV-I).
Methods: Forty serum samples from HTLV-I seropositive carriers from Japan were tested. The samples were previously confirmed by radioimmunoprecipitation (RIP) and were examined for anti-HTLV-I by ELISA (1=Abbott, 2=Electronucleonics, 3=Biotech Dupont), by passive particle agglutination (PA=Fujirebio) and WB (Biotech Dupont).
Results: The sensitivities for ELISA 1,2 and 3 were 75.0%, 97.5% and 61.5% respectively, 95.0% for PA and 50.0 - 75.0% for WB depending on the positivity criteria used. The highest antibody titers of tested samples reached 1/10240 for ELISA 1 and 2, 1/2560 for ELISA 3 and 1/81920 for PA.
Conclusions: 1) An extensive variation in the sensitivity of the screening methods for detection of anti-HTLV-I was observed. 2) The currently available WB methods may not be appropriate for confirmatory testing.

Th.A.318 HTLV, HEPATITIS B AND C MARKERS IN AFRICANS WITH TUBERCULOSIS AND AIDS

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Objectives: To find out primarily the seroprevalence rates of HTLV1 and markers of Hepatitis B and C in African patients with tuberculosis and AIDS and secondarily to find out if these are significant cofactors for the progression of HIV infection to the disease, AIDS.
Methods: A cohort of 20 Tanzanian patients with Tuberculosis and AIDS were randomly selected from hospital wards. Blood spots and serum samples obtained from them were examined for HTLV using EIA and RIPA and for Hepatitis B virus and also Non-A and Non-B Hepatitis virus. Serum samples and blood spots were examined from Nigerian patients hospitalized for a variety of conditions but negative for HIV and tuberculosis.
Results: 85% of the HIV positive patients with tuberculosis had antibodies to HBV and 80% of these patients had antibodies to Non-A Non-B Hepatitis (HCV). All these patients were negative for HTLV1 and 2. In the Nigerian samples, antibodies to HCV were not detected in drug abusers and dementia patients but 70% of these patients had antibodies to HBS and HBC. It is noteworthy that none of the dementia patients and drug abusers, who do not use injectable drugs, were positive for HIV or HCV. In another cohort of 122 hospitalized patients in Ibadan, Nigeria abnormal bands for HIV1 and HIV2 were observed in 14 patients on Western Blot. Viral particles measuring between 55 and 110 nm were seen in the sera of patients with Tuberculosis and AIDS who were also positive for HBV and HCV but none of these patients had Kaposi sarcoma or malignant lymphoma. These particles are considered to be larger than published sizes for HIV and HBV which were positive on serology but just within the size of HCV which is estimated to be between 30 and 60 nm.
Conclusions: HTLV does not appear to be a significant cofactor for the development of AIDS in this part of the world. HBS and HBC are relatively high in Africa irrespective of the seroprevalence of HIV. The significantly high seroprevalence of antibodies to HCV in 85% of patients with HIV is of interest but the predominant route of transmission of HIV is by sexual contact while that of HCV appears to be by several routes including sexual contact. The relatively high association of these two viral agents raises the possibility of sexual transmission of both agents since the seroprevalence rate of HCV is relatively high in some parts of Africa.

Th.A.319 RH9 CELLS EXPOSED TO SALIVARY GLAND EXTRACTS FROM PATIENTS WITH SJÖGREN'S SYNDROME PRODUCE AN A-TYPE PARTICLE ANTIGENICALLY-RELATED TO HIV

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Objective: The sera of 30% of Sjögren's Syndrome (SS; autoimmune exocrinopathy) patients (14/47) contain significant levels of antibodies reactive with the major gag protein of HIV (CA, p25). Experiments were designed to identify the antigenic stimulus.
Methods: SS is characterized by infiltration of lymphoid cells into glandular tissues. Therefore, cells of the RH9 subclone of HuT 78, a T-lymphoblastoid cell line, were exposed to extracts from salivary glands of persons with SS. The propagation of a retrovirus in the cultures was detected by antigen capture immunoassay, western blotting, electron microscopy, sucrose gradient centrifugation, and reverse transcriptase assay.
Results: HIV-related antigens were detected in 2/6 cultures after 2 and 10 weeks by antigen capture immunoassay and western blotting. The presence in these cells of an intracisternal A-type retrovirus antigenically-related to HIV was confirmed by electron microscopy. Particles isolated from 0.1% Triton X-100 cell lysates had a density of 1.22 g/cm^3 and were associated with a Mn^{++}-dependent reverse transcriptase activity.
Conclusions: The retrovirus isolated following exposure of cultured lymphoid cells to biopsy material from SS patients could be distinguished from HIV by morphological and biophysical criteria, and reverse transcriptase divalent cation preference. This A-type retrovirus may be the antigenic source for the production of gag-reactive antibodies in sera from autoimmune patients. Further studies are required to define the relatedness of this retrovirus to HIV or other retroviruses.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.320 MONKEY BLOOD THAT SEROLOGICALLY CROSS REACTS WITH HIV-1 ANTIGENS CONTAINS A PROVIRUS THAT HYBRIDISES WITH HIV-1 PROBES AT LOW STRINGENCY

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Object To investigate the characteristics of the retroviral infection in the blood of wild cercopithecus monkeys found in central african forests.
Wild cercopithecus monkeys trapped in the wild have been anaesthetised, blood samples taken and then immediately released. The blood has been serologically examined using ELISA and WESTERN BLOT techniques and a group identified that cross react with HIV-1 antigens. The lymphocytes of these samples have been separated and a PCR technique used to amplify gag, pol and env regions of the provirus that is present in these cells. The provirus has been stimulated, using PHA and iL2, in co-cultures with human lymphocyte cell lines. The DNA isolated from these cells has been examined by Southern Blot and similar PCR techniques. Various DNA samples have been subject to southern/dot blot analysis, hybridising with HIV-1, HIV-2, or SIVagm probes. Most interesting results were obtained when hybridising with the P32 labelled BH10 probe. At low stingency several PCR fragments hybridise with the HIV-1 probe and a variable stringency technique has been used to characterise their sequence variability relative to the BH10 probe. DNA fragments of particular interest are being cloned for sequence analysis and for use as probes in the clonage and sequencing of the provirus.

Oncogenesis

Th.A.321 AUTOCRINE AND PARACRINE GROWTH STIMULATION OF KAPOSI'S SARCOMA-DERIVED CELL CULTURES.

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Objective: In vitro cultivation of Kaposi's sarcoma (KS)-derived cell cultures for studying their grade of malignancy, their growthfactor synthesis and growth factor requirements.
Methods: Primary cell culture; malignancy tests; growth assays; conditioned media; thymidine incorporation; northern blotting; receptor binding.
Results: Approximately 30% of KS-derived cell cultures are invasive through artificial basement membranes and reveal, in comparison to control cells, an enhanced passage number in 0.5% serum containing media. Conditioned media from KS cells stimulate DNA synthesis in quiescent KS cells and fibroblasts and promote growth of bovine aortic endothelial cells. However, in vitro growth of KS cells is strongly dependent on externally supplied growth factors. Platelet-derived growth factor is a strong mitogen for KS cells, probably on the basis of a low mitogenic response to epidermal growth factor (EGF). Growth of KS cells stimulated by EGF is 20% of that of control fibroblasts and binding of iodinated EGF to its receptor on KS cells is reduced to one third of the value obtained for the control.
Conclusion: Our data support the hypothesis of KS being a low malignant neoplasia. This may be due to only a limited autocrine growth potential of KS cells which makes them dependent on paracrine acting growth factors.

Th.A.322 CULTURED KAPOSI'S SARCOMA-DERIVED SPINDLE CELLS EXPRESS VASCULAR PERMEABILITY INDUCING ACTIVITY

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Objective: To elucidate the mechanism of edema associated with AIDS-Kaposi's sarcoma (AIDS-KS) lesions.
Methods: Long-term cultured AIDS-KS cells and their concentrated culture supernatants were transplanted/injected intraperitoneally and subcutaneously into athymic nude mice following injection of Evans blue at various intervals. Peritoneal fluid was harvested and the amount of intraperitoneal exudated dye was measured by spectrophotometer. Intradermal exudated dye at the transplant site was directly observed.
Results: The metabolically active AIDS-KS cells induced a biphasic vascular permeability response in nude mice with the early antihistamine-sensitive and non-specific phase (15-30 min.) and with the antihistamine-resistant and specific, prolonged phase (12 hr.). In contrast, 0.00125% glutaraldehyde-fixed AIDS-KS spindle cells did not induce the vascular permeability. The concentrated AIDS-KS cell-derived conditioned media also induced a biphasic vascular permeability response with the antihistamine-sensitive and non-specific phase (15 min.) and with the antihistamine-resistant late phase (1 hr.).
Conclusion: Data presented here show that KS spindle cells secrete vascular permeability factor(s). Such factor(s) may be involved in strongly edematous lesions sometimes observed in AIDS-KS patients. These data also support our hypothesis that KS spindle cells secrete biologically active molecules which induce KS lesions in humans.

Th.A.323 PHENOTYPIC CHARACTERIZATION OF AIDS-KAPOSI'S SARCOMA CELLS IN LONG-TERM CULTURE IN THE ABSENCE OF RETROVIRALLY CONDITIONED MEDIUM.

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Objective: Isolate, propagate, and characterize the specific "Kaposi's sarcoma cell."
Methods: Based upon our previously successful techniques for in vitro isolation of endothelium from benign lymphatic and blood vascular tumors, (i.e., lymphangiomas and hemangiomas), we prepared enzyme isolate cultures of excised KS skin lesions from four patients with AIDS in standard tissue culture medium. Over 5-9 months, these primary cultures were subjected to selective manipulations including modified enzymatic dissociation, medium depletion, short pulse trypsinization, and increased CO_2 concentration to select an endothelial cell subpopulation. Inverted light, transmission and scanning electron microscopy as well as fluorescent microscopy (FM) and flow cytometric analysis (FCM) of endothelial marker Ulex europaeaus ligand (UL) and anti-Factor VIII-related antigen antibody (F8) staining were used to characterize endothelial phenotypic patterns which were then compared with cultured bovine mesenteric artery, and lymphatic endothelial standards and original tissue sections.
Results: The initial outgrowth of all cultures yielded a heterogeneous population with focal endothelial cells, which were followed through successive generations. "KS cells" were spindle to stellate and flattened in appearance. Although varying from patient to patient, monolayer preparations exhibited substantial F8 (range 67-71%) and UL (41-45%) positivity on both FM and FCM.
Conclusion: Cultured endothelial cell populations derived from AIDS-KS, maintained over successive generations, retained morphologic characteristics found in both lymphatic and blood vascular endothelium in vivo and in vitro. Moreover, contrary to a previous report by Gallo and associates, the maintenance of the AIDS-KS cells profiled here required no special retrovirally conditioned medium. This in vitro model should allow delineation of the structural and functional features of the AIDS-KS cell while providing a test system to develop specific monoclonal antibodies and assess therapeutic agents directed against KS.

Th.A.324

KAPOSI'S SARCOMA AND HIV INFECTION IN CAMEROON.

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* University Center for Health Sciences in Yaounde(Cameroon), **University Teaching Hospital in Yaounde, ***Public Hospital in Ngaoundéré(Cameroon).

Kaposi's sarcoma is the frequently encountered malignant disease in AIDS, but the reason for this association is not clear. We have studied the association of HIV infection with Kaposi's sarcoma in Cameroon where the later is relatively common.

We tested 30 patients with kaposi's sarcoma who were diagnosed during a six month period at the Central Hospital Yaounde and the University Teaching Hospital in Yaounde(Cameroon). All of them underwent clinical and paraclinical examinations to determine the form of the disease and the presence of any possible immunodeficiency.We looked for antibodies to HIV by the Enzygnost anti-HIV micro-elisa tests (Behring) and perdormed a histological analysis of the lesions in all of the patients.

Of the 30 patients,27 were male and 3 female.Histological typing(Templeton) was a follows:23 were type I(mixed cellularity),6 were type II (monocellulary) and one was type II (anaplastic). The 23 type I patients were 17 nodular forms 1 florid,4 infiltrative and 1 lymphadenopathic.The 6 type II patients were 2 florid forms and 4 infiltrative.The one type II patients was a florid form. There was no patient with overt signs of immunodeficiency and all of them were HIV antibody negative, even the aggressive forms.

In conclusion, there has been no change in Kaposi's sarcoma since the advent of AIDS.Thus HIV infection appears to be only a cofactor in the apparition of Kaposi's sarcoma.The mechanism of appearance is still elusive and Kaposi's sarcoma appears to be a good model for studying the role of viral infection in the immune system and oncogenesis.

Th.A.325

HIGH PREVALENCE OF ANAL INTRA-EPITHELIAL NEOPLASIA AND ANAL PAPILLOMAVIRUS INFECTION AMONG MALES WITH GROUP IV HIV DISEASE.

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Objective: Squamous cell cancer of the anus is increasing in incidence among homosexual males and, similar to other human papillomavirus (HPV)-associated cancers such as cervical cancer, the risk may be increased in association with immunodeficiency. The goals of this study were 1) to determine the prevalence of, and association between anal HPV infection and cytologic abnormalities, including anal intra-epithelial neoplasia (AIN), in a high risk male population, and 2) to study their association with immunodeficiency.

Methods: Ninety seven male homosexual subjects with group IV HIV disease were studied for anal HPV infection using the ViraPap/ViraType™ dot blot technique on material obtained from a Dacron swab inserted to the anorectal junction. A second swab was then inserted to collect cells for anal cytology. T4 lymphocyte counts were drawn within one month of study entry.

Results: HPV DNA was detected in the anal swabs of 52 subjects (54%). Cytologic specimens of 38 subjects (39%) demonstrated abnormalities ranging from atypia (19%) to AIN (15%). Detection of HPV DNA was significantly associated with abnormal anal cytology (p=0.003, Fisher's exact two-tailed test), with a risk ratio of 4.6. Infection with multiple HPV types was common (12%), and was associated with a risk ratio for abnormal cytology of 39.0. Median T4 counts were significantly lower among those with cytologic abnormalities (147) than those normal cytology (194) (p=0.05, Mann-Whitney test).

Conclusions: These studies indicate that there was a high prevalence of, and strong association between anal HPV infection and potentially precancerous cytologic abnormalities in this high risk population. Advanced immunodeficiency was associated with cytologic abnormalities as well, and this population may be at significant risk for the development of anal cancer.

Th.A.326

INTERACTION OF HUMAN IMMUNODEFICIENCY AND PAPILLOMA VIRUSES: ASSOCIATION WITH ANAL EPITHELIAL ABNORMALITY IN HOMOSEXUAL MEN

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Objective: To evaluate whether human immunodeficiency virus (HIV) infection enhances the expression of human papilloma virus (HPV) and whether anal epithelial abnormality is related to biologic interaction between HIV and HPV.

Methods: Anal swabs obtained from 105 homosexual men were tested for HPV specific sequences [6/11,16,18,31,33,35; by dot blot and polymerase-chain reaction (PCR) methods] and Papanicolaou smears. Serologic, immunologic and statistical tests used standard methods.

Results: Overall, 41 (39%) of the 105 men had anal swabs positive for one or more genotypes of HPV 6/11, 16/18 or 31/33/35. 23 (53%) of the 43 HIV+ subjects harbored HPV compared to 18 (29%) of the 64 HIV- subjects (p=0.01), including higher prevalence rates for HPV genotypes 16/18 (p=0.01), 6/11 (p=0.007), and 31/33/35 (p=0.07). Multivariate logistic regression analysis of the HIV+ subjects showed low CD4+ cell counts to be an independent risk factor for detection of HPV (p=0.04) and in particular for HPV genotypes 31/33/35 (p=0.02) and 6/11 (p=0.07). In contrast, similar analysis of the HIV- subset showed that a positive antibody test for syphilis was associated with HPV (p=0.03). Anal epithelial abnormalities were found in 13 (14%) of 92 technically adequate cytologic smears and were strongly associated with detection of HPV by the dot-blot method (p=0.01), especially with HPV genotypes 6/11 (p=0.001). None of 15 subjects with HPV detected only by PCR had anal epithelial abnormality.

Conclusion: HIV-related immune deficiency may allow HPV to reactivate, with subsequent appearance of possibly pre-cancerous epithelial abnormalities.

Th.A.327

SIGNIFICANCE OF RETROVIRAL DNA SEQUENCES IN MALIGNANT NEOPLASIA FROM AFRICA

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Objectives: Different seroprevalent rates for HIV1 in Kaposi Sarcoma have been reported from different parts of the world including Africa. It was decided to find out if nucleic acid sequences for HIV or HTLV, structural and non structural genes, can be detected in Kaposi Sarcoma and lymphoproliferative malignant tissues in Africans before and after the advent of the HIV epidemic. This may also help in identifying the approximate period that retroviruses began to play a pathogenic role in neoplasia in Africa.

Methods: Tissues from histologically diagnosed patients with Kaposi Sarcoma, Hodgkin's and non-Hodgkin's lymphoma in children and adults were retrieved from the pathology departments of two African teaching hospitals. PCR and slot blot hybridization techniques were performed on all paraffin embedded tissues using the method of Shibata et al (1987) and probed for HIV gag and env genes and also for HTLV (Lee's method). Where neccessary, the products of hybridization were sequenced and identified by comparing with genomic sequences in data bank.

Results: All tissues of Kaposi sarcoma in Ugandan children obtained after 1985 were positive (100%) for HIV1 gag and env gene expressions but negative for HTLV1 and II. In a few adult Ugandan tissues, there was hybridization with HTLV but the sequenced products showed lack of significant homology with HTLV or HIV. All cases of non-Hodgkin's lymphoma (B-cell type) were also positive for HIV1 gag and env but negative for HTLV DNA sequences. The sequence of the cloned product from Uganda, which hybridized with HTLV primers showed unique composition. Tissues obtained between 1964 and 1972 from Nigeria were essentially negative for HIV and HTLV sequences.

Conclusions: These results suggest that HIV is frequently associated with the development of Kaposi Sarcoma and also responsible for some B-cell lymphomas since the beginning of the HIV epidemic and that HTLV, or its related oncogenic viruses, are yet to be incriminated in Africa for the pathogenesis of malignant lesions which account for cancer morbidity and mortality in Africa. PCR is an essential technique for the amplification of DNA in tissues with diseases known to have high associations with retroviruses in Africa. The use of serological tests in HIV infected patients is considered to be relatively insensitive for detailed elucidation of its pathogenic role in affected tissues.

Th.A.328 IMMUNOGLOBULIN SECRETED BY AN AIDS LYMPHOMA CELL LINE RECOGNIZES HIV GP160, SUGGESTING THAT THE IMMUNE RESPONSE TO HIV ANTIGENS MAY CONTRIBUTE TO LYMPHOMAGENESIS.

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Objective: To determine the antigenic specificity and nucleic acid sequence of the variable regions of the IgM secreted by 2F7, an AIDS lymphoma cell line.
Methods: Solid phase immunoprecipitation (SPIT), SDS-PAGE, Southern blot, polymerase chain reaction (PCR) amplification of the immunoglobulin mRNA present in 2F7 cells, sequencing (Sanger dideoxy method) of the amplified and cloned IgM variable region.
Results: A monoclonal cell line, 2F7, was derived from a patient with AIDS associated Burkitt's lymphoma. Immunoglobulin gene rearrangement analysis revealed 2F7 to be identical to the patient's original tumor. 2F7 IgM immunoprecipitated recombinant HIV-1 gp160. Sequence analysis of the 2F7 heavy and light chain cDNAs found them to be mutated from known germline and fetal rearranged genes. The 286 bp amplified and cloned V_H fragment showed closest homology to members of the V_HIII family: 85% with a human fetal immunoglobulin, clone 56P1, and 82% with the germline gene V_H26. The 398 bp 2F7 lambda gene fragment was homologous to members of the V lambda I family, and was most closely related to variable regions of antibodies produced by non-AIDS tumors, including a diffuse large cell lymphoma (92% homology) and a Burkitt's lymphoma, BL2 (91% homology).
Conclusions: Specific recognition of HIV-1 gp160 by IgM secreted by 2F7 cells, and somatic mutation of the sequence corresponding to the variable region of the 2F7 IgM, suggest a critical role for the host immune response against HIV-1 antigens in the development of AIDS-associated lymphomas.

Th.A.329 MULTISITE MOLECULAR ANALYSIS OF AIDS-ASSOCIATED LYMPHOMAS

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Objective: The pathogenesis of AIDS-associated lymphomas is unclear. We sampled multiple sites of 3 autopsies with the express purpose of developing a molecular scheme to characterize B-cell lymphoproliferations and tumors in AIDS patients.
Methods: DNA was isolated from phenotypically characterized autopsy tissue sites. Southern restriction fragment analysis was performed for immunoglobulin gene rearrangements (J_H probe), th presence of EBV genomes (long internal and terminal region repeat probes) and c-myc rearrangements (exon 1 probe). Polyclonality was defined as the non-emergence of distinct rearranged bands at a 5% level of sensitivity.
Results: All specimens featured polymorphous infiltrates, primarily of immunoblasts.

Autopsy		Ig	EBV	c-myc
1	peripancreatic LN	polyclonal	-	germline
1	liver	polyclonal	-	germline
1	spleen	monoclonal	-	germline
1	peri-aortic and corinal LN	monoclonal	-	germline
2	liver	polyclonal	-	germline
2	spleen	polyclonal	-	germline
2	lymph node	polyclonal	-	germline
3	lung (site 1, site 2)	polyclonal	-	germline
3	lung (site 3, site 4)	monoclonal	monoclonal	germline

Conclusion: Three distinct molecular subtypes of lymphomas were revealed in this study: 1) polyclonal EBV lymph negative lymphoma; 2) monoclonal EBV negative lymphoma; and 3) monoclonal EBV positive lymphoma. The "emergence" of both types of monoclonal lymphomas from EBV-negative polyclonal lymphoproliferations in separate single patients may have important pathogenetic implications.

Vaccine Development

Th.A.330 AIDS VACCINE DEVELOPMENT: SCIENTIFIC AND PUBLIC POLICY CHALLENGES FOR THE 1990'S

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In efforts to expedite the development of a safe and effective AIDS vaccine, two comprehensive programs have been established by the Division of AIDS, NIAID. These programs, known as the AIDS Vaccine Research and Development Group and AIDS Vaccine Clinical Trials Network, consist of international networks of scientists from academic, commercial, and government sectors. During the past twelve months, significant advances have been made in both preclinical and clinical AIDS vaccine development, markedly improving the feasibility and accelerating the timetable for successful development of AIDS vaccines. The current status of the more than twenty vaccine approaches currently in preclinical development will be reviewed, including the various adjuvant methods under development aimed at immunopotentiation of candidate antigens. The experience gained from clinical evaluation of candidate vaccines in the AIDS Vaccine Clinical Trials Network will be detailed, including discussions on clinical trial design, recruiting, safety/immunogenicity analyses, and endpoints in the decision-making processes for advancing candidate vaccines through the sequential phases of clinical development. A summary of the current status of human studies with candidate AIDS vaccines will be provided. Finally, the remaining scientific and public policy challenges which are impeding efforts to develop a safe and effective AIDS vaccine and potential models for overcoming these obstacles will be described.

Th.A.331 HIV-1 TAT PROTEIN RELEASED DURING ACUTE INFECTION STIMULATES GROWTH OF SPINDLE CELLS DERIVED FROM AIDS-KAPOSI'S SARCOMA

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HIV-1 Tat protein is released into the culture supernatant during acute infection of H9 cells or by COS-1 cells transfected with a Tat-expressing plasmid. The Tat-containing supernatants specifically stimulate growth of cells derived from Kaposi's sarcoma (KS) lesions of AIDS patients and this proliferative effect is inhibited by specific purified anti-Tat antibodies. Similarly, exogenous recombinant Tat proteins, but not control proteins (gp160 and Nef), stimulate AIDS-KS cell growth, and again the effect is blocked by specific anti-Tat antibodies. The two phenomena, Tat-release and Tat-induced proliferation, define new biological properties of Tat. These results, together with the recent data from the Tat-transgenic mice (induction of KS-like lesions), suggest that Tat may be fundamental in the induction and/or progression of KS in HIV-1-infected individuals.

Th.A.332 HIV-SPECIFIC B AND T LYMPHOCYTE FUNCTIONS IN UNINFECTED HUMAN VOLUNTEERS IMMUNIZED WITH HIV RECOMBINANT GP160

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Objective: The purpose of this study was to determine whether immunization of uninfected volunteers with a recombinant gp160 (rgp160) candidate vaccine would result in the production of HIV-specific serum antibodies, and whether peripheral blood leukocytes (PBL) from these donors would generate T cell immune responses to HIV synthetic peptides.
Methods: Volunteers were immunized multiple times with 40 or 80 ug of the Microgenesys rgp160 vaccine in alum or with alum alone. Sera were tested by ELISA for antibodies to rgp160, and PBL were tested in vitro for HIV-specific T helper cell responses by proliferation and interleukin 2 production (IL2) in response to four gp120 and gp160 synthetic peptides, and for cytotoxic T lymphocyte (CTL) activity to the same peptides.
Results: Weak and transient antibody responses were observed in 4 of 5 of the vaccinees after the third immunization. All vaccinees responded to the HIV peptides by proliferation and IL2, and half of the volunteers exhibited peptide-specific, CD8-mediated CTL activity. No HIV-specific B or T cell immunity was detected in any of the controls.
Conclusion: This rgp160 candidate AIDS vaccine elicited strong and persistent T cell immunity, even one year after the last immunization, but only weak and transient antibody responses. These results are of interest for the development of an AIDS vaccine.

Th.A.333 ENHANCED IMMUNOGENICITY IN HUMANS OF AN HIV SUBUNIT VACCINE REGIMEN EMPLOYING PRIMING WITH A VACCINIA GP160 RECOMBINANT VIRUS (VAC/ENV) BY BOOSTING WITH RECOMBINANT HIV ENVELOPE GLYCOPROTEIN (RGP160).

Cooney, Elizabeth, L.*; Corey, L.*; Hu, S.L.[x]; Collier, A.*; Arditti, D.*; Hoffman, M.*; Smith, G.[o]; Steimer, K.[+] and Greenberg, P.*. *University of Washington, Seattle, WA USA; [x]Oncogen, [o]MicroGeneSys, and [+]Chiron Corporations.

Objective: To determine if the T cell and antibody responses to the envelope of HIV can be augmented in individuals previously immunized with a recombinant vaccinia (vac/env) virus [HIVAC-1e, Oncogen] by boosting with recombinant gp160 derived from a baculovirus vector and formulated in alum [MicroGeneSys].
Methods: 11 subjects were inoculated with 2 doses of vac/env separated by 8 weeks, and boosted one year later with two (160μg) injections of gp160 8 weeks apart. T cell *in vitro* proliferative responses to a panel of antigenic stimuli, including uv-psoralen inactivated HIV (ps-HIV), recombinant HIV proteins, and non-HIV antigens, were calculated as stimulation indices (SI) pre- and at 4 week intervals post-immunization. Antibody responses to HIV were measured pre- and post-immunization by Western blot (WB), ELISA and neutralizing antibody assays.
Results: Following immunization with only vac/env, 8/10 individuals with clinical and laboratory evidence of prior smallpox immunization developed low and/or transient T cell responses to ps-HIV which were undetectable 1 year after immunization. By contrast, the 1 vaccinia naive subject developed strong, persistent T cell responses to HIV. Following boosting with rgp160, all 11 augmented their proliferative T cell responses to HIV as evidenced by a marked increase in SI to envelope antigens from homologous and heterologous strains of HIV. Mean SI to ps-HIV (LAV strain), gp160 (derived from LAV strain) and gp120 SF_2 (derived from San Francisco strain) pre-boost were respectively 2, 3, and 7.6; at week 2 post-boosting were 29, 196, and 102; and at week 12 were 107, 261 and 232. T cell responses to non-HIV antigens and mitogens were unaffected by immunization with rgp160.
Prior to boosting with gp160, only the subject initially naive to vaccinia had Ab to HIV detectable by WB. Following immunization, 9/10 remaining subjects developed Abs to HIV by WB, with 7/9 responding after the first dose of rgp160. 7/10 exhibited Ab by whole virus ELISA. Preliminary studies have detected neutralizing antibodies in some individuals, including the 1 vaccinia-naive subject.
Conclusion: This regimen of vac/env followed by rgp160 demonstrated enhanced immunogenicity compared to that previously elicited with either vaccine administered alone. The results suggest: 1) standard analysis of T cell and antibody responses underestimates the efficiency of priming to envelope following immunization of vaccinia-immune individuals with recombinant vac/env; 2) boosting vac/env primed hosts with rgp160 induces significant anamnestic T cell and antibody responses to homologous and heterologous strains of HIV.

Th.A.334 STUDY OF HUMORAL RESPONSE FROM FRENCH SERONEGATIVE HEALTHY IMMUNIZED VOLUNTEERS AGAINST HIV

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Objective : To determine the neutralizing or the antibody-dependent enhancing capacity of sera from HIV negative immunized volunteers.
Methods : Sera from 30 immunized volunteers (D. Zagury protocol) were obtained one month after each boost for about one year. These sera were tested in the MT4 neutralizing assay against five HIV isolates (3 well known laboratory strains - IIIB, RF, MN-, and 2 freshly isolated from Africa : RII and from France : Ch88). Antibody-dependent enhancement of HIV infection was tested in the MT2 complement dependent system. Individuals presenting neutralizing antibodies were also tested for their response against large spectrum of HIV peptides.
Results : Among the 30 individuals, 6 were selected for their positive neutralizing and stable response. Among these 6 subjects, 4 had a group-specific reactivity. Sera from these individuals showed no enhancing activity for HIV infection in MT2 cells. Preferential response of these sera against HIV peptides will be presented.
Conclusion : Some of the volunteers immunized with the French protocol (from D. Zagury) possess neutralizing antibodies against different virus strains without any enhancing response.

Th.A.335 IMMUNE THERAPY: CLINICAL TRIAL (PHASE 1) IN AIDS/ARCS PATIENTS

Picard.O**; Imbert J.C**; Salaun. JJ***; Lurhams.Z***; Moss.B****; Gallo.RC****; and Zagury.D*
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A clinical trial (Phase 1) against AIDS consisting of active anti HIV specific immunization was begun in March 1989 on 19 ARC/AIDS patients in the Hôpital Saint Antoine. In this trial, immunizations administered 4 or 5 times a year were aimed at enhancing HIV immunogenic signals at the surface of antigen presenting cells (APC). Immunogenic reagents were : (1) autologous cells first infected by recombinant vaccinia (prepared by Bernard MOSS) expressing HIV env, gag and pol proteins and subsequently fixed with paraformaldehyde, (2) a set of immunogenic peptides from HIV env,gag and pol proteins.These immunogenic reagents differ from Jonas Salk's immunotherapy against AIDS trial[1] in that they contain env peptides and are devoid of viral nucleic acid.
This trial has so far confirmed the safety and clinical benefits observed in a parallel and similar trial we performed in Kinshasa since July 1986.
Safety: No side effects were observed after immunizations, only a transient fever which disappears with analgesic occured in some instances
Clinical benefits: No opportunistic infection was observed in the 19 patients since the treatment started (over 9 months ago) Moreover no weight loss nor infectious episodes were seen in any treated patients.
Biological benefits: By contrast to control individuals where T4 cell count decreased patients treated with immunetherapy associated or not to AZT, stabilized or increased significantly their T4 cells.
FACING ?these beneficial effects persisting up to now (January 1990), the place of active anti HIV specific immunization in AIDS therapy and infection is now posed: alternative to AZT/DDI treatment; association with discontinuous AZT/DDI treatment, HIV infected healthy volunteers

(1) Jonas Salk etal 5th International Conference on AIDS - Montreal, Canada

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.336 THE HLA-A11 MOLECULE IS CTL RESTRICTING FOR THE IMMUNODOMINANT EPITOPE, PEPTIDE 18, OF HIV GP160 IN IMMUNIZED HUMANS.

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Objective: In a previous report we demonstrated that peptide 18 can be used to detect T effector cell activity and that effector cells are restricted HLA. A2 and HLA.A3 . We investigated whether the HLA.A11 is a CTL restricting element for peptide 18 in immunized humans.
Methods : Volunteers primed by rV expressing gp160 protein received boosts composed of gp 160 determinants. The PBLs were stimulated in vitro by irradiated autologous cells carrying gp 160 signals in a mixed lymphocyte culture. Effector cells were assayed for specific cell mediated cytotoxicity by chromium release test, using EBV transformed B cells pulsed with P 18.
Results : Effector cells of donor (HLA.A11) were essayed using autologous and HLA-typed allogenic EBV lines. Lysis was observed for peptide - preincubated targets that shared HLA.A11class I antigen with the effectors.
Conclusion : The T-cell epitope P18 is sufficient to elicit a response in HLA- diverse groups of immunized donors. This peptide which is a site for T cell recognition has a sequence able to fold as an amphipatic helical structure and at least three diverse antigenic functions. Because this peptide is immunodoninant in association with multiple class I MHC-antigens it deserves consideration in vaccine development.

Th.A.337 IMMUNIZATION OF HIV-INFECTED INDIVIDUALS WITH INACTIVATED HIV IMMUNOGEN: SIGNIFICANCE OF HIV-SPECIFIC CELL-MEDIATED IMMUNE RESPONSE.

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Objectives: To determine the feasibility of therapeutic immunization with an inactivated envelope-depleted HIV immunogen, administered to HIV-seropositive subjects, to delay or prevent progression to AIDS, and to determine the methods whereby a clinically significant immune response may be measured.
Methods: 100 ug doses of HIV immunogen in IFA were given to 19 subjects with ARC and to 54 asymptomatics. Serial measurements were made of anti-p24 Ab, p24 Ag, anti-RT Ab, CD4 and CD8 cells, non-specific and HIV-specific skin tests (DCH), and PBL cultures for HIV.
Results: Median F/U is 18-24 months. All patients are alive, without evidence of toxicity. After immunization of 19 ARC patients anti-HIV Ab did not increase. However, 7/15 who received ≥3 doses became HIV-specific DCH positive (≥9 mm induration). Those who became HIV-DCH positive had higher baseline anti-p24 and anti-RT Ab titers than those who did not. A similar correlation with baseline CD4 levels was not observed, suggesting that the capacity to develop a positive DCH response is more directly related to functional state than to absolute CD4 number. DCH responders were more likely to be PBL culture negative than non-responders, and were more likely to have a slower decline of CD4 cell number over time.
Conclusions: (1) HIV-DCH responsiveness correlates with higher anti-p24 and anti-RT Ab levels and with a lower frequency of positive PBL cultures for HIV, and is independent of CD4 number. (2) Clinical significance is now being evaluated with more potent CMI-stimulating adjuvants, and results will be discussed.

Th.A.338 EXPERIENCE WITH THIRTEEN HIV EFFICACY TRIALS IN CHIMPANZEES

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Objective: To evaluate the efficacy of various HIV vaccines to prevent infection in chimpanzees.
Methods: The following HIV vaccine candidates were employed to actively or passively vaccinate a total of 43 chimpanzees. 1. synthetic peptide (735-752), 2. vaccinia-env, 3. rgp120 (CHO), 4. HIVIG, 5. recombinant peptide (350-674), 6. vaccinia-gag, 7. truncated vaccinia gp120, 8. truncated vaccinia gp120 plus vaccinia-env, 9. idiotypic antibodies (cocktail of anti-CD4s), 10. rgp120 (yeast), 11. p55, 12. PB1, 13. whole inactivated HIV.
Results: Cell-mediated immunity (helper and/or cytotoxic T cells) in immunized animals was detected in most trials (except 1,5,9). While humoral immunity (Elisa and/or Western blot) was induced with all vaccines (except 7) only passive immunization with HIVIG conferred significantly high neutralizing antibodies. With the exception of one HIVIG treated chimpanzee all immunized and control animals that were challenged (trials 1-4, 11) were not protected from infection, i.e. HIV could be isolated and/or seroconversion was documented. Due to the experience gained in trials 1-4 and 11 it was decided that the remaining vaccine candidates did not warrant a challenge with live HIV.
Conclusion: Protection of 1 chimpanzee passively immunized with HIVIG and the failure of most HIV vaccines to induce high neutralizing antibodies in immunized chimpanzees point to the importance of neutralizing antibodies in protection from infection.

Th.A.339 ANTI-HIV ANTIBODY-DEPENDENT CELLULAR CYTOTOXICITY (ADCC) IN SERA OF IMMUNIZED CHIMPANZEES.

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Objective : Antibodies (Ab) that mediate ADCC were investigated in an animal vaccination model because, beside virus neutralization, ADCC may be important to consider for protection against HIV infection.
Methods : Adult chimpanzees received ≥ 3 injections of different combinations of HIV-1 BRU antigen preparations : recombinant vaccinia virus (rVV) expressing gp160, p25 or p27*nef* ; formalin- and ß-propiolactone-inactivated whole HIV (HIVi) ; soluble recombinant gp160 associated or not with p18, with or without p27*nef* ; a 24-mer peptide of the V3 region of gp120 (V3) coupled to KLH ; the 3 latter preparations being administered with a Syntex adjuvant formulation. Anti-HIV ADCC in pre- and post-immunization sera was evaluated with normal human PBMC as effectors against NK-resistant CEM-NKR target cells coated with HIVi. Background specific lysis (SL) was ≤ 10%. The most discriminant data were obtained with E:T = 50:1 and 1:100 serum dilutions.
Results : A first series of immunization with either of the rVV mixtures gave no significant or borderline (SL < 20%) ADCC. Soluble proteins regularly led to ADCC (SL = 20-51%) whether the chimpanzees were naive or had been preimmunized with rVV and/or HIVi , and whether they received gp160 only or mixed with other proteins. Only 1/3 animals that received KLH-coupled V3 presented significant recall ADCC response. The strongest and most sustained activity (SL = 27-88%) was elicited by HIVi. Serum ADCC was independent from overall anti-HIV Ab or neutralizing titers. One chimpanzee, which had been repeatedly immunized with rVV (gp160, p25) followed by HIVi, presented strong ADCC: this did not relate with protection from live virus challenge performed at the peak of the response, but with a chimpanzee-passaged BRU variant.
Conclusions : Among immunogens, HIVi but also soluble HIV proteins elicited significant serum ADCC activity whereas rVV usually did not. ADCC Ab were independent from neutralizing Ab. Serum ADCC seemed insufficient to protect against HIV infection.

Th.A.340 CHALLENGE WITH HIV IS NOT FOLLOWED BY ANTIBODY RESPONSE TO VIRAL CORE PROTEINS IN A CHIMPANZEE IMMUNIZED WITH RECOMBINANT gp160.

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Objectives: To test the potency of an HIV candidate vaccine in the chimpanzee model.
Methods: Chimpanzees received 6 intramuscular doses of recombinant gp160 (rgp160, 50µg per immunization) on days 0,27,55,97,120 and 147. On day 315 two rgp160-immunized chimpanzees and one unimmunized control animal were challenged by intravenous injection with 10^2 $TCID_{50}$ units of HIV-1 (III B strain). Determinations of T cell reactivity towards HIV env and core proteins (by assessment of the IL2 receptor CD25 and/or by antigen-specific proliferation of T cells following in vitro stimulation with rgp160 or p24) as well as antibody determinations (binding, neutralizing, Western blots) were performed at regular intervals.
Results: Immunization with rgp160 led to a substantial and long lasting T cell memory towards the immunogen which was observed for several months after the last booster and persisted after challenge. Serum titers of neutralizing antibodies (Ab), however, never exceeded 1:20. Substantial gp160 specific T cell proliferative responses (indicating the presence of gp160 primed memory T cells) were observed at the time of challenge (chimp E7 123300 dpm, chimp D8 13600 dpm) whereas neutralizing Ab titers (<1:10) were already decreased. In immunized chimps HIV challenge was followed by a rapid and long lasting increase in the capacity of chimpanzee lymphocytes to become activated upon stimulation with rgp160 (% $CD25^+$ cells after stimulation with rgp160 post challenge: chimp E7 92%, chimp D8 34%; pre challenge values were 56% (E7) and 20% (D8). In the control animal the capacity of lymphocytes to become activated upon gp160 stimulation developed much slower and never exceeded 20%. HIV challenge also led to the generation of core specific antibodies (determined by Westerns blots) in animal D8 and in the control chimpanzee. In contrast to that animal E7 remained completely negative for antibodies to HIV core and regulatory proteins, indicating the control of viral replication.
Conclusion: gp160 vaccination in the proper adjuvant formulation induced a long lasting T cell memory towards gp160. One of the immunized animals did not produce antibodies to viral core proteins upon challenge with HIV which could reflect control of viral replication.

Th.A.341 SURVEILLANCE OF AIDS VACCINE STUDIES IN NON-HUMAN PRIMATES

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Animal models are essential to AIDS vaccine development. Simian immunodeficiency virus (SIV) originating from the sooty mangabey infects and causes disease in rhesus macaques. This surrogate model for human AIDS is now well-established and has already produced important vaccine studies. The same SIV growing in cynomolgus monkeys, and a related SIV in African green monkeys are also developing as similar models, as well as an HIV-2 model with isolates found to productively infect rhesus macaques. Limited but nonetheless significant vaccine studies have also been accomplished with HIV-1 in chimpanzees. Results already published have documented beneficial effects of prior vaccination; both slower disease progression and protection from infection have been observed after immunization when animals were challenged with infectious virus from defined, titered stocks. Progress in human AIDS vaccine development will depend on defining the protective immune responses in these animals, establishing the duration and breadth (i.e.- homologous vs heterologous virus challenge) of such protection, and on developing optimized vaccination dosages and scheduling. Some projects are in early stages, while others are well underway. As an aid to information dissemination, facilitation and coordination of these efforts, the Vaccine Research and Development Branch of the NIAID Division of AIDS maintains surveillance of overall progress in these experiments. An updated summary of research approaches and findings will be presented.

Th.A.342 SIV VACCINE PROTECTION OF RHESUS MACAQUES

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Objective: To determine if rhesus monkeys can be protected against challenge with live SIV by an inactivated whole SIV vaccine.

Methods: Monkeys were immunized with an inactivated whole SIV_{mac} vaccine using two different adjuvants, muramyl dipeptide (MDP) and incomplete Freund's adjuvant (IFA) or no adjuvant. They were challenged intramuscularly with 10 ID (0.1 TCID/50) of live SIV_{mac}.

Results: Protection against challenge infection - now 8 weeks post-inoculation - was observed in 3 of 3 rhesus given the vaccine with MDP, 1 of 3 rhesus given the vaccine with IFA and 1 of 3 rhesus given the vaccine with no adjuvant. 100% (14 of 14) naive controls were readily infected by the same challenge dose and route of live SIV. The animals that were protected were those that had detectable envelope antibody by Western blot before challenge.

Conclusion: These results confirm those at the New England and Delta Primate Centers and indicate that inactivated whole SIV vaccines can indeed protect rhesus macaques against challenge infection with low doses of live SIV. These findings add hope to the possibility of an eventual AIDS vaccine.

Th.A.343 IMMUNIZATION WITH HIV-1 gp160 ENHANCES HIV-SPECIFIC IMMUNE RESPONSES ELICITED BY VACCINIA-HIV RECOMBINANT VIRUS.

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Objective: To determine if immunization with gp160 could further increase the immune responses elicited by vaccinia-HIV recombinant virus and to study the effect of various adjuvants on the immunogenicity of gp160.
Methods: HIV-1 gp160 was expressed either in insect cells by a baculovirus vector, or in mammalian cells by recombinant vaccinia virus. They were formulated in various adjuvants including Freund's adjuvants, immune stimulating complex (ISCOM), monophosphoryl lipid A plus cell wall skeleton (MLP+CWS; RIBI), or alum. Mice and rabbits with or without prior immunization with recombinant vaccinia-HIV virus were immunized with gp160 and their HIV-specific antibody responses were determined by ELISA, Western blot and neutralization assays.
Results: Mice immunized with a recombinant vaccinia virus expressing HIV-1 gp160 (HIVAC-1e) generated env-specific antibodies (ELISA titer 1:800). Re-immunization with the same virus was not effective, most likely due to pre-existing immunity to vaccinia. Boosting of these mice with gp160 resulted in an immediate and significant (>100-fold) increase in antibody titer and the generation of neutralizing antibodies. Conversely, priming with recombinant vaccinia virus was more effective than that with subunit gp160. Immunization of rabbits with gp160 formulated with Freund's adjuvants, ISCOM, or MLP+CWS were more effective than alum in eliciting HIV-neutralizing antibodies.
Conclusion: Immunization of animals with vaccinia-HIV recombinant virus followed by gp160 resulted in greater immune responses than either regimen alone. Several formulations of vaccinia-made HIV gp160 were effective in eliciting HIV-neutralizing antibodies.

Th.A.344 THE EFFICIENT EXPRESSION OF SIMIAN IMMUNODEFICIENCY VIRUS (SIV) ENVELOPE PROTEIN FROM THE RECOMBINANT HUMAN ADENOVIRUS TYPE 5 WITH A HOST-RANGE MUTATION

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Objective: To express SIV envelope protein from a recombinant adenovirus capable of infecting both human and monkey cells.
Methods: Two recombinant adenoviruses were constructed: (1) pEXO17/ad5hr contains a single subgenomic segment of SIV that includes both exons of rev and the entire env gene; (2) pENV9/ad5hr was derived from pEXO17/ad5hr by deleting the first exon of rev. pEXO17/ad5hr can express both rev and env, should splicing of the rev exons occur; but pENV9/ad5hr only had the potential for env. The SIV DNA was inserted between the early region 3 (E3) promoter and the E3B polyA signal of ad5hr404 with E3 deletion from map units 78.8 to 85.7
Results: Both recombinant viruses replicate equally well in human and monkey cells. Nevertheless, significant syncytium formation was only observed from pEXO17/ad5hr infected cells cocultivated with a human CD4+ lymphocyte cell line (CEMx174). SIV env-specific proteins were detected from cells infected with pEXO17/ad5hr at early time after infection from the E3 promoter as well as at late time from the major late promoter.
Conclusion: We have constructed the recombinant human adenovirus type 5 with a host-range mutation capable of expressing functionally active rev and env proteins both at early and late time after infection. This virus can be used as a potential live-viral vaccine to immunize monkeys against simian AIDS.

Th.A.345 SPECIFIC RESPONSE OF RHESUS MONKEYS TO AN IMMUNIZATION WITH VACCINIA-HIV2 RECOMBINANTS.

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Objective: To study the immunization of Rhesus monkeys, with a mixture of vaccine-HIV2 recombinants, and to determine the usefullness of vaccine env recombinant addition in this potential vaccine preparation against HIV2.
Methods: As a vaccine, we used different recombinant vaccinia viruses expressing HIV2 genes: gag, pol, nef, vif and env. 5 Maccaca mulata were vaccinated with a mixture of 4 different recombinant viruses (gag, pol, nef and vif). 5 other animals received the same viruses added with the recombinant expressing env gene. 1 monkey, as a negative control, just received wild type vaccinia. The intradermal route was chosen for all of the injections. The kinetic was as follows: priming was done on day 0 and 30 with 8.10^5 UFP of each recombinant virus. On day 284, 349 and 475 animals received 150 µg of each purified antigen in MDP adjuvant (Syntex). Haematologic and clinical parameters were followed monthly, peripheric blood lymphocytes (PBL) and sera were collected. PBL proliferation against whole heat inactivated HIV2 were determined. Specific serology was analyzed and sera were titrated respectively using western blot and ELISA assays (Diagnostic Pasteur). CD4/CD8 ratio were calculated.
Results: All the animals behave clinically well, excepting early fever episod and strong ulceronecrotic reaction persisting two months after the first injection with alive recombinants. The ELISA titers were found lower than 1/100 following the priming with recombinants viruses, went up to 1/2000-1/64000 after the first purified antigens injection and reached 1/64000 to 1/120000, one month after the second boost with purified antigens.The ELISA titers of the animals "env" injected became higher than the other animals after the second purified proteins injection. Sera were found negative before the first injection of purified proteines, using western blot assays, and all of the animals seroconverted for all the proteines injected two weeks after this injection.
To investigate cellular responses, PBL specific proliferative responses to HIV2 were measured: no significant proliferation was observed after the injections with recombinant viruses.
Conclusion: No clinical and no specific biologic symptoms was observed in the "env-group". All animals developped a high humoral response especially in the "env-group". Neutralizing antibody titers as well as facilitating serie factors are now being tested , before the expected challenge with live lentivirus.

Th.A.346 ASSEMBLY OF HIV-LIKE PARTICLES BY A RECOMBINANT VACCINIA VIRUS EXPRESSION SYSTEM

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Objective: To study the in vitro assembly of defective HIV-1 particles, and their potential use as immunomodulators in the treatment of AIDS.
Methods: BSC-40 cells were infected with two vaccinia recombinant viruses carrying either the HIV-1 gag or env genes. The gag gene used in these experiments included the virus protease coding sequence. HIV-like particles were isolated from culture supernatants of doubly infected cells by sedimentation at 120,000xg. Isolated particles were analyzed for protein content by RIP and SDS-PAGE,and for morphology by thin section immunoelectron microscopy (EM). Immunogenicity testing of the particles was conducted in rabbits.
Results: The HIV-like particles were composed of gag proteins, primarily p24, as well as the env proteins gp120 and gp41. Visualization by EM coupled with immunogold labeling showed that the sedimented particles were 100-120nm in length, were characterized by the presence of cylindrical core structures, and displayed the mature gp120/gp41 complexes on their surfaces. The particles assembled and bud at the plasma membrane. Nucleic acid hybridization suggested that the particles packaged only the gag mRNA and not the env mRNA. Furthermore, the particles did not replicate in CEM lymphoblastoid cells. Immunization with the recombinant-made particles elicited a pronounced immune response in rabbits, comparable to immunization with psoralen inactivated virus. The antibodies generated, reacted with all HIV structural proteins both env and gag. Additionally, lymphocytes isolated from the immunized rabbits exhibited HIV-specific proliferative response.
Conclusion: Nonreplicating HIV-like particles were generated in vitro. These particles resembled the intact virus in structure and morphology, were immunogenic, but noninfectious. This may provide a novel and attractive approach for vaccine development.

Th.A.347 FORMATION OF PRIMATE LENTIVIRUS PARTICLES IN CELLS INFECTED WITH VACCINIA RECOMBINANTS

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Objective. To analyze the production of retroviral-like particles by recombinant vaccinia viruses that express the env, gag and pol genes of HIV-1 or of simian immunodeficiency virus (SIV)
Methods and Results. Recombinant vaccinia viruses containing the env, gag, and pol genes of HIV-1 or of SIVmac251, in monovalent and multivalent conformations, were constructed by standard methods of in vivo recombination. Expression of the HIV gag gene alone resulted in the formation of enveloped, retroviral-like particles that lacked surface spike projections and contained the unprocessed p55 gag precursor polypeptide. The coexpression of env with gag-protease or gag-pol gave rise to the formation of retroviral particles that had surface spike projections, were specifically stained at the surface by immunogold electron microscopy using a monoclonal antibody to the env transmembrane protein, and contained the outer membrane glycoprotein gp120. Trivalent SIV/vaccinia recombinants that expressed the gag, pol, and env genes yielded retroviral particles containing processed gag, pol, and env polypeptides. These results define parameters for AIDS virus particle formation using vaccinia-based expression systems and suggest a means for safely making noninfectious AIDS virus for vaccine purposes.

Th.A.348 EXPRESSION AND PROCESSING OF HIV GAG PROTEINS WITH RECOMBINANT ADENOVIRUS VECTORS

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Objective: To explore HIV gag expression by recombinant adenoviruses as part of a broader program in the development of oral HIV vaccines based on adenovirus vectors.
Methods: Non-defective type 4 and 7 adenoviruses (with E3 deletions) were constructed to carry the HIV rev gene in the E3 region and, in the right-hand terminal region of the virus, an expression cassette with the HIV gag gene, the protease part of the pol open reading frame, and a rev-responsive element from the env gene. In these constructs, rev expression was driven by the E3 promoter; gag expression occurred from an adenovirus major late promoter and tripartitie leader in the cassette. Gag proteins were detected by ELISA, by immunoblotting with AIDS patient plasma or monoclonal antibodies and by immunoelectron microscopy.
Results: In human cells infected with the recombinants. gag synthesis was 400-1200 nanogram (p24 equivalent)/one million cells. The p55 precursor was observed; some processing occurred to a 41 kDa intermediate and to the p17 and p24 products. Gag proteins were also detected in the culture fluid from infected cells; biochemical analyses and immunoelectron microscopy demonstrated that some of the extracellular gag protein was incorporated into 120 nm-diameter particles. Similar particles were observed within the cells.
Conclusions: The HIV gag gene can be expressed from recombinant adenovirus vectors; gag proteins are partially processed and can apparently assemble into virus-like particles.

Th.A.349 CONSTRUCTION OF SYNTHETIC HIV PEPTIDE IMMUNOGENS USING DEFINED T AND B-CELL EPITOPES

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The identification of relevant T and B-cell epitopes on HIV gene products is important for the rational design of an AIDS synthetic vaccine. A highly conserved T-cell epitope of HIV-1 p24, p24E encompassing amino acid residues 292-306 was selected to construct two chimeric peptides, namely CLTB-1 and CLTB-2 which individually contained p24E in tandem with envelope neutralizing epitopes, BE3 (residues 728-751) and C21E (residues 252-272), respectively. The uncoupled BE3 and C21E peptides were ineffective in inducing an antibody response as tested in Balb/c (H-2d) mice. However, mice primed and boosted with 20 ug or greater amount of the uncoupled CLTB-1 and CLTB-2 produced strong secondary antibody responses against BE3 and C21E determinants, respectively, as judged by peptide -specific immunoassays.
The antibody responses to CLTB-1 and CLTB-2 were H-2-restricted. Among the five inbred mouse strains (s,a,b,d and q haplotypes) tested, only the q haplotype was found to be unable to respond to the chimeric peptide.
Anti-BE3 and anti-C21E antibodies were capable of recognizing the corresponding native proteins, gp41 and gp120, respectively. HIV neutralizing assays so far performed with anti-CLTB-1 antisera showed that the antibodies generated against the BE3 determinant were capable of inhibiting wild-type HIV virus infection of human CD4 lymphocytes.
Our studies show the potential of using an HIV-1 p24 T-cell epitope as carrier in the design of a prototype AIDS synthetic vaccine.

Th.A.350 SYNTHETIC PEPTIDES FROM A CONSERVED REGION OF THE HIV ENVELOPE INDUCE BROADLY REACTIVE ANTI-HIV RESPONSES

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In our efforts to identify reagents that might be used for active immunotherapy in HIV infection, we have studied synthetic peptides derived from the CD4 attachment site of gp120. Two peptides have emerged with particularly interesting properties. The first (B138) spans the envelope residues 421-438 and is a linear form; the second (1005/45) encompasses amino acids 418-445 and is cyclized via a disulfide bond through its terminal cysteines. Both species show syncytial inhibition in a conventional bioassay; B138 being the most efficient. Both peptides elicit high titers of anti-peptide antibodies in immunized mice, rabbits, and goats, with titers exceeding $1:10^5$ in many cases. A substantial portion of this response is directed against gp120 as determined by ELISA. Analysis by flow cytometry has demonstrated that the antisera is broadly reactive with multiple diverse strains of HIV. The anti-gp120 activity of the anti-peptide antiserum was further confirmed by radioimmunoprecipitation assays (RIPs). Furthermore, RIP analysis and inhibition experiments in a CD4-gp120 binding assay have revealed that anti-peptide sera contain antibodies against the CD4 attachment site on gp120.

Th.A.351 PARATOPE-SPECIFIC ANTI-IDIOTYPIC ANTIBODY (Ab-2) INDUCES HIV-1 NEUTRALIZING ANTIBODIES IN RABBITS

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Objective: Based on the concept of idiotype (Id) network, an HIV-neutralizing monoclonal antibody (BAT123) recognizing the neutralization site of HTLV-IIIB gp120 (amino acid residue #308-322) was used to generate syngeneic Ab-2 bearing the internal image of this neutralization site. These paratope-specific Ab-2 (Ab-2ß) may serve as the surrogate antigen to induce HIV-neutralizing responses in animals.
Methods: BALB/c mice were immunized s.c. with BAT123 conjugated with keyhole limpet hemocyanin. Splenocytes were isolated and fused with Sp2/0 myeloma cells. Supernatants from fusion wells were tested for competition of the binding of ^{125}I-gp120 to BAT123. Ab-2ß were characterized by the inhibition of Id-anti-Id reactions by gp120 and by induction of specific anti-HIV immune responses in rabbits.
Results: Two Ab-2, designated as AB19-4 and AB19-31, were generated. They reacted specifically with BAT123. The binding of AB19-4 or AB19-31 to BAT123 was specifically competed by gp120 and the synthetic epitope peptides of BAT123. The antibodies (Ab-3) generated by rabbits immunized with AB19-4 reacted specifically to gp120 and the epitope peptides. These Ab-3 also bound to H9 cells infected by HTLV-IIIB or HTLV-IIIMN and neutralized the infectivities of both HTLV-IIIB and HTLV-IIIMN. By contrast, BAT123 neutralized only HTLV-IIIB.
Conclusion: Our findings in this study suggest that AB19-4 mimics the internal image of the neutralization site of HIV defined by BAT123. The induction of a broader protective immunity to HIV using a neutralizing paratope specific Ab-2 may provide a viable approach for developing vaccines for AIDS.

Th.A.352 PREPARATION OF ANTI-IDIOTYPIC ANTIBODIES BY USING SYNTHETIC CD4 FRAGMENT PEPTIDE (70-132) INHIBITING HIV-1 REPILICATION AND SYNCYTIUM FORMATION

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Objective: We previously reported the identification of CD4 fragment peptide (70-132) that inhibits HIV-1 replication and syncytium formation[1]. To prepare anti-idiotypic antibodies by using this CD4 fragment peptide.
Methods: CD4 fragment peptide (70-132) was synthesized chemically on solid phase, and used as an antigen for preparation of monoclonal antibodies (MoAbs). To determine epitope recognized by the MoAbs, we synthesized 13 kinds of shorter CD4 fragment peptides covering this region. Anti-idiotypic MoAbs were prepared from mice immunized with the MoAbs to CD4 fragment peptide.
Results: A total of 11 hybridoma cell clones producing MoAbs to the CD4 fragment peptide (70-132) was isolated. By ELISA test using 13 kinds of shorter CD4 fragment peptides, it was found that these 11 MoAbs were classified into at least 5 types. All of these MoAbs to CD4 peptide slightly inhibited HIV-1 replication, while type I MoAbs reactive with CD4 (74-86) region strongly inhibited HIV-1-induced syncytium formation. Anti-idiotypic MoAbs prepared by immunizing type I MoAbs also strongly inhibited HIV-1 replication.
Conclusion: These results suggest that CD4 (70-132) region, especially CD4 (74-86), is a critical site for HIV-1 infection.

1) Hayashi et al., Arch. Virol., 105, 129-135 (1989).

Th.A.353 ANTI-CD4 IDIOTYPES: POTENTIAL FOR AIDS VACCINATION

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Objective: The production of monoclonal anti-CD4 antibodies which bind to or overlap with the HIV gp120 binding site on CD4. To assess the potential of these Ab-1 antibodies to produce an internal image anti-idiotype (Ab-2) response in small animals, which by structurally mimicking the CD4 receptor, will bind to and neutralize HIV.
Methods: A panel of CD4 specific monoclonal antibodies (mAbs) were produced by immunization of rats or mice with CD4 positive cells. mAbs were characterized for gp120 binding inhibition, reciprocal cross blocking, and for their ability to produce anti-idiotypic responses capable of binding to HIV in ELISA or Western blot assays. CD4 epitopes were identified by mapping antibodies on human/mouse recombinant CD4 molecules or on mutant CD4 proteins containing murine L3T4 amino acid substitutions.
Results: Over 120 CD4 antibodies were produced which map to reveal numerous distinct epitopes of CD4. The majority of mAbs which inhibit gp120 binding to CD4 were shown to bind sites close to the CDR2 like, gp120 binding site. Other antibodies which bound to the CDR3 region of V1CD4 were also shown to be effective in gp120 binding inhibition, and in syncytial inhibition assays. Anti-idiotypic sera or mAbs produced against gp120 blocking antibodies in rats, mice, or rabbits were demonstrated to possess internal image activity by production of anti-anti-idiotypes which mimicked Ab-1 activity. None of the anti-idiotypes produced were able to bind HIV to the assay systems employed.
Conclusions: The characterization of this panel of anti CD4 mAbs has produced many potential candidates for an idiotype based vaccine for AIDS. However, we have not yet identified the precise gp120 binding site on CD4. While this concept of an idiotype based approach to AIDS vaccination has not yet been reduced to practice, it is still an attractive one. This work demonstrates clearly that more innovative approaches to relevant Ab-1 and Ab-2 antibodies may be necessary.

Th.A.354 GENERATION OF MONOCLONAL ANTI-IDIOTYPIC ANTIBODIES AGAINST A NEUTRALIZING MONOCLONAL ANTIBODY (0.5β) OF HIV-1

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Objective: Anti-idiotypic antibodies (Ab2) which recognize unique V region of antigen binding antibody (Ab1) and mimic internal image of antigen could be used for vaccines of some kinds of infectious agents or tumors. In order to apply this strategy for HIV, syngeneic monoclonal anti-idiotypic antibodies directed against a neutralizing murine monoclonal antibody (0.5β) of HIV-1 (HTLV-IIIB) were raised.
Methods: Murine monoclonal anti-idiotypic antibodies against 0.5β were obtained by immunizing BALB/c mice with KLH-conjugated 0.5β. Hybridomas were screened by the inhibition of 0.5β binding to the synthetic peptide recognized by 0.5β.
Results: Two murine monoclonal anti-idiotypic antibodies (Idβ1, -β2) were obtained. Idβ1 and -β2 specifically bind to 0.5β and inhibit the binding of 0.5β to native gp120 of HTLV-IIIB/LAV-1. Competitive inhibition studies showed that Idβ1 and -β2 recognize different idiotopes. Immunization of mice and rabbits with KLH-conjugated Idβ1 produced anti-anti-idiotypic antibodies (Ab3) that inhibit the binding of Idβ1 to 0.5β. However, the binding activities against gp120 of produced Ab3 were not detected. Immunization with Idβ2 has not yet be done.
Conclusion: Idβ1 did not contain an internal image of the antigen, because the produced Ab3 did not bind to gp120 of HIV-1. Analyses of the idiotopes recognized by Idβ1 and -β2 would be useful for further investigation of immune responses against HIV-1.

Th.A.355 T4a - SPECIFIC ANTIBODIES IMITATING THE gp120 BINDING SITE USED FOR VACCINATION AGAINST HIV

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Objective: Monoclonal antibodies generated against the T4a epitope were shown to block gp120-CD4 interaction and inhibit syncytia formation in HIV infected lymphocyte cultures.
These T4a-specific antibodies may serve as a vaccine to raise -via an anti-idiotypic response- antibodies cross-reacting with the gp120 binding site and possibly inhibiting HIV-infection.

Methods : Rabbits have been vaccinated with different T4a-specific mouse-monoclonal antibodies. The IgG-fractions were isolated from the immunesera and absorbed with whole mouse IgG to remove all reactivity against mouse IgG isotypes. Serum titres and anti-idiotypic activity were measured in an ELISA.

Results : The different purified anti-idiotypes reacted -even at high dilutions- with the idiotypic region of the corresponding monoclonal antibody used for vaccination.
The results of binding and neutralisation of HIV will be demonstrated.

Th.A.356

Autologous and recombinant HIV-1 core particles produced in different eucaryotic expression systems as a vacine candidate

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Objective: Conventional HIV-1 vaccine strategies, based on the external part of the env protein, were till now not found to induce protective immunity. In addition, enhancing antibodies may negatively influence disease progression. Due to the early appearence in infection, the virus core protein seems to be a promising vaccine candidate. As shown in other virussystems (Hepatitis B), core particles are good immunogens and can be stably expressed in eucaryotic systems. Immunogenicity of recombinant p55-core particles should be improved by fusing a consensus sequence of the major HIV-1 neutralizing epitope V3 of gp120 into different sites of the p55-carrier.

Methods: p55-core expression was assayed by recombinant vaccinia and baculoviruses. Site directed mutagenesis preventing myristylation and addition of pol coding sequences enables us to investigate p55-processing, core-particle formation and particle characterisation by Western blot analysis, electron microscopy and sedimentation analysis. A consensus sequence of the V3 major neutralizing epitope was integrated into different sites of p55-core and expressed in the eucaryotic systems mentioned above. The reactivity of the 38 aa-V3 consensus peptide was evaluated by ELISA.

Results: The formation of 90-110 nm core particles was observed in both expression systems. The localization of the unmyristilated form is restricted to the nucleus, myristylated particles are shedded into the culture medium. Protease mediated processing reduces p55-particle formation and is independent of myristilation. More than 85% of the sera tested with our 38 aa-V3 consensus peptide were positive in ELISA. The expression of the p55/V3 fusion products in E. coli, recombinant vaccinia- and baculoviruses was verified by Western blot analysis and immunofluorescence. Expression products are analyzed for particle formation and imunogenicity.

Conclusion: Autologous premature p55 core particles can be stably expressed in different eucaryotic systems. Immunogenicity can be extended by insertion of defined epitopes of other reading frames into the gag coding sequence, as shown here for a V3 consensus sequence. Recombinant p55/V3 vacciniaviruses will be directly used as a life vaccine in experimental animals.

Th.A.357

DENATURATION ABOLISHES CD4 MEDIATED IMMUNOSUPPRESSIVE ACTIVITY, BUT NOT ANTIGENICITY OF GP120

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HIV gp120 inhibits antigen dependent T cell activation by binding to CD4, an accessory structure used by T cells to facilitate interaction with MHC on antigen presenting cells (APC). Heat denaturation abolishes immunosuppressive activity (ie. CD4 binding) but spares antigenicity of gp120. This was demonstrated by using a gp120 specific human T cell line generated by repeated stimulation of T cells with gp120 pulsed APC. When the established line was stimulated with gp120 pulsed APC, the proliferative response was 20.7 cpm x 10 [illegible], over a bkg of 3.1. In the presence of native gp120, proliferation dropped to 3.7. Heat denaturated gp120 did not inhibit the response to pulsed APC (23.3). When gp120 was added directly to cultures with T cells and APC, proliferation was 3.4 with native gp120 and 21.5 with denatured gp120.

Administration of native and denatured gp120 resulted in immunosuppression (5.1), indicating that native inhibitory gp120 is functionally dominant over denatured antigenic gp120.

These data show that the physico-chemical status of gp120 dictates its immunosuppressive or its antigenic activity as defined in this functional assay and suggest that denatured rather than native gp120 could be used for vaccination aimed at inducing selectively a gp120 specific response of T cells.

Th.A.358

THE IMMUNOGENICITY OF STREPTOCOCCUS PNEUMONIAE (Pn) CONJUGATE VACCINES IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION.

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Objective: Pyogenic infections are increasingly recognized to be a major problem in patients at all stages of HIV disease. Patients with AIDS have been shown to have an impaired antibody (Ab) response to Pn capsular polysaccharide (CP) vaccines. The conjugation of CP to carrier proteins is recognized as a method of enhancing responses to the CP. The purpose of this study was to evaluate the immunogenicity of conjugate Pn CP in HIV-infected adults who failed to mount a protective Ab response after immunization with Pn CP vaccine.

Methods: Twelve patients were immunized with Pnu-Imune (Lederle) 23-valent CP. Ab responses were assessed by radioantigen binding assay for total serum Ab to serotypes 6, 12, 14, 18, 19 and 23. Six of these individuals were given conjugates made with diphtheria toxoid (DTd) which had proven immunogenic in normal adults.

Results: Pre and post immunization Ab to CP were calculated as a % of a reference polyvalent serum standard. Significant rises in Pn CP Ab were not seen. Additionally, Ab to DTd have been measured and these results will be reported.

	Pn 6		Pn 19	
	Pre	Post	Pre	Post
Pt # 1	2.7	3.0	51	59
3	7.4	7.0	54	48
4	5.3	8.4	10.0	14.0
7	49	68	10.5	12.7
10	5.1	10.8	8.8	15.8
12	5.2	14	5.4	5.0

Conclusions: Enhancement of CP Ab responses with DTd conjugates was not noted in this population of patients with HIV infection. The enhancement provided by conjugate vaccines has been attributed to the elicitation of T-lymphocyte helper effects by the proteins. The T-helper cell which is the target of HIV infection may not be able to provide this function in these patients. However, additional boosts with the conjugates may be required, and these studies are underway.

Th.A.359

ADOPTIVE TRANSFER OF HUMAN IMMUNE MEMORY RESPONSES TO HU-PBL/SCID MICE: EFFECT OF DONOR AND RECIPIENT IMMUNIZATION.

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Objective: To study the effect of donor and recipient booster immunization on transfer of specific human antibody responses to mice with severe combined immunodeficiency (SCID mice) reconstituted with human peripheral blood cells (Hu-PBL/SCID).

Methods: Groups of 3 (6-8 wk old) SCID mice were transplanted i.p. with 1.25 x 10^7 peripheral blood mononuclear cells (PBMC) obtained from a human donor either before or after booster immunization of that donor with tetanus toxoid (TT). The recipient SCID mice were immunized at 3 or 35 days after cell transfer with 0.1 ml TT (10 Lf/ml) or with 0.5 ml 10% (v/v) sheep red blood cells (SRBC). The TT protocol was repeated with cells obtained from the donor 10 days after he received a TT booster immunization (0.5 ml, 10 Lf/ml). Sera, pooled by experimental group, were obtained from the recipient mice (0, 14, 35 and 45 days after cell transfer) and assayed by ELISA for human IgG antibody to TT and by hemagglutination for antibody to SRBC.

Results: Primary immunization of Hu-PBL/SCID mice with SRBC did not elicit detectable antibody responses. In contrast, adoptive transfer of secondary responses was consistently observed, the level of responsiveness being markedly dependent on immunization protocol (Table). With TT immunization the donor antibody titer increased from 2,600 to 49,700 (inverse of greatest serum dilution at which antibody could be detected).

DONOR BOOST	MOUSE DAY 3 TT	MOUSE DAY 35 TT	RECIPROCAL TITER DAY 0	DAY 14	DAY 35	DAY 45
-	-	-	0	8	ND	0
-	+	-	0	173	ND	873
-	-	+	0	8	0	0
+	-	-	0	1,691	3,324	930
+	+	-	0	30,064	24,079	22,901
+	-	+	0	1,691	1,118	171

Conclusions: 1) Hu-PBL/SCID could not generate 1° responses to SRBC. 2) Adoptive transfer of 2° responses a) depend on donor immune status b) require early (< Day 35) recipient immunization for optimal responses. 3) Titers achieved in optimally treated Hu-PBL/SCID mice approached those obtained in the recently boosted human donor. 4) This model system may prove useful for evaluating protective efficacy of immune responses generated in human HIV vaccine recipients.

TRACK A: BASIC SCIENCE
POSTER SESSION

Th.A.360 ASSESSMENT OF HIV 1-p18 ANTIGENS ON THE SURFACE OF HIV 1-INFECTED LYMPHOCYTES BY MEANS OF SCANNING ELECTRONMICROSCOPY.

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Objective: This study was designed to look for highly conserved HIV 1-specific antigens expressed on the surface of HIV 1-infected cells with special emphasis to the question wether these antigens are really accessible from outside of the infected cells to cytopathogenic mechanisms like (ADCC). This is to be seen with respect to the development of vaccines based on highly conserved antigens.
Methods: Experiments were performed with: i. HIV 1-infected H9-cells; ii. polystyrol particles (Dynabeads) of either 280 or 450 nm in diameter were coated with antibodies against p18 -thus imitating "antigen-specific cell-structures" that cannot penetrate the membrane of cells. The reaction products were scored by scanning electronmicroscopy.
Results: The HIV 1-specific p18-antigens were readily localized on the surface of HIV 1-infected H9-cells. The specificity was proven by blocking reactions with free anti-p18 (:no cell/bead-structures) or free anti-gp120 resp. anti-p24 (:cell/bead-structures present). By means of double-labeling-procedures with anti-CD4-coated beads in addition to the above mentioned beads we were able to demonstrate cell/bead structures in lymphocyte-isolates from HIV 1-positive patients of different clinical stages.
Conclusions: Results showed that also HIV 1-specific antigens of the matrix structure are exprimed at the cell surface and are accessible to antigen-specific cell-like structures.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Gastrointestinal Manifestations

Th.B.361 **CORTICOSTEROID THERAPY OF IDIOPATHIC ESOPHAGEAL ULCERS IN AIDS.**

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Objective: To determine the effect of corticosteroids upon symptoms in patients with idiopathic esophageal ulcers.
Methods: We previously demonstrated cells containing HIV genome by in situ RNA hybridization in patients with idiopathic esophageal ulcers (Am J Gastroenterol 1989;84:313). Clinical anecdotes indicate that a dramatic response in symptoms may occur in response to corticosteroid therapy. Studies were performed in 9 AIDS patients with esophageal ulcers who had refractory retrosternal pain, odynophagia, and weight loss (9±1kg). Esophageal biopsies were examined histologically and HIV p24 content was determined by quantitative ELISA (Coulter). Patients were treated with corticosteroids, given either parenterally (hydrocortisone), orally (prednisone), or by intralesional injection during endoscopy (methylprednisolone acetate).
Results: Nonspecific acute and chronic inflammation with granulation tissue was seen histologically, without viral inclusions, mycelia or other pathogens. HIV p24 was detected in 7 of 8 ulcers (526±260 pg/mg prot), whereas no p24 was detected in uninvolved mucosa. Serum p24 antigen (30±14 pg/ml) was detected in 5 of 8 patients. Symptoms improved in all 9 patients and weight gain occured in 8. The most dramatic responses occured after intralesional injection, though symptoms invariably recurred within 2 weeks. Parenteral steroids gave a more rapid response than oral steroids. The dosage was tapered but had to be continued for at least one month. Recurrence of pain was common after therapy was discontinued and responded to a repeated course of steroids.
Conclusions: These preliminary and ongoing studies indicate that 1) idiopathic ulcers in AIDS contain HIV protein antigens, 2) corticosteroids are effective in the symptomatic treatment of idiopathic esophageal ulcers, 3) recurrence of pain after treatment with corticosteroids is common.

Th.B.362 RECURRENT ANOGENITAL WARTS AND HIV STATUS

Thomas, Gary; Geraci, A.; Lavigne, J.; Levy, M.

Objective: Recurrence rates of venereal warts have long been felt to be high in those infected with HIV, though no studies of adequate sample size have been published to document this. This study provides statistical evidence for a strong correlation between HIV infection and recurrence of anogenital warts in the gay male population.
Methods: A retrospective review of 116 patients treated one or more times with laser surgical excision of anal warts was performed and data analyzed for statistical significance via student's 1-tailed T-test. The variance of recurrence rates for HIV positive/negative populations was measured as well as a positive predictive value of wart recurrence for HIV status.
Results: The average number of recurrences of anogenital warts per patient for HIV negative patients was 1.03; the average number for HIV positive patients was 1.86; these groups are statistically different at the $p < .005$ level of confidence. Patients who have had more than two recurrences of anogenital warts have an 86.00% chance of being HIV positive, with a sensitivity of 53.75% and a specificity of 80.56%.
Conclusion: HIV infection, per se, regardless of T4 count, increases the likelihood of recurrent anogenital condylomata in spite of apparently adequate local treatment with CO2 laser. If there are 2 or more recurrences of warts on a given patient, this likelihood of being HIV infected is 86%.

Th.B.363 TREATMENT OF CHRONIC DIARRHEA WITH SACCHAROMYCES BOULARDII

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Objective: to assess the response of chronic diarrhea to saccharomyces boulardii.

Background: chronic diarrhea and weight loss are common features of HIV infection and one major course of morbidity and death in HIV infected patients.

Methods: 30 patients with AIDS and severe chronic diarrhea were studied. All patients had a complete physical examination: serial stool examinations for viral, bacterial, fungal and protozoan pathogenes and colonoscopy to obtain mucosal tissue to analyse for enteric pathogens or histopathology. All patients had had an history of CMV, MAI, infection and kaposi's sarcoma and excreted 4 to 8 liters of watery stool per day for at least three months Trials with more than four antidiarrheal medications were ineffective. Patients received 3 g per day of saccharomyces boulardii, a non pathogenic yeast.

Results: Repeat stool examinations identified no bacterial or parasitic pathogen. Colonoscopy showed colitis and chronic inflamatory changes in heir intestinal biopsy specimens. During treatment, the patient's fecal output decreased to less than 1 liter per day after 48 hours of treatement and 8 days after the onset of the drug, stools were fully formed. Saccharomyces boulardii offers an exciting possible new treatment for chronic diarrhea.

Th.B.364 EFFICACY AND TOLERANCE OF SMS 201-995 (A SOMATOSTATIN ANALOGUE) IN HIV INFECTED PATIENTS WITH DIARRHEA.

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OBJECTIVE. To evaluate the clinical efficacy and tolerance of SMS 201-995 as a symptomatic therapy for the diarrhea in HIV infected patients.
METHOD. We enrolled all HIV infected patients suffering from diarrhea without clinical response to conventional therapy. SMS 201-995 was administered by subcutaneous route every 8 hours. The dose ranged from 300 to 1500 mgr per day according to the clinical response. If the response was satisfactory, the therapy was stopped at the 21th day and it was re-started if the diarrhea appeared again.
RESULTS. Ten patients were included. All were males with a mean age of 33 years (range 25-43). The behavioral risk for HIV infection was: Intravenous drug addiction in 6 cases, homosexuality or bisexuality in 3 and 1 case acquired the HIV infection through an heterosexual contact. All fulfilled the AIDS case-definition (CDC. August 1987). The mean CD4 cells count was 250/mm^3. The etiology of the diarrhea was identified in 6 cases (5 **Cryptosporidium** and 1 **Isospora belli**). Seven patients (70%) had a good clinical response to SMS 201-995 and the diarrhea disappeared in 48-72 hours; 2 patients (both with a **Cryptosporidium** enteritis) had a bad course and in 1 the SMS 201-995 was discontinued at the 5th day because of gastrointestinal intolerance.
CONCLUSION. In selected cases, SMS 201-995 may be a good alternative for the symptomatic treatment of diarrhea in HIV infected patients.

Th.B.365 PRELIMINARY RESULTS OF VAPREOTIDE (A NEW SOMATOSTATINE ANALOGUE) IN AIDS RELATED DIARRHEA

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Objective : On the basis of experimental antisecretory activity of the somatostatine analog RC-160 (D-Phe-Cys-Tyr-D-Trp-Lys-Val-Cys-Trp-NH_2, Vapreotide) a pilot trial for treatment of AIDS related diarrhea was conducted from August 1988 until December 1989.
Methods and results : Twenty-eight patients entered the trial. Three patients were excluded : 2 refused to continue treatment even though they responded favorably, 1 patient experienced abdominal pain and stopped treatment before its efficacy could be judged. Twenty-five patients were evaluable ; the number of daily stools varied from 3 to 20 (mean : 10.6) ; Cryptosporidium was found in the stools of 18/25 patients. RC-160 was administered subcutaneously at the dose of 400 µg or 500 µg 2 to 6 times per day. When efficacious, treatment was scheduled beyond the 14 day evaluation period. Three patients attained complete response, ten patients experienced partial response with a reduction of more than 50 % of their daily stools ; 12 patients did not respond to doses up to 2100 µg/day. Although there were no significant factors to predict efficacy, patients without cryptosporidiosis and/or mild diarrhea (less than ten stools/day) were more inclined to respond. The mean duration of response was 2.6 months (0.5 - 9 months). Relapse occurred despite maintenance therapy in 5/13 patients (mean delay 3 months). Toxicity was minimal.
Conclusions : Patients with AIDS related diarrhea may benefit from Vapreotide (RC-160).

Th.B.366 JEJUNAL AUTONOMIC NEURONAL DEGENERATION IN HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION

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Objective: Pathophysiology of depressed autonomic nervous function in HIV disease is unknown but may be related to neuronal degeneration. In order to test the hypothesis that jejunal autonomic neuronal mass is reduced in HIV infection we have histologically quantitated neuronal tissue in jejunal biopsies using a neurone specific monoclonal antibody, PGP 9.5.
Methods: Crosby capsule jejunal biopsies from HIV antibody positive male homosexuals (n 19): asymptomatic 5, persistent generalised lymphadenopathy 9, AIDS 5) were treated with PGP 9.5 which was histologically detected using an immunoperoxidase technique. Volume Density (D) of nerves in villi (DV) and around crypts (DC) was quantitated by a point-counting technique using a Lennox graticule under light microscopic examination for 50 villi in each biopsy. Using this technique D of nerve per constant area of lamina propria was expressed as arbitrary units. Jejunal biopsies from age matched male control subjects (n 10) were similarly treated.
Results: DV and DC were decreased at all clinical stages of HIV disease; DV: (control) 15.3 ± 5.2, (HIV) 9.0 ± 4.7, p<.003; DC: (control) 27.3 ± 6.2, (HIV) 17.8 ± 5.4, p<.0002 (mean ± 1 SD, Student's two tailed t test).
Conclusion: Thus there is histological evidence of decreased neuronal tissue in jejunal mucosa in HIV disease. The loss of neuronal tissue was demonstrated in villous and deep lamina propria and was detected at all clinical stages of HIV infection. Such autonomic neuronal degeneration may contribute to diarrhoeal disease in HIV infection.

Th.B.367 JEJUNAL BIOPSY IN HIV INFECTED PATIENTS

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OBJECTIVES: to evaluate the histomorphologic aspects and the presence of microorganisms in the intestinal mucosa, correlating these findings to the clinical stage.
PATIENTS AND METHODS: Peroral jejunal biopsy was obtained with a Watson capsule in 43 patients with HIV infection, defined as two positive serologic tests (ELISA and IMMUNOFLUORESCENCE).
According to the 1986 Centers for Disease Control classification, 33 patients were at stage IV (21 with and 12 without diarrhea), 3 at stage III and 7 at stage II.
RESULTS AND CONCLUSIONS: Subtotal villous atrophy (28.6%;p<0.02) and severe mononuclear infiltrate (23.8%;p=0.02) were only found in group IV patients with diarrhea. Crypt regenerative activity was present in all but two patients. Intraepithelial lymphocyte count was decreased in patients with diarrhea but this was not statistically significant (p=0.06).
Specific infectious agents were unexpectedly rare for the tropical developing country population studied: they were found in 33.3% of patients presenting with diarrhea and in 18.8% of those without this symptom. The most commom organism associated with diarrhea was Cryptosporidium sp. (57%). The etiology of diarrhea in a significant number of patients remains unclear.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.368 DIARRHOEA IN ADVANCED HIV INFECTION ASSOCIATED WITH INCREASED SMALL INTESTINAL PERMEABILITY IN BOTH AFRICAN AND CAUCASIAN PATIENTS

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Objective: To measure small intestinal permeability (SIP) using Lactulose/Mannitol test in Caucasian and African HIV infected patients with and without diarrhoea at different clinical stages of HIV disease.
Methods: 40 London HIV patients (AIDS 26, ARC 7, Asymptomatic 7) 15 of whom had diarrhoea (AIDS 11, ARC 4); 18 non-diarrhoea (AIDS 15, ARC 3); and 20 Kampala HIV patients (AIDS 14, ARC 6); 15 of whom had diarrhoea (AIDS 10, ARC 5); 5 non-diarrhoea AIDS were studied. Non-high risk healthy London Caucasian (19) and Ugandan African (6) volunteers were control subjects. Fasted subjects drank a test solution containing Lactulose (L) 10g + Mannitol (M) 5g and urine collected for 6 hours. L and M urinary recovery was measured using High Pressure Liquid Chromatography and pulsed amperometric detection and L:M calculated. All HIV patients had faecal smear microscopic examination for enteroparasites.
Results: 1) L:M was higher in AIDS and ARC patients with diarrhoea than any other group. 2) L:M in Kampala AIDS or ARC patients was greater than London AIDS or ARC. Enteroparasites were more commonly detected in Kampala (36%) than London (12%) HIV patients.
Conclusion: SIP increases in parallel with clinical progression of HIV disease in African and Caucasian patients. SIP is greater in African than Caucasian patients at similar clinical stages of HIV disease. Differences in SIP suggest severity of small intestinal disease in African HIV patients may be greater than in Caucasians.

Th.B.369 INTESTINAL INFLAMMATION ASSOCIATED WITH HIV INFECTION.

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Objective: To correlate the presence of HIV protein expression in the gastrointestinal tract with clinical and histologic features and with tissue cytokine contents.
Methods: Sixty four HIV-infected patients were studied (8 WR2, 9 WR3/4,10 WR5, 37 WR6 (Walter Reed classification). Rectal biopsies were performed as part of the clinical evaluation which included both histologic and microbiologic evaluation. In addition the tissue content of HIV p24 was determined by quantitative ELISA (Coulter). Tissue contents of interleukin 1- beta (IL-1b - Cistron) and tumor necrosis factor alpha (TNFa - T Cell Sciences) also were determined by ELISA.
Results: Forty five patients had diarrhea, the rest had proctologic or other complaints. Histological findings included inflammation, edema, eosinophilic infiltration, disordered lymphoid follicles, apoptosis, histiocytic aggregates, and enteric pathogens (P), such as CMV, MAI, or cryptosporidia. HIV p24 was detected in 69% of biopsies while IL-1b and TNFa were detected in 59% and 49%, respectively. Tissue p24, IL-1b and TNFa were undetectable in 7 normal controls.

	WR2	WR3/4	WR5	WR6
HIV p24*	159±133	536±259	254±71	104±33
TNFa	13±13	0	60±25	63±15
IL-1b	171±51	217±142	157±73	146±45

p24-pg/mg prot; TNFa, IL-1b-pg/mg prot; *p=0.06
Tissue p24 content correlated with histologic inflammation (p=.026). In the absence of P, p24 correlated with symptoms (p=.066). There were no correlations between p24, TNFa and IL-1b.
Conclusions: 1) GI symptoms in HIV-infected patients are related to an inflammatory bowel disease (IBD) which is detectable histologically and biochemically, 2) the role of HIV in the pathogenesis of IBD remains to be clarified.

Th.B.370 HELICOBACTER PYLORI INFECTION IN PATIENTS WITH AIDS OR ARC.

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Objective. To study the prevalence of Helicobacter (formerly Campylobacter) pylori (HP) infection of the gastric mucosa in unselected patients with AIDS or ARC undergoing endoscopy for upper gastrointestinal complaints.
Methods. On consecutive AIDS/ARC and age-sex matched control patients with similar symptoms 2 endoscopic biopsies of the gastric antrum were obtained: one was cultured for HP, the other was stained with hematoxylin-eosin, Warthin-Starry, Giemsa, and cresyl fast violet. Either microbiological isolation or characteristic curved bacilli visualized on at least two stains was considered diagnostic of HP infection.
Results. HP was detected in 14 of 33 AIDS patients (42%) vs. 9 of 25 controls (36%). HP was never noted to invade the lamina propria. Active chronic gastritis (ACG) was found in 19 AIDS and 14 control patients: 11 (58%) and 8 (57%) respectively were HP positive. HP was detected in 1 of 6 AIDS patients with chronic gastritis, 1 of 2 with acute gastritis, and 1 of 6 with normal histology. In controls it was present in 1 of 9 with normal histology, and in neither of 2 with chronic gastritis. HP was more often associated with ACG than with either any other finding ($p<0.05$) or normal histology ($p<0.05$). Of 23 AIDS patients with candidiasis, Kaposi's sarcoma, or CMV infection of the gastro-esophageal tract, 9 were HP positive (39%). Gastric ulcer was found in 2 AIDS and 2 control patients, duodenal ulcer in 1 control (all HP negative). Antibiotic or H2-blocker use did not affect the rate of HP detection.
Conclusions. HP gastric infection and active chronic gastritis are common in AIDS: their clinical relevance and treatment options should be assessed.

Th.B.371 HELICOBACTER PYLORI INFECTION IN HIV+ PATIENTS

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OBJECTIVE: To determine the prevalence and significance of Helicobacter (Campylobacter pylori) infection in HIV- infected patients.

METHODS: All patients referred for gastroscopy examination on clinical grounds seen in two consecutive months were included; some of the patients were on antibiotics. Clo test and biopsies stained with hematoxylin-eosin and Giemsa were used. Patients were stratified into age groups by decade. There were 32 without known risk factors and 25 known HIV positive; 20 with full blown AIDS.

RESULTS:

AGE GROUP	HIV-	CLO TEST +	%	HIV+	CLO TEST +	%
0 to 30	4	3	75%	4	2	50%
31 to 40	3	1	33%	11	1	9%
41 to 50	9	3	33%	7	0	0%
50 & over	16	9	56%	3	0	0%
Totals	32	16	50%	25	3	12%

CONCLUSION: We found a high correlation between gastritis or duodenal ulcers and positive Clo test in patients without risk factors for AIDS. In HIV infected patients, although showing a high incidence of non-specific gastritis (68%), a statistically significantly lower percentage were Clo test positive (chi square = 9.12, $P < 0.01$). When age matched, HIV+ patients have a lower incidence of Helicobacter infection than patients without known risk factors. The reason for this requires further study, but perhaps hypochlorhydria and the widespread use of antibiotics may be contributing factors.

Th.B.372 INTESTINAL SPIROCHETOSIS OF HIV-INFECTED HOMOSEXUAL MALES

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[1]AIDS-Zentrum, [2]Auguste-Viktoria-Hospital, [3]Robert Koch-Institut, Berlin, FRG

Objective. Prevalence and clinical relevance of intestinal spirochetosis in HIV-positive individuals with enteropathy.
Methods. 42 HIV-infected individuals, 38 of them homosexual males, were studied. 37 showed diarrhea, weight loss, abdominal pain, fever or obstipation as the main symptoms. Biopsies taken by ileocoloscopy were examined with histological and bacteriological techniques. The spirochetes were successfully cultivated on trypticase-soy-agar with sheep erythrocytes and spectinomycin under anaerobic conditions. The diagnosis was confirmed by negative staining and/or thin section EM.
Results. Spirochetes were isolated from 11 homosexual males suffering from severe gastrointestinal disorders. In 6 cases also histologically a dense layer of the bacteria could be demonstrated on the epithelium of the gut. In 5 of the 11 cases intestinal spirochetosis was the monocausal diagnosis, the other 6 patients were suffering also from other opportunistic infections. Cultural reexamination of 5 patients with intestinal spirochetosis showed that from 3 patients treated with metronidazol, cultivation of spirochetes was negative, whereas from 2 patients without treatment culturing was positive. One person, free of spirochetes after metronidazol treatment, suffered from diarrhea one year later, and intestinal spirochetosis was diagnosed again. All patients subjectively felt better after chemotherapy of the spirochetosis.
Conclusions. Colonisation of the large intestine by these spirochetes should be considered as an important opportunistic disease.

Oral Manifestations

Th.B.374 SIALOCHEMISTRY IN HIV- ASSOCIATED SALIVARY GLAND DISEASE

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Dodd, C.L., Daniels, T.E. , Hollander, H., Chernoff, D., Greenspan, J.S.
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Objective: To compare salivary chemistry of HIV-associated salivary gland disease (HIV-SGD) with that in HIV-seropositive controls and primary Sjogren's syndrome(SS).
Methods: HIV-SGD was defined as the presence of xerostomia or enlarged salivary glands in an HIV infected individual. Stimulated parotid saliva was obtained from seven adult homosexuals with HIV-SGD with enlarged parotid glands, control groups of 13 HIV+ males without SGD and 37 patients with primary SS. Saliva IgA, protein, Na^+, K^+, Cl^-, lactoferrin, lysozyme, albumin and IgA rheumatoid factor (IgA RF) were measured.
Results: IgA, protein and K^+ were significantly increased in HIV-SDG and SS, compared to HIV+ controls. The IgA RF levels in HIV-SGD and HIV+ controls were similar, and lower than in SS.
Conclusion: HIV-SGD has, like SS, a number of sialochemical differences from normals, but quantitatively these differences are less pronounced than in SS. The increased IgA in parotid saliva of HIV-SDG suggest an active local Ig production in the glands. The pathogenesis of this condition should be further studied.
Supported by NIH P01-DEO7946-02, Danish Med. Res. Council 12-8465.

Th.B.373 VIRAL GASTROINTESTINAL INFECTION IN PATIENTS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION.

Rolston, Kenneth, Rodriguez, S. The University of Texas M. D. Anderson Cancer Center, Houston, Texas, USA.

Diarrhea is common in HIV infected individuals and is caused by a wide variety of microorganisms including bacteria, protozoa and other intestinal parasites. Cytomegalovirus (CMV) is the most common virus causing diarrhea in such patients. The role of gastrointestinal viruses such as Adenovirus, Enterovirus and Rotavirus is unclear.
Objective: To determine the incidence and importance of gastrointestinal viruses in HIV infected patients in whom other causes of diarrhea had been excluded.
Methods: Stool samples from HIV seropositive patients with diarrhea (>4 b.m./day) and a negative work up (culture; ova and parasites) were tested for the presence of gastrointestinal viruses - Adenovirus (ADV), Enterovirus (ENT), Rotavirus (ROT) - using Elisa and tissue - culture techniques. These patients were seen over an 8 month period and their medical records were examined for clinical details.
Results: Thirty-three patients had stool samples sent for study. Viruses were detected in 9 (27%), ADV in 7 (21%) and ENT in 2 (6%). Only one patient had another potential viral pathogen (cytomegalovirus) isolated in addition to ADV. Seven of these 9 patients (78%) had full blown AIDS and were more severely immunosuppressed than the majority of the other patients tested. Both acute gastroenteritis and chronic diarrhea were seen clinically. Spontaneous remission and relapses also occurred.
Conclusion: Gastrointestinal viruses (ADV, ENT) may cause acute or chronic diarrheal disease in HIV infected patients particularly those that are severely immunosuppressed.

Th.B.375 RELIABILITY OF NEGATIVE STAINING EM FOR THE DETECTION OF EPSTEIN BARR VIRUS IN ORAL HAIRY LEUKOPLAKIA

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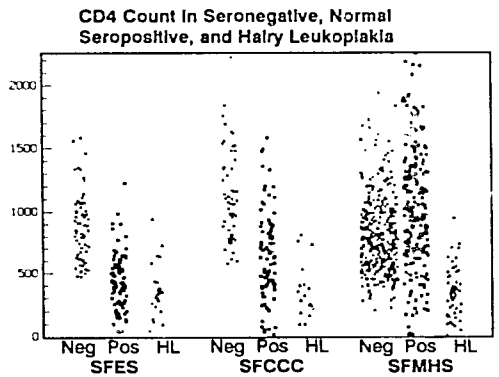
Objective: Purpose of the present study was to evaluate two different EM techniques suitable to detect Epstein-Barr virus (EBV) in oral hairy leukoplakia (HL).
Methods: A comparative study using the conventional two step method of negative staining (CNS) and negative staining after airfuge enrichment (ANS) was performed. For the study of CNS scrape specimens from lateral borders of tongue of 12 HIV-infected patients; for ANS scrape specimens of 54 HIV-positive patients were available. As controls served 3 patients with infectious mononucleosis and 4 HIV-negative patients.
Results: Using CNS, EBV particles were detected in 4 out of 16 clinically diagnosed HL cases (25 %). In the second group (ANS) HL was observed clinically on 41 tongues; in 35 instances EBV was detected (85.4 %). HIV negative controls were EBV negative, mononucleosis patients were positive in two instances without clinical appearance of HL.
Conclusion: Whereas CNS of HL scrapes allowed for detection of EBV in only 25 % the evaluation by ANS revealed - as expected - a high number of positive results (85.4 %). It is, however, also interesting to find EBV in clinically normal oral mucosa. This finding indicates that EBV expression precedes clinical appearance of HL.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.376 PREVALENCE OF HAIRY LEUKOPLAKIA BY CD4 COUNT LEVEL

Feigal, David W.; * Greenspan, D.**; Winkelstein, W. ***; Rutherford, G.****; Moss, A.**; Greenspan, J.S. **
* Univ of Calif, San Diego;** Univ of Calif., San Francisco, *** Univ of Calif, Berkeley, **** Department of Public Health, San Francisco, CA, USA.

Objective. To determine prevalence of hairy leukoplakia (HL) by absolute CD4 count in gay men.
Methods 564 seropositive and 644 seronegative gay men were examined (blind to serostatus) in 1987 in 3 cohorts of the Oral AIDS Epidemiology project: the SF Gay Mens Health Study (SFGMHS, n=715); the SF City Clinic Cohort (SFCCC, n=305); and the SF Epidemiology study (SFES, n=188).
Results: HL was observed in 91 seropositives and 1 seronegative by the cohort examiners. The prevalence of HL between 400-500 Cd4=.16; 300–400=.42; 200–300 =.42;100–200 =.44; and 0–100= 35. 23% of HL was observed with CD4 >500.



Conclusions: HL is infrequently diagnosed in seronegative gay men by trained non-dental observers. HL often presents with near normal CD4 counts and should not be expected to always be associated with imminent progression to AIDS. Once the CD 4 count is below 400, HL is observed in 35% of participants on scheduled cohort exams.

Supported by NIH PO1-DE-07946.

Th.B.377 HAIRY LEUKOPLAKIA LIKE LESIONS IN PATIENTS WITHOUT HIV INFECTION

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Objective: To investigate the role of immunosuppression other than that caused by HIV infection in the pathogenesis of hairy leukoplakia (HL).
Methods: We chose patients at Day 90-100 following bone marrow transplant as models of chronic severe immunosuppression. All patients were HIV negative. Clinical changes of the lateral borders of the tongue consistent with a description of HL were biopsied. These specimens were submitted for routine histopathology and were subsequently assessed by in situ hydridization for EB virus.
Results: Of these lesions, two had unequivocal pathological criteria described for hairy leukoplakia. One of these cases demonstrated EB virus positivity and the other was EBV negative. A third case was highly suggestive histologically for HL and was determined to be EBV positive. The remainder of the tissue specimens had features suggestive of HL but were EBV negative. In all of these cases, histology was not that of graft versus-host disease nor candidiasis.
Conclusion: HL has previously been described as associated with HIV infection. We have seen HL-like lesions in patients following bone marrow transplantation who are HIV negative. Clinical features, histological features and EBV in situ hybridization demonstrate that HL occurs in these patients. Our conclusion is that HL may occur in patients with chronic immunosuppression other than that due to HIV infection.

Th.B.378 MOLECULAR TYPING OF CANDIDA ALBICANS ISOLATED FROM ORAL LESIONS OF HIV-INFECTED INDIVIDUALS.

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Objective: Clonal restriction (i.e. infection limited to one or more unique strains) has recently been described for Mycobacterium avium-intracellulare complex and Histoplasma capsulatum infection in patients with AIDS. It has also been suggested, based on serotypic analysis, that strains of Candida albicans are similarly restricted in HIV-positive patients. We have used molecular techniques to examine isolates of Candida albicans obtained from HIV-infected patients with oral lesions to further investigate the epidemiology of C. albicans infection.
Methods: Thirty nine isolates from HIV-positive patients with oral candidiasis were examined using two DNA probes (a Histoplasma capsulatum ribosomal DNA probe that cross-hybridizes with C. albicans and a C. albicans strain-specific probe derived from repetitive sequence DNA). C. albicans obtained from the oral cavity of patients receiving cytotoxic chemotherapy were used as controls.
Results: Using the H. capsulatum ribosomal DNA probe, isolates were shown to members of at least five distinct classes of C. albicans. 49% of isolates (19/39) were members of the same class. However, 46% (6/13) of control C. albicans isolates were also members of this class. Further analysis of the class-restricted isolates from the HIV-infected patients using the C. albicans strain-specific probe showed that these could be further separated into at least four sub-groups.
Conclusions: These data indicate that strains of Candida albicans that cause oral candidiasis in HIV-positive individuals are not clonally restricted and are similar to those colonizing the oral cavity of other severely immunocompromised hosts.
(Supported by the Dept. of Veterans Affairs and by NIH AI 25903)

Th.B.379 ORAL LESIONS IN CHILDREN WITH HIV INFECTION

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*Oral AIDS Center, UCSF, **Dept of Pediatrics UCSF, +Dept of Pediatrics University of Miami, Florida, ***University of British Columbia, Canada.

Objective: To investigate the nature and prevalence of oral lesions in children born to HIV infected mothers.
Methods: Two cohorts of children are being followed as part of a longitudinal study of the epidemiology of oral manifestations of HIV infection in children.. A hundred seropositive children with perinatally acquired HIV infection were given complete oral and physical examinations in the Pediatric Clinic at the University of Florida. A total of 267 examinations were performed (mean 2.7 per child). The median age of the children was 35 months (range 2.4 mths - 10 years). The second group of 59 children are part of a prospective study of infants born to mothers at high risk for HIV infection. The median age at first visit was 3 months and a total of 230 examinations were performed (mean: 3 visits per child, range 1-9 visits).
Results: 82.4% of all examinations in the Florida cohort were abnormal. The prevalence of oral lesions was: erythematous candidiasis 25%, pseudomembranous candidiasis 35%, parotid enlargement 42.7%, herpes simplex virus 10.7%, hairy leukoplakia 1%, dental caries 28%. No preponderance of oral soft tissue disease was seen in the children in the prospective study.
Conclusion: Oral lesions are common in children with HIV infection who present at a Pediatric clinic with systemic illness. The most common oral lesions are candidiasis and parotid enlargement and tend to be of a chronic or recurrent nature. Oral manifestations of HIV infection in asymptomatic younger children are less prevalent.

Th.B.380 ORAL PATHOLOGY IS A GOOD PREDICTOR FOR HIV INFECTION IN HIGH RISK POPULATION.

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OBJECTIVE: To study the value of oral pathology as a predictor of HIV sero positivity in high risk populations.

METHODS: In 303 patients (pts) who consulted spontaneously for first time to our HIV clinic, we performed clinical and stomatological examination. Oral pathology was defined as one or more of the following: Oral thrush, hairy leukoplakia, angular cheilitis, erythematous candidiasis, ulcer - necrotic gingivitis. HIV serology was performed by ELISA (Abbott), and is positive confirmed by immune flourescence (CEM - LAV cells, I. Pasteur, Paris).

RESULTS: HIV seropositivity was found in 109 pts (36 %). Out of them 59 (54.2 %) had one or more oral lession. In 194 HIV - subjects, only 20 (10.3 %) had evidence of oral illness as defined (Chi square 154.7; $p < 0.001$). Since some pts presented other clinical markers of HIV infection, we compared HIV + and HIV - pts, excluding those who fitted in CDC groups III and IV definition.

Again, HIV + showed a significant difference in terms of bearing oral pathology when compared with HIV - people: 49/93 (52.7 %) versus 20/194 (10.3 %) $p < 0.001$. The relative risk for HIV infection in pts with oral patology was of 10.2.

CONCLUSION: Systematic examination of oral cavity appeared as a good predictor for HIV serpositivity in our risk groups, at the initial consultation.

Th.B.381 ORAL MUCOSAL LYMPHOMAS IN AIDS PATIENTS.

Raphael martine°, Pallesen G.+, Chomette G.°, Audouin J.°°, Szpirglas H.°, Hamilton-Dutoit S.+, Lenoir G.++

°CHU Pitié-Salpêtrière, Paris, France, + University Institute of Pathology Aarhus, Denmark, °°Hotel Dieu Hospital, Paris, France, ++International Agency on Cancer Research, Lyon, France.

Extra-nodal sites with unusual presentation of high grade non-Hodgkin's lymphomas (NHL) of Bcell type are observed in AIDS patients. We report a series of 12 patients with oral mucosal lymphomas registered in the "French study group for HIV associated tumors" and in the "Danish group".

Twelve patients (mean age: 39 year old) had oral cavity NHL involving gingiva, tongue, hard and soft palate without any other localisation at presentation. A detailed histopathological study was done with immunohistochemistry technics on paraffin and frozen sections. The EBV genome was detected by Southern-blot and by in situ hybridization. Rearrangement of Ig gene and c-myc oncogene were tested by Southern blot.

All cases were immunoblastic with plasmablastic and/or plasmacytic differentiation. B cell antigens, CD10, CD19, CD20, CD22, CD38, were variously expressed ; CD21 and CD23 were negative. In most cases the proliferation was monoclonal, one case was polyclonal. The EBV genome was present in most cases and in only one case the c-myc rearrangement was detected.

The immunoblastic proliferation with plasmablastic and plasmacytic differentiation, the presence of polyclonal B proliferation, the frequency of the EBV genome lead us to individualize oral mucosal lymphomas in AIDS patients.

Tulliez M., Paris, Horshowski N., Marseille, Meyran M., St Mandé, France.

Th.B.382 APHTHOUS ULCERS ASSOCIATED WITH HIV-DISEASE: RELATIONSHIP OF T4 AND T8 COUNTS TO TYPE OF ULCER.

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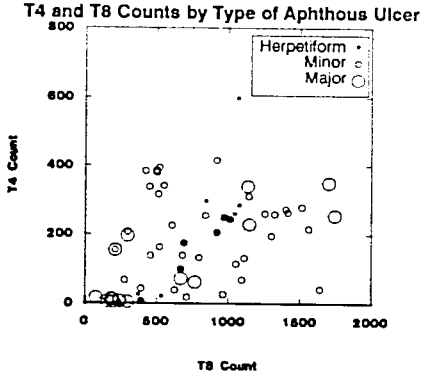
Objective. To determine the relationship between lymphocyte subtype and HIV associated recurrent aphthous ulcers (RAU). *Methods:* Absolute T4 and T8 counts were determined in 42 patients on 124 visits for RAU. RAU types were defined as: Minor = 1 or more ulcers < 10 mm diameter, Major = 1 or more > 10 mm, Herpetiform = 5 or more 1-3 mm. *Results:* Major RAU was associated with lower absolute neutrophil counts (1634 vs. 2254 p=.02), T4 counts (107 vs.231 p=.002) and T8 counts (576 vs 999 p=.01) compared to other RAU types. Herpetiform and minor types did not significantly differ from each other. 50% of Major RAU occurred with T4<50 compared to 15% of other RAU types. (odds ratio=5.3, p=.001.) *Conclusions:* Major RAU is associated with more severe depletion of neutrophils, T4 and T8 cells. When seen with more normal T4 counts Major RAU was associated with high T8 cells. Impaired mucosal healing due to lymphocyte and neutrophil depletion may be the key factor in the development of major RAU.



Supported by NIH PO1-DE-07946.

Th.B.383 LONGITUDINAL OBSERVATION OF HIV-ASSOCIATED GINGIVITIS

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*University of Bern, Bern, Switzerland, School of Dental Medicine

Objective: The purpose of the present investigation is to study longitudinally the severity and the course of HIV-associated gingivitis by standard clinical periodontal parameters.

Methods: 12 patients were selected for this study, 10 males and 2 females with a mean age of 33.2 years (range from 22 to 48). Six patients had a diagnosis of AIDS and six patients were HIV-seropositiv without symptoms. Three patients were treated with zidovudine, otherwise the patients were not taking antibiotic or antifungal medication during the observation period. A complete oral exam was performed at baseline and every three months thereafter. In addition the Plaque-Index (PlI), the Gingival Index (GI, and the prevalence of bleeding upon periodontal probing (BoP) were determined at four sites of each tooth. Pocket probing depth (PPD) and loss of probing attachment (LA) were measured at six sites of each tooth. This resulted in 1764 measurements per exam. The observation time was 6 to 12 months with a mean of 7.5 months.

Results: The mean PlI was 1.19 (0.83) at baseline and 1.25 (0.80) at the final exam. The mean Gingival Index was 1.76 (0.53) at the beginning and 1.66 (0.53) at the end of the study. The prevalence of bleeding on probing was 71% at baseline and 65% at the final exam. At baseline the mean pocket probing depth was 3.01 mm (0.95mm), loss of probing attachment was 3.25mm (1.08mm). The latest measurement revealed mean values of 3.05mm (0.92mm) for pocket probing depth and 3.31mm (1.06mm) for the loss of probing attachment. Using Student's T-test none of these differences were statistically significant.

Conclusions: One of the major clinical features of HIV-associated periodontal lesions is the inadequate local host response. A mean plaque index of 1 equals fair to good oral hygiene. A corresponding gingival index of values near to 2 and a prevalence of bleeding on probing of 60-70% is remarkably high and has not been observed in any other patient population before. The mean values for PPD and AL do not indicate any progression towards periodontitis during this observation period. The few sites that in fact showed loss of probing attachment of 2mm or more had no reflection in the mean values. Although it has been described that progression from HIV-associated gingivitis to HIV-associated periodontitis may occur within a few weeks this can not be confirmed by the present data. Therefore more studies with a longer observation period are required to determine if and when gingivitis progresses into the more severe periodontis in HIV-seropositive patients.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.384 FLUCONAZOLE IN MAINTENANCE THERAPY OF ORAL CANDIDIASIS IN HIV INFECTED ADULTS

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(Infectious Diseases Unit° and Parasitological Laboratory°°)
University Of Montpellier, Montpellier, France

Objective : to evaluate efficacy and tolerance of oral fluconazole in maintenance therapy after a first oral candidiasis episode.
Methods : 53 HIV infected adults (12 ARC, 41 AIDS), after an initial curative treatment of fluconazole (50 mg daily for 2-4 weeks), receveid oral fluconazole (50 mg daily for one week in two). Patients were treated over a period of 3 to 14 months (mean 6 months). For severe relapse cases, susceptibility of Candida isolates and blood concentrations of fluconazole were determined.
Results :
- No relapse : 22 cases (41,5 %) mean follow up 6,5 months
- Moderate relapse : 14 (26,4 %) 6 months
- Severe relapse : 12 (22,6 %) 5,8 months
- Severe relapse with oesophageal involvement : 5 (9,4 %) 4,8 months

Fluconazole was well tolerated (3 nauseas). The sensibility of Candida species for fluconazole after relapse was variable.
Conclusion : In our study the relapse frequency of candidiasis during fluconazole long-term therapy appears high (32 % with severe relapse). In discussing maintenance therapy interest, therapeutic regimen and evolution of strains must be examined.

Nutritional Aspects

Th.B.386 THE ROLE OF TUMOR NECROSIS FACTOR (TNF) AND ALTERED METABOLIC RATE IN WEIGHT LOSS IN AIDS.

DWORKIN, Brad M., Seaton,T., Wormser, G.
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Patients infected with Human Immunodeficiency Virus (HIV) frequently become cachetic. To evaluate the roles of TNF and hypermetabolism in seropositive HIV patients, we studied 33 clinically stable, afebrile outpatients, staged by CDC criteria as stage 4 (N=33). Resting metabolic rate (RMR) was measured by indirect calorimetry and body composition by bioelectrical impedance analysis and anthropometrics in 19 cases. TNF ELISA assay was performed in all. The patients had a mean (±S.E.M.) weight loss of 16.5±3.9 lbs. The % predicted RMR (Actual/Harris-Benedict) was 0.99±0.14. 27% had elevated TNF levels with a mean of 31.6±11.4 pc/ml. There were no differences in weight loss or % RMR in those with or without elevated TNF levels. An inverse relationship between TNF and albumin was noted ($r=-0.41; p<0.02$) and a correlation between % RMR and wt. loss was present ($r=0.48; p<0.05$). TNF did not correlate with any body composition parameter. Conclusion: Clinically stable, HIV patients are not significantly hypermetabolic compared to predicted RMR, and TNF levels are poorly correlated with metabolic or nutritional parameters, including weight loss. However, RMR and weight loss are related. This could suggest impaired metabolic adaptation to weight loss in AIDS cases.

Th.B.385 FLUCONAZOLE OR CLOTRIMAZOLE TROCHE FOR OROPHARYNGEAL CANDIDIASIS IN HIV-1 POSITIVE PATIENTS

Lichter Saralyn, Palenicek J, Yamaguchi E, Barbacci M, Chaisson RE. The Johns Hopkins University School of Medicine, Baltimore, Maryland, USA.

Objective: Study the efficacy, safety and tolerance of fluconazole or clotrimazole troches in the treatment of HIV-1 positive patients with oropharyngeal candidiasis.
Methods: Patients with symptomatic, culture-proven oral candidiasis were randomized to fluconazole daily capsule (100 mg) or clotrimazole troche five times daily for 14 days. Follow-up was done on days 28 and 42.
Results: 24 participants have been enrolled thus far.

		Fluconazole	Clotrimazole
Clinical (cure)			
Days	3	45% (5/11)	25% (2/8)
	17	90% (9/10)	50% (4/8)
	14	100% (10/10)	100% (7/7)
Mycology (present)			
Day	7	80% (8/10)	71% (5/7)
	14	70% (7/10)	20% (1/5)
Relapse Rate			
Day	28	0% (0/8)	29% (2/7)
	42	29% (2/7)	20% (1/5)

Discussion: The use of fluconazole is related to a faster clinical response and a decreased relapse rate post-treatment. The increased precentage of culture-positive, candida in the fluconazole group may not be predictive of disease recurrence. Ongoing enrollment is necessary for further analysis.

Th.B.387 SUPPLEMENTAL PARENTERAL NUTRITION IN PATIENTS WITH AIDS AND PROTEIN-CALORIE MALNUTRITION

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OBJECTIVES: 1. To assess the efficacy of supplemental parenteral nutrition in the treatment of protein-calorie malnutrition not improved by at least 4 weeks of oral supplementation in patients with AIDS. 2. To assess the effect of treatment on performance status and quality of life. 3. To assess infectious and metabolic complications of catheter use and therapy.
METHODS: Patients were treated with 1.2 to 1.5 liters of dextrose 25%, amino acids 4.4% (final concentrations), standard electrolytes, trace elements and multivitamins for 8-12 hours qd for 4-6 weeks and 500 cc of 20% lipids infused concurrently twice a week; self-administered via central catheter. All patients had been treated with anti-viral therapy for a least 6 months, chronic opportunistic infections if present had been treated for at least 6 weeks and none were suffering from an acute infection. Patient response was evaluated by comparison of pre-treatment and 1 week post-treatment weight, albumin, Karnofsky performance scale and quality of life index. Assessments of catheter sites were conducted and chemistry profiles obtained twice weekly.
RESULTS: Nine patients were studied. Weight increased in all 9 by 4% to 19% of pre-treatment weight (median 12%). Albumin increased in 8, by 3% to 154% of pre-treatment albumin (median 25.5%) and decreased in 1 by 6%. Karnofsky performance index increased in all patients by 2 to 5 levels. Quality of life index improved in all patients. None developed septic complications, 2 patients developed superficial infections at the catheter site responsive to local care and oral antibiotics. No metabolic complications of therapy occurred.
CONCLUSIONS: 1. Supplemental parenteral nutrition was effective in treating protein-calorie malnutrition refractory to oral supplementation. 2. Treatment of malnutrition resulted in improved functional ability and quality of life. 3. No significant infectious or metabolic complications occurred. 4. Further studies are needed to determine if this will correlate with improved immune competence, decreased complications of AIDS and hospitalizations.

Dermatologic Manifestations

Th.B.388 Dermatological findings in patients with advanced HIV-related disease in Brazil. Manela-Azulay, M.; Caneschi, J.R T.; Marta Cavalcanti; Ramos-Filho, C.F.; Perez, M.; Schechter, M.& Pereira Jr., A.C. AIDS Programme, Federal University of Rio de Janeiro.

Objective- to describe and evaluate the frequency of dermatological manifestations among patients admitted to a Brazilian University hospital with advanced HIV-related disease.
Methods- three hundred and fifty consecutive patients were prospectively screened for skin disease. Data was collected for age, sex, ethnicity, risk factors for HIV infection, and cutaneous manifestations.
Results- eighty patients were non-white, and 270 white; 305 were male. Three hundred and ten patients had at least one dermatosis (88.57%, .95 C.L.= 85.24 to 91.90%). Oral candidiasis was the most frequent one (66.57%), followed by seborrhoeic eczema (13.7%) and Kaposi´s sarcoma (13.50%), among others. Prurigo was present in 4.57%. Statistical analysis of Kaposi´s sarcoma, seborrhoeic eczema and prurigo showed no racial predominance (X2= 1.05; 0.53; 2.62, respectively).
Conclusions- skin and mucous membranes commitment is very common among patients with advanced HIV-disease in Brazil. In our sample we did not detect any of the so-called tropical diseases. Prurigo was a relatively uncommon finding, not explained by racial differences in our sample. This is in sharp contrast with findings from Africa and French Guiana. Therefore, prurigo may not have a wide application as a marker of HIV infection or stage, in different geographical settings.

Th.B.389 MUCOCUTANEOUS MANIFESTATIONS OF HIV IN CHILDREN AND THEIR CORRELATION WITH IMMUNOSUPPRESSION. M. Co, N. Sadick, M. Ravipati, E. Kaplan, and Pahwa S. North Shore University Hospital-Cornell University Medical College, Marhasset, N.Y.
OBJECTIVE: To evaluate the incidence of mucocutaneous disease in children with HIV infection and correlate this with the degree of immunosuppression.
METHODS : 76 children, age range 2 wks to 17 yrs 48 of whom were in the P1/P2 and 28 in the P-0 category were evaluated for the presence of mucocutaneous disease over a period of six years. This was correlated with the immune status as evaluated by absolute T4 count (T helper cells, CD4+).
RESULTS: Mucocutaneous manifestations were noted in 53% of the study population, (81% of children with P1/P2 disease and 7% of children in the P-0 category). Classification of lesions as to etiology revealed that the most common lesions were infectious in nature (fungal 67% with oral candidiasis as the most frequent, viral 29%, mostly molluscum contagiosum and herpes zoster lesions, parasitic 5% and bacterial 2%), followed by epidermal hyperproliferative states (29%), which included seborrheic dermatitis, icthyosis and xerosis. Hypersensitivity rashes accounted for 9%, 3 cases secondary to TMP/SMX and 1 presumed to be secondary to HIV. Vascular, neoplastic and nutritional dermatoses were infrequent. Recurrent aphthous ulcers of unknown etiology were noted in 2 children. Patients were divided into 2 groups: those with T4<500/cmm and T4>500/cmm. All patients with T4 <500/cmm had mucocutaneous disease. There was an increase in incidence of molluscum contagiosum, recurrent herpes zoster and icthyosis in the more immunosuppressed group. These patients had more severe or recurrent disease that was recalcitrant to therapy and had multiple manifestations.
CONCLUSIONS: In our series of HIV infected children, mucocutaneous disease was relatively common. The incidence, multiplicity, and severity of disease was directly related to the level of immunosuppression.

Th.B.390 HYPERPIGMENTED ERYTHRODERMIAS IN AIDS.
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Objective : To describe three case reports of hyperpigmented erythrodermia (E) recorded between July 1987 and December 1989.
Methods : Retropective study of three HIV1 seropositive patients : 2 homosexual men (1) and (2), and 1 women (3) (infected by transfusion), respectivly : 40, 54 and 82 years old, with no past history of psoriasis or atopic dermatitis. They had a febrile E with great weight loss, alopecia, polyadenopathy. The E was noteworthy for his unusual hyperpigmented feature. The delay between diagnosis of AIDS and beginning of E was : 14 months for (1), 13 months for (2). (1) had PCP, CMV retinis; (2) : PCP, CMV retinis and toxoplasmosis. (3) had E 6 months before the occurence of Kaposi's sarcoma. CD4/CD8 count was for (1) : 18/198, (2) : 6/383, (3) : 54/432. Circulating Sezary's cell and HTLV1 serology were negative.
Results : The histology demonstrated an mononuclear, dermal lymphocytic infiltrate, with some histiocyts, without epidermotropism and atypical cytonuclear feature. The phenotype of the infiltrate was uniformly of the nature suppressor - cytotoxic subset : CD2+, CD3+, CD5+, CD7+, CD8+, CD4-, Dr+, Tac-, Ki1-. (1) and (3) died 6 months after the beginning of E; (2) is still alive 3 months after, but cachectic.
Conclusion : The intense pigmentation of these E is surprising, and reported in only one case before, but it was a pseudo-Sezary syndrome. These E are the result of a polyclonal T8 proliferation. The absence of cytonuclear anomaly and loss of T antigens is against the hypothesis of a monoclonal T8 prelymphomatous proliferation. The pronostic is very poor.

Th.B.391 SEBORRHOEIC DERMATITIS (SD) AND PITYROSPORUM OVALE (PO) COLONISATION OF THE SKIN IN HIV(+) PATIENTS AND HIV(-) CONTROLS.
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Objective : To study the relation between skin colonisation by Pityrosporum ovale (PO) and the presence of seborrhoeic dermatitis (SD) in HIV(+) patients.
Methods : Contact plates (Dixons medium with 0,5 mg/ml chloramphenicol) were pressed on the forehead (FH) and on the intrascapular region (IS) of 32 HIV(+) patients (28 males-4 females) and of 24 HIV(-) controls (17 males-7 females). Controls were STD-clinic visitors. All patients were caucasians. None used systemic antifungals 1 month before inclusion. The number of PO colonies per plate (CFU/plate) were counted after 5-10 days at 37°C incubation.
Results : SD was present in 10 (31 %) of 32 HIV(+) patients and in 2 (8 %) of 24 controls (p=0,08). Never SD was localised on FH or IS region.
PO skin colonisation was observed with a similar frequency
in HIV(+)patients: FH : 15 (47 %) IS : 25 (78 %), and
in HIV(-) contols: FH : 13 (54 %) IS : 21 (88 %).

Median numbers of CFU/plate were
for the HIV(+)patients : FH : 0 (95% CI : -0,56 - 0,56) IS : 4,5 (95 % CI 1,42- 7,58),
and for HIV(-)controls : FH : 1,5 (95 % CI :0,11 - 3,11) IS : 35,5 (95 % CI : 6,2 - 64,8).
In the HIV(+) group SD was present in 2 (40 %) of 5 patients without PO colonisation and in 8 (30 %) of 27 with PO colonisation. In the control group SD was present in none of the patients without PO colonisation and in 2 (10 %) of 21 with PO colonisation.
Conclusion :Isolation frequencies of Pityrosporum ovale from healthy skin regions were similar in HIV(+) patients as in HIV(-) controls, and in patients with or without seborrhoeic dermatitis. However an etiological role of PO in SD could not be ruled out, as sampling of lesions was not performed.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Pneumocystis Carinii *Pneumonia*

Th.B.392 IS *PNEUMOCYSTIS CARINII* (PC) TRANSMISSIBLE FROM AIDS TO OTHER PATIENTS: *A CASE-CONTROL STUDY OF A CLUSTER OF PC PNEUMONIA IN RENAL TRANSPLANT RECIPIENTS.*

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Objective: pc pneumonia (pcp) presumably results from reactivation of a previously acquired infection, but clusters of cases in the pre-AIDS era suggest that nosocomial transmission could occur. Since 1988, 4 pcp occured in HIV-negative renal transplant recipients (rtr), while no cases were observed previously among 114 rtr treated with cyclosporin. No modification in immunosuppressive protocols nor in diagnostic techniques for pc could account for these episodes, but rtr were cared for in the same outpatient facility than AIDS patients (pts), for whom outpatient treatment and prevention protocols with aerosolized pentamidine were implemented in 1988. A case-control study was performed to detect if rtr with pcp had more encounters with AIDS pts with pcp than rtr controls (ctrl).
Methods: Since all rtr with pcp were followed for acute graft rejection, each was matched for severity of immunosuppression with 3 ctrl who were followed during the same period. Encounters in the waiting or treatment rooms between rtr during rejection episodes and AIDS pts who had presented or subsequently developed pcp were recorded.
Results: For 1 rtr, visits could not be reconstituted, but were reported as frequent. Number of encounters for the 3 remaining rtr are: case # 1: 8 (ctrl: 3;1;4); case # 2: 4 (ctrl: 0;2;0) case # 3: 9 (ctrl: 2;3;0).
Conclusions: rtr who developed pcp had more outpatient clinic encounters with AIDS pts with pcp than matched rtr ctrl ($p<0.01$, Wilcoxon rank sum test). This observation suggests that nosocomial transmission of pc may occur between AIDS and other pts.

Th.B.393 DETECTION OF PNEUMOCYSTIS CARINII ANTIGEN IN BRONCHOALVEOLAR LAVAGE (BAL) BY DOT IMMUNOBINDING ASSAY (DIB)

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Objective. DIB using non-commercial mouse monoclonal antibody (E5-8) has been compared to an indirect immunofluorescent test (IIF) for detection of P.carinii antigen in BAL. BAL were also stained by Gomori's modified methenamine silver stain (GMS).
Methods. 84 BAL were included in this study: Group A) 40 from AIDS patients with P.carinii pneumonia (PCP) (31 GMS+ and 9 GMS-); Group B) 24 from HIV+ patients without PCP (GMS-); Group C) 20 from adult neoplastic HIV- patients no having clinical evidence or chest x-ray suggestive for PCP (GMS-).
Results. DIB as well IIF resulted positive in all BAL GMS+ and in 5 BAL GMS- from Group A. P.carinii antigen was also identified in 3 BAL from Group B. No positive reactions occurred in sample from Group C.
Conclusions. At now IIF is the most common technique used to diagnose PCP, but DIB is more economic, and it also reveals soluble antigens that could reflect the presence of previous stages of P.carinii in BAL sample. This might prove useful in early diagnosis, surveillance and management of HIV+ patients at risk for PCP.

Th.B.394 SYSTEMIC AND ALVEOLAR PRODUCTION OF INTERLEUKIN 6 IN HIV PATIENTS WITH PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

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Objective : Interleukin 6 (IL6) is likely to be an important mediator of the inflammatory response. In vitro, HIV can induce the secretion of IL6. We have measured the levels of this cytokine by a biological assay in the sera of 76 HIV seropositive patients.

Methods and results : The presence of IL6 was considered to be positive when > 30 units /ml. There was little or no detectable circulating IL6 in patients of CDC group II and III (n=32). In patients with active opportunistic infections, except PCP, (n=24), IL6 was increased in only two patients with disseminated histoplasmosis and diffuse tuberculosis. In contrast, IL6 was increased in 17/20 patients with clinical evolutive PCP (from 128 to 8 000 units /ml). Among these 20 patients, IL6 was measured in parallel in broncho-alveolar lavage fluid at the time of the diagnosis and was positive in 6/7 (from 205 to 19 500 units/ml). The dosage of IL6 in the alveolar fluid was found to be negative in 12 control alveolar lavages in HIV patients without PCP.

Conclusions : These data provide evidence for an alveolar production of IL6 in patients with PCP during the acute episods. Experiments are in progress (i) to precise the role of IL6 in the pathophysiology of the respiratory disease, (ii) to analyze the involvement of others cytokines (TNF alpha...) in association with IL6 (iii) to investigate the consequences of IL6 overproduction during PCP on HIV viral replication.

Th.B.395 AEROSOLIZED PENTAMIDINE VS. TRIMETHOPRIM / SULFAMETHOXAZOLE FOR ACUTE *PNEUMOCYSTIS CARINII* PNEUMONIA(PCP): A RANDOMIZED DOUBLE BLIND TRIAL.

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Objective. To assess the efficacy and safety of aerosolized pentamidine (AP) compared to Trimethoprim/Sulfamethoxazole (TMP/SMX) for acute treatment of PCP.

Methods. 379 patients at 27 centers were randomized to AP or TMP/SMX if their room air Aa gradient was less than 55. 284 had PCP microscopically confirmed after induced sputum or bronchoscopy. The AP group received 600 mg of pentamidine in 6 mls sterile water delivered by the respigard II nebulizer on a daily basis. The TMP/SMX group received 15 mg/Kg/day in four divided doses. Patients could be switched to oral TMP/SMX after five days of IV and could be discharged from the hospital when clinically stable to complete their 21 day total treatment as an outpatient. Placebo aerosol, IV solution, and tablets were used to blind the study. If the patient needed to have medications switched due to adverse reactions or slow clinical response intravenous pentamidine 4 mg/Kg/day unless the clinical investigator felt that another agent would be more appropriate.

Results. Mean duration of treatment for TMP/SMX was 19.5 days vs. 23.1 days for AP. ($p<.001$). Five patients in the AP group and 11 patients in the TMP/SMX group died during the acute episode of PCP.($p=.09$) The most common adverse experiences attributed to study drugs were (TMP/SMX vs. AP):rash (23% vs 1%) elevated transaminases (15% vs. 3%), drug fever (15% vs. 0%), neutropenia (15% vs. 1%), and nausea (14% vs 2%). The probability of discontinuing study drug for adverse reactions was 20% vs. 51% for AP vs. TMP/SMX by the 14th day and 33% vs. 59% by the 21st day. ($p=.001$). The probability of discontinuing study drug for slow clinical response was 18% vs. 13% for AP vs. TMP/SMX by the 7th day and 39% vs. 18% by the 21st day. ($p=.01$).

Conclusion. AP is effective for the treatment of acute PCP and is more likely to be tolerated for a full course of treatment than TMP/SMX. Slow clinical response was seen more often with AP which may be best suited for patients with less severe Aa gradient abnormalities.

Th.B.396 CLINDAMYCIN/PRIMAQUINE vs TRIMETHOPRIM/SULFAMETHOXAZOLE FOR PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS.

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Objective: To assess the safety and efficacy of clindamycin + primaquine (C/P) in comparison with trimethoprim + sulfamethoxazole (T/S) for the therapy of PCP in patients with AIDS.
Methods: This is an ongoing, double-blind trial which will include 120 patients. Patients are considered if: they are HIV+, have a first episode of PCP, are 16-70 year-old, have ≥45 kg, paO_2 ≥55 mm Hg. Those having a deficit in G6PD, prior intolerance to any of the study drugs, prior anti-P.C. therapy, diarrhea, are excluded. The eligible patients are randomly allocated to one of treatment regimens: C (600 mg or 450 mg I.V. QID X 11 d., then 450 mg or 300 mg P.O. QID X 10 d.) + P (15 mg base P.O. die X 21 d.) or T/S (320/1600 mg or 240/1200 mg I.V. QID X 11 d., then P.O. X 10 d.) The toxicity is graded according to the WHO and NIAID-ACTG. Criteria to assess efficacy are: PCP and APACHE II scores, the need for mechanical ventilation, change of therapy, the survival and the relapse rate. Statistical analysis includes chi-square or t-test, analysis of variance, survival analysis.
Results: So far 15 patients were entered into the study: 13 are evaluable for safety and 11 for efficacy. The follow-up is 7-28 weeks. The initial therapy was switched to pentamidine in 6 cases due to intolerance (5 cases) and inefficacy (1 case). The code had to be broken in 3 of the above patients and all were on T/S. Only one relapse was recorded and all the patients are alive.
Conclusion: It is anticipated (based on an open study with 85 treated PCP episodes) that C/P is at least as efficacious as T/S, but less toxic.

Th.B.397 EFFICACY OF CLINDAMYCIN/PRIMAQUINE (C/P) VS TRIMETHOPRIM/SULFAMETHOXAZOLE (TMP/SMZ) IN ACUTE TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

Ruf, B., Rohde, Iris, Pohle, H.D. II. Department of Internal Medicine, Rudolf Virchow University Hospital (Wedding), Berlin, FRG.

Objective: TMP/SMZ is highly effective in PCP treatment but associated with a high rate of side effects. Therefore alternative regimens are needed. The goal of the study was to compare C/P and TMP/SMZ in acute treatment of PCP.
Patients: Less or moderate severe cases were included in the C/P study, defined by the following criteria: pO_2 > 60 mmHg, T°< 40°C, pulse rate < 120/min, demonstration of P. carinii with BAL, radiological proof of pneumonia. Each of these cases was retrospectively correlated to a patient treated with TMP/SMZ and identical in risk factor, duration of symptoms, clinical data and immunological parameters to obtain matched pairs.
Treatment: C/P was given for 3 weeks, primaquine 30 mg/d and clindamycin 4x900 mg/d. TMP/SMZ was given 4x2 g/d for 3 weeks. In both regimens steroids were added in a dose-reduction schedule from 50 mg if pO_2 was < 70 mmHg.
Results: 30 patients were treated, 15 in each group. All patients showed clinical improvement. No difference was seen in respect to time of defervescence (6/4.5 d) and resolution of infiltrates (15.5/16 d). Relapses occurred after TMP/SMZ in 3 cases and after C/P in 1 case. Side effects with TMP/SMZ vs C/P were bone marrow damage (n=6/2), rashes (n=7/8), increased liver enzymes (n=5/3), gastrointestinal disorders (n=8/5). C/P treatment was associated with methaemoglobinaemia (max. level 21 %).
Conclusions: Both regimens were comparably effective, but the C/P regimen was slightly superior in respect to side effects. Regarding the high rate of sulfonamide allergy in HIV positive patients C/P therapy is a reliable alternative. Clinical trials comparing these regimens in severe cases of PCP are warranted.

Th.B.398 EFLORNITHINE VERSUS CO-TRIMOXAZOLE IN THE TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA.

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OBJECTIVE: To assess the efficacy and safety of eflornithine (DFMO) and co-trimoxazole (CTX) in the treatment of first episode Pneumocystis carinii pneumonia (PCP) in AIDS patients.
METHODS: Forty five HIV positive patients with cough, exertional dyspnoea, fever and an arterial blood gas (PAo_2) <11Kpa and a desaturation below 90% on exercise pulse oximetry were enrolled. Thirty one had confirmed episodes of PCP (induced sputum or bronchoscopy). They were randomised to receive DFMO 400µgs/Kg by intravenous infusion or CTX 3.84g intravenously, twice daily for 14 days.

RESULTS:

	Response to 1° therapy	Adverse events stopping 1° therapy	Response to 2° therapy	Deaths during 1° therapy	Deaths during 2° therapy
DFMO (18)	5	2	8	1	2
CTX (13)	4	5	2	1	1

CONCLUSION: DFMO and CTX have apparently similar efficacy as first-line agents for first episode PCP. More patients receiving CTX experienced therapy limiting adverse events.

Th.B.399 A PILOT STUDY OF PIRITREXIM (PTX) WITH LEUCOVORIN (LCV) FOR THE TREATMENT OF PNEUMOCYSTIS PNEUMONIA

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Objective: To evaluate the safety and efficacy of oral piritrexim administered with concomitant leucovorin for the treatment of pneumocystis pneumonia (PCP) in AIDS pts.
Methods: An open dose-escalation trial of PTX/LCV was conducted in 4 centers. 23 pts with mild/moderate PCP and no other therapy for this episode received PTX 150 mg/m² bid (13 pts) or 250 mg/m² bid (10 pts) for up to 21 d with LCV 50 mg orally qid.
Results: PTX was effective in 10 (77%) pts at 150 mg/m² and 6 (60%) at 250 mg/m². Two pts (15%) at 150 mg/m² and 2 pts (20%) at 250 mg/m² came off study for deterioration or failure to improve. Four pts had PTX discontinued for toxicity: 1 for thrombocytopenia (day 14), 2 for fever/rash (days 11 and 14), and 1 for increase in liver enzymes (day 10). One pt came off study after a sedative overdose. Non-dose-limiting effects include nausea/vomiting (6 pts), diarrhea (1 pt), rash (8 pts) and decrease in neutrophil count (9 pts). In all pts, decreases in neutrophil counts responded rapidly to increase in LCV dose. Of pts successfully treated with PTX, 4 of 9 pts at 150 mg/m² (1 other lost to follow-up) and 3 of 6 pts at 250 mg/m² developed a recurrence of PCP within 2 months of the completion of therapy despite the use of prophylaxis in most pts.
Conclusions: PTX/LCV is an effective, well-tolerated outpatient oral regimen for the treatment of PCP. Early recurrences of PCP after PTX/LCV occurred in more pts than expected, suggesting that it should not be administered as sole therapy for PCP. A trial of the combination of PTX/LCV with a short course of concomitant dapsone is being planned.

Th.B.400 EVALUATION OF PHARMACOKINETIC INTERACTIONS BETWEEN THE COMBINATION OF PRIMAQUINE PLUS CLINDAMYCIN AND ZIDOVUDINE (ZDV)

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Agents for prophylaxis of *Pneumocystis carinii* pneumonia (PCP) cheaper than aerosolized pentamidine and less toxic than trimethoprim/sulfamethoxazole (TMP/SX) are desirable. The combination of clindamycin (C) and primaquine (P) shows comparable activity to TMP/SX in both rat treatment and prophylaxis models of PCP. Pilot studies in humans have shown C and P to be effective in treating acute PCP. Consequently, we are evaluating the potential of C and P for PCP prophylaxis.

Objective: Since many patients requiring PCP prophylaxis will be taking ZDV, we investigated the effect of C and P on the pharmacokinetics of ZDV in 7 patients with AIDS or ARC and CD4 lymphocyte counts < 200/mm³.

Methods: ZDV levels were measured by high pressure liquid chromatography (HPLC) in serum of patients who were given ZDV 200 mg every 4 hours orally. Next, ZDV levels were measured in the same patients after administration of multiple doses of C (450 mg every 6 hours) and P base (30 mg every day).

Results: Mean half life ($t_{1/2}$), peak concentration (Cmax), and area under the concentration vs time curve (AUC) were:

	$t_{1/2}$ (hr)	AUC (ng-hr/ml)	Cmax (ng/ml)
ZDV	1.36 (± .47)	1596 (± 589)	1284 (± 641)
ZDV plus C and P	1.07 (± .51)*	1463 (± 535)*	1138 (± 607)*

* p= not significant

Conclusion: These data suggest that C and P do not affect disposition of ZDV in patients with AIDS or ARC. Therefore, ZDV dosing need not be adjusted for patients participating in planned clinical trials of C and P prophylaxis.

Th.B.401 SUCCESSFUL OUT-PATIENT TREATMENT OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN AIDS.

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Objective: Recent improvements in the management of acute PCP have resulted in fewer hospital admissions for treatment. To determine the effectiveness of out-patient (out-pt) management, we analyzed clinical and laboratory characteristics, and outcomes, in acute PCP treated at home or in hospital.

Methods: All first PCP's between Jan.'87 and Dec.'89 were analyzed. The decision to admit or follow at home was made by clinicians experienced in HIV disease. Parameters studied included: HIV disease severity; symptom duration prior to presentation; intake vital signs; and initial chest x-rays. Within 48 hours of assessment, PaO2 on room air, and standard hematologic and biochemical tests were obtained. Student's t-test or Chi-square analysis was used for group differences.

Results: Of 49 pts analyzed, PCP was confirmed in 46; 3 refused bronchoscopy, but had clinical and radiographic findings compatible with PCP. Twenty-three subjects (47%) were treated as out-pts, with conventional oral anti-PCP therapy. Three out-pts (13%) were admitted because of deteriorating status, and 3 (13%) for severe skin reactions or seizures. No out-pts died during active treatment and all pneumonias resolved clinically and radiographically. In the 26 in-patients, acute mortality was 15%. Of the analyzed parameters, the heart-rate, respiratory rate, lymphocyte count, albumin, and lactate dehydrogenase concentrations were significantly different ($p<0.01$) compared to the out-pts, suggesting that the out-pts had milder disease.

Conclusions: Almost 50% of our patients with a first episode of PCP were initially managed as out-pts. Of these, 75% were successfully treated. These results have important implications for health care delivery.

Th.B.402 PRONOSTIC VALUE OF COLLAGENIC MARKERS IN SEVERE PNEUMOCYSTIS CARINII PNEUMONIA(PCP).

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During PCP with acute respiratory failure, an irreversible fibrotic process can occur extremely fast. It would be of great interest to have an vivo index predicting the likelihood of such a process. We report here for the first time a study of four markers of collagen metabolisme obtained from both bronchoalveolar lavage (BAL) fluid and serum. BAL was performed in 12 patients in toxic coma (T) without pulmonary disease and in 17 patients with PCP. 9 of them with PaO_2 53±18 mmHg survived (S) and 8, with PaO_2 40 ± 8 died (D).

Methods: In BAL fluid without preliminary concentration and in corresponding sera, three collagenic antigens were measured by RIA (type I: CI; type III: CIII; type III procollagen N-terminal peptide: PIIINP) and galactosyl glucosyl transferase activity (GGTA) was measured by radioisotopic assay. Data are presented as mean ± sd

Results: * *p<0.05, **p<0.01

		S	D	T
CI	LLBA	32 ± 35	69 ± 65 *—	10 ± 5
ng/ml	SERUM	162 ± 17	214 ± 73 **—	165 ± 29
CIII	LLBA	10 ± 3	29 ± 33	12 ± 4
ng/ml	SERUM	14 ± 6 **—	39 ± 35 **—	10 ± 7
PIIIP	LLBA	28 ± 31	74 ± 86 *—	1 ± 1
ng/ml	SERUM	19 ± 6 **—	32 ± 16 *—	10 ± 3
AGT	LLBA	38 ± 58	51 ± 51 **—	6 ± 8
dpm/ml	SERUM	189 ± 68	199 ± 83	166 ± 53

Conclusions: CI, PIIINP and AGT in BAL fluid, CIII and PIIINP in sera are increased in fatal PCP. PIIINP in sera appear promising for its ability to predict the early onset of pulmonary fibrosis.

Th.B.403 UNRELATED PARASITICAL AND CLINICAL DATA DURING EVOLUTION OF PNEUMOCYSTIS CARINII PNEUMONIA (P.C.P.) IN AIDS PATIENTS.

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Objective of this study : to determine in AIDS patients (pts) if there is a relation between parasitical data (degree of parasitism (DP) and parasite viability (PV)) and clinical data during the evolution of P.C.P.

Patients : This study concerns 61 AIDS pts with P.C.P. diagnosed by bronchoalveolar lavage (BAL) (n=59) or lung biopsy (n=2).

Methods : Evaluation of parasitical and clinical data was made on admission (between do and d3) (n=61) and either after a short period (d7 to d20) (n=40) and/or a longer period (d20 to d60) (n=45). DP was evaluated on all specimens, by semi-quantitative analysis (intense: > +++; low: < ++). PV was evaluated on 44 specimens with acridine orange stain (positive: +, negative: -, indeterminate: ±). Clinical evolution was considered as favorable on decreasing respiratory symptoms, apyrexia (in the absence of other cause than P.C.P. for fever) and significant and durable increase in PaO2.

Results : No correlation was shown between DP or PV and clinical data, either on admission or on early and late evaluation, even in those pts without possible bacterial or viral (CMV) associated pulmonary infection

Table 1 : DP in pts with PCP alone

		early evaluation (n=19)		late evaluation (n=22)	
parasitism	:	> +++	< ++	> +++	< ++
favorable	yes :	n = 5	n = 3	n = 5	n = 11
evolution	no :	n = 9	n = 2	n = 0	n = 6

Conclusion : From the above data, the interest of repeated DP and PV evaluation during the course of P.C.P. in AIDS pts is not demonstrated.

Th.B.404 CORRELATION OF CYST DENSITY WITH MORTALITY IN AIDS PATIENTS WITH PNEUMOCYSTIS CARINII PNEUMONIA (PcP).

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15-20% of AIDS patients with PcP do poorly despite early intervention, but it is not known what distinguishes those who die. We tested the hypothesis that the trophozoite is the more virulent lifeform and therefore more abundant in patients who die, by using image analysis to find out the relative abundance of cysts within aggregates of Pc found in induced sputa (21) and lavage (14) from 35 patients with PcP. One smear from each patient was stained with Ag-methenamine and Diff-Quik. We calculated a cyst density (number of cysts/area of aggregate) for each aggregate and a mean cyst density for all of the aggregates on the smear. Cyst density varied from 5-35 x 10^{-3} cysts per u^2. Six patients died within 2 weeks of diagnosis; all 4 who had autopsies had residual Pc; one also had disseminated C. imitis. The mean cyst density for those who died was 9.7 $\pm$ 3.9 (range: 5-15). The 29 patients who survived beyond 2 weeks had a mean cyst density of 18.4 $\pm$ 8.7 (range 5-35; p=0.01). Mean cyst density did not correlate with PaO_2 or LDH, and was not influenced by the number of aggregates present in the smear, variation in cyst density among aggregates in a smear, nor the episode of PcP. Elevated LDH also predicted mortality (p=0.005), but independently of cyst density; neither PaO_2 nor amount of Pc were related to mortality. Five of 8 patients with cyst densities $\leq$15 and an LDH >1200 died; none of 20 patients with cyst densities >15, LDH $\leq$1200, or both, died. We conclude that a low cyst density, which indicates a greater proportion of trophozoites, predicts an unfavorable outcome, independent of PaO_2 or LDH. Cyst density can be used in combination with LDH to identify those patients with a particularly poor prognosis.

Th.B.405 CHANGING OUTCOME OF MECHANICALLY VENTILATED ACUTE RESPIRATORY FAILURE SECONDARY TO AIDS-RELATED PCP.

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OBJECTIVE: To describe the outcome of acute respiratory failure (ARF) requiring mechanical ventilation (MV) in the setting of AIDS-related PCP.

METHODS: All cases of PCP admitted to our hospital were identified from the AIDS Care Group, PCP Registry. Charts were reviewed to determine the number of cases developing ARF, the number of ICU admissions for MV and the ICU and hospital mortality.

RESULTS

Year	PCP Admitted	ARF-PCP	ICU-PCP	ICU Survivors	Hospital Discharge
1985	37	5	4	1	1
1986	65	17	12	7	7
1987	90	13	6	3	3
1988	105	20	9	1	0
1989	146	22	9	1	0

Despite a continued rise in the number of PCP admitted to hospital, the prevalence of acute respiratory failure has been stable at approximately 18%/year. ICU admission for PCP decreased from 18% to 6% of all PCP admitted cases in 1989. The initial survival of approximately 50% for the years 1985 to 1987 rapidly decreased to an 11% ICU survival and 0% hospital discharge over the last 2 years.

CONCLUSION: We described the change in outcome for patients requiring mechanical ventilation for acute respiratory failure secondary to AIDS-related PCP. It must be noted that the rate of ICU admission has dropped steadily. The survival for patients admitted to ICU over the last 2 years has been dismal. There is a strong suggestion that this can be at least partially attributable to the early use of adjunctive corticosteroid therapy.

Supported by a grant from National Health and Research Development Programme.

Th.B.406 A RANDOMIZED, PROSPECTIVE, CONTROLLED, AND COMPARATIVE TRIAL OF INHALED PENTAMIDINE FOR PRIMARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP).

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Objective: To determine efficacy and side effects of inhaled pentamidine in the primary prevention of PCP.

Methods: Patients with AIDS but without PCP, patients with advanced Aids-Related-Complex (ARC), and asymptomatic HIV-seropositive persons with less than 200 CD4-positive lymphocytes/mm^3 were randomized to one of two groups:

- **group 1)** Inhalation of 300 mg of pentamidine every 28 days;
- **group 2)** Inhalation of 300 mg of Na isethionate every 28 days.

Results: From May to December 1989, 177 patients have entered the trial. Inhalations were well tolerated, with only a 6% use of bronchodilators and a 15% incidence of cough. 5 patients have died, none from PCP. 2 patients have dropped out because of severe cough, and 14 for various other reasons mostly related to compliance. So far, 8 patients have developed PCP; 4 of these were on pentamidine, and 4 on placebo. Recruitment will continue until 250 patients are enrolled. Updated results in June will represent an estimated 110 patient-years of follow-up.

Conclusions: At this time, no beneficial effect of pentamidine inhalations on PCP is yet apparent.

Th.B.407 RANDOMIZED TRIAL OF INTERMITTENT DAPSONE VERSUS AEROSOLIZED PENTAMIDINE FOR PRIMARY AND SECONDARY PROPHYLAXIS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

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Objective: To compare the efficacy and safety of oral Dapsone (OD) and aerosolized Pentamidine (AP) in the primary and secondary prophylaxis of PCP, and to study the independent effects of prophylaxis and zidovudine (ZDV) on survival in patients with AIDS and ARC.

Methods: 251 patients at risk for PCP were randomized to treatment with either oral Dapsone (100 mg twice weekly) or aerosolized Pentamidine (AP) (100mg every 2 weeks) stratified into groups: prior PCP (N=116), ARC with CD4 counts<250 (N=92) and AIDS without prior PCP (N=43). AP was delivered with a Pulmosonic nebulizer (particle MMAD=3.5 microns). 58 patients were withdrawn in the first 6 months secondary to adverse effects (15), personal reasons (10), lost to follow-up (10), death or end-stage illness (21) or a PCP event within 4 weeks of starting treatment (2).

Results: 25% of evaluable patients (n=193) have been followed for 52 weeks (mean=30 weeks). 65% of patients in each treatment arm also received ZDV. 11% (12/107) of patients on AP have developed PCP at a mean of 30.4 weeks, compared to 9% (8/86) of patients on OD at a mean of 32.5 weeks of follow-up (p=.65,NS). Sixteen patients relapsed in the secondary prophylaxis stratum, compared to 4 in the primary prophylaxis stratum (p<0.001). 75% of patients on either arm had improvement in diffusing capacity after 6 months. 15% of patients on AP had bronchospasm; 11% required bronchodilator therapy. Cough, dizziness, dysguesia, shortness of breath and sore throat were more common in the AP arm (p<0.05), rash and hepatic dysfunction were more common in the OD arm (p<0.02). Anemia (hemoglobin<8 gm/dl) and transfusion requirements were similar in both arms. Pneumothoraces occurred in 3 patients on AP and 1 patient on OD. ZDV use did not prevent PCP, yet may have prolonged the PCP-free interval among those who relapsed in either arm, (p=0.1). Kaplan-Meier estimates did not show a difference in survival between the two treatment arms, yet ZDV users had improved survival at 52 weeks (p<0.0001).

Conclusion: AP and OD are equally effective for PCP prophylaxis; primary prophylaxis is more effective than secondary prophylaxis with either drug. ZDV impacts on survival more than use of PCP prophylaxis.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.408 AEROSOLIZED PENTAMIDINE IN THE PROPHYLAXIS OF PRIMARY AND SECONDARY PNEUMOCYSTIS CARINI PNEUMONIA (PCP)

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OBJECTIVE: To evaluate the efficacy of aerosolized pentamidine prophylaxis (APP) for PCP in HIV infected patients.
METHOD:From May 1 to December 31,1989 550 HIV patients were enrolled in an APP treatment program at the central clinic in Toronto. All patients had baseline clinical assessments and pulmonary evaluation including chest radiograph (CXR), pulmonary function tests and exercise oxymetry study. The risk group stratification is: 96.0% homosexual/bisexual; 1.6% blood transfusion 0.5% IV drug users; 1.8% other/unspecified. 439 (80%) patients were for primary and 111 (20%) were for secondary prophylaxis. The mean age was 39 (range 19-73); 535 (97%) were men. Immune status in the primary prophylaxis group as defined by the level of lymphocyte subpopulation (T4 x 10^5/L) are:234 (4%) < 100, 126 (23%) 100 200, 147 (27%) 200-300, 43 (8%) unspecified.522 (95%) were on AZT. The APP treatment protocol involved using an ultrasonic neoulizer (Pisoneb) with 5 loading doses at 60 mg each over two weeks followed with a maintenance regime of 60 mg once every 2 weeks.
RESULTS: After 8 months, 498 (91%) of the patients are continuing with the APP program (mean 20 weeks). There were 7 deaths and 7 lost to follow-up. Six documented breakthrough episodes of PCP occurred from 1-6 months after APP initiation. In 2 cases PCP presented as bilateral apical disease on CXR. PCP was diagnosed by induced sputum (2), bronchoscopy and lavage (3) or transbronchial biopsy (1 case). All the episodes responded to therapy.
CONCLUSION: APP is well tolerated by HIV patients and a large scale central APP treatment program can be cost-effectively run in high demand areas.

Th.B.409 AN OPEN, RANDOMISED, PROSPECTIVE COMPARISON OF ORAL DAPSONE AND NEBULISED PENTAMIDINE FOR PCP PROPHYLAXIS.

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OBJECTIVE: To compare the efficacy and haematologic toxicity of oral dapsone and nebulised pentamidine used as PCP prophylaxis in patients also receiving zidovudine (AZT).
METHOD: HIV patients with CD4 cells of <200/ul are randomised to receive oral dapsone 100 mg twice weekly or nebulised pentamidine 400 mg monthly at commencement of AZT. Interim analysis of the data is examined 3 monthly with respect to haematological toxicity breakthrough PCP, other AIDS defining illness (ADI) and death.
RESULTS: As of 12.1.90, 69 patients were enrolled. Thirty-three patients were evaluable after a minimum 3 months follow-up (17 on dapsone and 16 on pentamidine). The mean length of follow-up for those on dapsone was 7.1 months and for those on pentamidine 9 months. Three of 17 on dapsone required a total of 9 units of blood prior to randomisation and 8 (47%) required a total of 114 units afterwards. Of those on pentamidine none required blood prior to randomisation and 3 (19%) required a total of 60 units afterwards.

	Dapsone	Pentamidine
Mean WBC before/after enrolment (/μL)	5.6/3.5	4.4/3.1
Mean PLT count before/after enrolment (/μL)	227/176	175/157
Breakthrough PCP	0	2 (12.5%)
Other ADI	4 (23%)	3 (19%)
Deaths	2 (12%)	0

CONCLUSION: There was no significant difference in toxicity or efficacy of oral dapsone and nebulised pentamidine although a trend to increased transfusion requirement was seen with dapsone.

Th.B.410 THE EFFECT OF INHALED PENTAMIDINE ON ALVEOLAR MACROPHAGE POPULATIONS

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Objective: This study examines the role of lung macrophage populations in the development of pneumocystis carinii pneumonia (PCP) and the effect of prophylactic inhaled pentamidine on these populations.
Method: Bronchoalveolar lavage (BAL) was performed on 40 HIV infected patients presenting with pneumonitis. Cytospin preparations of the BAL cells were analysed for the proportions of monocytes, phagocytic macrophages, and dendritic cells using monoclonal antibodies and immunoperoxidase staining.
Results: Those patients receiving effective inhaled pentamidine had significantly increased proportions of cells expressing the monocyte phenotype (45% of cells) as compared with those not receiving pentamidine (4%) and uninfected individuals (10%). In patients who developed PCP despite prophylaxis this increase in monocyte percentage was not seen. In HIV infected patients not receiving pentamidine, reduced proportions of cells expressing the phenotype of mature macrophages (55% in normals, 14% in HIV+) and those expressing the monocyte phenotype (10% in normals, 4% in HIV+) were seen, yet there was no reduction in the proportion of cells with dendritic cell phenotype (30% in normals, 25% in HIV+). In these patients the presence of PCP was associated with a return towards normal proportions of the monocyte and macrophage populations and an increase in the dendritic cell percentage to 62% (25% in normals).
Conclusions: 1)Susceptibility to PCP in HIV infected patients may be related to depletion of lung monocyte populations. 2)The efficacy of pentamidine prophylaxis may in part depend on its effect on the numbers of these cells.

Th.B.411 THE SAFETY OF WEEKLY DAPSONE AND WEEKLY DAPSONE + PYRIMETHAMINE AS PNEUMOCYSTIS PROPHYLAXIS

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Objective: To determine the safety of weekly dapsone (dap) and dap plus pyrimethamine (pyr) in individuals with HIV infection who are at risk of P. carinii pneumonia (PCP).
Methods: Pts infected with HIV who had a history of PCP and/or a CD4 count < 250/mm³ were sequentially enrolled in cohorts receiving dap p.o. every 7 d (gp 1: 100 mg, n=5; gp 2: 200 mg, n=7; gp 3: 300 mg, n=9), or dap 200 mg plus pyr 25 mg p.o. every 7 d (gp 4, n=5). All pts received zidovudine (minimum 500 mg per day). Pts were followed by clinical and laboratory parameters for toxicity and/or development of PCP.
Results: Of 26 pts enrolled, 5 had prior PCP. Median on-study CD4 counts/mm³ were 52 in gp 1, 82 in gp 2, 172 in gp 3, and 123 in gp 4. Median wks on study to date were 33 for gp 1, 26 for gp 2, 17 for gp 3, and 3 for gp 4. Nine pts are off-study, 6 for toxicity: 2 in gp 2 (1 vomiting/fever, 1 elevated SGPT), 3 in gp 3 (1 anemia, 1 rash, 1 fever), and 1 in gp 4 (rash/fever). Dap 200 mg/wk was considered the maximum tolerated dose, and all pts then received this dose (median wks at 200 mg was 6 in gp 1 and 13 in gp 3). Methemoglobinemia to 5.6% occurred in 1 pt, >2-fold increase in lactate dehydrogenase in 4 pts, and >² gm decrease in hemoglobin in 2 pts. Reticulocytosis occurred in all but 3 pts. Toxicities were not clearly dose-dependent. One pt in gp 1 developed PCP at wk 21.
Conclusions: Weekly dap (200 mg) and dap (200 mg) + pyr (25 mg) are inexpensive and well-tolerated long-term therapies in HIV-infected pts on zidovudine who are at risk for PCP. Laboratory findings consistent with mild hemolysis occur, but anemia is tolerable in most pts. The efficacy of these regimens in preventing PCP is being explored.

Th.B.412 SULFAMETHOXAZOLE-TRIMETHOPRIM AS SECONDARY PROPHYLAXIS AGAINST PCP.

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Objective: To evaluate: 1) the efficacy of sulfamethoxazole trimetoprim (SMX-TMP) as secondary prophylaxis (SP) after Pneumocystis carinii pneumonia (PCP) and 2) the frequency of hypersensitivity reactions during SP.
Methods: One hundred and twenty-two patients received SMX-TMP as SP 800/160 mg daily. Six patients were included after their second episode of PCP. Hypersensitivity was defined as rash and/or fever without any other explanation, disappearing after discontinuation of SMX-TMP.
Results: The patients received SMX-TMP for a total of 1362 months, mean 11.2 months per patient (range 1-37). During the treatment period 8 patients had relap-se of PCP. Four episodes were histologically verified, four clinically su-spected. Mean time to relapse was 13.1 months (range 5-25). Relapse rate per treatment year was 6.1% (mean observation 11.2 months). Patients with relapse were treated with SMX-TMP. The treatment were succesful in six patients. In two patients with visceral Kaposi the effect were only moderate. Seven patients (5.7%) had their treatment discontinued due to hypersensitivity.
Conclusion: With a relapse rate per treatment year of 6.1% SMX-TMP 800/160 mg daily (half the dosage recommended by CDC) is considered effective as SP against PCP. Hypersensitivity reactions in this dosage seems uncommon, only 5.7% had their treatment discontinued.

Th.B.413 ONCE DAILY TRIMETHOPRIM-SULFAMETHOXAZOLE AS PROPHYLAXIS FOR PNEUMOCYSTIS CARINII PNEUMONIA

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Objective: To determine the efficacy and hematologic toxicity of once daily (OD) trimethoprim-sulfamethoxazole (TMP/SMX) used as a prophylaxis for Pneumocystis carinii pneumonia (PCP).
Methods: Charts were reviewed retrospectively. Inclusion criteria were (a) PCP prophylaxis with OD TMP/SMX, (b) CD4+ count $\leq$200/mm^3 or CD4+ cells$\leq$20% of total lymphocytes, or prior episode of PCP, and (c) minimum follow-up of 3 months. Length of follow-up, episodes of PCP, and change in granulocyte count from time of initiation of prophylaxis were determined for each patient. None of the patients received leucovotin. Results were compared to a Kaplan-Meier estimate for PCP incidence in a similar group. Paired t-test was applied to differing rates of incidence.
Results: Seventy patients had been followed for 3 months,45 for 6 months, 30 for 9 months, and 21 for 12 months. No episodes of PCP were observed in any of the patients. Results were statistically significant for the 6 and 12 month intervals to $p < 0.01$ with 95% confidence.

	expected # cases	observed # cases	mean change granulocyte #
3 mos		0 (70)	-65.84
6 mos	5.85 (13%)	0 (45)	-266.46
9 mos		0 (30)	+27.62
12 mos	5.04 (24%)	0 (21)	-243.65

Conclusions; Once daily TMP/SMX is an effective and safe method of PCP prophylaxis. Granulocyte counts changed little without the use of leucovorin. Further studies comparing the efficacy and toxicity of OD TMP/SMX with other methods of PCP prophylaxis are warranted.

Th.B.414 TWICE WEEKLY DAPSONE-PYRIMETHAMINE FOR PREVENTING P.CARINII PNEUMONIA RELAPSES IN HIV INFECTED PATIENTS.

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OBJECTIVE: This study aimed to evaluate the efficacy of dapsone-pyrimethamine (D-P) in reducing the frequency of second episodes of P.Carinii pneumonia (PCP) in HIV seropositive patients.
METHODS: We introduced 20 male patients fulfilling AIDS criteria who had recovered from PCP with intravenous cotrimoxazole therapy given according to standard regimes. 12 were drug abusers and 8 homosexuals. Patients received dapsone 100 mg and pyrimethamine 25 mg twice weekly. All were also on zidovudine, parenteral vitamine B12 (2000 ug/monthly) and folic acid (10 mg/d).
RESULTS: Mean follow up is 6.5 months (range 4-16). Complications included nausea (3) and skin rash (4). One patient was withdrawn because of the adverse reaction. Compliance of the treatment was good. All patients had initially less than 200 CD4 cells/mm. No PCP relapses were observed. One case of cerebral toxoplasmosis occurred 4 months after having stopped D-P because an adverse reaction. Anemia and the need for transfusions were similar to the groups receiving other prophylactic regimes (cotrimoxazole, inhaled pentamidine).
CONCLUSION: The association of dapsone and pyrimethamine twice weekly is highly effective for preventing relapses of PCP in HIV seropositive patients. It is well tolerated and has a reasonable cost-efficacy relationship. A possible role of primary prophylaxis in cerebral toxoplasmosis is suggested and is now under study.

Th.B.415 AEROSOLISED PENTAMIDINE (AP). WHICH NEBULISER?

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Objective: To measure pulmonary deposition (PD) of AP 300 mg given via Respirgard II and 6 other nebulisers.
Methods: After pre-treatment with salbutamol, 8 patients with AIDS received 300 mg AP (an effective dose for prophylaxis), via 4 jet (Respirgard II [RII], Centimist [C], System 22 Mizer [SM], and System 22 Mizer with particle size modifier [SMP] all driven by an air compressor [AFP Medical]), and 3 ultrasonic nebulisers (Portasonic [P], Samsonic [SS], and Fisoneb [F]), using 6 ml solution (5 ml for P). An indirect marker (99mTc HSA, 37 MBq 0.1 mg) for pentamidine was used. PD and non-pulmonary (oropharyngeal and gastric) deposition were measured using a gamma camera during and after 40 min. nebulisation.
Results: Deposition was completed within 15 min for all the ultrasonic nebulisers but took at least 25 min for all the jet nebulisers. Total PD (mg) for both lungs is shown in the Table.

	RII	C	SM	SMP	P	SS	F
Mean	6.4	7.2	16.2	4.4	4.7	2.9	7.3
(SEM)	0.6	0.9	2.5	0.4	0.9	0.4	1.5

Only the SM delivered more pentamidine to the lungs than RII ($P < 0.01$). Non-pulmonary deposition was greatest with SM, F and P ($P < 0.05$), and these caused the most symptoms.
Conclusions: 1. AP (300 mg) via RII produces an PD of 6.4 mg. Similar PD is achieved using C and F but over twice as much (16.2 mg) is delivered by SM. 2. The best tolerated nebulisers were RII, C, SS and SMP.

Th.B.416 DISTRIBUTION OF PENTAMIDINE (PM) AFTER INTRAVENOUS AND INHALED APPLICATION IN AIDS-PATIENTS

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Objektive: Evaluation of distribution and multiple dose kinetic of PM after intravenous(i.v.) and inhaled application in treatment of pneumocystosis (PCP).
Methods: 35 AIDS-patients (pts) with severe or mild episodes of PCP were treated with PM-isethionate: 8 pts (gr.I) by i.v. infusion (4 mg/kg/day), 11 pts (gr.II) by daily inhalation of 300 mg and 16 pts (gr.III) by 600 mg over 21 days, respectively. The nebuliser system was RESPIGARD II, PM in plasma, urine and in the nebuliser was determined by HPLC.
Results: After infusion a steady state in plasma of 60-80 ng/ml is reached on the 8th day of treatment. In gr.II and III PM in plasma was mostly <2 ng/ml. In urine the daily elimination of PM after 8 days of treatment amounts to 5-7 mg/day in gr.I, 0.2-0.4 mg/day in gr.II and 0.1 mg/day in gr.III, respectively (median values). Up to 40 % of the pentamidine base to be aerosolized can be measured as a residue in the nebuliser chamber or in the exhalation filter.
Conclusion: 1)The multiple dose pharmacokinetic of PM is characterized by a steady state reached after 8 days, a volume of distribution of >100 l/kg, a small daily elimination via urine (max. 4 % of the dose) and an elimination half life of 4 days. 2)A loading dose by i.v. treatment and/or a combined therapy with infused and inhaled PM should be considered.

Th.B.417 SCINTIGRAPHIC EVALUATION OF THE LUNG DELIVERY OF THREE NEBULIZERS USED FOR PENTAMIDINE INHALATION.

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Objective : To evaluate the comparative efficacy of three nebulizers for lung deposition of pentamidine.
Methods : Pentamidine isethionate (150 mg), mixed with technetium-99m-labeled human serum albumin was administered by means of one jet nebulizer (Respirgard, Marquest) and two ultrasonic nebulizers (DP 100, DP Medical ; Portasonic, De Vilbiss) to 8 HIV patients under primary prophylaxis with aerosolized pentamidine. All patients inhaled pentamidine with each nebulizer (one inhalation every two weeks) and the lung edge was previously defined by 20 % contour of the chest posterior view on a 99-m Tc-macro-aggregates perfusion scan. Side effects during inhalation were recorded. 4 indexes were determined : Pulmonary uptake/Total body uptake (PF), aerosol penetration index (API) calculated by PIV/PIP where PI = peripheral counts per pixel/inner counts per pixel with PIV measured after inhalation and PIP after perfusion, total pulmonary uptake (TPU), absolute alveolar deposition (AAD) defined by APIxTPU.

Results :

	PF (%)		API		TPU	AAD
Respirgard	80.6 ± 2.8	*	1.63 ± 0.42	*	3054 ± 552	6234 ± 2888
DP 100	74.4 ± 5.8		2.35 ± 0.5		5225 ± 451	12843 ± 3553
Portasonic	68.9 ± 2.8		2.6 ± 0.43	*	3629 ± 510	9516 ± 2473

Side effects were minimized with Respirgard, intermediate with Portasonic and pronounced with DP100.
Conclusions : (1) Respirgard was the best tolerated nebulizer with the lowest extrapulmonary deposition. (2) The highest relative peripheral deposition reflected by API was obtained with the Portasonic although the absolute peripheral amount (AAD) was not significantly different. (3) Ultrasonic nebulizers with high potency quartz can achieve high alveolar deposition but are associated with more frequent side effects.

Th.B.418 AUTORADIOGRAPHIC EXAMINATION OF THE ORGAN DISTRIBUTION OF ^{14}C-LABELLED PENTAMIDINE IN RATS AFTER I.V. AND INHALATIVE ADMINISTRATION

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Objective: The organ distribution of ^{14}C-pentamidine was studied in Spraque Dawley rats by means of whole-body autoradiography following intravenous application and inhalation of aerosolized pentamidine.

Methods: The distribution time after intravenous administration of 5 mg pentamidine per kg rat was 30 minutes, 6 hours, 24 hours, and 7 days respectively. The corresponding times after administration of aerosolized pentamidine were 30 minutes and 24 hours. By measuring radioactivity in punch specimens of 100 µm sections, the distribution of radioactivity could also be determined semiquantitatively.

Results: Besides renal excretion, the excretion of pentamidine in the bile and via the salivary glands was assessed by autoradiography. Further target organs included the spleen and the bone marrow. As early as after 30 minutes no radioactivity was detectable in the blood vessels. A lack of radioactivity in the brain tissue, with concentration of pentamidine in the meninges, suggests that pentamidine does not pass the blood/brain barrier. Following intravenous administration, the lung uptake of pentamidine was relatively low. However, increased drug levels were recorded in the bronchial system.
The elimination time of pentamidine from the target organs was long. The lung levels of pentamidine remained almost unchanged for a period of 7 days.
Following application by inhalation, high levels of pentamidine were measured in the lung. ^{14}C-pentamidine was also detectable in the oropharyngel and gastrointestinal tract, the drug stemming from pentamidine ingested or licked off the skin by the animals. Other target organs could not be demonstrated.

Conclusion: From the pharmacological point of view, these studies prove the advantages of pentamidine aerosol in the treatment of Pneumocystis carinii pneumonia and provide information on extrarenal excretion mechanism and deep compartments.

Th.B.419 RISK OF TB TRANSMISSION IN HIV INFECTED PATIENTS RECEIVING AEROSOLIZED PENTAMIDINE TREATMENT.

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Objective: Because cough and bronchospasm are frequent side effects of aerosolized pentamidine (AP) treatments, airborne transmission of infectious diseases is a growing concern. TB occurs in 2-5% of all AIDS patients and may represent the most serious threat of nosocomial transmission. This study assessed the risk of TB transmission during AP administration in San Francisco.
Methods: Respiratory therapy records of patients treated with AP for PCP prophylaxis at 3 major hospital centers were matched against records from the SF County TB Control Office. Dates of TB diagnoses and treatments were compared to AP treatment records. PPD test results of respiratory therapists (RT) administering AP were also checked.
Results: Records of 2299 patients treated with AP over a period of 2.5 years were reviewed. 30 patients (1.3%) had a TB diagnosis; 21 (0.9%) had pulmonary TB (17 were smear positive). Patients receiving AP during the period 3 months prior to or 1 month after initiating TB therapy were considered capable of transmitting TB. Only 3 patients received AP during this "high risk" period (2 were smear positive). None of the 30 respiratory therapists had PPD conversions subsequent to administering AP.
Conclusions: This data suggests that the risk of TB transmission associated with AP treatments for PCP prophylaxis in SF is low. However, in locations where HIV infected populations have a higher prevalence of TB, the risk may be higher. We conclude that if appropriate preventive measures are implemented, the benefits of AP treatments in reducing the risk of PCP in high risk HIV infected populations outweigh the risks of TB transmission.

Th.B.420 AEROSOLIZED PENTAMIDINE INDUCED BRONCHOSPASM: Relation to airway hyperresponsiveness and response to preventive therapy.

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OBJECTIVE: To describe the frequency of pentamidine induced bronchospasm (PIB), its relationship to airways hyperresponsiveness and its response to preventive therapy using salbutamol (SAL), ipratropium bromide (IB) or sodium chromoglycate (SC).

METHODS: Consecutive patients entering our aerosolized pentamidine (AP) programme were eligible for the study if they were not previously treated with AP. Simple spirometry was performed before and 10 minutes after a single 60 mg dose of AP given via an ultrasonic nebulizer (Fisoneb^R). PIB was defined as a $\geq$ 10% decline in FEV1 after a single dose of AP. Methacholine challenge was performed in all subjects 24 hours to 7 days after initial AP dose. From this measurement, the concentration that produced a 20% fall in Fev1 (PC20) was calculated. PIB patients were re-studied at regular intervals (>24 hrs. apart) on 3 separate occasions after premedication with 2 puffs of SAL, IB or SC in random order.

RESULTS: Thirty-one subjects have been studied to date. The FEV1 changed (ΔFEV1) -7.9 $\pm$ 7.1% (range 1 to -27.8%) after 1 dose of AP. Nine subjects met the definition of PIB; they had a Δ FEV1 of -17.1 $\pm$ 6.3% (range -10.5 to -27.8%). ΔFEV1 had no significant correlation with smoking history, a past history of PCP, asthma, or baseline FEV1. A methacholine response was present in 1 non-PIB (PC 20 = 6mg/ml) and 5 PIB subjects (PC 20 = 2 to 23mg/ml). ΔFEV1 was 1.5 $\pm$ 4.2, -3.2 $\pm$ 9.9 and -8.6 $\pm$ 7.2% after premedication with SAL, IB and SC, respectively.

CONCLUSION: Significant bronchospasm with AP occurred in 30% of subjects. This did not relate to the presence or magnitude of airway hyperresponsiveness. Salbutamol effectively suppressed PIB; ipratropium and sodium chromoglycate were only partially effective.

Supported by a grant from National Health and Research Development Programme.

Th.B.421 BRONCHOCONSTRICTION INDUCED BY NEBULIZED PENTAMIDINE. SEVERITY, DURATION, AND REVERSIBILITY WITH TERBUTALINE.

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OBJECTIVE: To define the extent, duration, and reversibility of Pentamidine induced bronchoconstriction in HIV positive patients, which has so far been poorly characterised.
METHODS: Forty males with normal lung function, mean age =35.6, (range 24-56), were studied. All were receiving fortnightly nebulized Pentamidine Isethionate, (300mg in 5ml water) as prophylaxis for Pneumocystis carinii pneumonia. Twenty received nebulized Pentamidine alone, the remainder were pre-treated with 10mg nebulized terbutaline 2 minutes prior to Pentamidine. FEV_1 was measured before, immediately after, and serially for 30 minutes following nebulization.
RESULTS: Without Terbutaline, FEV_1 fell in all patients after Pentamidine. Mean maximum fall was 20.6% (range 7.6 - 61.8%). Mean time to maximum fall was 9.5 mins (range 1-30 mins). The fall was not statistically greater in smokers than non-smokers (20.1 vs 13.4%, p=NS). Post Terbutaline + Pentamidine, mean maximum change in FEV_1 was -4.3% (range +16.6 to -22.6%), but in 2 patients, falls in FEV_1 of over 10% still occurred.
CONCLUSION: Nebulized Pentamidine caused significant and sustained falls in FEV_1 in all patients. This was generally diminished by pre-treatment with Terbutaline ($p<0.005$), but not abolished completely in all patients.

Th.B.422 DIABETES MELLITUS IN HIV+ PATIENTS POST-PNEUMOCYSTIS PNEUMONIA AND THE IMPACT OF AEROSOLIZED PENTAMIDINE

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Objective: To prospectively monitor post-PCP patients for glucose dysfunction and to identify the risk of dysglycemia in patients who subsequently receive aerosolized pentamidine (AP) for secondary prophylaxis.

Method: Glucose tolerance testing (GTT) (oral 75 gm load) was performed on 35 patients who had recently recovered from first episode PCP. Followup GTTs were performed at 6 and 12 months. The diagnosis of diabetes was based on standard GTT criteria (glucose $\geq$ 200 mg/dl at 1 and 2 hr).

Results: Four of 35 (11.4%) patients met the criteria for diabetes on initial GTT testing. All 4 had received IV pentamidine for acute treatment of PCP; the likelihood of diabetes in persons having received IV pentamidine for acute PCP treatment was 22.2% (4/18). No patient who received only sulfa drugs or dapsone for acute PCP treatment had an abnormal GTT (p=0.06; Fishers exact test). 17 patients who subsequently received AP have undergone followup GTT testing; only 1 (5.9%) had GTT evidence of diabetes. This patient received IV pentamidine for acute PCP 6 months earlier. None of the patients exposed de novo to AP had an abnormal GTT.

Summary: Among HIV+ persons, diabetes following systemic pentamidine treatment is common (22.2%); however prophylactic aerosolized pentamidine is much less likely to cause diabetes (5.9%). Further followup of these patients is in progress.

Th.B.423 RADIOGRAPHIC MANIFESTATIONS OF PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN PATIENTS RECEIVING AEROSOLIZED PENTAMIDINE (AP) FOR SECONDARY PROPHYLAXIS.

Duguay, Donna; Falutz, J; Fanning, M; Fong, IW; Garber, G; Gervais, A; Gilmore, N; Hyland, R; Lawson, L; Louie, T; MacFadden, DK; Martel, AY; Montaner, JSG; Schlech, W; Rachlis, A; Renzi, P; Simor, AE; Taylor, G.
Canada.

Objective: We analyzed the CXR patterns of recurrent PCP in patients receiving long-term AP prophylaxis to determine whether upper lobe disease is the most common radiographic feature.
Methods: Chest x-ray reports of first PCP relapses in 44 patients after 5.5$\pm$3.2 months (range 0.6-11.7) prophylactic AP treatment, and in 28 concurrently followed placebo-treated patients, were reviewed. All patients, in the sitting position, received 5 doses over 2 weeks, followed by 1 dose bi-weekly of 60 mg AP or placebo, delivered by hand-held self-triggered ultrasonic nebulizer. All patients were followed prospectively after their first episode of PCP, and all relapses were confirmed histologically.

Results:

CXR Patterns at Relapse	AP (+)	AP (-)	Chi-Square
Total number of patients	44	28	
Upper lobes predominant	14 (31.8%)	5 (17.9%)	1.07, p=0.30
Diffuse/varied	28 (63.6%)	22 (78.6%)	1.10, p=0.48
Normal	2 (4.5%)	1 (3.6%)	

Conclusions: In patients receiving AP prophylaxis, upper lobe relapses were nearly twice as common (31.8%) as in untreated patients (17.9%), but this difference was not statistically significant. The majority (68.2%) of AP treated patients did not have predominantly upper lobe CXR abnormalities.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.424 ULTRASOUND DIAGNOSIS OF DISSEMINATED PNEUMOCYSTIS CARINII.

Gopinath, Nanda, Blendis, L.M., Vellend H., Sherman M., Rachlis A., Wilson S., Cameron R., Read S., Phillips, A.M. University of Toronto, Toronto, Ontario, Canada.

OBJECTIVE: Extrapulmonary pneumocystis carini (PC) has been recognized with increasing frequency, possibly related to increasing use of aerosolized pentamidine prophylaxis (APP) in HIV disease. Ultrasound (U/S) was used to screen for PC.
RESULTS: Two index cases led us to note a characteristic ultrasound appearance of tissue PC. One patient had painful thyromegaly, with liver, spleen and intestinal involvement, confirmed on biopsy of the first two organs. The other patient presented with ascites and profound hypoalbuminemia with liver PC noted on biopsy. He died despite systemic treatment, and had the ultrasound picture of splenic, renal, and intestinal PC confirmed at biopsy. 18 asymptomatic patients on APP were screened, and an additional two cases were identified. These had renal involvement only. 3/4 patients had prior PC pneumonia treated systemically with 2/4 treated within the previous 6 months. The mean duration of APP prior to the detection of extrapulmonary PC was 1.5 years, with the dose of APP ranging from 60 mg every two weeks to 300 mg monthly.
CONCLUSION: Ultrasound may be a simple non-invasive method for the diagnosis of extrapulmonary PC in HIV patients. The prevalence of asymptomatic extrapulmonary PC in patients receiving APP is currently being determined. The implications in terms of prophylaxis and treatment of PC must be explored.

Th.B.425 UNUSUAL MANIFESTATIONS OF PNEUMOCYSTIS CARINII INFECTION IN HIV POSITIVE SUBJECTS ON PROLONGED INHALED PENTAMIDINE PROPHYLAXIS

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Objective: To review cases of pneumocystis carinii infection (PCI) among HIV positive subjects who have received prolonged inhaled pentamidine as primary or secondary prophylaxis.
Method: Review of charts among 187 HIV positive subjects to determine cases of PCI among those patients receiving more than 6 months of inhaled pentamidine. Clinical and significant laboratory values are presented for 3 atypical cases of pulmonary PCI.
Results: 3 cases of PCI were identified among 25 patients who have received greater than 6 months of inhaled pentamidine. Breakthrough PCI occurred in 3/8 patients with CD4 counts <50, 0/9 with CD4 counts 50-100 and 0/8 with CD4 counts 100-200 cells/ml. 2 patients with primary PCI presented with acute onset of shortness of breath. Chest X-rays in both cases showed apical cavitary disease and pneumothoraces. Diagnosis was established by bronchoscopy in one patient and lung biopsy in the other. Both required pleurectomies to relieve persistent bronchopleural fistulae and responded to IV pentamidine. The third case involved a persistent right pleural effusion (borderline transudative/exudative). Pleural biopsy showed PC on silver stain of intercostal muscle. Patient responded to IV pentamidine and chest tube drainage. All patients had persistently very low CD4 cell counts and received prolonged inhaled pentamidine and AZT.
Conclusion: Patients with very low CD4 counts on ($\geq$ 6 mos.) of inhaled pentamidine may have breakthrough PCI. This change in the natural history of PCI may require the use of intermittent systemic prophylaxis in patients with very low CD4 counts.

Th.B.426 ATYPICAL PNEUMOCYSTIS CARINII PNEUMONIA (PCP) IN PATIENTS RECEIVING INHALED PENTAMIDINE PROPHYLAXIS (IPP)

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Objective: Recent case reports have noted atypical presentations of PCP in pts receiving IPP. In order to assess the magnitude of this problem, we studied the frequency and characteristics of PCP in pts who received IPP.
Methods: Retrospective study of all pts with biopsy or cytology proven PCP at two hospitals from July 1987 to December 1989.
Results: 39 pts developed PCP during the study period. After initial episode of PCP, 12 pts received monthly IPP of whom 4 (33%) developed recurrent PCP. Time to recurrence was 8, 18, 25, and 28 months. Atypical X-ray findings occurred in 3 of 4 pts, including bilateral upper lobe cavities with pneumothorax, focal upper lobe infiltrates, and pleural effusion with bilateral interstitial disease. With respect to diagnostic studies, induced sputum and bronchial lavage fluid were falsely negative in 2 of 2 and 2 of 4 pts, respectively, and resulted in delay of treatment and more invasive studies such as transbronchial biopsy, pleural biopsy, and mediastinoscopy. Treatment included inhaled pentamidine (1 pt), trimethoprim/dapsone (2), and trimethoprim/dapsone and trimethoprim/sulfamethoxazole (1). Two pts are alive and well 4 and 5 months after recurrence. Two pts have died, one 12 months after PCP due to inanition, and the other 3 months after PCP with widely metastatic extrapulmonary Pneumocystis carinii infection.
Conclusion: In pts with prior PCP who receive IPP, PCP may recur often. The frequency of recurrence as well as atypical radiographic and clinical presentation may make IPP unsuitable for many patients.

Th.B.427 CLINICAL DATA OF DISSEMINATED PNEUMOCYSTIS CARINII INFECTION (D.P.C.I.) IN 6 AIDS PATIENTS RECEIVING SECONDARY PROPHYLAXIS WITH AEROSOLIZED PENTAMIDINE (AP).

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Objective of this study : to analyse clinical data in all AIDS patients (pts), seen during 1989 in the Eastern Paris Hospitals because of D.P.C.I.
Patients : 5 homosexual and 1 drug addict males, between 35 and 39 years old, treated with Zidovudine for 12 to 22 months because of AIDS.
Methods : In all cases, D.P.C.I. were documented on specimens obtained by thoracotomy (n=5) and/or autopsy (n=3).
Results : 1) Patient characteristics at the time of diagnosis :a) Known allergic reactions to various drugs (n=5); b) 1 to 3 previous episodes of PNC.C pneumonia 9 to 24 months earlier treated with TMP-SMZ (n=5) and/or A.P.(n=7); and c) secondary prophylaxis with A.P. (n=6); 2) Clinical presentation: progressive development (1-3 months) of respiratory symptoms, asthenia, variable fever and mild hypoxemia; 3) Chest X-ray and CT presentation : disseminated nodular opacities some with cavitation (n=6), mediastinal adenopathies (n=3) and pleural and/or pericardial effusions (n=3); 4) Diagnostic approach : a) BAL showing no (n=4) or few (n=1) PNC.C. and b) thoracotomy (n=5) or autopsy (n=1) leading to diagnosis of endothoracic D.P.C.I. with pulmonary (n=6), pleural (n=4), pericardial (n=1) and mediastinal (n=2) localizations; 5) Evolution : a) bilateral pneumothorax (n=5); b) rapid death of 4 pts in spite of (n=3) or in absence of (n=1) curative treatment in the last case with D.P.C.I. in liver and spleen; and c) major lung destruction in 1 of 2 survivors.
Conclusion : The diagnosis of D.P.C.I. in long AIDS survivors with secondary AP prophylaxis is difficult and prognosis poor. The physician must be aware of this new clinical presentation.

Th.B.428 EXTRAPULMONARY PNEUMOCYSTIS CARINII IN PATIENTS RECEIVING AEROSOLIZED PENTAMIDINE

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Pneumocystis carinii (PC) is the organism responsible for the most common cause of morbidity and mortality in patients infected with the HIV-1. Pneumocystis carinii pneumonia (PCP) occurs in 60-70% of patients with AIDS. Recently, aerosolized pentamidine has received widespread use for PCP prophylaxis. Because significant systemic absorption rarely occurs with inhaled pentamidine, extrapulmonary infection may also be seen. Although the frequency of PC infection is high in HIV-1 infected patients, disseminated pneumocystis is unusual.

The Northwestern University AIDS Clinic has treated 318 patients with aerosolized pentamidine for PCP prophylaxis and six have extrapulmonary manifestations of PC infection. Three had widely disseminated pneumocystis while another three had evidence of PC choroiditis. Of the patients with dissemination, two were diagnosed pre-mortem and both had disease in the liver and spleen. A third patient died from PCP and had histologic evidence of PC in his liver, spleen, bone marrow, kidney, pancreas, myocardium, thyroid, parathyroid, lymph nodes and lungs.

It is unclear why dissemination occurs in patients on aerosolized pentamidine. One theory is that individuals with dissemination have more virulent strains of PC. Conversely, PC infection may be a systemic disease that most commonly affects the lungs and when prophylaxis is directed against pneumonia, extrapulmonary infection is revealed. Regardless of the etiology, disseminated pneumocystis is occurring more frequently in patients on aerosolized pentamidine which underscores the need to further evaluate the most effective regimen for PCP prophylaxis.

Cytomegalovirus

Th.B.430 IS CMV VIREMIA PREDICTIVE OF SUBSEQUENT CMV RETINITIS?

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OBJECTIVE: To evaluate the link between CMV shedding in saliva/urine and CMV viremia and the development of CMV retinitis.
METHOD: One hundred and thirty-nine patients enrolled in 4 categories of HIV infection (established AIDS >4 months, 42, new AIDS, 29, CD4 <200, 37, CD4 >200, 31). Blood urine and saliva are cultured 2 monthly for 12 months. A formal ophthalmological examination is performed at enrolment, and when symptoms develop.
RESULTS:

	% with positive cultures		
	Saliva	Urine	Blood
AIDS	66%	60%	25%
CD4 <200	27%	32%	5%
CD4 >200	0%	6%	0%

Twenty-one participants were CMV viremic, 7 on enrolment and 14 during follow-up. Of these 19 were enrolled with AIDS and 2 with advanced ARC (CD4 <200). No asymptomatic individual is CMV viremic. Thirteen of the 14 were positive for CMV in urine/saliva prior to becoming viremic. One patient had CMV viremia without prior shedding in saliva/urine. Each of three patients who to date have developed CMV retinitis on study, were CMV viremic beforehand.
CONCLUSION: The proportion of patients shedding CMV in saliva/urine/leukocytes increases as HIV infection becomes more advanced. This observation may have implications for the use of prophylaxis.

Th.B.429 DISSEMINATED PNEUMOCYSTIS CARINII INFECTION IN PATIENTS WITH AIDS.

Feuerstein, Irwin; Falloon, J; Polis, M; Pluda, J; O'Neill, D; Travis, W; Masur, H. National Institutes of Health, Bethesda, Maryland, USA.

Objective: To assess the clinical, laboratory, radiologic, and pathologic features of disseminated Pneumocystis carinii infection (DPCI) in patients with AIDS.
Methods: Retrospective review of charts, radiologic studies, and pathologic specimens of pts with AIDS and DPCI diagnosed either histologically or radiologically with longitudinal follow-up.
Results: DPCI was diagnosed by lymph node biopsy in 1 pt and at autopsy in 1 pt. Two pts were diagnosed with DPCI based on documented Pneumocystis carinii pneumonia (PCP) with abdominal imaging studies showing abscess-like or calcified lesions that improved with anti-PCP therapy and that were identical to recently published descriptions of DPCI. Lesions occurred in lymph nodes in 2 pts, liver in 3 pts, spleen in 2 pts, and kidneys in 3 pts. All 4 pts had a history of at least 1 prior episode of PCP; all had CD4+ counts <30/mm^3, and all had received AZT and prophylactic aerosolized pentamidine (AP). Three had pulmonary symptoms, 4 had cystic pulmonary lesions on CT scan, and 3 had documented PCP. The 2 pts with presumptive DPCI had no clinical symptoms or laboratory abnormalities to suggest dissemination.
Conclusions: Sonographic and CT studies indicate that DPCI may be more common than routine clinical and radiologic studies would suggest. DPCI and cystic lung lesions may be associated, and DPCI may be associated with AP administration. The prognostic implications of DPCI may not be as ominous as once thought.

Th.B.431 RELATIONSHIP BETWEEN CMV CULTURE POSITIVITY AND CIRCULATING CD4 COUNT IN PATIENTS WITH HIV INFECTION.

Zurlo, John; O'Neill, D., Polis, M.; Manischewitz, J.; Davey, R.; Falloon, J.; Kovacs, J.; Zunich, K.; Yarchoan, R.; Lane, H.; Masur, H. Clinical Center/NIAID/NCI, National Institutes of Health, and FDA, Bethesda, Maryland, USA.

Objective: To determine the relationship between CMV urine and blood culture results and circulating CD4 counts in HIV infected patients.
Methods: The initial blood and urine CMV culture was assessed in all HIV infected patients who had a circulating CD4 count done the same day as the culture.
Results: The patient population consisted largely (>95%) of homosexual men. Three hundred and ten patients had a CMV blood culture and 297 patients had a CMV urine culture result on the same day that a CD4 count was determined. CMV blood cultures were positive in 32/76 (42%) pts with 0-100 CD4 cells/mm^3, 3/32 (10%) pts with 101-200 CD4 cells/mm^3, 1/28 (3%) pts with 201-300 CD4 cells/mm^3, and 0/176 pts with CD4 counts >301/mm^3. Eleven of the 36 patients with positive blood cultures had definitive evidence of CMV end-organ disease (retinitis). 4/11 patients with retinitis were CMV blood culture negative; all 4 had CD4 counts $\leq$ 100 cells/mm^3. Urine cultures were positive in 52/75 (69%) pts with 0-100 CD4 cells/mm^3; 9/28 (32%) pts with 101-200 CD4 cells/mm^3; 9/29 (31%) pts with 201-300 CD4 cells/mm^3; and 18/147 (12%) pts with CD4 cells >300/mm^3. All 16 patients with retinitis were CMV urine culture positive. There was significant correlation between the results of simultaneous blood and urine culture determinations ($p<0.001$).
Conclusions: CMV cultures of blood or urine are more likely to be positive if the CD4 count is below 200/mm^3. Patients with CMV retinitis were invariably culture positive in urine (100%) and usually blood (75%), but many CMV viremic patients had no clinically apparent disease due to CMV at the time of evaluation.

Th.B.432 GANCICLOVIR (GCV) IN AIDS PATIENTS WITH IMMEDIATELY SIGHT-THREATENING CMV RETINITIS (ISTCR): INITIAL SUMMARY OF "TREATMENT IND" DATA

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Objective: To evaluate the safety and efficacy of intravenous GCV therapy in AIDS patients (pts) with ISTCR. GCV was distributed under the "treatment IND" mechanism which permits access by any licensed US physicians to a promising investigational drug with evidence of safety.

Methods: AIDS pts with ophthalmologist-confirmed, newly-diagnosed ISTCR (defined as any lesion whose border is inside the major temporal vascular arcades, within 1500 u of the optic disc, or within 3000 u of the fovea) were treated with GCV 5mg/kg IV BID X 14 days followed by 35 mg/kg/week IV indefinitely. Patients were monitored for safety and retinitis progression (enlargement of lesion >750 u, any new lesion or retinal detachment) at days 14, 28, and monthly thereafter.

Results: Between 1/3/89 and 6/23/89, 1125 pts were enrolled into AIDS Program study TX 303. 95% were men; mean age for all pts was 37.7 yrs (range 18-71). Mean time from AIDS diagnosis to diagnosis of retinitis was 16 mos. Approx. 75% had received prior therapy with AZT. Safety data are available for 628 pts and outcome data for 701. Mean time to progression from the start of therapy by Kaplan-Meier analysis was 97.3 days (range 4-220); median was 89 days. 56% had not progressed by the end of the study. Neutropenia was the most common adverse event. 49 pts (6%) withdrew because of adverse events.

Conclusions: The data from this "treatment IND" provide additional confirmation of the efficacy and safety of GCV for AIDS pts with ISTCR.

Th.B.433 THREE TIMES A WEEK MAINTENANCE GANCICLOVIR TO PREVENT RELAPSE OF CMV RETINITIS IN AIDS.

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Fairfield Hospital, Melbourne, Australia.

AIM: To determine the efficacy of ganciclovir infusions given three times per week as maintenance therapy to prevent relapse of CMV retinitis.
METHODS: Forty-eight AIDS patients were treated at Fairfield Hospital with ganciclovir for CMV retinitis from June 1986 to January 1990. Therapy consisted of an induction course of 2.5 mg/Kg 8 hourly or 3.75 mg/Kg 12 hourly intravenously followed by maintenance infusions of 10 mg/Kg three times per week. Regular retinal assessments were performed by an ophthalmologist. Response to induction therapy was defined as a reduction in activity of retinitis. Active retinitis was defined as the development of new lesions and/or the enlargement of existing lesions.
RESULTS: Forty-three of 47 patients (91%) responded to an induction course of ganciclovir. Forty-two patients received maintenance DHPG therapy (one with no induction course). Seventeen (40%) relapsed with active retinitis at a mean 4.1 months. Nine (21%) had inactive retinitis when maintenance therapy was ceased [death (7), bilateral retinal detachments (1) lost to follow-up (1)] at a mean 4.1 months. Sixteen (38%) had inactive retinitis and remain on maintenance therapy at a mean 6.1 months.
CONCLUSION: The time to relapse of CMV retinitis using 10 mg/Kg thrice weekly DHPG maintenance therapy is similar to published data using 5 mg/Kg five times per week. Thrice weekly DHPG maintenance therapy is more convenient as well as offering savings in time and cost for patients and hospitals.

Th.B.434 INTERMITTENT AND AMBULATORY TREATMENT OF CMV RETINITIS WITH FOSCARNET IN AIDS.

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OBJECTIVE : Evaluation of efficacy and tolerance of intermittent administration of Foscarnet (PFA) in treatment of acute CMV retinitis.
METHODS : Patients with acute retinitis were given PFA (200 mg/kg/d) through IV infusion. 2 regimens were used : (A) 60 mg/kg/day q 8 hours ; (B) 100 mg/kg/day q 12 hours ; concomittant hydratation with 1500 - 2000 cc saline isotonic was added. Ophtalmologic and biological evaluation were performed every week. Treatment duration was 3 weeks up to 4 according to the ophtalmologic response.
RESULTS : 43 patients were treated for acute CMV retinitis ; 38/43 (88%) had prior opportunistic infection ; mean CD4 cells was 20 ; 42/43 patients through 60/61 PFA courses had complete cicatrization in a median delay of 21 days ; median duration of therapy was 28 days. One patient failed to respond to PFA with new lesions after 4 weeks; even CMV viremia remained negative. 1/30 CMV viremia was positive at study entry and became negative.
TOLERANCE : Renal insufficiency occured in 7/61 courses (11%) and variation of 25% more than baseline data were seen in 1/61 for calcemia and 22/61 (36%) for phosphatemia. No hematologic side effect was noted, and digestive troubles occured in 8/43 (19%) patients. No difference in efficacy and tolerance was noted for regimen A or B.
CONCLUSION : Foscarnet administrated intermittently is efficace and well tolerated since 60 courses out of 61 had complete resolution of CMV retinitis with good clinical tolerance and mild reversible renal insufficiency in 11%. Intermittent therapy allow home care administration of Foscarnet in acute as in maintenance phase.

Th.B.435 MAINTENANCE THERAPY WITH FOSCARNET IN PREVENTION OF CYTOMEGALOVIRUS (CMV) RETINITIS IN AIDS PATIENTS

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Objective : Evaluate the efficacy and tolerance of Foscarnet (PFA) in maintenance therapy of CMV retinitis.
Patients : 22 patients who had successfully completed a PFA (100 mg/kg q 12 hours) with cicatrization of retinal lesions were given PFA in maintenance therapy with 100 mg/kg/day in a two-hour infusion ; a concomittant hydratation was added. Treatment was maintained as long as no relapse occurs. Ophtalmologic and biological evaluation were performed every 2 weeks.
Results : 8/22 patients (36%) had relapses ; time of progression of retinitis was 2 weeks in 2 patients ; and $\geq$ 6 weeks in 6 cases with a mean time of 9,5 weeks (6-17).
No progression was observed in 14/22 (64%) after a mean follow up of 20 weeks (4-95). 2 patients had discontinuation of treatment at week 2 (renal insuffisiency) and at week 4 (death). Among the 12/14 patients who were treated $\geq$ 4 weeks, the mean follow up with no relapse was 23 weeks (8-95).
These results demonstrate a significantly better prevention of relapse with PFA 100 mg/kg/d than with PFA 60 mg/kg/d where 10/11 treated patients had relapse in a mean delay of 5 weeks (p=0,009) (results previously reported).
Side effects were nephrotoxicity in 1/22, nausea-vomiting in 2/22, hypophosphoremia in 1/22. No hematologic side effects were observed.
Conclusion : Long-term therapy with Foscarnet (100 mg/kg/day) appears to be more effective than with lower dosage in maintenance therapy, since 64% had no relapse. There was no major intolerance. Because of the absence of hematotoxicity, drugs such as zidovudine can be associated.

Th.B.436 AN OPEN STUDY OF FOSCARNET TREATMENT OF CYTOMEGALOVIRUS (CMV) RETINITIS IN AIDS PATIENTS.

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Objective:To evaluate the safety and efficacy of foscarnet treatment of CMV retinitis in AIDS patients.
Methods: Patients with AIDS and active CMV retinitis were enrolled. Some, but not all patients had prior DHPG treatment. Those completing a 14-21 day induction phase of intermittent intravenous infusions were randomized to an every 12 or every 24 hour maintenance dose regimen. Measures of central tendency and percentages are used for preliminary description of the findings.
Results: Thirty-six patients were enrolled. Nineteen (55.8%) were randomized to maintenance; 7 (36.8%) patients experienced a relapse of retinitis (mean time 40 days on maintenance). Four patients (21%) completed the prescribed study course. Sixteen of 26 patients (61.5%) experienced a decrease in disease activity within the first 21 days of therapy. Eighteen patients (50%) developed serious toxicities and were removed from the study; 44% of these were due to renal impairment. Other drug limiting toxicities included 3 episodes of penile fixed drug eruptions.
Conclusion: Foscarnet is an effective treatment for CMV retinitis. Although 50% of patients studied developed serious toxicities, these can be controlled in most patients through careful monitoring and appropriate dose modifications. The proper dose for maintenance remains to be determined.

Th.B.437 TREATMENT OF GANCICLOVIR (GCV) RESISTANT CYTOMEGALOVIRUS (CMV) RETINITIS WITH FOSCARNET (PFA)

Parenti David M,* Drew WL,** Feinberg JE,*** O'Donnell JJ,**** Whitmore PV,* Miner R,** Jacobson MA****. The George Washington Univ. Med. Ctr.,* Wash., DC; UCSF and San Francisco General Hospital,**** Mt. Zion Hospital,** San Francisco, CA; NIAID AIDS Clinical Trials Group,*** Bethesda, MD, USA.

Objective: To assess the activity of PFA on CMV retinitis in HIV-infected patients (PTS) with clinical and virologic resistance to GCV.
Methods: Retinitis progression was defined as either a new opacified lesion in a previously uninvolved area of either eye, or advancement of any pre-existing lesion by more than 750 μ. Two PTS who developed progression of CMV retinitis on several occasions at 2 week intervals despite high-dose GCV were treated with PFA at 60 mg/kg x 14d, then 90 mg/kg qd. Both PTS shed CMV during GCV therapy and these isolates were tested for in vitro susceptibility by a plaque reduction assay.
Results: Antiviral susceptibilities were as follows:

	ED50 (μM)		ED90 (μM)	
	GCV	PFA	GCV	PFA
Pt 1	14.5	300	27.5	860
Pt 2	9.5	290	>30	860
Controls	≤ 3	≤ 300	≤ 6	NA

Both PTS responded to PFA therapy with cessation of viral shedding in urine and blood, and subsequent retinitis progression did not occur until week 25 (Pt 1) or 12 (Pt 2) of PFA therapy.
Conclusion: PFA therapy may be effective for AIDS PTS with rapidly progressive CMV retinitis who have developed in vitro resistance to GCV.

Th.B.438 ANTI-CMV ACTIVITY OF FOSCARNET IN A RANDOMIZED CONTROLLED CLINICAL TRIAL FOR THE TREATMENT OF NON-SIGHT THREATENING CMV RETINITIS

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Objective: To evaluate the anti-CMV activity of foscarnet (fos) in patients on a clinical trial for the treatment of non-sight threatenting CMV retinitis.
Methods: A randomized controlled clinical trial was conducted in AIDS patients (pts) with non-sight threatening CMV retinitis to evaluate the therapeutic efficacy and activity of fos against CMV and HIV. 13 pts were randomized to receive immediate therapy (immed) and 11 pts to delayed therapy (delay) once progression of retinitis was noted. Fos was administered at 60 mg/kg IV q8h for 21 days (induct) followed by 90 mg/kg IV qd (maint), adjusted for creatinine clearance. CMV cultures were performed in duplicate in MRC-5 cells. Buffy coats and urines were cultured weekly during induct and delay and biweekly during maint. Cultures were maintained for 5 weeks before discarding.
Results: Data previously presented demonstrated that immed was more effective than delay in postponing progression of CMV retinitis ($p<.005$, Mantel-Cox) and that p24 antigen decreased in patients on fos who had detectable levels of p24 antigen ($p<.005$, Fisher's). 23/23 patients were viruric and 16/24 patients were viremic prior to induct. Immediately after induct, 9/21 were viruric ($p<.001$, McNemar's) and 0/21 were viremic ($p<.001$). Viremia generally cleared in 1 week and viruria within 2 weeks on induct. There was no difference in the clearing of CMV cultures after induct between patients on delay or immed arms. On maint, 2/15 patients became viremic and 6/15 remained viruric (p, NS).
Conclusions: With potent anti-CMV activity and previously demonstrated anti-retroviral activity, fos may become the treatment of choice for CMV retinitis in patients with AIDS.

Th.B.439 EFFECTS OF FOSCARNET ON CALCIUM HOMEOSTASIS IN MAN

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Objective: To determine the effects of foscarnet on serum ionized calcium (Ca++), parathyroid hormone (PTH) and 1,25-dihydroxycholecalciferol ($1,25(OH)_2D_3$) levels in man. In dogs, foscarnet treatment by continuous intravenous (IV) infusion is known to reduce Ca++ and elevate PTH and $1,25(OH)_2D_3$.
Methods: AIDS patients in a CMV retinitis study were tested weekly during induction and biweekly during maintenance therapy for random Ca++, PTH and $1,25(OH)_2D_3$ levels. Foscarnet was administered by intermittant IV infusion at a dose of 60 mg/kg q8 hours (induction) and 60, 90 or 120 mg/kg/day (maintenance). All patients were newly diagnosed with CMV retinitis at the time of their entry into the study.
Results: In the first 10 patients tested, foscarnet treatment caused no chronic change in Ca++. However, there was a trend for an increase in both PTH and $1,25(OH)_2D_3$ levels during periods of foscarnet therapy.
Conclusion: Foscarnet appears to have some effect on calcium homeostasis in man, as in dogs, but further study is required.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.440 GENITAL ULCERATIONS (GU) OCCURING DURING FOSCARNET (F) THERAPY.

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Objective: To describe a new side effect of F observed in AIDS patients (pts)
Methods: Between 1985 and 1989, AIDS pts who developed G.U under F therapy for CMV retinitis, were evaluated with biological, viral, bacteriological and histological investigations.
Results: Eleven homosexual men, mean age 38 years, developped erosive, bullous, tender ulcerations of glans penis and cervix glandis, size 1-5 cm, number 2-5. Oral localisations were associated in 4/11. Eight/11 had previous Kaposi sarcoma. Mean duration of AIDS was 16 months (1-37). Viral cultures were negative in 8/8, histology showed inflammatory infiltrate in 3/3, without viral inclusion. Neutrophil count was 1080 mm3 (400-1530), CD4 count 6 mm3 (2-11). Renal function was normal in 11/11. Other treatment included sulfamid 4/11. Lesions appeared in 7/11 during first induction after 16 days (10-27) d ; 2/11 during maintenance therapy after 9 and 178 days ; 2/11 during ulterior induction therapy after 11 and 15 days. Treatment was stopped in 7/11 because of pain: healing was obtained in 7/7 after 6 to 12 days. Reintroduction induced relapse in 2/2 after 2 days ; there was no healing when treatment was maintained.
Conclusion: Imputability criteria (delay of occurrence, healing after treatment interruption, relapse with reintroduction, absence of other etiology) suggest that G.U are a F. related eruption. Frequency of this previously undescribed side-effect of F. has to be estimated prospectively.

Th.B.441 SUPPRESSION OF CMV RETINITIS WITH HIGH DOSE INTRAVENOUS (IV) ACYCLOVIR (ACV)

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Objective: To evaluate the efficacy and safety of high dose IV ACV in combination with zidovudine (ZDV) as suppressive therapy for CMV retinitis in AIDS patients.
Methods: A single arm, open-label, phase 2 pilot study using ACV 10 mg/kg IV q 8 hours plus ZDV 200 mg p.o. q 4 hours as suppressive therapy for CMV retinitis. Patients selected met the following criteria: Ophthalmologically documented CMV retinitis with salvageable vision defined as visual acuity of 20/100 or better in at least one eye and successful completion of at least 14 days of induction ganciclovir (5 mg/kg IV q 12 hours) within 48 hours of enrollment; age >13 years; Karnofsky score >60% at entry; and ability to provide informed consent. Patients were to be treated for 12 weeks and followed weekly for drug toxicity and evidence of ophthalmologic progression.
Results: Since 7/89, 8 patients have been enrolled. Two patients are currently on study and stable at week 2 and 3, respectively. Of the remaining 6 patients, 2 were dropped from the study within the first week of therapy due to development of another life-threatening opportunistic infection. One patient progressed at 2.5 weeks concomitant with a diagnosis of disseminated MAI. One patient progressed at 4 weeks, but was only on drug approximately 50% of the time due to poor compliance. The other 2 patients progressed at week 7 and 8 of therapy. One patient developed reversible renal toxicity (creatinine 2.8) secondary to volume depletion from an intercurrent illness. Three patients required dose reduction of ZDV due to anemia.
Conclusion: Our preliminary results demonstrate high dose IV ACV is well tolerated and can be safely administered with ZDV. This regimen may be effective in suppressing CMV retinitis in patients who have completed successful induction remission therapy with ganciclovir; further efficacy evaluation will require larger numbers of patients.

Th.B.442 HUMAN MONOCLONAL ANTIBODY TO CYTOMEGALOVIRUS (TI-23): PHARMACOKINETICS AND TOXICITY STUDY IN HIV SEROPOSITIVE PATIENTS

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Objective: To determine the toxicity and pharmacokinetics of TI-23, a human anti-cytomegalovirus (CMV) monoclonal antibody in HIV seropositive persons.
Methods: TI-23 is produced from a fusion of human splenic lymphocytes with mouse myeloma cell line P3x63AgU1. TI-23 is an IgG1 with high neutralizing activity against CMV strains and no cross-reactivity with other herpes viruses.
TI-23 was administered as a single intravenous dose to 12 asymptomatic HIV and CMV seropositive but CMV buffy coat culture negative recipients in 4 dose ranges: 10 mg/m^2, 30 mg/m^2, 50 mg/m^2, and 80 mg/m^2. Specific TI-23 responses in the presence of native CMV antibody were determined using a highly sensitive anti-TI-23 antibody. Pharmacokinetics, toxicity and possible development of anti-idiotypic activity were followed for 7 weeks.
Results: The pharmacokinetics showed the T1/2 to be for 10 mg/m^2-13.0 days, 30 mg/m^2-13.7 days, 50 mg/m^2-17.5 days, and 80 mg/m^2-18.5 days.
No objective side effects were noted in any recipient. No laboratory abnormalities, evidence for immune complex formation or development of anti-idiotypic antibody were noted.
Conclusion: TI-23 is well-tolerated with a T1/2 approaching native immunoglobulin in HIV seropositive recipients. This data provides the basis for the testing of clinical efficacy of TI-23 in patients with symptomatic CMV disease, currently under way at the University of Arizona.
This study was supported by Teijin Limited.

Th.B.443 GASTROINTESTINAL CMV- MANIFESTATIONS IN AIDS

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OBJECTIVE: To describe clinical,diagnostic and endoscopic findings in gastrointestinal (GI) cytomegalovirus (CMV) lesions and their therapeutical response to therapy with ganciclovir.
METHODS: Upper and lower GI tract endoscopies were done in 250 AIDS patients with GI symptoms.CMV lesions were found in 85/250 (34%).Localisation of CMV lesions and association with clinical symptoms and response to therapy were monitored.
RESULTS: CMV manifestation as the most important enteric pathogen presented with abdominal pain (31/85 pts.), diarrhoea (31/85) and dysphagia (20/85) as the leading symptoms.Sites of mucosal lesions included esophagus (21/85), stomach(23/85),small bowel(12/85),coecum(10/85),colon(60/85) and rectum(13/85). Slight mucosal changes due to CMV appeared in 23/85 pts.,erosions and ulcers in 62/85.Comparing the methods for CMV identification,culture was positive in 70/85,immunhistochemical investigation in 65/85 and histology in 58/85 pts. A correlation between the grade of mucosal lesion and positive histology could be documented. 57 patients underwent therapy with Ganciclovir(acute th. and maintenance).Good clinical response was seen in 54/57 pts.,healing of the lesions in 52/57 and a virological response in 28/57 patients.
CONCLUSION: 1.CMV manifestations in the GI tract were found in 1/3 of symptomatic AIDS patients. 2. GI symptoms like dysphagia, diarrhea or abdominal pain should lead to endoscopy for early diagnosis and treatment of CMV. 3.Distribution of CMV lesions shows manifestations in all parts of the GI tract. 4. 72,9% of the patients present with severe mucosal lesions like erosions or ulcerations. 5. Ganciclovir had good clinical, endoscopic and histological efficacy in most of the patients.

Th.B.444 CMV ENCEPHALITIS IN AIDS PATIENTS: FREQUENCY AND SIGNIFICANCE OF DIAGNOSTIC PROCEDURES. RESULTS FROM A CLINICO-PATHOLOGICAL STUDY

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Objective: To evaluate the frequency and clinical manifestations of CMV encephalitis and the significance of diagnostic procedures.
Methods: Analysis of data from AIDS patients (n=65) with a complete clinical follow-up and autopsy investigation. CMV diagnosis: serology, culture (respiratory secretions, urine), investigation of tissues specimens, obtained clinically or at autopsy with culture, routine histological evaluation, immunohistochemistry (APAAP) and in situ hybridization.
Results: Evidence of CMV infection was found in a total of 54 of 65 cases. A disseminated CMV infection proven by histology was found in 12 cases clinically and in further 9 cases at autopsy. In 3 of these 21 cases a CMV encephalitis was present. In 2/3 cases CMV encephalitis was the sole CNS lesion. Neurologically, all 3 patients suffered from severe dementia without focal neurological symptoms. Cerebral CT and magnetic resonance imaging failed to detect morphological changes. CSF analysis was normal, CSF culture was negative in 2 cases examined.
Conclusions: CMV encephalitis is not frequent in AIDS patients with disseminated CMV infection. CNS involvement should only be considered if other more common etiologies have been ruled out. The clinical diagnosis is difficult since neurological findings are unspecific, and radiological evaluations and CSF analysis are without diagnostic significance.

Other Viral Opportunistic Infections

Th.B.446 EVOLUTION OF FOSCARNET AND ACYCLOVIR RESISTANT HERPES SIMPLEX INFECTION IN RESPONSE TO THERAPY.

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Objective: Foscarnet resistance developed in severe genital Herpes Simplex Virus 2 (HSV2) infection in a young woman with AIDS. Partly successful symptomatic management of lesions was achieved with topical interferon (IFN) and trifluorothymidine (TFT).
Methods & Results: Our patient presented with HSV2 unresponsive to iv acyclovir (ACV). Isolates from lesions lacked viral thymidine kinase activity. After 10 months of symptomatic disease, she had complete healing of genital lesions within 10 days of commencing Foscarnet (FOS) therapy. Recurrent disease after six months required further prolonged FOS therapy, without complete clearing of lesions. ACV/FOS resistant strains were hypersensitive to aphidicolin. This mapped FOS resistance to a viral DNA polymerase mutation, confirming sequential evolution of clinically significant resistance to available antiviral agents. FOS associated nephrotoxicity necessitated topical therapy, and after failure of idoxuridine cream and then IFN (10^6u/ml) gel, combined TFT (0.5%)/IFN ($2x10^6$u/ml) gel produced considerable but incomplete healing. ACV/FOS resistant strains were sensitive to TFT and synergy between TFT and IFN was demonstrated.
Conclusions: The sequential evolution of DNA pol mediated FOS resistance in a TK-strain from severe mucocutaneous lesions suggests two distinct mutation events mediating clinically significant antiviral resistance. Few therapeutic alternatives remain, and good symptomatic relief has been obtained with topical IFN/TFT gel.

Th.B.445 BRONCHOSCOPY CULTURES FOR THE DIAGNOSIS OF CYTOMEGALOVIRUS (CMV) PNEUMONIA

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Objective: To assess the potential usefulness of bronchoscopy cultures for the diagnosis of CMV pneumonia in patients with AIDS.
Methods: We correlated detection of CMV in bronchoscopy specimens by culture with definitive diagnosis of CMV pneumonia at autopsy in 60 AIDS cases from LAC-USC MC and 26 AIDS cases from NEDH. Cultures positive for CMV were counted as true positive (TP) in cases with CMV pneumonia diagnosed postmortem and as false positive (FP) without CMV pneumonia at autopsy. Cultures negative for CMV were counted as true negative (TN) in cases without CMV pneumonia and as false negative (FN) with CMV pneumonia at autopsy.
Results: CMV pneumonia was diagnosed postmortem in 19 (32%) of the 60 LAC-USC cases, with 70 cultures, including 19 TP, 25 TN, 19 FP and 7 FN cultures. CMV pneumonia was present at autopsy in 12 (46%) of the 26 NEDH cases, with 37 cultures, including 8 TP, 13 TN, 11 FP and 5 FN cultures. Restricting the analysis to cultures within 2 months of autopsy and the culture closest to autopsy in each case left 47 cultures: 15 TP, 19 TN, 10 FP and 3 FN. These cultures had 83% sensitivity for diagnosis of CMV pneumonia, 66% specificity, a 60% positive predictive value and an 86% negative predictive value.
Conclusions: A negative bronchoscopy culture for CMV has moderate potential utility for excluding the diagnosis of CMV pneumonia but a positive culture has very limited utility for making this diagnosis, presumably due to the nonspecific shedding of CMV in oropharnygeal secretions of AIDS patients.

Th.B.447 FOSCARNET (PFA) INDUCTION AND MAINTENANCE THERAPY FOR ACYCLOVIR-RESISTANT (ACV-R) HERPES SIMPLEX (HSV) INFECTIONS IN AIDS.

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Objective: To determine the safety, clinical and virologic efficacy and maintenance therapy (Rx) requirements of PFA for ACV-R HSV infections in AIDS patients (pts).
Methods: Six AIDS pts with persistant HSV infections (5-perianal, 1-facial) clinically and virologically well-documented to be resistant to ACV (ID_{50} >50 micromolar) were randomized to IV PFA induction (40 mg/kg q 8h X 14-35d) with (N=3) or without (N=3) IV PFA maintenance (40 mg/kg/d). Pts developing recurrence of lesions following initial induction or 10 wk maintenance were re-induced / re-maintained with PFA Rx.
Results: Cessation of HSV shedding was documented after 3-7 days of PFA Rx in all patients. Significant or complete crusting and healing of lesions was seen in all pts following induction Rx (14d, N=3; 21d, N=2; 35d, N=1). HSV lesions recurred within 1-3 wks in all 3 pts not receiving maintenance Rx. PFA maintenance Rx was effective in suppressing clinical recurrence of HSV lesions for up to 10 wks; recurrences occurred in all pts when maintenance Rx was discontinued. One pt required 60 mg/kg/d for effective maintenance Rx. Re-induction courses have been successful in all pts treated: 2 pts have been re-induced up to 4 times. One pt developed severe renal insufficiency after prolonged induction therapy; no other significant renal toxicity has been seen. Minor, reversible fluctuations in serum calcium, magnesium and phosphorus have been witnessed. No significant neurologic toxicites have been observed. One pt has developed a persistant penile lesion.
Conclusion: PFA induction and maintenance Rx is safe and effective for ACV-R HSV infections. Maintenance PFA Rx is effective in the continued suppression of HSV and support of healed lesions. Re-induction Rx following recurrence is successful to suppress re-current lesions. No clear evidence of PFA-resistant HSV infection has been seen to develop.

Th.B.448 HERPES ZOSTER AND HIV INFECTION IN RWANDA

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Objective: to describe the clinical and epidemiological features of HIV related Herpes Zoster (HZ) in Rwanda, a country in Central Africa where the HIV infection and AIDS are common.
Methods: Between january 1985 and november 1989, 793 patients choosen from the Dermatology Clinic's attendants were screened for HIV1 antibodies. The relationship between HIV seropositivity and presentation with HZ was investigated by chart review of these patients.
Results: Of the 617 seropositive patients, 240 (39%) presented with HZ; 90% of all patients presenting with HZ where HIV seropositive. The average age was 30 years, 85% were between 21 and 40 years. All dermatomes were involved, specifically thoracic (45.2%), cervical (24.5%), lumbar (17.5%), cranial (11.4%), and sacral (1,3%). Only one patient, an eight year old child, had generalized involvement. Among 28 patients (11.6%) with HZ relapses, 23 had 2 HZ episodes, and 5 had 3. HZ was the first presenting sign of HIV infection in 149 patients (62%). At the first consultation, only 45 patients met the WHO Clinical Definition of AIDS in Africa (20%). The distribution according to sex, marital status, professional occupation and social environment followed the epidemilogical profile of HIV infection in Africa. 17 patients are known to have died with a mean survival time of 3 years from the first episode of HZ. In the same Clinic, the HZ incidence has progressively increased from 1985 (1,5%) to 1989 (3.5%).
Conclusion: Among dermatological manifestations of HIV infection and AIDS, HZ is common and early manifestation. HZ could be used as a sentinel sign to measure the prevalence of HIV infection in a population such as the one reported above.

Th.B.449 CLINICAL AND EPIDEMIOLOGICAL CONSIDERATIONS ON 31 CASES OF PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY (PML) IN AIDS

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Objective:1) To assess the prevalence of PML in a large autoptical series of AIDS cases. 2) To idetify early clinical signs of PML.Methods:A series of 385 consecutive AIDS autopsies performed at L.Sacco Hospital, Milan from 1984 to 1989 was rewieved. Histological diagnosis of PML was confirmed by anti SV40 MoAb and/or JC virus specific probes.Results:PML was demonstrated in 31/385 AIDS cases(8%); 30 were males and 1 female (mean age 31+9 years), 26 drug addicts, 3 homosexuals, 2 with unknown risk factor.CNS pathology due to JC virus alone was observd in 13 cases, being PML in the other 18 patients associated with: HIV encephalopathy(13), Toxoplasmosis(6), brain limphoma(3) and CMV encephalitis(1). Extremity weakness(7), mental status(5), gait(4) and visual(2) disturbances, cranial nerves palsy(2) headache(1) dysarthria(1) were the initial neurological complaints, in the cases with PML alone. Hypodense white matter CT scan lesions were seen in 9/13 patients. MR imaging showed typical lesions in 2 more cases. Routine CSF analysis gave non specific results.
Conclusion:PML has a relatively high incidence.Many clinical features can overlap with those of the frequently associated CNS opportunistic and HIV related lesions; PML must be suspected even in the presence of aspecific neurological findings.

Th.B.450 PREVALENCE OF POLYOMAVIRUS INFECTION IN BRAIN TISSUE FROM AIDS PATIENTS DETECTED BY DNA HYBRIDIZATIONS.

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Objective: we have conducted a prospective study to determine the prevalence of polyomavirus (BK virus and JC viruses) in brain tissue from AIDS patients suspected of having CNS virus involvement.
Methods: Brain material were frozen immediately after autopsy and stored at -70°C. DNA from frozen tissue was treated with proteinase K and SDS in NTE, followed by phenol/chloroform extractions. After extensive dialysis, RNase treatment and phenol extraction, DNA was ethanol precipited and resuspended in TE buffer. DNA fractions were immobilized on nylon membrane either directly using a slot-blot apparatus or after restriction enzyme digestion, electrophoresis through horizontal agarose slab gels and transfer to nylon membrane using the Southern blot procedure. All blots were hybridized with the JCV DNA and BKV DNA probes.
Results: Twenty four brain tissue specimens have been tested by these technics. By slot-blot hybridization, 3 of these specimens were positive for both viruses. However when using Southern hybridization and stringent conditions, weak hybridization was observed with BKV DNA probe and the JCV probe gave a strong signal in all 3 cases.
Conclusion: We have been able to detect and to identify, among 24 AIDS patients with no history of progressive multifocal leucoencephalopathy, 3 persistent JC virus. To increase the sensitivity of BKV and JCV detection, we are now using PCR method and preliminary results will be presented.

Th.B.451 NATURALLY ACQUIRED ANTIBODY TO HEPATITIS B SURFACE ANTIGEN IN HIV INFECTED PATIENTS.

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Introduction : HIV infection may interfere with the natural course of hepatitis B virus (HBV) infection and failure to show an adequate antibody response to hepatitis B vaccine has been described. In this study, we examine the level and the evolution of antibody to hepatitis B surface antigen (anti-HBs) according to the stage of HIV infection.
Patients (pts) and methods : HBV markers were determined by radio-immunoassay. Serum samples were available from 61 pts (47 males and 14 females), 21 blacks, 35 whites, 5 hispanics with a mean age of 41 years. All pts were positive for anti-HBc. Twenty-three pts had a 12 months follow-up.

Results	Anti-HBs level (IU/l) Mean	Median	< 50	CD4/mm3 Mean
Group II - III (N=18)	13018	120	50 %	509
Group IVA IVC2 (N=20)	1174	145	40 %	185
Group IV C1 (N=21)	340	45	52 %	116

* chronic HBV carriers excluded

Results	Anti-HBs level (IU/l) Mean	Median	< 50	CD4/mm3 Mean
Time 0 (N=23)	8390	160	22 %	394
12 months (N=23)	4375	130	52 %	317

Conclusion : Decrease in anti-HBs level with disease progression did not reach statistical significance (P=0.07). There was no correlation between anti-HBs level and CD4 cell count (r=0.192; P=0.14). The % of low responders (< 50 IU/l) and of chronic HBV carriers were the same in the 3 groups. Decrease in anti-HBs level after 1 year was statistically significant (Δ log - 0.212 $\pm$ 0.78; P < 0.02); increase in low responders % after 1 year was non significant; comparison with a control population and correlation between anti-HBs level and igG level will be presented. Pts will be added.

Th.B.452 SEROPREVALENCE OF HEPATITIS C VIRUS ANTIBODIES IN HIV EUROPEAN SEROPOSITIVE PATIENTS.

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Objective : Seroprevalence evaluation of HCV comparatively to seroprevalence of HBV and HDV in a population of HIV seropositive patients.
Material and methods : 150 HIV seropositive patients living in France, well documented (source of contamination, clinical assessment according to WHO HIV criteria) were studied. All sera were tested for HBV and HDV markers and by Ortho HCV ELISA for anti HCV. Sera were considered HCV positive if ratio : serum absorbance/cut off was ≥1.4
Results : The total seroprevalence of HCV was 41.33 %. Seroprevalence according to ethnic origin (Africans : 33.33 %, Europeans : 43.16 %) and risk factors was as follow.

Homosexuals	Bisexuals	IVDA	Patients transfused	Travellers
14.29 %	28 %	81.64 %	61.64 %	25 %

Seroprevalence increased with clinical grade of HIV disease. No significative variation was observed according to the sex (M : 41.74 %, F : 43.75 %). Seroprevalence was higher (53.85 %) in < 20 years old patients group. Seroprevalence was also studied according to HBV markers, giving following results : AgHBs (+ : 38.09 %, - : 43.22 %), Ab HBc (+ : 52.94 %, - : 25.92 %). Increased transaminase levels were found in 12.3 % HCV + and 2.3 % HCV -.
Conclusion : The results found among homosexual patients and among IVDA patients in this study are higher than those found in the same risk groups in Europe : IVDA : 74 %, homosexual HIV + patients : 5 %. HCV markers might be systematically researched in HIV seropositive patients.

Cryptococcus

Th.B.454 RELATION BETWEEN DECREASING SERIC CD_4 LYMPHOCYTES COUNT AND OUTCOME OF CRYPTOCOCCOSIS IN AIDS PATIENTS : A BASIS FOR NEW DIAGNOSIS STRATEGY.

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Cryptococcis (C.D.) due to Cryptococcus neoformans is the most frequent disseminated fungal infection in AIDS patients (pts). Its prognosis depends on the precocity of treatment. Screening for soluble cryptococcal antigen (SCA) in sera is the easiest way for early diagnosis and consequent early treatment.
Objective of the study : to determine on the basis of a seric CD_4 lymphocytes (L) count HIV infected pts who are at risk for C.D. and consequently are the best candidates for systematically repeated screening with SCA and/or prophylactic therapy.
Patients and Methods : In 39 symptomatic AIDS pts with C.D. seen in the Eastern Paris hospitals from June 1984 to December 1989, 31 were selected on the basis of an available seric CD_4 L. count at the time of diagnosis of C.D.; diagnosis proved by positive direct examination and/or positive culture and/or the presence of SCA detected by latex agglutination.
Results : All pts but one (96,8 %) had CD_4 L. counts < 100/µl, at the time of diagnosis, 27 pts (87 %) had a CD_4 L. count < 75/µl. SCA in sera was positive in 28 pts (90,3 %).
Conclusion : In HIV infected pts, risk for C.D. is mainly related to a seric CD_4 L. count < 100/µl. We conclude that the diagnosis interest of systematically repeated screening for SCA in sera should be investigated in symptomatic and even asymptomatic pts with such low CD_4 L. count.

Th.B.453 THE ROLE OF HEPATITIS C (HCV) AND HIV INFECTIONS IN THE CHRONIC LIVER DISEASE OF HEMOPHILIACS

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Objective: Hepatitis C virus is associated with non-A, non-B hepatitis (NANBH) which is a major cause of chronic liver disease. Chronic hepatitis (CH) is a frequent cause of mordidity in hemophiliacs who consist a unique population to determine the impact and interactions of HCV and HIV infections in CH.
Methods: 210 hemophiliacs, 165 with hemophilia A (HA), 34 with hemophilia B (HB) and 11 with Von Willebrand disease (VWD) were included in follow up studies since 1980. The antibodies to HCV (anti-HCV) were tested with an ELISA (Ortho Diagnostics).
Results: The prevalence of anti-HCV was 183/210 (87.1%). Presence of anti-HCV was not related to age and it was more common to HA (88.5%) and HB (88.2%) than VWD (63.6%). It was associated to the infusion rate of concentrates in HA but not in HB and it was higher to HIV (+) (90.3%) than to HIV (-) hemophiliacs (78.6%). The prevalence of anti-HCV in hemophiliacs with normal, transiently elevated and persistently elevated ALT values was 72.0%, 90.6% and 100% respectively ($p<0.0001$). Presence of anti-HCV was not associated to hepatomegaly and spleenomegaly [relative risks (RR) 1.33 and 1.06 respectively]. However, anti-HIV was strongly associated to hepatomegaly (RR=7.26, $p<0.0001$) and spleenomegaly (RR=5.30, $p<0.001$). Presence of HIV did not modify the effects of HCV and vice versa.
Conclusions: 1) Hepatitis C virus is associated with biochemical evidence of chronic hepatitis. 2) Liver and spleen enlargement in hemophiliacs are not related to the HCV infection but they are strongly associated with HIV infection.

Th.B.455 PULMONARY CRYTOCOCCOSIS IN AIDS PATIENTS

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Objective : To study the incidence, presentation and clinical course of pulmonary cryptococcosis (PC) in AIDS patients (pts).
Methods : Thirty nine pts with AIDS and cryptococcosis diagnosed between January 1982 and December 1989 were reviewed retrospectively. Twenty pts had documented PC but data of 18 were available for review.
Results : Fifteen of the 18 pts were male. Age range was 23-64 (mean 36,4). Risk factors for HIV infection included homosexuality (12), blood transfusion (1), zairian (2), heterosexuality (3). Cryptococcosis was the initial opportunistic infection (OI) in 4 pts. Of the 18 with PC, clinical presentation especially included : fever (15), weight loss and asthenia (15), cough (13) and dyspnea (10). Chest X-Ray patterns were very polymorphic : the most common finding was interstitial infiltrates (12) of which 11 had coexistent OI : pneumocystosis (9) associated in 2 pts with Cytomegalovirus (1) and Mycobacterium avium complex (1), Cytomegalovirus alone (1). Soluble cryptococcal antigen (SCA) was positive in all sera tested (17), ranged from 1/8 to > 1/100 000. Cryptococcus neoformans was found in bronchoalveolar lavage (16), sputum (1), pleural fluid (1), lung at autopsy (2). PC remained confined to lungs in 4 pts. Positive simultaneous extrapulmonary cultures (cerebrospinal fluid, skin, spleen, bone marrow, urine, ...) were found in 14 pts. Fifteen pts were treated in first intention by Amphotericin B (AMB) alone (1), AMB + 5FC (4) and fluconazole (10). 2/3 pts with isolated PC had negative follow up sera SCA after 3 months of fluconazole. 8/11 treated pts with concomittant meningitis died with a mean survival of 4,5 months.
Conclusion : PC in AIDS pts occurs more frequently than previously reported (20 of the 30 tested pts : 66.7 %). Radioclinical features are not specific. Prognosis depends of in which stage of cryptococcosis is the pt at the time of the diagnosis : mortality may be reduced if the PC is treated before extrapulmonary dissemination.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.456 EFFECT OF PRONASE TREATMENT ON CRYPTOCOCCAL ANTIGEN TESTS ON SPECIMENS FROM AIDS PATIENTS

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Objective: We evaluated the effect of pronase on cryptococcal antigen (CA) detection, titers and unclear test reactions.
Method: Ninety-seven sera and 42 CSF from 37 HIV+ patients(pts) were tested before and after pronase with the Meridian Diagnostics kit.
Results: Twenty-six(27%) sera (no CSF) were negative before and positive after pronase. Titers on these sera ranged from 1:4 to 1:4096. The geometric mean titers before and after pronase in sera were 1:45 and 1:583 and in CSF were 1:97 and 1:79, respectively. Titers on 57% of sera increased after pronase by 2-13 dilutions, none decreased. Prozone reactions occurred on 9% of sera and were eliminated with pronase. Titers with unclear reactions were resolved with pronase. CA titers were the same on repeat testing of 96% of 53 CSF without pronase and 94% of 35 sera after pronase. Antifungal agents or their metabolites added to sera or freeze thaw cycles on sera did not change CA titers. Twenty-six sera and 28 CSF from 44 pts without cryptococcal disease were negative before and after pronase.
Conclusion: Pronase, previously reported to eliminate false positives, eliminates false negative, prozone-like reactions and unclear test reactions for CA titers on serum. Pronase treatment of serum but not CSF is recommended with the Meridian kit.

Th.B.457 THE SIGNIFICANCE OF ISOLATED POSITIVE CEREBROSPINAL FLUID CRYPTOCOCCAL ANTIGEN IN HIV-INFECTED PATIENTS.

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Objective: To determine the incidence and significance of isolated positive (+) cryptococcal antigen assay (CA) from CSF in HIV+ patients (pts).
Methods: All CA performed between 12/87 and 4/89 were identified. Cases in which CA was + in the cerebrospinal fluid (CSF) but not in the serum and cultures were negative were regarded as isolated positive (IP) tests. Records of these pts were reviewed for other evidence of cryptococcal infection (CI), HIV status and amphotericin B therapy (AmB).
Results: 48 of 635 CSF specimens (7.5%) tested + for CA. Of the 48 + tests, 27 (56%) had + CSF cultures and were eliminated from the analysis. Inverse CSF titers in this group were 4 to 10240 (mean=1618). Of the remaining 21 + results, 10 were from 10 HIV- pts and were excluded. 11 (23%) were from 9 HIV+ pts. Inverse titers in the HIV+ pts were 1 to 20 (mean=4.9). 2 of 9 (22%) HIV+ pts received therapeutic courses of AmB. Of the 7 pts who received no therapy, 1 (14%) was found to have active CI 6 months (m) after the initial + CA (regarded as true +), 3 (42%) had no evidence of active infection on followup of 3 to 11 m (possible false +), 1 (14%) had no evidence of CI at autopsy 1 m after initial + CA (definite false +), incomplete data was available on the remaining 2 pts.
Conclusion: Isolated + CSF CA tests were common in HIV+ pts. Titers were substantially lower than in cases where CI was documented by other means. A significant proportion appear to be false +. Supporting evidence of CI should be sought in such cases prior to the institution of AmB if the clinical condition of the patient is stable.

Th.B.458 AIDS-RELATED CRYPTOCOCCOSIS IN RWANDA, EPIDEMIOLOGICAL FEATURES.

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** INSERM U. 330, Bordeaux, France,*** Institute of Tropical Medicine, Antwerp, Belgium.

Objective: To study the epidemiological features of AIDS-related cryptococcosis (C) in Kigali, Rwanda, between January 1983 and December 1989.
Methods: 1. Each patient with suspected meningitis (meningeal signs and/or unexplained fever, headache, altered mentation) had a CSF examination including a wet mount microscopy, a latex agglutination test for the detection of cryptococcal antigen and culture on various media. For each patient with documented C, age, sex, date of diagnosis, loss for follow-up and/or death were recorded. 2. During two study periods (05/15/89-06/15/89 and 10/30/89-11/07/89) on the etiology of febrile illnesses in adults, each patient had a blood culture including the blood lysis system to screen bacteremia and fungemia on admission.
Results: 1. The annual incidences of cryptococcal meningitis from 1983 to 1989 showed the following profile: 1983: 1 (1M), 1984 1 (1M), 1985: 14 (10M, 4F), 1986: 19 (16M,3F), 1987: 35 (25M,10F), 1988: 41 (28M,13F), 1989: 72 (51M,21F). During this observation period CSF specimens were obtained from 630 men and 425 women giving respectively 132 and 51 cryptococcal infections ($X2 = 14.52$; $p<0,01$). C. neoformans was by far the most important pathogen isolated from CSF. 2 C. neoformans was cultured from the blood of 13 out of 162 (8%) HIV positive patients admitted to the hospital because of febrile illness and from a total of 269 (5%) patients with fever.
Conclusions: In spite of sufficient laboratory facilities, cryptococcal infections were not diagnosed in Rwanda prior to 1983. Since then, there has been an obvious increasing incidence of AIDS-related cryptococcosis in Kigali probably reflecting an increase of AIDS-cases. Health workers in Central Africa should consider cryptococcosis in a differential diagnosis of fevers in areas with high prevalence of HIV infection.

Th.B.459 INTRAVENOUS AND ORAL FLUCONAZOLE IN THE TREATMENT OF ACUTE CRYPTOCOCCAL MENINGITIS.

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OBJECTIVE: To assess the efficacy and tolerance of fluconazole (fcz) in the treatment of acute cryptococcal meningitis.
METHODS: Protocol I: 11 consecutive patients with acute cryptococcal meningitis received I.V. fcz 400mg loading dose, followed by 200mg/day for 2 weeks, then 200mg/day orally thereafter, with a doubling of dose if disease progressed. Protocol II: Fcz was given at 400mg/day I.V. after an 800mg loading dose, to determine if doubling the dose initially is more effective.
RESULTS: In Protocol I, 9 of 11 patients improved up to 10 weeks and 4 of 11 up to 40 weeks; 2 of 4 were cured after 56 weeks. Doubling the dose was necessary in 8 of 11 patients (between 2.5-12 weeks). 6 of 11 relapsed between 10-41 weeks and were switched to amphotericin-B. 2 died within 5 days of starting treatment. CSF cryptococcal antigen titers did not correlate with clinical remission. In protocol II, 4 of 5 improved for 6 weeks, but 2 of 4 relapsed later. 1 patient became comatose on day 2 of fcz. No side effects attributable to fcz occurred in 16 patients.
CONCLUSIONS: Fluconazole is effective in inducing remission (82%) in previously untreated acute cryptococcal meningitis, although microbiological cure was achieved in only 2 cases. Doubling of the dose did not influence progression of disease in protocol I. More data on protocol II will be presented, but preliminary observation shows no significant difference in efficacy and toxicity from protocol I.

Th.B.460 FLUCONAZOLE (Flu) : A FIRST-LINE DRUG FOR CRYPTOCOCCOSIS (C) IN AIDS.

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*Hop Purpan, Toulouse, **Hop Archet, Nice, ***Hop Gui Chauliac, Montpellier, France.

From 06.85 to 09.89, 29 AIDS pts have been treated for C. There were 28 M/1 F, mean age:37 yrs (±10,6), HIV infected via sexual (22) contact, I.V.D.U. (9) or blood transfusion (2). C. was the 1st manifestation of AIDS in 18 pts (62%). Disseminated C. defined as a positive latex test in blood (24) or CSF (21), or a positive blood (11) or CSF (23) culture occured in 28 pts ; 1 pt presented with a localized pulmonary C. Mean T4 counts was 67,6/mm3 (±77). Amphotericin B (Am. B = 0,5 mg/kg/d with 5 FC in 5 pts) from 06.85 to 02.88, Flu (200-400 mg/d) from 08.87 to 09.89 have been used successfully in 22 pts, for a mean of 49,5 days (SD:15,8).

		Am. B (n:11)	Flu (n:18)
Apyrexia at day		11 ± 3,9	10,4 ± 4,3
Early death		2	5 p/0,45
Neg. culture (d:15-50) in blood		5/6	10/10
	CSF	4/8	7/11
Adverse effects		6	0

Twenty-one pts have received a maintenance treatment: Flu (100-200 mg):15, Am.B:2, 5FC:3, Itraconazole:1 ; 4 pts relapsed: 3 had stopped treatment, one in spite of 5FC. Survival rates at M6, M12, M24 were 52%, 32% and 19% whatever initial treatment was. Flu should represent the drug of choice as initial and maintenance treatment of C. in AIDS.

Other Opportunistic Fungal Infections

Th.B.462 THE INCIDENCE OF COLONIZATION AND INVASIVE DISEASE IN A POPULATION OF AIDS PATIENTS WITH ASPERGILLUS SPECIES

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Objective: To determine the incidence of colonization and invasive aspergillosis (IA) in a population of AIDS patients with Aspergillus species.
Methods: Retrospective review of the medical records (including autopsy data when available) for all patients with Aspergillus isolated from sputum antemortem.
Results: Among 902 patients with AIDS who have been followed at MSKCC, there have been 40 patients (4.8%) who have been colonized with Aspergillus spp., based on positive sputum culture. Aspergillus fumigatus was isolated from 26 patients (65%), A. niger from 10 patients (25%), and A. flavus from 4 patients (10%). One case of IA was documented and treated antemortem with amphotericin-B in a patient with lymphoma on cytotoxic chemotherapy and corticosteroids, with no evidence of aspergillosis found at autopsy, and death attributed to cytomegalovirus (CMV) enterocolitis. Of 504 deceased AIDS patients, autopsies were performed on 212 (42%). There was evidence of IA confined to the lung in 2 cases. One had lymphoma and was receiving cytotoxic chemotherapy; the other had Kaposi's sarcoma and was neutropenic from gancyclovir therapy for CMV retinitis; one of these patients had sputum positive for Aspergillus antemortem.
Conclusions: 1. Aspergillus is a frequent colonizing organism in patients with AIDS. 2. Invasive disease from Aspergillus is a rare complication of AIDS and appears in patients with traditional risk factors for IA.

Th.B.461 LACK OF SURVIVAL BENEFIT AND FREQUENT NEUROLOGIC COMPLICATIONS OF INTRATHECAL AMPHOTERICIN B FOR CRYPTOCOCCAL MENINGITIS

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OBJECTIVE: To determine whether addition of intrathecal (IT) amphotericin B would improve outcome in patients with AIDS and cryptococcal meningitis when compared with standard therapy.
METHODS: The population was AIDS patients at LAC/USC Medical Center with culture proven cryptococcal meningitis. Patients were randomly allocated to standard therapy with or without IT amphotericin B. Standard treatment consisted of amphotericin B at ≥ 0.3 mg/kg/d plus flucytosine at 150 mg/kg/d. IT amphotericin B was given by cisternal puncture in escalating doses for 6 days to a maximal dose of 0.5 mg/dose, which was then given 3 times a week.
RESULTS: Fifteen patients (10 IT therapy, 5 conventional therapy) were enrolled. Among those assigned to IT therapy, 1 received no IT injections and 1 received only 1 injection and then developed thrombocytopenia precluding further IT injections; 4 died and 4 had spinal cord injury manifested by paraplegia and/or urinary retention, which ultimately resolved in all patients. Among patients assigned to standard therapy, 1 of 5 died.
CONCLUSIONS: Intrathecal amphotericin B offered no survival benefit and was associated with frequent, severe, yet ultimately reversible spinal cord injury.

Th.B.463 ASPERILLUS INFECTION IN AIDS

Just-Nuebling, Gudrun [1]; Helm, E.B.[1]; Laubenberger C.[1]; Falk, S.[2], Keul, HG.[2]; Hübner, K.[2]; Gräfin Vitzthum, H.[3]; Wölki, U.[3], Schlote, W.[3]; Stille, W.[1]
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Objective: Aspergillus infections are a complication known to occure in the immunocompromised host. With this study we report on incidence as well as the clinical and pathological findings of invasive Aspergillosis in AIDS-patients.
Methods: Between 5/82 and 12/89 510 patients with full blown AIDS were treated at our hospital. During this time 288 subjects died. 155 underwent autopsy with special regard to Aspergillosis. In addition sputum and or bronchial lavage fluid from 125 survivors were analysed for the presence of Aspergillus.
Results: In 11(9%) out of 155 autopted patients, an invasive Aspergillosis was found. Lung infections (n=10), CNS-infections (n=5), kidney (n=3) and thyroid infections (n=2) could be demonstrated. Only 1 had been diagnosed intra vitam. All subjects had either granulocytopenia (n=6), other pulmonary infections (CMV n=7, PCP n=6) resp. tumors (KS n=3) or were under steroid therapy (n=9). In addition two cases with proven pulmonary Aspergillosis were successfully treated with Itraconazole.
Conclusion:
1. Aspergillus infection may occure in the progressed stage of AIDS.
2. Predisposing factors are granulozytopenia, long term steroid therapy and other opportunistic lung infection resp. tumor.
3. Pulmonary Aspergillosis can be treated with Itraconazole.

Th.B.464

PULMONARY ASPERGILLOSIS (ASP) IN AIDS:PATTERNS OF DISEASE (dis.), PREDISPOSING FACTORS AND OUTCOME IN 12 PATIENTS (P).

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Objective:To describe the features of pulmonary ASP in AIDS, as infrequently reported in AIDS P although common in other immunocompromised P.
Methods:Diagnosis (D) of ASP was confirmed by:autopsy 2, aspiration of lung or rib 4, bronchoalveolar lavage culture (cx) positive with no other pathogen and new clinical and/or radiologic abnormalities (C/R abnorm.) 4, microscopy and cx of sputum plugs with new C/R abnorm. 2.
Results:Predisposing factors were AIDS 11, HIV+ 1; neutropenia <500 6/9; steroids 5/12; marijuana use 2/8; CMV dis. 4/12. Mean/median time to D ASP 23.7/25 mos. after D AIDS. Four patterns of dis. were seen:cavitary upper lobe, usually bilateral 4; lower lobe with major respiratory symptoms and bronchial plugging 2 or invasive dis. 3; pulmonary nodules 1; pleural dis. with extrapulmonary spread 2. Symptoms=non-productive cough (C) 6, productive C 3, hemoptysis 1, chest pain 3, dyspnea 5, fever 7, night sweats 2, none 1. All P had abnorm. chest x-ray though abnorm. subtle in 2 with diffuse lower lobe dis. 1 P also had ASP sinusitis. Response seen in 3/4 evaluable amphotericin Rx (1 relapse); 4/6 itraconazole Rx (1 recrudescence). 2 P received no Rx. 4 P died of ASP, 4 died with possibly active dis.; 4 alive with controlled dis.
Conclusion:Pulmonary ASP in AIDS has many presentations, may follow neutropenia and/or steroids, occurs late in AIDS and usually responds to Rx.

Th.B.465

PROSPECTIVE COMPARATIVE STUDY OF GENTIAN VIOLET, KETOCONAZOLE AND NYSTATINE TO TREAT ORAL AND OESOPHAGEAL CANDIDIASIS IN AIDS PATIENTS.

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1. Projet SIDA; 2. Belgian-Zairian Cooperation; 3. Mama Yemo Hospital, Kinshasa, Zaire; 4. I.T.M., Antwerp, Belgium.

Methods: AIDS patients (pts) hospitalized in the internal medicine wards of Mama Yemo Hospital with oral and oesophageal candidiasis were randomized to receive gentian violet 0.5 %, b.i.d. (G), or nystatin (N) 500.000 U q.i.d. mouth washes, or oral ketoconazole (K) 200 mg/d, until complete resolution of oral lesions and dysphagia. Pts treated with mouth washes swallowed their medication after mouth washing. Follow-up after 7 and 14 days included oral examination and microscopy of oral scrapings. Oesophagoscopy plus biopsy was repeated after 14 days therapy.

Results:

	V (n=28)	K (n=28)	N (n=27)
Dysphagia disappeared/# pts with dysphagia evaluated after 7 days:	8/12	6/16	5/14
14 days:	7/10	7/11	6/11
Oral lesions disappeared/# pts seen after 7 days:	4/18	4/20	4/19
14 days:	4/12	6/13	2/15
Mycelia present in oral scraping/# scrapings done after 7 days:	7/18	13/20	15/19
14 days:	6/12	5/13	12/15
Oesophageal candidiasis present/# oesophagoscopies at 14 days:	10/10	9/11	12/13
# Oesophageal biopsies positive for yeasts/oesophageal biopsies performed at 14 days:	5/8	4/9	7/11

None of the differences observed between treatments were significant.
The overall mortality rate at 14 d was 35.1 %, and 5 patients were lost to follow-up.
Conclusions: The preliminary results of this study indicate that gentian violet may be as effective as ketoconazole or nystatin in oral candidiasis. However, oesophageal candidiasis was very resistent to treatment. Given its limited cost (less than 10 % of that of K or N) G may become an interesting treatment alternative in our economic setting.

Th.B.466

FLUCONAZOLE PREVENTIVE THERAPY FOR CANDIDA ESOPHAGITIS IN AIDS

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Objective: To assess the efficacy of a weekly fluconazole (FZ) regime to prevent the relapse of esophageal candidiasis (EC) in AIDS patients.
Methods: From March 1988 to December 1989, 21 AIDS patients (14 male, 7 female) with a previous episode of EC were evaluated. Resolution of EC was confirmed by endoscopy, biopsy and fungal culture in all cases prior to inclusion in the study. Mean age of the patients was 28 yr (r:23 to 55). There were 15 IVDA, 5 homosexuals and 1 heterosexual. Fluconazole, 200 mg p.o. once a week, was administered to 18 patients. During the follow-up a clinical assessment, immunologic evaluation and fungal investigation was performed. Oral thrush, positive pharyngeal swab for fungi and negative esophagoscopy were required to establish the diagnosis of oropharyngeal candidiasis (OC). EC was confirmed by endoscopy.
Results: The mean follow-up was 12.5 months (r:1.5-18). 11 patients completed the prophylactic regimen during a mean of 11.1 months. In this group, EC was confirmed in 3 patients (27%) and OC in one. In the remaining 7 patients FZ was discontinued after a mean period of 9.7 months of therapy. 6 patients in this group (86%) suffered a total of 10 relapses (2 OC and 8 EC; 2 during suppressive therapy and 8 after FZ was discontinued). All 3 patients that did not receive FZ prophylaxis relapsed (1 OC and 2 EC). No correlation was found between the relapse ratio and immunologic parameters (total linfocytes and CD4+ cells counts, HIV Ag levels) or fatal outcome.
Conclusions: The results indicate that oral fluconazole, 200 mg once a week, was a very effective regimen for secondary prophylaxis of esophageal candidiasis in AIDS patients.

Th.B.467

TREATMENT OF ESOPHAGEAL CANDIDIASIS (EC) WITH FLUCONAZOLE : A PROSPECTIVE STUDY.

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Objective: To assess the efficacy and tolerance of Fluconazole for the treatment of EC associated with AIDS.
Methods: During a 18 month period all HIV patients (P) with an esophagoscopy documented EC have been treated with Fluconazole 100mg daily. Therapeutical response was ascertained by disappearance of clinical signs and symptoms at the end of treatment and esophagoscopy post therapy whenever feasible.
Results: Thirty-nine P have been enrolled (24M, 15F, mean age 37y, range 21y-66y) from which 5 (13%) were not evaluated: 2 deaths (1 cerebral abscess, 1 adult respiratory distress syndrome), 2 lost for follow up, 1 unconfirmed EC. Mean duration of treatment was 19d (range 12-28d). Clinical cure with complete disappearance of complaints and signs (stomatitis) was obtained in all 34 P (100%). All control esophagoscopies performed in 25 P were negative. Upper gastrointestinal tract disturbances occurred in 3/34 P (9%), from whom 1 interrupted therapy. Transient mild elevation of ALT/AST was noted in 4/34 P (12%). Among the 33/34 P who have been followed up for at least 60 days, 6 relapses (18%) occurred after a mean duration of 45d (range 37-54d). All P were retreated with Fluconazole and cured.
Conclusion: Fluconazole appears to be a safe and effective oral therapy for esophageal candidiasis associated with AIDS. Further studies are under way to evaluate a regimen consisting on shorter duration of treatment.

Th.B.468 FLUCONAZOLE RESISTANCE DURING SUPPRESSIVE THERAPY OF AIDS-RELATED THRUSH AND ESOPHAGITIS CAUSED BY CANDIDA ALBICANS.

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Objective: To document the development of clinical relapse associated with in vitro resistance of C. albicans to fluconazole.
Patients, Methods, and Results: A 28 year old female was diagnosed with AIDS, thrush and Candida esophagitis in 1988. Initial treatment and suppressive therapy with topical clotrimazole was effective, although compliance was limited. One year later fluconazole 150 mg orally every 3 weeks was initiated, and clotrimazole was discontinued. The initial response was prompt; however, progressively shorter dosage intervals were required to control mucosal candidiasis. After 6 months of fluconazole, and while receiving 100 mg/day for 2 months she experienced a relapse of thrush confirmed by examination, gram-stained smear and culture. The minimum inhibitory concentration of fluconazole for the isolate was 25 ug/ml.
Conclusion: Despite the poor correlation between in vitro susceptibility and clinical efficacy for fluconazole, this case indicates the potential for the development of resistance. It is unclear whether or not intermittent dosing may have been a contributing factor.

Th.B.469 COCCIDIOIDOMYCOSIS DURING HIV INFECTION. A CONTINUING PROSPECTIVE STUDY.

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Tucson Veterans Affairs Medical Center and the University of Arizona College of Medicine.

Objective: To determine the epidemiology, clinical manifestations and outcome of coccidioidomycosis (coccy) among subjects infected with HIV in an area endemic for *Coccidioides immitis*.
Methods: HIV-positive subjects living in Tucson and Phoenix, Arizona, have been prospectively followed at approximately 4 month intervals. Laboratory studies included CD4 lymphocyte counts, coccidioidal serologies, *in vitro* lymphocyte transformation (LT) studies, and coccidioidal skin testing (CST).
Results: As of January, 1990, 124 subjects have been followed for a mean of 6.1 months (range 0 - 18.5). 28 subjects (22.6%) had a positive CST on entry. A positive CST was significantly associated with time spent in the endemic area, a history of prior coccy, and CD4 ≥ 200/μl (for all, $p < 0.05$). For those with CD4 ≥ 200/μl, there were no significant differences between CST positive and negative subjects with regard to survival, response to other skin tests or LT responses. Subjects with CD4 < 200/μl were more likely to have negative CST and other skin tests and to die during the study (for both, $p < 0.05$). The CST was positive in 15 instances where the coccidioidal LT assay was negative. Positive coccidioidal serologies only occurred in subjects with active coccidioidomycosis ($p < 0.001$). In addition to 5 subjects who entered the study with active coccy, 3 subjects developed active disease during follow-up. All 3 had CD4 ≤ 200/μl and a negative CST at the time of development of active coccy.
Conclusions: Evidence of prior infection with *C. immitis* in HIV-infected subjects living in the coccidioidal endemic area is common. Active coccidioidomycosis is associated with CD4 < 200/μl and positive coccidioidal serologies. To date, a positive CST does not predict the development of active coccy but is a more sensitive indicator of previous infection than the LT assay.

Th.B.470 EPIDEMIOLOGY AND IMMUNOLOGIC CHARACTERISTICS OF SYMPTOMATIC COCCIDIOIDOMYCOSIS IN PATIENT WITH HIV/AIDS.

Cone, Lawrence; Woodard, D.; Fiala, M.; Christopher, S.; Sneider, R. Eisenhower Medical Center, Rancho Mirage, California, 92270, USA.

Objective: To define the frequency, clinical course and immunologic alterations associated with coccidioidomycosis in patients with HIV/AIDS residing in an area endemic for the pathogen, the Coachella Valley of Southern California.
Methods: A chart review of all AIDS patients seen at this Institution from 1982 through 1989 was performed. Clinical course, CD_4 counts and serologic studies were analyzed. Additionally all cases of symptomatic or radiographic coccidioidomycosis seen during this period were analyzed.
Results: Ninety-three percent of all AIDS patients seen during the study period were bisexual or homosexual males. Of 290 patients with AIDS, 8 had coccidioidomycosis; 7 were Caucasian and one Hispanic. Three had focal pulmonary disease, while 5 had nodal or bilateral reticulo-nodular pulmonary disease. CD_4 counts were available on all patients and serologic studies in 7. All individuals with focal disease had >185 CD_4/μl while the 5 with extensive disease had <35 CD_4/μl. Serologic studies were not helpful in distinguishing these clinical subsets.
Conclusion: The annual risk of developing symptomatic coccidioidomycosis in this endemic region among homosexual/bisexual males with HIV/AIDS is 0.13%. Nearly 2/3 develop extensive, life threatening disease associated with CD_4 = <35/μl. Those subjects with >185 CD_4/μl experience a clinical course which is similar to non-HIV infected individuals.

Th.B.471 A HIGHER THEN EXPECTED FREQUENCY OF HISTOPLASMOSIS: IMPORTANCE OF ROUTINE OBTAINTION OF BLOOD CULTURES FOR FUNGI.

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Objective: To demonstrate the importance of routinely obtaining blood cultures for fungi in AIDS patients, independent of presenting signs and symptons.
Methods: Blood cultures were routinely obtained from all HIV positive patients admitted to the University Hospital of the Federal University of Rio de Janeiro and seeded on Sabouraud's medium.
Results: Of a total 610 HIV positive in patients, Histoplasma capsulatum was isolated from 21, in the January 1986 - December 1989 period.
Conclusion: According to Brazilian official statistics (Boletim Epidemiológico do Ministério da Saúde ano 3, nº 4) of a total 9003 AIDS patients, 51 had systemic histoplasmosis. In our hospital, cultures routinely obtained revealed systemic histoplasmosis in 21/610 (X^2 = 63,8 , O.R. = 6.7 , C.I. 3,6 - 10,8 , p 0,000001). It is then recomended that blood cultures for fungi should be obtained in all HIV positive patients admitted to a hospital regardless of presenting clinical picture.

Th.B.472 AMPHOTERICIN B IN THE TREATMENT AND PREVENTION OF AIDS: SELECTIVE REDUCTION OF CYTOTOXICITY BY COMPLEXING TO LIPIDS.

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Objective: To show the efficacy of lipid complexing with amphotericin B to reduce cytotoxicity.
Methods: Amphotericin B at concentrations of 5, 33, and 50 mole % was complexed to lipid, using Dimyristoyl Lecithin and Dimyristoyl Phosphatidylglycerol in chloroform according to the method of Janoff et al.. Once complexed the lipid preparation was standardized to the parent compound and assayed for activity using Candida, sheep red blood cells, Herpes Simplex Virus and HIV.
Results: Overall the 33 mole% was the least toxic of the preparations showing greatly reduced hemolytic activity with sheep red blood cells and increased cell viability with H9 and Molt-3 cells. The antifungal activity was retained with all the preparations, although the anti-viral activity was dependent on the relative concentration of AmB to lipid and generally was observed with the 33 mole% preparation. This preparation neutralized the infectivity of HIV, herpes simplex virus and rabies virus at concentrations below the toxic level of the drug. Conclusion: These results show promise in developing formulations of AmB that retain sufficient antimicrobial activity with its cytotoxicity reduced to a tolerable level.

Toxoplasmosis

Th.B.473 TOXOPLASMOSIS IN SPANISH AIDS PATIENTS. A MULTICENTER RETROSPECTIVE STUDY.

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Objective: To evaluate the clinical, radiological and therapeutic characteristics of a large series of spanish AIDS pts with cerebral toxoplasmosis (CTx)
Methods: AIDS was diagnosed according to 1987 CDC definition, and CTx was diagnosed using clinical (96%) or histological (4%) criteria. CTx cases were retrospectively evaluated.
Results: Of 850 pts with AIDS observed between 1984-1989, 125 (15%) were diagnosed of CTx. They were 103 males and 22 females, with a mean age of 31 years, and 70% were drug addicts. In 57% CTx was the first AIDS complication. Detailed clinical and radiological findings will be shown.
109/115 (95%) pts received initial treatment with sulfadiacine (S) and pyrimethamine (P), while 17/109 (15%) were treated with clindamicin and P -4 initially and 13 after S toxicity-. 84% of pts improved with treatment and adverse effects were observed in 22%. 8/85 (9%) pts who received daily or intermittent maintenance treatment relapsed as compared with 6/16 (37%) who did not (p=0.009). 54% of pts died after a mean follow-up of 8 months (1-41), 44% of them due to CTx. Pts who died because of CTx had lower lymphocyte count (p< 0.001), coma (p=0.03) and mass effect in computed tomography (CT) (p=0.0004). The mean survival time was 14.2 months in pts treated with AZT after CTx episode and 5.7 months in pts non treated (Mann-Whitney, p=0.01).
Conclusion: CTx is a frequent AIDS-associated disease in our HIV-infected pts. Pts with a low lymphocyte count, coma or mass effect in CT have a poor prognosis. Early relapse is frequent in pts without maintenance treatment. Survival is longer in pts taking AZT after CTx episode.

Th.B.474 ISOLATION OF TOXOPLASMA GONDII IN LYMPH NODES OF PATIENTS WITH HIV INFECTION AND GENERALIZED LYMPHADENOPATHY

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OBJECTIVES : To stablish a relationship between generalized lymphadenopathy (GL) in HIV patient and Toxoplasma Gondii (TG) infection. To annalyze the efectiveness of a new diagnostic method.
METHODS : We include 30 patients (24 IVDUs, 5 Homosexuals, 1 IVDU-homosexual). 24 males and 6 females. Mean age 26 years. CDC classification : 17 (III), 10 (IV-C), 1 (IV-E), 2 (IV-1). We perform clinical, analitical, immunological study to all the patients. We made lymph node biopsy for optic microscopy and culture. We perform anti-TG serology : IIF-Ig M, IIF-Ig G, Direct aglutination (DA) and Dye-Test. To isolate TG, homogenizated lymph node were inoculated to 3 mice for patient. We made serological and histoimmunological study 6 weeks post-inoculation.
RESULTS: Dye-Test was positive in 16,6%, IIF-IgG in 10%, DA in 53,3%, IIF-IgM was negative in all. Lymph node biopsy :Follicular hyperplasia in 20 cases,lymphoid deplection in 9 and 1 mycobacterial granuloma. Isolation of TG : 33,3% of mice showed TG seroconversion, in 10% protozoa particles were seen in mice's brain. In 13,3% we observed nonspecific encephalitis. In 4 cases of mouse's isolation, patients serology was negative with all the methods employed.2 patients with symptoms of brain toxoplasmosis showed positive TG lymph node isolation.
CONCLUSIONS : 1) The usual antitoxoplasma serology does not reflect the infection, latent or active, faithfully in the immunocompromised patient. 2) There is a high rate of TG infection in patient with GL and HIV infection. 3) Lymph node TG isolation can be an useful and less aggressive diagnostic method.4) There isn't relationship between isolation and lymph node histological pattern. 5) Piringer-Kuchinka's histological pattern for diagnosis of TG lymphadenitis, shouldn't be useful in immunocompromised patient.

Th.B.475 CEREBRAL TOXOPLASMOSIS IN AIDS PATIENTS: ACCURACY OF PRESUMPTIVE DIAGNOSTIC CRITERIA

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Objective and Methods : To evaluate the diagnostic accuracy of cerebral toxoplasmosis in AIDS patients (pts) using clinical features, imaging findings and conventional treatment response.
Results: Cerebral toxoplasmosis was suspected and treated in 52 HIV-infected subjects observed from 1987 to 1989. In 37 pts the diagnosis was done by clinical and imaging findings response to therapy, meeting CDC presumptive diagnostic criteria. Nine of them died, 3 from relapses and 6 from other conditions related to AIDS. Autopsy confirmed cerebral toxoplasmosis in all pts.
Fifteen out of the 52 pts did not respond to therapy and died. Autopsy revealed cerebral toxoplasmosis in 3 pts, primary CNS lymphoma in 10, PML and VZV encephalitis in 1 case each. In the same period other 9 pts without clinical and radiological evidence of focal encephalopaty were found to have unexpected cerebral toxoplasmosis at autopsy.
Conclusion : In our experience, the response to therapy is a very useful diagnostic criterion to confirm cerebral toxoplasmosis, although in a few cases may be not sufficient. In the cases not responding to therapy, primary CNS lymphoma should be firstly considered.

Th.B.476 PREVALENCE OF TOXOPLASMOSIS IN 365 AIDS AND ARC PATIENTS BEFORE AND DURING ZIDOVUDINE TREATMENT.

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Objective: To study, in 285 AIDS and 80 ARC patients (pts), the prevalence of toxoplasmosis (Toxo) before and during Zidovudine therapy (ZDV Rx).

Methods: 365 pts were treated with ZDV, 200 mg/4h whenever possible (n=260) or 200mg/8h otherwise (n=105) and prospectively followed (Lancet; 1988;ii,1297) for a mean (range) of 113 (22-130) weeks (wks) (AIDS pts) and 102 (45-130) wks (ARC pts)

Results:1) Before ZDV Rx, 50/285 pts had suffered from Toxo (17.5%). Mean CD4 cell count (CC) at day 0 of Rx (DO) was 45±58/mm3, compared to 100±90/mm3 in pts without Toxo.Twenty six % (43/166) of pts with CD4 CC ≤ 100/mm3 at DO had experienced Toxo.2) Relapse(s) occurred in 14/50 pts (28%),31±25 wks after beginning of Rx. 3) New Toxo occurred during Rx in 55 other AIDS pts(23.4%) after 48±32 wks. CD4 CC was 60.4±66/mm3 at DO. Toxo occurred within 24 wks of Rx in 9% of pts with CD4 CC at DO ≤ 100/mm3, versus 1.6% of other pts ($p < 0.03$). 4) Thus,105 pts(37%) had toxo before and/or during Rx. CD4 CC at DO was ≤ 100/mm3 in 84% of them;CD4 CC at DO was 51.6±64/mm3, versus 87±102/mm3 in pts without toxo ($p < 0.001$). Twenty eight% of pts with CD4 CC at DO ≤ 100/mm3 have experienced toxo before or within 24 wks of Rx, versus 10.4% of other pts ($p<0.01$). 5)Toxo occurred in 16 % of ARC pts (13/80),27% of those with CD4 CC ≤ 100/mm3, and 7% of pts with higher values ($p < 0.03$).

Conclusion: Prevalence of Toxo was 37% in AIDS, and 16% in ARC pts . Mean CD4 CC at DO was 51.6±64/mm3 in AIDS pts with Toxo, and ≤ 100/mm3 in 84% of them. These results may help to select the best candidates for primary prophylaxis against Toxo.

Th.B.477 COTRIMOXAZOLE TREATMENT OF TOXOPLASMA ENCEPHALITIS IN AIDS PATIENTS.

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Objective: To evaluate the efficacy of cotrimoxazole (trimethoprim-sulfamethoxazole) in the treatment of Toxoplasma encephalitis in AIDS patients.

Methods: Twenty-five AIDS patients with cerebral lesions consistent with cerebral toxoplasmosis and treated with 40-50 mg/kg cotrimoxazole daily were retrospectively examined. Responders were defined those patients who had both clinical and radiological improvement. Clinical evaluation was done 2 months after the start of treatment. Mean survival was also determined.

Results: Eighteen of 25 patients responded to treatment. In 5 non-responders clinical diagnosis of Toxoplasma encephalitis was confirmed by autopsy. The other 2 non-responders underwent cerebral biopsy, which showed histological findings of central nervous system lymphoma and progressive multifocal leukoencephalopathy, respectively. Mean survival was 2.1 months in non-responders, 8.8 months in responders.

Conclusion: These data suggest that cotrimoxazole may be useful in treatment of Toxoplasma encephalitis, particularly in comatose patients in whom intravenous route is needed and in those countries (e.g. Italy) where sulfadiazine -pyrimethamine are not commercially available.

Th.B.478 TRAITEMENT OF BRAIN TOXOPLASMOSIS BY FANSIDAR

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Objective : to give an estimation of the efficiency and tolerance of Fansidar (R) in the treatment of brain toxoplasmosis.

Methods : 36 HIV seropositive patients suffering from brain toxoplasmosis diagnosed by scanner (confirmed or not by sérology) have been treated by Fansidar (R) during the acute phase, at the rate of 1 intramuscular injection of two doses a day for 15 days, followed by oral treatment at the rate of 2 tablets every 2 days for one week then two tablets twice a week for one week, then finally 2 tablets once a week as a maintenance treatment. The efficiency of the product was appreciated on the bases of clinical and neuroradiological evolution as well as the recurrence or non recurrence of the disease.

Results : Improvment of the clinical andradiological state is observed in 29 patients. Unchanged condition or worse condition is observed in the other patients. Tolerance : blood tolerance : frequent cytopenia, serious cytopenia in 4 cases but always ready to regress when stopping the product.
cutaneous reactions : rash and frequent erythrodermia. Absence of Lyell Syndrom.
5 patients have suffered from recurrences of the disease after 2 to 6 months of maintenance treatment.

Conclusion : Treatment by Fansidar (R) seems efficient in the acute phase of brain toxoplasmosis. The parenteral form is specially interesting when the patient is in a state of coma.The subsequent prophylaxy wich is not too heavy is also effective and well tolerated.

Th.B.479 FAILURE OF DOXYCYCLINE IN THE TREATMENT OF CEREBRAL TOXOPLASMOSIS

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Objective: To determine the effectiveness of doxycycline for the treatment of cerebral toxoplasmosis in AIDS patients intolerant to sulfadiazine and pyrimethamine (S/P).

Methods: Prior to 1987, on the basis of experimental animal data, doxycycline (100 mg po BID) was used as second line therapy for patients with cerebral toxoplasmosis at our institution. We reviewed the charts of all patients who had received at least one month of doxycycline for the treatment of cerebral toxoplasmosis diagnosed by the presence of ring-enchancing lesions on brain CT which resolved in response to treatment with S/P.

Results: Six patients with cerebral toxoplasmosis were treated with doxycycline following side effects which required discontinuation of S/P (rash in 4, renal failure in 2). Five of 6 patients (83%) experienced recurrence of neurologic findings and ring-enhancing lesions on CT scan during therapy with doxycycline. Three of these 5 patients had resolution of the clinical and CT findings following retreatment with S/P.

Conclusion: Despite encouraging experimental animal data, doxycycline appears to lack efficacy in the management of cerebral toxoplasmosis in humans.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.480 SULPHADIAZINE DESENSITISATION IN PATIENTS WITH AIDS AND CEREBRAL TOXOPLASMOSIS

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OBJECTIVES: To evaluate the efficacy of a sulphdiazine desensitisation protocol for use in the treatment of patients with AIDS and cerebral toxoplasmosis who are allergic to sulpha drugs.
METHODS: Sixteen AIDS patients with cerebral toxoplasmosis and a past history or current manifestations of sulpha allergy were desensitised to sulphadiazine from October 1988 to December 1989. The protocol employed the oral administration of gradually increasing increments of sulphadiazine three hourly over five days. Success was defined as tolerance of two to four grams of oral sulphadiazine per day for at least seven days until death or the present time without any allergic reactions.
RESULTS: Our success rate overall was 10/16 (62%) patients. Seven patients achieved a final dose of 4g/day, 3 a dose of 2g/day.
CONCLUSION: Our sulphadiazine regime successfully and safely desensitises patients with AIDS, cerebral toxoplasmosis and sulpha allergy. This enables the most effective treatment known for cerebral toxoplasmosis to continue. We present the largest series published on sulphadiazine desensitisation. The mechanisms by which desensitisation works are unknown.

Th.B.481 RELATION BETWEEN DECREASING SERIC CD4 LYMPHOCYTE COUNT AND OUTCOME OF TOXOPLASMOSIS IN AIDS PATIENTS : a basis for primary prophylaxis.

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Cerebral Toxoplasmosis which occurs in 20-50% of AIDS patients (pts) worldwide and particularly in some 40% in France, is one of the most frequent opportunistic infections (OI) in HIV-infected pts. Consequently, it is necessary to identify high risk pts for toxoplasmosis in order to select candidates for primary prophylaxis, although, the best regimen for such a treatment remains to be evaluated.
Objective of this retrospective study : to determine if on the basis of seric CD4 lymphocyte (L) counts, HIV infected pts at high risk for Toxoplasmosis can be identified.
Patients : 182 AIDS pts were treated in the Eastern Paris hospitals between january 1986 and november 1989 for toxoplasmosis, the predominant localizations being brain (n=172), eyes (n=7) pulmonary (n=1) bone marrow (n=1) and multivisceral with positive blood culture (n=1). For this study, we considered only those with a seric CD4 L count, either three months prior to diagnosis (n=101) and/or at the time of diagnosis (n=133) since specific serology seems poorly related to the onset of Toxoplasmosis.
Results : Three months before diagnosis, 79% of patients (n=80/101) had CD4 L counts < 150/µl; at the time of diagnosis, 78% (n=104/133) had CD4 L counts < 100/µl.
Conclusion : From these data, we conclude that in France HIV-infected patients with CD4 L counts < 150/µl are at high risk for toxoplasmosis and could possibly be candidates for evaluation of primary prophylaxis.

Th.B.482 TRIMETHOPRIM-SULFAMETHOXAZOLE IN THE PREVENTION OF CEREBRAL TOXOPLASMOSIS

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Objective. To determine if trimethoprim-sulfamethoxasole (T/S) prescribed for prophylaxis of Pneumocystis carinii pneumonia (PCP) also prevents cerebral toxoplasmosis (toxo).
Methods. Charts were reviewed on all patients receiving T/S and inhaled pentamidine (IP) for the prophylaxis of PCP. T/S was routinely prescribed in the dose of 1 DS tablet BID. The diagnosis of toxo was based on the demonstration of ring-enhancing lesions on brain CT which resolved during treatment with sulfadiazine or clindamycin and pyrimethamine.
Results. Ninety-seven patients were prescribed T/S for prophylaxis of PCP (mean 9.1 months), 86 in the dose 1 DS tablet BID. 4 of 97 patients developed toxo (0.45/100 pt months), all of whom reported or demonstrated noncompliance to therapy with T/S. Of a control group of 86 patients who received IP (mean 6.9 months) 5 developed toxo (0.84/100 pt months).
Conclusion. T/S in the dose 1 DS tablet BID may prevent the development of cerebral toxoplasmosis, while patients receiving T/S in lower dosages and those receiving inhaled pentamidine remain at risk for toxo. On the basis of this retrospective observation, a prospective study of T/S in various dosing regimens to prevent cerebral toxoplasmosis seems warranted.

Th.B.483 INTERMITTENT MAINTENANCE THERAPY FOR TOXOPLASMIC ENCEPHALITIS (TE) IN AIDS PATIENTS.

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OBJECTIVE: To describe the efficacy of an intermittent (2 days per week) maintenance therapy to avoid relapses on TE in AIDS patients.
METHODS Seventy four episodes of TE were accepted in 53 of the 374 AIDS cases when the clinical and computed tomographic (CT) scan findings were consistent unless an alternative diagnosis became apparent, during the 40 months period of the study. Acute episodes were treated with a Pyrimetamine/Sulfadiazine (P/S) combination (a loading dose of 50-100 mg of P was initially administered followed by 25-50 mg per day; the dose of S was 75 mg per kg per day; both drugs were given orally) during 3-6 weeks. Because of a previously known major allergy to sulfonamides 15 episodes were treated with clindamycin (CX600 mg IV/ 6 hours) instead of S. In those patients who accepted to perform maintenance therapy a combination of P/S (at the same dosage) 2 days per week was administered. C was used instead of S in those patients known to be allergic to sulfonamides. A relapse was accepted when a patient with a previous episode of TE developed a new one at least 2 months after the complete resolution (clinical and CT-scan) of the previous one.
RESULTS: Forty five patients (84.9%) survived the first episode and could be followed-up. Twenty patients of these 15 decided, against medical advice, not to perform a maintenance therapy. Five of these patients were lost and in the remaining 15 could be followed-up during a mean period of 13.8 months (4-25 months). Eight (53.3 %) developed a relapse between 2 to 15 months after having recovered from the first episode. Fifteen patients agreed to perform an intermittent long-term maintenance therapy with P/S, were followed-up a mean of 12.3 months (2-27 months) and none developed a relapse while they were on maintenance therapy. Ten patients received an intermittent maintenance treatment with P/C during a mean period of 13.3 months (2-25 months) and 4 (40 %) relapsed between 2 to 9 months after starting the maintenance therapy.
CONCLUSION: An intermittent (2 days per week) maintenance treatment on TE with P/S was effective for preventing relapses although prospective randomized studies remain to be done.

Th.B.484 PREVENTION OF TOXOPLASMA ACTIVATION AMONG IMMUNOCOMPROMISED PATIENTS; A DECISION ANALYSIS

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Objective: To determine the thresholds of safety and effectiveness which would justify immunocompromised patients taking preventive therapy (PrevRx) to prevent activation of latent *Toxoplasma gondii* infection (TOXO).

Methods: A decision analysis using a Markov model was used to simulate events for hypothetical cohorts [immunocompromised, shortened life expectancy (LE) and serological evidence of TOXO] following taking or not taking long-term courses of antibiotics active against TOXO (PrevRx). The outcomes studied were LE and lives saved per cohort. Published data were used to estimate TOXO activation and mortality rates and the risks of antibiotic therapy (toxicity common but nonfatal, resulting in interrupted therapy with lesser consequent effectiveness). Wide variations were made for all assumptions in the sensitivity analysis; because the effectiveness of PrevRx is unknown, it was varied from 0% to 100%.

Results: PrevRx saves lives, even among persons with a LE of 2 yrs, assuming its toxicity is nonfatal and it has even minimal effectiveness; if effectiveness is moderate (50%), 5400 lives are saved per 100,000 cohort. Even if PrevRx nonfatal toxicity were as high as 50% and fatal toxicity were as high as 1%, PrevRx saves lives if the effectiveness is greater than 14%. Quality adjustments were made for the morbidity of TOXO and PrevRx toxicity: PrevRx is beneficial, under moderate assumptions, assuming its effectiveness is greater than 23%. The decision is greatly influenced by the rate of TOXO activation, the patient's LE and quality adjustments made for PrevRx toxicity. Wide variations in other assumptions have little effect on the thresholds.

Conclusions: Unless studies show PrevRx to be both highly ineffective and toxic, the benefits of long-term PrevRx outweigh risks for immunocompromised persons with serologic evidence of TOXO. This analysis supports clinical studies of therapy to prevent TOXO activation.

Tuberculosis

Th.B.485 A RETROSPECTIVE COHORT STUDY OF THE INCIDENCE OF TUBERCULOSIS (TB) AMONG CHILD-BEARING WOMEN WITH HIV INFECTION IN KINSHASA, ZAIRE

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Objective: To determine the incidence of TB in persons with HIV infection.

Methods: A cohort of 249 HIV(+) and 310 HIV(-) postnatal women were retrospectively studied over a 3-year period for incidence of TB.

Results: After a median follow-up of 32 months, there were 22 new self-reported cases of TB among HIV(+) subjects (3.6 cases / 100 person-years [PY]) compared to 1 among HIV(-) subjects (0.12 cases / 100 PY), for a relative risk of 30. The relative risk for bacteriologically or histologically proven TB was 11 (1.3 cases / 100 PY versus 0.12 cases / 100 PY). Of the 22 HIV(+) TB cases, 12 were pulmonary; 7 had a sputum smear positive for acid-fast bacilli and were considered highly infectious.

Conclusion: HIV(+) child-bearing women in Zaire are at high risk of developing active tuberculosis. It is likely that all HIV(+) adults in Zaire have the same order of risk. This cohort study provides evidence that the HIV/AIDS epidemic is significantly contributing to the incidence of TB in sub-Saharan Africa and stressing already overburdened national TB control programs.

Th.B.486 COHORT STUDY OF HIV INFECTED TUBERCULOSIS PATIENTS, NAIROBI, KENYA: DATA AT PRESENTATION AND MORTALITY.

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Objectives: To assess HIV seroprevalence among a cohort of newly presenting TB patients, and compare clinical characteristics of HIV+ and HIV- TB.
Methods: 240 consecutive patients with newly diagnosed TB presenting to Infectious Diseases Hospital were enrolled as part of a longitudinal study.
Results: 73/240 (30%) were HIV infected. 146 were men and 94 women. 207 (86%) had confirmed TB. 41 culture results are awaited. HIV infection was associated with residence in Nairobi(p=.007), but not with age, sex or previous treatment. Diarrhoea(p=.0003), oral candidiasis (p<.0001), generalised itchy rash(p=.0005) and lymphadenopathy(p=.004) were associated with HIV infection, but weight loss, fever and cough were equally common in HIV+ and HIV- cases. The WHO Bangui criteria gave a sensitivity of 78%, but a specificity of only 27% with a positive predictive value of 33%. 37% of HIV+ cases had no clinical features specific to HIV infection. Mean initial total white cell count and haemoglobin were lower in HIV+s (7.5x109/l(SD3.2) vs 9.5(SD5.3) and 9.6g/dl(SD2.2) vs 11.2(SD2.2) respectively). Mortality at median follow up of 90 days was 15/73(21%) among HIV+s and 9/167(5%) among HIV-s(p=.0008).
Conclusion: HIV infection is associated with significant morbidity and mortality in this TB population although many HIV+ cases are clinically undetectable. TB control programmes urgently need new diagnostic and management strategies and more resources to cope with the effects of HIV.

Th.B.487 A PROSPECTIVE STUDY OF PULMONARY TUBERCULOSIS AND HIV INFECTION IN INTRAVENOUS DRUG ABUSERS (IDA's) IN DETOXIFICATION.

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Objective: To determine the incidence of Pulmonary tuberculosis (PT) and HIV infection in a longitudinally study focused to asymptomatic IDA's admitted to a detoxification Unit.
Methods: From Feb 1987 to Oct 1989, 194 IDA's (39 F, 155 M) were consecutively registered.Rx of chest,Ziehl stains in 3 samples of sputum and cultive in Lowenstein medium (10 weeks) were analyzed.HIV antibodies (Ab) were tested according to an ELISA method.
Results: The mean age was 24.3±4.1 years;time of addiction was 69.3±35.7 months. 136 out of 194 (70.1%) were HIV+.Ziehl stains were negative for Mycobacterium Tuberculosis (MT) in all cases but MT was isolated from Lowenstein medium in 8/194 (4.1%) patients and 2/194 (1%) had Atypical Mycobacterium. All cases with MT were HIV+; only 1/8 showed localized infiltration at x-ray of chest.MT was isolated in 8/166 HIV+ vs 0/58 HIV-(p=0.9).
Conclusion: Subclinical Pulmonary Tuberculosis is present in asymptomatic,HIV infected,heroin abusers.Efforts to early diagnostic and teatment must be focused on IDAS's that seek detoxification.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.488 TUBERCULOSIS AMONG HIV INFECTED INDIVIDUALS. Different patterns in Buenos Aires, Argentina and Vancouver, Canada.

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OBJECTIVE: To describe the varying patterns of tuberculosis in Buenos Aires (BsAs) and Vancouver (Vanc), two large metropolitan cities with different socioeconomic and epidemiological characteristics.

METHODS: Cases were collected from Oct 1, 1985 to Dec 31, 1988 at the University's ID Tb and Chest Hospital in BsAs where over 1/3 of the AIDS cases in Argentina (n=315) have been cared for. Similar cases were identified in Vanc by a linkage between the provincial AIDS and Tb registries for the 6 year period ending Dec 31, 1988. Medical records of all identified cases were reviewed.

RESULTS: A total of 49 cases were identified, 29 in BsAs and 20 in Vanc. Demographics, risk factors, symptoms, signs and method of diagnosis were not different between groups. An OI was diagnosed prior (or concomitantly) in 19/29 and 2/20 subjects in BsAs and Vanc, respectively($p<.01$). Extrapulmonary involvement was common at the time of diagnosis in both groups. CXR's commonly showed parenchymatous lung involvement (particularly miliary pattern) in BsAs while mediastinal adenopathy was most common in Vanc ($p<.05$) Response to treatment (INH + RMP for 12 months and PZA or EMB for the initial 2 months) was satisfactory in 18/29 and 18/20 in BsAs and Vanc, respectively. Mortality was 6/29 in BsAs and 2/20 in Vanc.

CONCLUSION: The spectrum of tuberculosis among HIV infected individuals appears to differ from Buenos Aires to Vancouver. In Buenos Aires, parenchymatous lung involvement is unusually common despite the fact that Tb itself appears to be diagnosed at a relatively late stage of HIV disease, as suggested by the high frequency of prior OI's. Mortality tended to be higher in the Buenos Aires group.

Supported by a grant from National Health and Research Development Programme.

Th.B.489 A STUDY OF HIV INFECTION IN ASSOCIATION WITH TUBERCULOSIS AS SEEN IN INFECTIOUS DISEASES HOSPITAL (IDH) NAIROBI.

Daniel K. Kibuga, S. Gathua.

Objective: Assess prevalence of HIV infection, associated complications and response to chemotherapy of all patients attended between January 1987 - June 1988 with tuberculosis.
Method: 656 patients were HIV tested by organon or Wellcozyme technique and Western blot confirmation done when possible. They have been followed up to the completion of chemotherapy and beyond in case of other complications. These were compared with randomly selected seronegatives marched for age and sex.
Result: 105 HIV seropositive patients were seen during this period. Drug reactions were five fold in HIV positive patients mainly to Thiacetazone. Mycobacterium tuberculosis was implicated in all cases.

Response to Chemotherapy

	HIV+ve n=105	HIV-ve n=105
Cured	- 34	64
Dead	- 44	13
Contact lost	- 27	28
Relapses	- 2	0

Conclusion: HIV associated tuberculosis is setting a serious challenge to tuberculosis control programme in Kenya.

Th.B.490 HIV-1 INFECTION IN ADULT TUBERCULOSIS PATIENTS IN CITE SOLEIL, HAITI

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Objective To assess the prevalence and clinical features of HIV-1 infection in adult tuberculosis (TB) patients in an impoverished urban area of Haiti.
Methods From 1 January through 31 December 1989, newly diagnosed TB patients $\geq$15 years old at the Cite Soleil TB Clinic were offered HIV testing. Sera were tested by EIA, with confirmation by Western blot. Clinical data were abstracted from clinic records.
Results Of 191 new TB patients $\geq$15 years old, 143 (75%) consented to HIV serologic testing. Overall, 56/143 (39%) were repeatedly HIV+ by EIA, including 38% of males and 40% of females. Seroprevalence was 28% for TB patients ages 15-24 and 42% for patients >25 years. HIV-1+ patients were significantly more likely to have extrapulmonary TB (33/56, 59%) than seronegative patients (20/87, 23%, $p<.00001$). Other symptoms of HIV disease (diarrhea, zoster, etc.) were present in 33/56 (59%) HIV-1+ patients. Adverse reactions to anti-TB drugs, especially thiacetazone, occurred in 24% of patients but were unrelated to HIV-1 serostatus.
Conclusion HIV-1 infection is strongly associated with TB in Haiti. In our clinic, HIV-1+ TB patients were significantly more likely to have extrapulmonary disease and had a high prevalence of other HIV-related symptoms. Effective programs for treatment and prevention of HIV-related TB are needed.

Th.B.491 TUBERCULOSIS AND AIDS IN A MEXICAN HOSPITAL.

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OBJECTIVE:Estimation of tuberculosis importance in AIDS.patients.
METHODS:200 AIDS patients registered durin a three-year period at the infec infectology unit,were evaluated throughclinical assesement and the following: smears,cultures,biopsies,immunodiagnosis,therapeutic response and necropsies Time related increase of AIDS cases was correlated with that of Mycobacterial disease incidence using a linear regression.As well as comparison of socio economical statusthroug a difference of means in AIDS patients with and without mycobacteria.
RESULTS:Mycobacterial infections were detected in 86(43.4%) out of 200patients but the difference in annual prevalence was 10% for 1986 and 63% for 1989. Calculation of linear regression was 2.775,wich showed that the quadratic coeficient,being equal to zero,was rejected with a value of $t=2.51$($p=0.02$), bacilli demonstration in sputum,was succesfull in 30(34.8%),by culture 30(34%) by biopsies 21(24.4%)at necropsies 37 out of 100(37%).Mycobacterium tuberculosis was present in 75% cases,according to cultures.And therapeutic response was succesfull in 78.5%.Immunodiagnosis was positive in 80% cases.Socioeconomical status,compared through a difference of means had a non significant value.747
CONCLUSIONS:Mycobacterium tuberculosis is the main pathogen in AIDS patients in in Mexico City General Hospital.Increase in Mycobacterial incidense is in progression,up to 63% of patients in 1989.Tuberculosis was found regardless of patients socioeconomical status.

Th.B.492

AIDS and tuberculosis. Encounter between two epidemics in a Latin american Country

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OBJETIVE: To analyze the clinical and epidemiological features of tuberculosis (Tb) in AIDS cases in Mexico.
METHODS: National AIDS registry data were analyzed.
RESULTS. Tuberculosis was diagnosed in 234/3512 (7%) of notified AIDS patients, representing 10.3% of all infections, and second only to Candida albicans. Eighty-eight percent of Tb/AIDS cases are men, 0.4% younger than 15 yrs, 1.7% older than 65 yrs old. Duplication period of Tb/AIDS cases is 13 months. Tb/AIDS cases have an ascending trend. Homo and bisexuals, heterosexuals, transfusion recipients and intravenous drug addicts represent 54.7%, 21.6 %, 19.6% and 1.2% of Tb/AIDS cases respectively. Lower socioeconomic levels represented 20% of Tb/AIDS cases. Extrapulmonary disease is diagnosed in 34.1% of patients; 52% have died at the time of notification. Young adults, intravenous drug addicts, and deaths at notification were significantly more frequent in Tb patients than in total AIDS patients.
CONCLUSIONS: Tuberculosis is the most frequent endemic infection in AIDS patients. Compared to total AIDS patients the proportion of young adults, intravenous drug addicts and deaths is greater in tuberculosis patients. Conditions exist that favor that HIV/AIDS epidemic impacts over tuberculosis epidemiology in the near future. Implementation of prophylactic measures is a public health priority.

Th.B.493

COMPARISON OF TUBERCULOSIS IN HIV-POSITIVE AND HIV-NEGATIVE INPATIENTS IN RIO DE JANEIRO, BRAZIL

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Objectives: To compare the clinical spectrum of disease caused by *Mycobacterium tuberculosis* in patients with and without HIV infection, as part of a study to generate empirical data for use in developing a practical case definition for AIDS.
Methods: Among 496 medical-ward inpatients screened in 1988 and 1989 in two university hospitals for HIV-1 and HIV-2 infection, 115 were HIV+, 365 HIV-, and 16 HIV-equivocal. Of this group, 110 HIV+ patients were compared to 135 randomly-selected HIV- patients by thorough medical history, physical exam, and chart review. Tuberculosis (TB) was diagnosed by clinical or radiographic findings confirmed by microscopic identification of acid-fast bacilli or by culture.
Results: TB of any organ was diagnosed in 41% (45/110) of HIV+ and in 3% (4/135) of HIV- patients (p<.001). Of 33 HIV+ patients with pulmonary TB, non-cavitary findings were reported in 28 (90%) of 31 with x-rays, while among 3 HIV- patients with pulmonary TB, 2 (67%) had a non-cavitary appearance (p=NS). Extrapulmonary infections occured in 1 (25%) of the 4 HIV- TB patients and in 23 (51%) of the 45 HIV+ TB patients (p=NS). Extrapulmonary sites involved in the 23 HIV+ TB patients were lymphnodes in 15 patients, disseminated 9 patients, pleura 3, pericardium 2, meninges 2, liver 1, and spleen 1 (sites not exclusive). No atypical TB was diagnosed.
Conclusion: TB is a strong predictor for HIV seropositivity among hospitalized inpatients in Rio de Janeiro, and is clearly opportunistic among these HIV+ patients, who are assumed to have the advanced immunosuppression of AIDS. TB is included (with HIV seropositivity) in a new AIDS surveillance case definition proposed in Brazil.

Th.B.494

ASSOCIATION OF TUBERCULOSIS AND HIV INFECTION IN ZIMBABWE

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OBJECTIVES: 1. To determine the seroprevalence of HIV among TB patients. 2. To compare the clinical features of TB between HIV+ and HIV- patients.
SETTING: City Health treats all TB diagnosed in urban Harare pop. 900,000.
METHODS: All patients treated for TB by the City TB Unit July 1988–June 1989 were eligible. Full clinical assessment, xray, and HIV serology were performed on each subject. Only specimens strongly reactive on two different commercial EIA kits were considered positive.
RESULTS: Total TB patients: 1032, 591 (57.3%) proven bacteriologically or histologically, 441 (42.7%) clinically. HIV serology obtained: 927 (89%).
SEROPOSITIVITY BY AGE GROUP IN FIRST AND SECOND 6-MONTH PERIOD:

	<5 yrs	5 14 yrs	15-34 yrs	35-54 yrs.	>55 yrs.	Total
88	13(34.2%)	0(0%)	101(41.6%)	47(35.1%)	3(5.1%)	164(33.8%)*
89	16(41.0%)	1(10%)	129(58.1%)	55(44.0%)	7(15.9%)	208(47.2%)*
88&89	29(37.6%)	1(4.3%)	230(49.4%)	102(39.3%)	10(9.7%)	372(40.1%)

Age, sex matched controls: 8% *Highly significant
Seroprevalence in confirmed TB: 40.6%; In clinically diagnosed TB: 39.4%.
HIV SEROPOSITIVITY BY SEX IN 15-54 AGE GROUP: Male 47.4%: Female 41.8%
SIGNIFICANT (p <.01) DIFFERENCES BETWEEN HIV+ AND HIV- PATIENTS AGE 15-35

	Mantoux<8mm	2 Organs	Pleural TB	Adenitis	Hilar LN	Cavities
HIV+	44.5%	10.5%	25.9%	12.0%	21.7%	34.6%
HIV-	28.7%	5.4%	15.8%	3.3%	8.5%	50.1%

HISTORY OF PREVIOUS TB TREATMENT: 5.1% of HIV+ and 6.4% of HIV- patients.
CONCLUSIONS: There is an increasingly strong association between HIV and TB in Zimbabwe. HIV- associated TB shows characteristic clinical features.

Th.B.495

HIV SEROPREVALENCE IN TUBERCULOSIS PATIENTS IN BAHIA, BRAZIL

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Objective: To evaluate HIV seroprevalence and associated high risk activities among hospitalized tuberculosis patients.
Method: Point prevalence sero-survey for HIV infection was performed in two reference hospitals for tuberculosis in Salvador, Bahia, Brazil.
Results: A total of 239 patients were enrolled in the study; 117 from the Hospital Otávio Mangabeira and 122 from the Hospital Santo Antônio. The overall HIV seropositivity rate, with Western blot confirmation, was 2.2%. The analysis of demographic data, risk factors and sexual behavior on the 122 patients from Hospital Santo Antônio revealed that 103 (84%) were male and 19 (16%) female. All HIV positive patients were male. The mean age was 41.5 yr (range, 14 - 79 yr). Among the HIV seropositive patients, 3 were IV drug abusers and another 2 had frequent contact with prostitutes; none was homosexual. None of the tuberculosis patients was recognized to have HIV infection prior to the survey.
Conclusion: Tuberculosis in Salvador may herald the presence of HIV infection. The high risk activities associated with HIV infection were IV drug abuse and contact with prostitutes.

Th.B.496

HOUSEHOLD CONTACTS (HC) OF HIV(+) PATIENTS IN ZAIRE WITH ACTIVE PULMONARY TUBERCULOSIS (PTB) ARE NOT AT INCREASED RISK OF SECONDARY M. TUBERCULOSIS (M.tb) INFECTION.

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Objective: To determine if HIV(+) patients with PTB and HIV-induced immunosuppression and possibly a larger body burden of M.tb organisms associated with their pulmonary infection are more infectious to their HC.
Methods: All patients reporting to the CDT with a sputum smear (+) for acid-fast bacillae(AFB), radiologic evidence of PTB, found to be HIV-1(+) and having at least one HC aged <10 years were matched with age, sex, HIV (-) patients with smear-positive PTB who also had at least one HC aged <10 years. All HC of these index cases(IC) were evaluated for M.tb and PTB with chest X-ray (CXR), PPD, sputum smear and culture when CXR was (+) and for HIV-1 serostatus (ELISA and Western blot).
Results: M.tb was isolated from the sputum cultures of all 100 IC enrolled through 1989. There were 42 HIV(+)/M.tb(+) IC [25 women, 17 men] and 58 HIV(-)/M.tb(+) IC [31 women, 27 men]. Nine (36%) of 25 HIV(+) female IC had AIDS compared with 3(18%) of 17 HIV(+) male IC. There were 174 HC (age 15 years and 149 HC >/age 15 years of HIV(+)/M.tb(+) IC. There were 227 HC (age 15 years and 183 HC >/age 15 years of HIV(-)/M.tb(+) IC. Secondary rates of M.tb transmission in HC did not correlate with the number of M.tb organisms seen on either sputum smear or culture of IC.
Table. HIV prevalence, M.tb isolation and TB infection rates in HC according to HIV status of IC.

	HC < 15 years			HC >/15 years		
	HIV	M.tb isolated	TB infect^	HIV	M.tb isolated	TB infect^
Index case	+(%+)	+(%+)	+(%+)	+(%+)	+(%+)	+(%+)
HIV(+)/M.tb(+)	4(2)	12(7)	87(50)	15(11)*	5(3)	111(74)
HIV(-)/M.tb(+)	1(.5)	11(5)	119(52)	9(5)	5(3)	140(77)
P	>.05	>.05	1.0	>0.05	>0.05	1.0

^TB infection=positive CXR + clinical symptoms + (+)PPD. * Spouses exclud.
Conclusion: There was no evidence of increased secondary transmission of HIV or M.tb among the 323 HC of IC dually infected with HIV and M.tb.

Th.B.497

TUBERCULOUS ABSCESSES IN AIDS

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Objective: To describe tuberculous abscesses in 5 AIDS patients out of a total of 45 patients with Mycobacterium tuberculosis (TB) infection and AIDS seen at the NYVA during the years 1988 and 1989.
Methods: Charts were reviewed for clinical and laboratory presentation, CT scans, TB cultures, treatment, and response to therapy.
Results: Patients ranged in age from 32-53 years; 2/5 had prior diagnoses of AIDS and 3 had extrapulmonary TB as their AIDS-defining illness; 2/5 developed abscesses while on TB therapy. The locations of the abscesses were defined by CT scan appearance, and all had positive aspirates for TB on smear and culture. One CT scan revealed a 3X4 cm abscess in the right lobe of the liver with a large fluid collection in the porta hepatis and a 3X6X11 cm subcutaneous collection in the right thoracic wall. Despite drainage and anti-TB therapy the patient developed a tuberculous empyema, pneumothoraces, and died. In the other 4 patients, locations of abscesses were: peripancreatic (1), mediastinal/neck (2),and psoas/pelvic (1). In these 4, 2 responded to TB chemotherapy alone (peripancreatic and mediastinal); 1 responded to drainage of 1200cc from a psoas/pelvic abscess and chemotherapy; 1 patient with a mediastinal abscess died despite anti-TB therapy alone.
Conclusions: In HIV-infected patients, abscesses are a common presentation of TB infection or may develop during anti-TB therapy. Prompt diagnosis and drainage may improve outcome.

Th.B.498

MYCOBACTERIAL LYMPH NODE INFECTION AND AIDS IN SÃO PAULO, BRAZIL

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*Hospital Brigadeiro, **Hospital Emílio Ribas, ***Instituto Adolfo Lutz, ****Centro de Referência e Treinamento de AIDS, São Paulo.

Objectives: To determine the frequency of mycobacterial lymph node infection in patients with HIV infection, and analyze clinical and epidemiological characteristics of these patients in São Paulo.
Methods: One hundred and fifty six patients with HIV infection had lymph node biopsy at our hospitals during the interval 1985 to mid 1989. Of these, all patients with mycobacterial lymph node disease were selected for inclusion in this study. Histopathological examination was performed at Hospital Emílio Ribas. Within this group, we determined the frequency of sex, age, risk factors for HIV infection, clinical and microbiological diagnosis.
Results: Mycobacterial disease was diagnosed in 77 patients. The most common risk factors for HIV infection were homosexual contact (45 patients - 60%) and intravenous drug use (23 patients - 30%). Of all 42 patients that had had lymph node biopsy after January 1988, 34 (81%) were classified in Group IV (CDC - Atlanta) and 8 (19%) in Group III.
Mycobacterial cultivation was performed in 33 lymph nodes. M. tuberculosis was the only mycobacteria isolated (26 cases). Pneumonia was diagnosed in 45 patients. Microbiological diagnosis for pneumonia was successful in 22 patients. M. tuberculosis was isolated from sputum in 18 patients.
Conclusion: 1) M. Tuberculosis is the most important causative agent of mycobacterial lymph node infection in São Paulo.
2) Further investigations must be done to determine the actual frequency of tuberculosis pneumonia in patients with mycobacterial lymph node infection and AIDS.

Th.B.499

SUSCEPTIBLE M. TUBERCULOSIS REFRACTORY TO STANDARD THERAPY WITH PROGRESSION TO CENTRAL NERVOUS SYSTEM INVOLVEMENT

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OBJECTIVE: To review treatment failure in three AIDS patients infected with M. tuberculosis(TB) susceptible to standard therapy; lack of response to therapy and subsequent progression to neurologic involvement.
METHODS: Retrospective chart review of clinical data and autopsy material.
RESULTS: All cases had diagnosed AIDS. Case 1 presented with miliary TB; case 2 and 3 had initial pulmonary infections. All initial cultures were sensitive to standard drugs and triple drug regimens were initiated. Appropriate compliance with drug therapy was determined by frequent outpatient followup or hospitalization. Each patient developed neurologic complications within six months of diagnosis. Meningitis was documented in all three cases. Two cases progressed to hemiplegia and paraplegia, and the third to obtundation and death. Documentation of neurologic involvement included radiologic procedures serial examinations of cerebrospinal fluid(CSF) showing elevated mononuclear cells and protein, and positive stearic acid ELISA in case 2. All cases had negative CSF cultures. Autopsy of case 1 revealed meningeal encasement with granulomatous AFB positive tissue. A similar pattern of involvement was seen by myelogram in case 2. Five drug regimens in cases 2 and 3 led to partial clinical responses.
CONCLUSIONS: Given the concurrent rise in TB and AIDS, especially in urban centers, it is important to recognize that AIDS patients with drug susceptible TB may not respond to standard regimens. Clinicians should follow patients for neurologic involvement and be aware of alternative methods of diagnosis when CSF cultures remain negative.

Th.A.500 CENTRAL NERVOUS SYSTEM TUBERCULOSIS IN AIDS.

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Centro Nacional de Investigación Clínica.Madrid,España.

OBJETIVE:To describe frequency and clinical picture of Central Nervous System tuberculosis (CNS-TB) in AIDS patients.
METHODS:Retrospective revision of AIDS patients with TB between 1986 and 1989. Those patients with cerebrospinal fluid(CSF)cultures growing Mycobacterium tuberculosis are described in this paper.
RESULTS:16 cases of CNS-TB were found among 138 AIDS patients with TB(11.6%). Fourteen were intravenous drug users and 2 gay men,with ages between 23 and 32 years.All had fever,7 reduced level of conciousness and only 6 headache.Nucal rigidity was present in 10 CSF had no cells in 4 and less than 100 in nine. Neutrophils were the predominant type of CSF cells in 44%.CSF glucose was below 40 mgrs% in 13 and CSF protein over 45 mgrs% in 11.CT scan was normal in 6 out of 9 made,2 had tuberculomas and 1 brain infartion.Most patients were trated with a three drug combination and 4 patients received corticosteroids in addition.Six patients have died,4 were lost to follw-up.In 5 of the 6 deaths,CNS-TB was considered as the cause of death.
CONCLUSIONS:Clinical picture of CNS-TB in AIDS is sometimes atypical.Acellular CSF or with minimal pleocytosis may yield M.tuberculosis incultures.In most cases CT scan was normal.CNS-TB must be kept in mind when evaluating feverish AIDS patients in countries where TB is prevalent.

Th.B.501 BLOOD CULTURE VALUE IN THE DIAGNOSTIC OF THE DISSEMINATED TUBERCULOSIS IN AIDS PATIENTS.

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OBJECTIVE:To emphasize the usefulness of the blood culture practise for mycobacterium in AIDS patients and suspicion of tuberculosis.
METHODS:Among 198 AIDS patients attended between June 1983 and September 1989 at F.J.Muñiz Hospital, 37 showed tuberculosis as opportunistic infection (OI), 35 men and 2 women, being the most frecuent OI after pneumocystis carinii pneumonia. Apart all the conventional diagnostic methods for such OI, blood culture were carried out as a routine extracting 5 cm³ of blood with heparine and it is divided in two parts: one sowing directly in Lowenstein-Jensen and Stonebrink medium and the other part sodium hidroxide is indected and it is sowed in the same medium.
RESULTS: From the 37 patients, 11 had disseminated forms of tuberculosis and in seven of them (50%) blood culture was positive with a period of development of about 22 and 36 days. In 4 of the 7 patients(57%) with positive blood culture this was the only isolation obtained.
CONCLUSION: The disseminated forms established the 30% of tuberculosis and AIDS patients.
Blood culture was positive in the 50% of the patients with such clinical forms. In the 57% of the patients with positive blood culture this was the only bacteriological finding.

Th.B.502 INTRACRANIAL TUBERCULOMAS IN PATIENTS WITH AIDS

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OBJETIVE: To evaluate the incidence of intracranial tuberculomas (IT) in patients with AIDS.
METHODS: We conducted a retrospective study on 419 patients with AIDS diagnosed between 1984 and October 1989. The diagnosis of IT was established by brain biopsy or response to antituberculous therapy.
RESULTS: Four (1%) of 419 patients had IT. In the same population, other manifestations of extrapulmonary tuberculosis, were diagnosed in 186 (48%) patients and 21 (11%) of them developed CNS toxoplasmosis after a median time of 9 months (range 1-28 months). In 3 patients IT were the first manifestation of AIDS. Two patients had ganglionar tuberculosis diagnosed at the same time and three months before the finding of the tuberculoma. CT scans of the brain revealed one (2 patients) or more hyperdense mass lesions with ring-like enhancement following administration of contrast. No hyperdense mass lesions were observed on the CT scans of 21 patients with CNS toxoplasmosis. Radiological improvement ocurred 2 to 4 months after the initiation of therapy. Paradoxal expansion of the tuberculoma was noted in 1 patient in the first month of therapy.
CONCLUSIONS: 1) Intracranial tuberculomas are unusual even in AIDS patients with high prevalence of extrapulmonary tuberculosis; and 2) Hyperdense mass lesions on non contrast CT scan are more suggestive of tuberculoma than toxoplasmosis.

Th.B.503 MYCOBACTERIA ISOLATIONS FROM STOOLS AND INTESTINAL BIOPSIES FROM HIV (+) PATIENTS AND CONTROLS IN KINSHASA, ZAIRE.

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Objective : To determine the role of mycobacteria as etiologic agent in HIV related enteritis in Africa.
Methods : Stools and intestinal biopsies were obtained in HIV (+) and HIV (-) patients without clinical evidence of *M. tuberculosis* infection, visiting the department of Internal Medicine in Mama Yemo Hospital, Kinshasa, Zaire. Specimens were conserved in cetylpyridinium chloride and after decontamination cultured on Löwenstein Jensen and Ogawa media. Intestinal biopsies were also examined histologically.
Results : Mycobacteria were isolated slightly less often from stools in HIV (+) patients [25% (15/60)] than in HIV (-) patients [43% (18/41)] (p=0.08) significantly less often in patients with diarrhea [15 % (6/40)] than in patients without diarrhea [44 % (27/61)] (p = 0.04). *M. avium-complex* was the species most frequently isolated, in 12 % of the HIV (+) and in 22 % of the HIV (-) patients. From none of the intestinal biopsies obtained in 17 HIV (+) patients with persistent diarrhea mycobacteria were isolated and in none of them histologic evidence of mycobacterial infection was found.
Conclusion : In Africa, mycobacteria do not seem to play a major role in causing diarrhea in HIV (+) patients. The reason why mycobacteria were isolated less often from HIV (+) and/or diarrhea patients remains to be determined.

Th.B.504 COHORT STUDY OF HIV INFECTED TUBERCULOSIS PATIENTS, NAIROBI, KENYA: BASELINE RADIOLOGICAL FEATURES

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HIV/TB Project, Kenya Medical Research Institute, Nairobi, and London School of Hygiene and Tropical Medicine, London, UK.

Objectives: To compare radiological features of HIV associated TB with HIV-TB and assess the usefulness of chest radiology in the diagnosis of HIV infection.
Methods: Antero-posterior chest radiographs were examined from 191 patients with smear and/or culture proven TB out of 240 newly diagnosed cases of TB.
Results: 58 (30%) of the cases were HIV infected.

	total zones/6 affected mean(SD)	<3 zones affected /6 nos.(%)	pleural effusion present nos.(%)	cavities present nos.(%)	mean no. zones with cavities mean (SD)	lymph nodes present nos. (%)
HIV +	3.8(1.8)	11(19)	16(28)	28(51)	1.7(0.7)	18(32)
HIV -	4.2(1.5)	11(8)	33(25)	94(75)	1.7(0.9)	18(15)
p-value	NS	.06	NS	.003	NS	.02

Scoring 1 for each of <3 zones involved, lack of cavitation, lymphadenopathy and lobar consolidation gave a PPV for HIV infection of 50% for a score of 2 or more but 28% of HIV +s had a score of 0.
Conclusion: In this population a number of radiological features suggested HIV infection but no combination was pathognomonic. Chest radiographs can only assist in the diagnosis of HIV infection among TB patients.

Th.B.505 CHEST ROENTGENOGRAMS IN 104 HIV-POSITIVE PATIENTS WITH TUBERCULOSIS (TB).

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Objective: To study radiographic patterns of pulmonary TB on chest x-rays.
Methods: We retrospectively reviewed the chest x-rays of 104 HIV+ pts. consecutively admitted at our teaching hospital with diagnosis of pulmonary and/or extrapulmonary TB. Diagnosis of TB was made either by recovery of M.tuberculosis from cultures or from demonstration of acid-fast bacilli on smears or biopsies, associated with positive response to standard artituberculous drugs. Pts. known to be infected by other pulmonary pathogens wew excluded from the study.
Results: Interstitial infiltrate was observed in 74 (71,2%) pts., with a reticular pattern in 15 (14,4%), reticulonodular in 14 (13,5%) and micronodular (miliary in 6 (5,8%) cases. Bilateral interstitial infiltrates were found in 36 (34,6%) cases. Alveolar infiltrates were identified in 66 (63,5%) pts., predominantly in the upper lobes in 36 (34,6%), diffusely in 16 (15,7%) and bilaterally in 15 (14,4%) cases. Mediastinal adenomegaly was seen in 38 (36,5%) pts., with a paratracheal predominance in 28 (26,9%), but also hilar lymphnode enlargement in 10 (9,6%) cases. Pleural effusion was observed in 34 (32,7%) pts., bilaterally in 8 (7,7%) and as the sole radiographic abnormality in 2 (1,9%) cases. Chest x-ray without abnormalities was seen in 23 (22,1%) pts., 6 (5,8%) of whom had diagnosis of TB made by culture and/or acid-fast smear of sputum, and 1 (0,9%) of them had diagnosis of pulmonary TB made at a necropsy performed 2 days after the radiographic study (A-P view). The remaining 16 (15,4%) pts.without x-ray abnormalities had extrathoracic TB. Cavitation was seen in 15 (14,4%) pts. Cardiomegaly was observed in 13 (12,5%) pts. due to pericardial effusion in 10 (9,6%) cases. Residual evidence of healed primary TB were the main radiographic finding in 12 (11,5%) cases.
Conclusions: 1) TB in HIV-infected patients characteristically produces chest radiographic manifestations that resemble those of primary disease. 2) A state of of immunesupression is frequently suggested by disseminated and/or unusual patterns. 3) Cardiomegaly should always raise the possibility of tuberculous pericarditis. 4) Chest x-ray without abnormalities does not rule out the diagnosis of TB. Endobronchial disease should be considered in some of these cases.

Th.B.506 PULMONARY TUBERCULOSIS (PT) AND AIDS:CHEST RADIOGRAPHIC (CR) FEATURES.

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Objective: analise the CR of PT patients with AIDS
Methods: we compared the CR features of 106 patients with PT and AIDS with 119 age and sex matched patients with only PT. The radiological features were divided into typical(TCR) or atypical(ACR) of adult reactivation tuberculosis.
Results: ACR was present in 7/119(6%) patients of the control group and 72/89'81%) patients of the AIDS group(p<0.001). Acid Fast Smears(AFS)were positive in sputum of 23/34(68%) patients with AIDS and ACR against 70/100 (70%) patients of control group with TCR(p=NS). In the AIDS group,anergy to PPD occurred in 35/41(85%) of ACR and in 6/10(60%) TCR patients (p<0.01). In our AIDS group, ACR was associated with 1/8(12.5%) of the TCR patients(p<0.001). Total involution of the radiological abnormality after starting treatment occurred in 13/92(14%) of the control group and in 13/28(45%) of the AIDS group(p<0.001)

Conclusion: ACR is a common feature of PT in AIDS patients. The AFS have a similar positivity in patients with AIDS and ACR whem compared with TCR in control group. The ACR was associated to a negative PPD test. The ACR is related to a poor response to the treatment. Total involution of the radiological abnormalities with treatment were frequent in AIDS group.

Th.B.507 SHORT COURSE ANTITUBERCULOUS THERAPY FOR PULMONARY TUBERCULOSIS IN HIV SEROPOSITIVE PATIENTS: A PROSPECTIVE CONTROLLED STUDY

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Objectives: To compare the efficacy of short course antituberculous therapy in new cases of pulmonary tuberculosis (pTB) in HIV(+) and HIV(-) patients (pts).
Methods: PATIENTS: HIV(+) and age/sex matched HIV(-) pts with smear and culture (+) first episodes of pulmonary TB. TREATMENT: daily rifampicin, INH, pyrazinamide plus ethambutol for 2 months, followed by rifampicin and INH biweekly for 4 months. After 6 months HIV(+) pts are randomized to placebo or continuous biweekly therapy for another 6 months. FOLLOW-UP: Ziehl smear and physical exam bimonthly, sputum cultures at 0, 2, 6, 12, and 18 months.
Results: SPUTUM NEGATIVATION by Ziehl smear and culture by nr. of pts evaluated at each follow-up visit:

		HIV(+) (n=140)	HIV(-) (n=133)	P
2 months	Ziehl	79/91	79/90	.95
	Culture	79/91	72/90	.79
4 months	Ziehl	46/47	54/55	.90
6 months	Ziehl	31/31	30/31	.93
	Culture	31/31	30/31	.93

MORTALITY: 19/140 HIV(+) cases died, of HIV-related complications (none of TB) vs 1/133 HIV(-) controls (p<.001).
Conclusions: HIV(+) and HIV(-) pts with a first episode of pTB had similar good TB treatment results when receiving short course anti-TB treatment. The mortality of HIV(+) pts was higher, due to other HIV-related complications. The study continues to assess relapse rates and efficacy of maintenance therapy.

Th.B.508 TREATMENT OF TUBERCULOSIS IN HIV-INFECTED PATIENTS

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Objective: To determine the relapse rate after the treatment of the acute phase of the tuberculosis in HIV infected patients.
Methods: 84 consecutive cases of tuberculosis in HIV-seropositive patients were followed-up. Sixty-nine (82%) were parenteral drug addicts, 7 (8.3%) male homosexuals, 3 (3.5%) parenteral drug addicts and male homosexuals and 5 (6%) belonged to other risk groups. 47 of the 84 patients (56%) were classified in the CDC stage IV-C1 only because of the tuberculosis. All but one patient completed a six months period of treatment with isoniazid and rifampin plus pyrazinamide and ethambutol during the first two months.
Results: The treatment was effective in all cases. Twenty-two (26.2%) patients have already died because of HIV-related events. Twenty-five (29.7%) patients were lost during the follow-up and thirty-seven (44%) are still currently being followed. The overall median duration of follow-up has been 16.5 months (range: 1-44 months). Three patients have relapsed at 8, 20 and 22 months after finishing the treatment. The patient who relapsed at 20 months was the one who did not complete the treatment. The cumulative relapse rates were 2.5% (1 of 39 patients) and 18.7% (3 of 16 patients) at 12 and 24 months, respectively.
Conclusion: A short therapeutic course (6 or 9 months) seems to be enough. However, since the relapse rate is higher than expected a maintenance treatment with isoniazid should be considered at least in those patients likely to survive a relatively long period of time.

Th.B.509 STEVENS-JOHNSON SYNDROME ASSOCIATED WITH TREATMENT OF TUBERCULOSIS IN PATIENTS WITH HIV INFECTION IN TANZANIA

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Five patients undergoing treatment for tuberculosis were admitted with Stevens-Johnson Syndrome to 1 ward at Muhimbili Medical Centre, Dar-es-Salaam, Tanzania, from 6/89 to 8/89. Patients admitted to this ward represent a random 1/3 of all medical admissions to Muhimbili, which total approximately 1200 per month. Four of the patients were HIV-positive by ELISA. The remaining patient tested negative for HIV, but clinical evidence suggested immunodeficiency (disseminated scabies, chronic diarrhea, and tuberculosis). A retrospective examination of ward admission rosters revealed only one additional case of Stevens-Johnson Syndrome in a patient being treated for tuberculosis since 1/89; that patient's HIV status was not available. Standard treatment of tuberculosis in Tanzania consists of 12 months of Thiazina (a tablet containing isoniazid and the sulfa drug thiacetazone) plus streptomycin injections for the first 2 months. All patients in this series developed Stevens-Johnson Syndrome while taking Thiazina. This severe complication may be analagous to Stevens-Johnson Syndrome occurring in AIDS patients taking pyrimethamine-sulfadoxine (Fansidar). It appears that patients with HIV infection may have an increased sensitivity to certain sulfa containing compounds, and may be more prone to develop Stevens-Johnson Syndrome than other patients. This observation has implications for the management of tuberculosis in East Africa, where thiacetazone is often used in treatment.

Th.B.510 ISONIAZIDE PROPHYLAXIS AMONG PATIENTS WITH HIV-1 INFECTION.

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Objective:To determine efficacy of isoniazide(INH) prophylaxis in prevention of Mycobacterium tuberculosis disease in adult Zambians infected with HIV-1.
Methods:A randomised, single-blind, placebo controlled study is underway since September 1988 at the University Teaching Hospital in Lusaka, Zambia. Non-pregnant adults with Western blot confirmed HIV-1 infection and with absence of active tuberculosis as determined by symptoms, signs and chest radiographs. Group 1. 252 patients received INH 300mg by mouth daily with a vitamin B complex (BCo) tablet for 6 months and subsequently only BCo.Group 2. 297 patients received BCo tablet daily. Patients in both groups were examined at 3 months interval and chest radiographs were taken after every 6 months. Active tuberculosis was subsequently diagnosed by radiograph & sputum culture.
Results: Patients in both groups were comparable by age, sex and staging of HIV disease as done by Walter Reed Stages. Group 1. 190 patients were followed for 99 patient years; 8 (8.1%) died during the followup. None developed M. tuberculosis infection or INH toxicity. Group 2. 220 patients were followed for 113 patient years; 11(9.7%) died during the followup and 5 developed pulmonary tuberculosis. All 5 (4.4%) were in Walter Reed Stages III and IV at recruitment. Stratifying patients in WRIII & IV, the annualised incidence of M. tuberculosis infection was 8.3% ($p < 0.05$).
Conclusion: INH prophylaxis significantly reduced the incidence of M. tuberculosis. There is evidence of activation of mycobacterial infection among patients in WRIII & IV compared to those in WR I & II.

Other Mycobacteria

Th.B.511 MYCOBACTERIAL INFECTIONS IN AIDS

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Among 1000 HIV+ pts of our surveillance program 149 developed AIDS. We diagnosed 36 (30%) Mycobacterial Infections (Myc): in 20/36 (55.6%) by M.tuberculosis (BK), in 8/36 (22.2%) by M.Avium Complex (MAC), in 8/36 (22.2%) by unidentified mycobacteria (UM). 27/36 (75%) pts were IVDU (including all the 8 MAC infected), 4 were omesex, 1 partner of HIV+ subject, 1 hemophilic, 2 IVDU+bisex, 1 unknown. Myc was initial and only AIDS marker in 9/36 pts, initial and associated in 6/36 and arised as complication during the follow-up in the remaining 21/36. 19/36 pts had disseminated Myc while lung or lymph nodes or urinary tract or bowel localizations accounted for 11, 2, 2, and 2 cases respectively. Diagnosis relied on DNA-probes, except in the 2 lymph nodes localization. At the diagnosis CD4+ were 41.4±16.3/ul in BK infections (INF), 19±6.9/ul in MAC-INF and 27±8.5 in UM-INF. CD8- count resulted 471±165/ul in BK-INF, 290.7±88.2/ul in MAC-INF and 735±234.9/ul in UM-INF. The clinical onset in BK-INF was septic-like while in MAC-INF was characterized by respiratory symptoms. No significant differences has been found in radiological findings. At six months survival rate was 72% in BK-INF, 14.2% in MAC-INF, 42% in UM-INF.

Th.B.512 CONCOMITANT HIV AND MYCOBACTERIAL INFECTION IN AUTOPSIED INTRAVENOUS DRUG USERS IN NEW YORK CITY

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OBJECTIVE To describe concomitant mycobacterial and HIV-1 infection among autopsied intravenous drug users (IVDU) in the New York City's Office of the Chief Medical Examiner (OCME) for deaths occurring in Manhattan and the Bronx.
METHODS Deaths of unknown or criminal causes, including narcotic use, and those occuring among prisoners, are routinely autopsied at the OCME. Blinded tissue and blood samples were obtained from autopsied IVDU's (identified by the presence of needle marks) and cultured for mycobacteria. HIV-antibody testing will be performed without identifiers upon completion of tissue collection. Mycobacteriologic analysis of tissue samples from 200 autopsied IVDU's are anticipated by June.
RESULTS Between February to December 1989, tissue and blood samples were obtained from 103 autopsied IVDU's. Of these, 50 (71.4%) were male, 41(59.4%) were Black, 18 (26.1%) Hispanic and 10 (14.5%) were White. Median age was 37.4 years (range: 26 to 60 years). Mycobacterial results are available for 70. M. avium intracellularae (MAI) was detected in 18 (25.7%) M. Tuberculosis (MTb) in 6 (8.6%), M. xenopi in 1 (1.4%) and M. gordonal in 1 (1.4%) A clinical diagnosis of AIDS detected prior to or at the time of autopsy was established in 25/70 (35.7%). Of the 6 with MTb, 3 (50%) had an AIDS diagnosis. The availability of HIV-1 serologies upon completion of tissue collection and removal of identifiers in June, will enable determination of associations between MTb and HIV-1 in this cohort.
CONCLUSION The elevated rates of MAI in this population suggests a potentially significant contribution to the cause of death by mycobacteria, particularly MAI, as unrecognized pathogens.

Th.B.513 MYCOBACTEREMIA IN AIDS PATIENTS: RESULTS EMPHAZISING THE IMPORTANCE OF ROUTINE BLOOD CULTURE

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Objective: To evaluate the importance of blood culture in diagnosing disseminated mycobacterioses in HIV infected patients.
Methods: Blood cultures were taken as part of a routine screening program for mycobacteria including examinations during the clinical course and at autopsy. From blood specimens buffy-coat and lysated cell pellets were processed for inoculation on solid standard media.
Results: 470 HIV positive patients were enrolled, 237 of them had AIDS. TB was diagnosed in 30 cases, with an incidence of 11 % among AIDS patients (27/237 cases). Mycobacteria other than M. tuberculosis (MOTT) were isolated in 73 patients: M. avium - M. intracellulare (MAI) (n=69), M. xenopi (n=3), M. simiae (n=1). Dissemination (in all cases due to MAI) was proven in 57/237 AIDS cases (24 %). TB was disseminated in 22 cases, with positive blood cultures in 32 % (7/22 cases). Positive blood cultures were obtained in 47 % of patients with disseminated MAI infection (23/57 cases). The cultural yield from buffy-coat was slightly higher compared to that from lysated cell pellets. A positive blood culture was the earliest diagnostic pointer to dissemination in 3 TB cases and in 23 cases with MAI infection.
Conclusion: Mycobacterial infections are frequently disseminated and blood cultures are positive in a high percentage, often representing the initial positive results indicating mycobacteriosis.

Th.B.514 RELATIONSHIP OF RESPIRATORY AND GI TRACT COLONIZATION WITH MYCOBACTERIUM AVIUM COMPLEX (MAC) TO DISSEMINATED MAC DISEASE IN HIV INFECTED (+) PATIENTS.

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Objective: To evaluate the incidence and natural history of respiratory tract (RT) and GI tract (GI-T) colonization with MAC in HIV+ patients and the relationship of colonization to development of disseminated MAC disease (D-MAC).
Methods: Review of microbiology, bronchoscopy, pathology, cytopathology, and patient records for all HIV+ patients from whom MAC was isolated from 12/88 to 12/89. Colonization was defined as isolation of MAC from RT and/or GI-T specimens in the absence of symptoms or signs of MAC disease or from patients with symptoms and/or signs which responded to treatment for other pathogens. D-MAC was defined as isolation of MAC from blood (BL) and/or bone marrow (BM) on at least one occasion.
Results: A total of 139 HIV+ patients had RT specimens, 86 had GI-T specimens, and 84 had BL/BM specimens sent for MAC culture from 12/88 to 12/89. Fifteen of 139 patients (11%) had MAC isolated from the RT, 17 of 86 patients (20%) from the GI-T, and 20 of 84 patients (24%) from BL/BM. Of the 15 with RT MAC isolates, 4 were excluded as no GI-T or BL/BM cultures were done; of the 17 with GI-T MAC isolates, 2 were excluded because they had diagnoses of D-MAC prior to the evaluation period. Of the 20 HIV+ patients with D-MAC, 13 of 19 had RT (4), GI-T (7), or both RT and GI-T (2) specimens positive for MAC. One was excluded as no RT or GI-T specimens were sent for MAC culture. Only 1 of these 13 had an isolate which preceded BL/BM dissemination; a RT isolate 3 months prior to D-MAC. Four patients had RT, 5 had GI-T, and 1 had RT and GI-T MAC isolates with no evidence of D-MAC during the observation period.
Conclusion: D-MAC occurs frequently in the absence of prior detectable RT and GI-T colonization. MAC may be isolated from the RT and/or GI-T without dissemination. Whether or not D-MAC develops in such patients remains to be determined.

Th.B.515 CLINICAL RISK FACTORS FOR DISSEMINATED MYCOBACTERIUM AVIUM COMPLEX INFECTION (DMAC) IN PERSONS WITH HIV INFECTION

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Objective: Because DMAC is an important source of morbidity in AIDS that may not be clinically recognized, we screened consecutive HIV-infected patients presenting to our facility to determine the prevalence of and clinical risk factors for this infection.
Methods: During 3 consecutive months blood was cultured for MAC from all newly referred HIV+ patients and from all HIV+ patients with fever (T >99° without known cause), anemia (Hct <26% not due to AZT), weight loss (>10% in 6 mo.), night sweats, or hepatosplenomegaly. Blood was collected in DuPont isolator tubes and cultured by lysis centrifugation on LJ and 7H11 media.
Results: 21 (18%) of 117 patients had blood cultures positive for MAC; no patients without signs/symptoms had DMAC. DMAC was more frequent as CD4+ counts decreased:

CD4+ cells/mm³:	0-25	26-50	51-100	101-200	201-500	501+
MAC+/total(%)	8/20(40)	4/12(33)	2/7(29)	0/9(0)	0/23(0)	0/9(0)

In patients with <100 CD4+ cells, DMAC was associated with signs or symptoms ($p<0.05$), but not age, sex, race, or HIV risk activity.
Conclusion: We conclude that DMAC is rare in patients without signs or symptoms but common in symptomatic patients with <100 CD4+ cells. Because therapy may alleviate symptoms of DMAC, all patients with <100 CD4+ cells and fever, anemia, weight loss, night sweats, or hepatosplenomegaly should have blood cultures performed for detection of DMAC.

Th.B.516 SURVIVAL OF AIDS PATIENTS WITH DISSEMINATED MYCOBACTERIUM AVIUM COMPLEX INFECTION (DMAC): A CASE-CONTROL STUDY

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Objective: Because previous studies suggesting decreased survival of AIDS patients with DMAC had incomplete information on patient immunologic status and followup, we performed a clinic-based, case-control study of AIDS patients with DMAC to assess the effect of DMAC on survival.
Methods: Case-patients were HIV seropositive persons with MAC cultured from blood or other usually sterile sites seen in a multi-physician clinic between 1985 and 1989. Cases were matched with HIV seropositive controls by CD4 cell count, prior AIDS status, history of antiretroviral therapy, and year of diagnosis. Survival of patients was determined from the time of onset of symptoms to avoid bias from delayed diagnosis. Therapeutic decisions were based on individual physician preference.
Results: Of 46 patients with DMAC, 37 (80%) had adequate data for analysis. Median CD4 cell counts of cases and controls were 10/mm3; 60% had received AZT; 81% had prior AIDS; 76% of cases and 49% of controls had died. Patients with untreated DMAC had significantly shorter survival than controls (median 4.1 months vs. 11.1 months, p<0.001), while the survival of patients with DMAC who had received treatment with 3 or more antimycobacterial medications did not differ from that of controls (p=0.60).
Conclusion: We conclude that DMAC makes a significant contribution to decreased survival in AIDS, despite the severely depressed CD4 cell counts of these patients. Moreover, these data suggest that antimycobacterial therapy may prolong survival in some AIDS patients with DMAC.

Th.B.518 RIFABUTIN MAY DELAY THE ONSET OF MYCOBACTERIUM AVIUM COMPLEX INFECTION (MAC) IN PATIENTS WITH AIDS

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Objective: To obtain preliminary information on the ability of rifabutin (ansamycin) to prevent MAC in AIDS.
Methods: 22 consecutive patients with AIDS/opportunistic infections (OI) treated with rifabutin 300-900 mg/day as an anti-HIV drug were compared retrospectively to 184 concurrent consecutive AIDS-OI patients at a second institution. We analysed Kaplan-Meier survival from case-defining OI to diagnosis of MAC (blood/marrow culture or AFB in histologic sections), censorship or death, using Wilcoxin and Mantel-Cox tests.
Results: The groups were comparable for age, date of OI diagnosis, date and proportion developing MAC within 30 days of entry (9.1% treated, 9.8% untreated), and CD4 count. They differed chiefly in proportion on P. carinii prophylaxis (72 vs 10%, respectively). The prolonged overall survival of the treated group (p = 0.014) may be attributable to P. carinii prophylaxis. A trend toward prolonged 75% MAC-free survival was observed in the rifabutin-treated group (Wilcoxin p = 0.043, Mantel-Cox p = 0.071) if the drug was administered >30 days.
Conclusion: Rifabutin may delay the onset of disseminated MAC disease in patients with AIDS-OI. Prospective, randomized trials in appropriate population groups are necessary to define the usefulness of rifabutin for MAC prophylaxis.

Th.B.517 TREATMENT OF AIDS-RELATED DISSEMINATED MYCOBACTERIUM AVIUM COMPLEX DISEASE (D-MAC) WITH A MULTIPLE DRUG REGIMEN INCLUDING AMIKACIN.

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Objective: To evaluate the response of AIDS patients with D-MAC to treatment with a multiple drug regimen including amikacin (AKN).
Methods: From 12/87-12/89, all AIDS patients evaluated by one of the investigators and diagnosed with D-MAC, defined by signs/symptoms not attributed to other pathogens and isolation of MAC from blood, bone marrow, and/or tissue, were treated with IV AKN 15 mg/kg/d, and oral clofazimine 150-300 mg/d, rifampin 600 mg/d, ethambutol 15 mg/kg/d and ciprofloxacin 750 mg BID. AKN was continued for ≥ 30 days or until a dose limiting toxicity occurred. Oral therapy was indefinitely continued.
Results: Twenty AIDS patients with D-MAC were treated. These included 18 men/2 women (mean age 34.8 years); 16 men were homosexual. AIDS defining conditions included PCP (14), candida esophagitis (3), cryptococcal meningitis (1), and D-MAC (2). Mean time from AIDS diagnosis to D-MAC was 15 ± 10 mos. Mean CD4 count prior to D-MAC was 36.3 ± 45.9/mm^3. The most common manifestations of D-MAC were fever (20), diarrhea (13), abdominal pain (13), abdominal lymphadenopathy (11), and abnormal LFTs (11). MAC grew from blood (12), bone marrow (7), tissue (12), stool (4), and urine (3). Mean duration of therapy was 5.3 ± 3.8 mos. and of AKN was 45.3 ± 28.8 days. Nineteen of 20 had a favorable clinical/ microbiological response with a mean F/U of 6.3 ± 5.5 mos. One received no AKN and remained bacteremic; 1 began oral therapy but remained bacteremic until addition of AKN; in 2, bacteremia recurred as AKN was stopped on day 14 and 30. Eight of 20 died of causes unrelated to D-MAC. Severe ototoxicity occurred in 3 after >60d AKN.
Conclusion: A multiple drug regimen including AKN was well tolerated and was associated with a favorable response in 19/20 AIDS patients with D-MAC. A prospective controlled trial using an AKN containing regimen for treatment of D-MAC is warranted.

Enteric Parasites

Th.B.519 CLEARANCE OF CRYPTOSPORIDIAL INFECTION IN HIV POSITIVE MEN: A POSITIVE CORRELATION WITH CD4 COUNTS.

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Cryptosporidial infection in immunocompromised patients causes chronic protracted diarrhea. In persons with AIDS it is almost invariably unresponsive to treatment and often leads to death. There have been recent reports of individual HIV positive patients who have cleared cryptosporidial infection. We identified 8 HIV positive individuals who had cryptosporidium identified in 2 stool exams and had diarrhea for over 2 weeks who subsequently cleared the infection with negative stool exams and normal bowel movements. We compared these individuals to 18 persons with AIDS who had uncontrolled infection. The mean CD4 count of individuals who cleared infection was 287 (± 246) compared to the CD4 counts 64 (± 42, p<0.05) of persons who did not clear. The mean CD8 count and hematocrit of those who cleared were higher than the CD8 count and hematocrit of those who did not clear, although the difference did not reach statistical significance (784 ± 673 vs 414 ± 419, p=0.18 and 39 ± 4 vs 34 ± 5, p=0.06 respectively). 7/8 individuals who did clear the infection had not had a previous opportunistic infection, whereas 11/18 individuals with uncontrolled cryptosporidiosis had a previous opportunistic infection. The correlation of CD4 counts and clearance of cryptosporidial infection in HIV positive individuals is important in predicting the natural history of disease and designing therapeutic strategies.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.520 ORAL DICLAZURIL THERAPY FOR CRYPTOSPORIDIOSIS

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Objective: To assess the safety and efficacy of escalating doses of oral diclazuril (DCZL) in subjects with AIDS and cryptosporidial (CS) enteritis.
Methods: This double-blind, placebo-controlled, randomized study used four successive groups (50, 100, 200, 400 mg) of 12 patients (9 active 3 placebo) each. Patients took drug for 7 days and were followed for at least one week. Those who failed double-blind therapy were treated with higher doses of DCZL (to 400 mg) until a response or intolerance was evident. Stool CS and clinical symptoms were quantitated weekly. Serum DCZL levels were determined using HPLC.
Results: Of 30 patients treated thus far, none responded completely. Partial responses (PR), i.e., (a) 50% decrease in diarrhea, and, or, (b) at least a one grade decrease in stool CS were as follows:

	Double Blind		Open Label	
DCZL (mg)	No. Treated	% PR	No.Treated	% PR
50	11	36	-	-
100	12	50	11	36
200	3	66	17	29
400	4	75	14	50

Serum DCZL levels were <100 ng/ml 8 hours after 50, 100 and 200 mg DCZL and ranged from 150-483 ng/ml 8 hours after 400 mg DCZL.
Conclusions: 1) DCZL is non toxic and appears to have efficacy for cryptosporidiosis in patients with AIDS. 2) Further studies using ≥400 mg DCZL for a period > 1 week are warranted. 3) DCZL is poorly absorbed.

Th.B.521 CRYPTOSPORIDIUM DIARRHOEA IN AIDS PATIENTS TREATED WITH HYPERIMMUNE BOVINE COLOSTRUM

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Objective: Evaluating treatment of cryptosporidium diarrhoea with hyperimmune colostrum (titer > 1:1600).
Methods: Randomized, cross-over, dobble blind design AIDS cases with diarrhoea and cryptosporidium in their stool were given 500 ml colostrum for 2 x 10 days. Effect was based on: Stool volume, concistency and frequency, oocyst excretion and body weight.
Results: 26 treatments were given, 15/11 with positive/placebo colostrum. Seven treatments with positive colostrum were evaluable: Marked effect = 4, some effect = 1, no effect = 2. Nine treatments with placebo colostrum were evaluable: Marked effect = 1, some effect = 2, no effect = 6. Intolerance (severe nausea /vomiting) was more prevalent towards positive vs. placebo colostrum, 4 vs. 1. Patients with marked effect had a higher level of IgM, T-helper cells and T-helper/T-suppressor ratio.
Conclusion: Hyperimmune colostrum (titer > 1:3200) seems to be an effective treatment of cryptosporidium diarrhoea in AIDS patients. Efficacy was correlated to high level of IgM, T-helper cells > 0,2 X 10^9/L and T-helper/T-suppressor ratio > 0,2.

Th.B.522 MICROSPORIDIOSIS IN AIDS: AN UPDATE OF ENTERITIS CAUSED BY E. bieneusi AND A SECOND SPECIES, AND E. cuniculi AS A CAUSE OF KERATOCONJUNCTIVITIS

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Objective: To ascertain the incidence of E. bieneusi (EB) induced diarrhea, its pattern of infection, and whether other species cause enteritis. To determine the cause of keratitis in 2 AIDS patients.
Methods: Endoscopic biopsies from 1 or more sights, including the small bowel, of 100 patients with unexplained diarrhea were studied by transmission electron microscopy (TEM) and light microscopy of semithin plastic sections (LM). Biopsies from 42 more patients were studied by LM alone. Conjunctival scrapings from two patients, plus a biopsy from 1 of the patients, were studied by TEM and LM.
Results: Twenty-eight cases of EB enteritis have been diagnosed giving an incidence of approximately 20%. The stomach, esophagus, and colorectum were never involved. The jejunum was usually more infected than the duodenum and never less involved. A second, as yet unclassified species, was diagnosed by TEM in a patient with diarrhea. The degree of jejunal and duodenal infection greatly exceeded that seen with EB, and, unlike EB, histiocytes were also infected. A superficial infection with an Encephalitozoon, E. cuniculi was the cause of the keratoconjunctivitis.
Conclusion: Two new species of microsporidia cause diarrhea in AIDS patients, and a third species causes an ophthamologic infection. The Microsporida are important protozoal pathogens in AIDS patients.

Th.B.523 IS SMALL INTESTINAL MICROSPORIDIOSIS ANOTHER OPPORTUNISTIC INFECTION OF IMPORTANCE IN AIDS?

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Objective: to estimate the prevalence of small intestinal microsporidiosis and to define its association with chronic diarrhoea in HIV infected individuals; further to explore a possible role in non HIV-infected patients with chronic diarrhoea, using a simplified method of detection by light microscopy of smears prepared from duodenal biopsies.
Methods: all patients underwent upper gastrointestinal endoscopy and biopsies were taken blindly from the distal duodenum. Giemsa stained smears prepared from the fresh biopsies, were examined under high power light microscopy. The typical morphology of the intracellular and liberated parasites in their different stages had been defined in earlier patients and confirmed by elektronmicroscopy. CD4 lymfocyte counts were done in all HIV-infected patients. All patients with diarrhoea had negative findings on stoolculture for Salmonella, Shigella, Campylobacter, Yersinia and on microscopy for parasites before endoscopy.
Patients: 1. HIV positive with chronic diarrhoea (N=56, previous opp. inf. 50)
2. HIV positive no diarrhoea (N=33, previous opp. inf. 23)
3. chronic undiagnosed diarrhoea gastroenterology unit (N=10).
Results: group 1: microsporidia 9/56 (16%), giardia 2 (4%), cryptosporidium 2 (4%)
group 2 and 3: no microsporidia found. All patients with microsporidiosis had previous or concomitant opportunistic infection (6 PCP, 3 candida oesofagitis). CD4 counts around time of diagnosis all less than 200/mm3, 8 less than 100/mm3.
Conclusion: 1. smaller intestinal microsporidiosis is related to chronic diarrhoea in severely immunodeficient HIV-infected patients
2. prevalence in Amsterdam 16% after exclusion of patients with positive findings in stoolculture and microscopy
3. appears not to be related to chronic diarrhoea in other patients.

Th.B.524 THE PREVALENCE OF INVASIVE AMEBIASIS AND CYSTICERCOSIS IS NOT INCREASED IN MEXICAN PATIENTS DYING OF AIDS

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Objective: The occurrence of infection by tropical disease agents in patients coinfected with human immunodeficiency virus (HIV) is of concern to third world countries. The information derived from the autopsy material of the General Hospital of Mexico City enabled us to examine the prevalence of specific infections in patients with and without AIDS.

Methods: A case-control sampling approach was used. The records of the autopsies performed from 1976-1979 and 1986-1989 were reviewed. Cases were all patients who died of AIDS. Controls were selected at random and matched for gender, age, and date of death. Selected cases and controls were reviewed by an experience pathologist to obtain information on the occurrence of cysticercosis, amebiasis, toxoplasmosis and other diseases.

Results:

Disease	Cases (n=97)	Controls (n=197)	OR	(95% CI)
Amebiasis	1 (1.0%)	6 (3.0%)	1.37	(0.04-2.77)
Cysticercosis	1 (1.0%)	3 (1.5%)	0.68	(0.07-6.42)
Toxoplasmosis	15 (15.5%)	2 (1.0%)	15.23	(3.55-65.28)
Tuberculosis	25 (25.8%)	37 (18.8%)	1.37	(0.88- 2.14)
Cytomegalovirus	48 (49.5%)	2 (1.0%)	48.74	(12.1-196.3)
Pneumocystis carinii	24 (24.7%)	0 (0%)	--	
Cryptococcosis	9 (9.3%)	0 (0%)	--	

Conclusion: Our results confirm previous observations that the frequency of invasive amebiasis is not increased in patients with AIDS. The same is true for cysticercosis.

Th.B.526 COMMUNITY-ACQUIRED BACTEREMIA, FUNGEMIA AND PARASITEMIA IN FEBRILE ADULTS INFECTED WITH HIV IN CENTRAL AFRICA.

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Objective : To investigate and compare the occurrence of bacteremia, fungemia and parasitemia in febrile patients (P) with and without HIV infection.

Methods : From 05/16/89 to 06/16/89 and 09/30/89 to 10/07/89, each P admitted at CHK with fever (t° ≥ 38°C) had a detailed medical history, physical examination, blood cultures on various media, thick film for the screening of blood paresites, hematological examination, HIV serology (Elisa, Western Blot), Chest X-ray and other examinations if indicated. Early and late serum specimens were also collected for further studies.

Results : 271 P (162 male/109 female ; age range 15-78 ; mean age: 31) were eligible for the study ; 163 (60%) were HIV positive (HIV+); 94 pathogens were isolated or detected from the blood of HIV+P and 56 from HIV negative (HIV-)P. Distribution of the pathogens in HIV + and HIV- P respectively was the following: S.pneumoniae 12/5, S.typhi 4/10, Non S. typhi salmonellae 10/1, other enterobacteriacae 12/6, mycobacteria 1/0, C.neoformans 13/0, Plasmodium 39/32, Borrelia 2/0. Prevalence of blood pathogens among HIV+ and HIV- P was significantly different for S. typhi (p=0.01), Non S typhi salmonellae (p=0.05), C. neoformans (p=0.003).

Conclusion :The profile of pathogens recovered from the blood of febrile HIV+ P differs from that of HIV- P, S.typhi being significantly more frequent in HIV- P while non S.typhi salmonellae and C. neoformans are significantly more prevalent among HIV+ P. However, Plasmodium remains the most common blood pathogen in febrile african adults, whatever the status of HIV serology is.

Bacterial Opportunistic Infections

Th.B.525 BACTEREMIA IN ADULT HIV-INFECTED PATIENTS

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Objective: To determine the prevalence, nature, and risk factors of bacteremia in adult HIV-infected patients with special reference to Staphylococcus aureus bacteremia.

Methods: We reviewed the charts of 536 HIV-infected patients from our hospital for the presence of bacteremia. Bacteremia was defined as the isolation of a bacterial pathogen from at least two blood culture samples or from one sample and the simultaneous presence of the organism on other body sites.

Results: In 41 of 536 patients (7,6%) 42 episodes of bacteremia were diagnosed. Staphylococcus aureus (n=20) was the most frequent pathogen followed by non-typhoidal salmonella (n=10), E. coli (n=3), enterococci (n=2), pneumococci (n=2), other streptococci (n=2), Pseudomonas (n=1), Campylobacter (n=1), and Proteus (n=1).
S. aureus infections occurred in 6 i.v. drug addicts and 14 male homosexuals; 14 subjects suffered from AIDS, 3 from ARC, and 3 were asymptomatic. Staphylococci entered the blood stream via i.v. catheters (n=10), i.v. drug abuse (n=5), or mucocutaneous ulcerations (n=2); in 3 patients the entrance remained unknown. Mean values for OKT4 were 169/µl, 1-hour sedimentation rate 91 mm, body temperature 39,4° C, time till defervescence 14 days. 9 patients died within 4 weeks after diagnosis, another patient had a late complication with lethal endocarditis. 6 subjects had granulocytopenia (1000/µl) and 5 suffered from coexisting disseminated cryptococcosis.

Conclusion: S. aureus bacteremia is the most important form of bacteremia in HIV-infected adults, and usually has a bad prognosis in spite of antibacterial therapy. Patients with granulocytopenia, disseminated cryptococcosis, or i.v. drug abuse are especially prone for staphylococcal bacteremia.

Th.B.527 SEVERE S.AUREUS (SA) INFECTIONS IN PATIENTS (PTS) WITH AIDS.

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Objective. To evaluate the clinical spectrum and the prevalence of methicillin-resistant S.aureus (MRSA) in clinical isolates of pts with AIDS.

Patients and methods. Retrospective charts review of 312 pts hospitalized for AIDS-related diseases from January, 1988 to December, 1989. Twenty-eight episodes of SA infection were observed in 26 pts:14 intravenous drug abusers(IVDA), 8 homosexual men, 3 heterosexuals and 1 transfused; 21 were male and 5 female.

Results. The 28 clinical isolates were obtained from 11 cases of extensive infection of soft tissues, 9 of pneumonia (3 multifocal, 1 with a concomitant pleural effusion), 4 of urinary tract infection in hospitalized pts with indwelling catheter, 2 of tricuspidal endocarditis and 2 of sepsis of unknown source. Seven episodes were directly related to the persistent use of iv heroin. Bacteraemia was present in 9/28 cases (32%). Eight were hospital- and 20 community-acquired diseases. The 8 nosocomial infections were caused by MRSA in 50% of cases, while MRSA accounted for 20% among community-acquired infections.

Conclusions. The prevalence of severe SA infections is rather frequent in our pts with AIDS. MRSA is present in 28.6% of the clinical isolates(50% in those from nosocomial and 20% from community-acquired infections). In our area, methicillin-resistance among non-hospitalized pts with AIDS is higher than that observed in non HIV-infected people.

TRACK B: CLINICAL SCIENCE & TRIALS
POSTER SESSION

Th.B.528

CENTRAL VENOUS CATHETERS (CVC) IN AIDS: RISK FACTORS FOR BACTERIAL INFECTION.

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Infection is a more frequent complication of CVC in AIDS, than in cancer patients.
Objective: to evaluate factors influencing bacterial sepsis over a one year period (1989).
Methods: 40 CVC were surgically implanted in 31 patients: 37 tunnelized silastic dual catheters (70 cath days) and 3 single lumen implantable ports (350 cath days). Reasons for insertion were: infusion of DHPG or phosphonoformate 26), antibiotics (12), perenteral nutrition (12), chemotherapy (8), emergency situation (3). Diagnosis of catheter related infection was a positive blood culture if fever was not related to an opportunistic infection. In case of *Staphylococcus epidermidis* (SE), 2 cultures were necessary to give the definition of catheter related sepsis. CVC were used more often out of the hospital (65% of cath longevity) than in the hospital.
Results: 13 bacteremias were diagnosed (33%), leading to a removal of CVC in 8 cases; in the other cases, antibiotics were sufficent to control infection. Bacteria were: *S.aureus* (3), S.E. (5), *Streptococcus sanguis* (1), *Enterococcus faecalis* (1), *Enterococcus fecium* (1), *Corynebactorium sp.* (1) and *Pseudomonas maltophilia* (1). Infection occured shortly after insertion (<2weeks) in 2, suggesting that it was more related to maintenance than insertion. There was no relation between bacteremia and neutrophil count, infusion of intralipids or chemotherapy. Recurrent bacterial infection occured in 3 patients, dementia was associated in 2. In 3 cases of implantable ports, no infection occured during the period of the study.
Conclusion: CVC infection occurs frequently, due to intensive use and neurological deterioration. It seems to occur less frequently in ports. A randomized study is under way to elucidate this question.

Th.B.529

INCREASED CARRIAGE RATE OF STAPHYLOCOCCUS AUREUS AMONG HIV-PATIENTS

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Introduction: An increased incidence of S. aureus bacteremia has been described in patients with AIDS. Among other factors S. aureus carriage may predispose to such infections.
Objective: To investigate the nasal and throat carriage rate of S. aureus in HIV-infected patients and its clinical consequences.
Methods: Cultures were taken from nose and throat within 24 hours from admission and consecutively twice weekly. Antibiotic resistence was determined from the cultured organisms. A group of healthy hospital staff was used as a control.
Results: 612 swabs from 86 HIV-infected subjects were taken. S. aureus could be cultured from 41 patients (47,7 %). Carriers were classified as persistent (n=17) intermittent (n=18) or occasional (n=6). 34 of the 41 carriers (82,9%) had staphylococci already detectable on admission. Persistent carriers had a higher rate of resistant S. aureus strains (52,6 %) compared to intermittent carriers (27,8 %); antibiotic resistance was most prominent against clindamycine, erythromycine and tetracyclin. Disease progression did not influence the detection of S. aureus, but i. v. drug addicts had a higher rate (61,1 %) compared to homosexuals (44,1 %). In the control group (n=35) 28,6 % were carriers.
Conclusion: The increased carriage rate of S. aureus in HIV-infected patients has implications for the epidemiology and treatment (resistence) of staphylococcal infections in this group.

Th.B.530

STAPHYLOCOCCUS AUREUS NASAL CARRIAGE IN GAY MEN WITH AND WITHOUT HIV INFECTION: INFLUENCE OF SEXUAL BEHAVIOR.

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Objective. To assess whether the reported increased carriage rate of S. aureus in AIDS or ARC patients is related to HIV disease or to trauma from anal sex.
Methods. Swabs from the anterior nares were obtained in consecutive outpatients with known HIV status and were cultured for S. aureus with standard methods . A self-administered questionnaire on sexual practices was filled by each participating individual. Patients on insulin, or on hemodialysis, or actively using intravenous drugs were excluded because they are known to have an increased carriage rate of S. aureus.
Results. In 155 patients (97 gay men and 58 heterosexuals) S. aureus carriage rate was: 29% in AIDS/ARC (33% in gay men and 25% in heterosexuals), 23% in asymptomatic HIV infected individuals (27% in gay men and 17% in heterosexuals), and 21% in HIV seronegative individuals (18% in gay men and 27% in heterosexuals). No statistically significant difference between groups occurred. In 94 gay men: anal intercourse in general vs. no anal intercourse did not affect S. aureus carriage rate (28% vs. 27%), nor did passive anal intercourse vs. active only or no anal intercourse (29% vs. 24%). Antibiotic use did not influence carriage rate.
Conclusions. We did not confirm an increased S. aureus nasal carriage rate in patients with AIDS or ARC, although a trend toward increased carriage rate was seen in gay men with progression of HIV disease. Trauma from anal sex did not appear to influence S. aureus carriage rate.

Th.B.531

VANCOMYCIN PROPHYLAXIS FOR LONG TERM CENTRAL VENOUS CATHETER INFECTIONS IN AIDS PATIENTS.

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Objective. To assess the efficacy of intravenous vancomycin given perioperatively in reducing the frequency of early (within 8 days) infections of long term central venous catheters (CVC) and particularly of those due to Staphylococcus aureus in patients with acquired immunodeficiency syndrome (AIDS).
Methods. Consecutive patients with AIDS received intravenous vancomycin 500 mg right before and 500 mg 6 hours after insertion of a long term CVC, and were followed up for 8 days with cultures of blood (peripheral and transcatheter), skin exit site and hub (day 2 and 8). Rates and causative organisms of early and late catheter infection were compared with those found in a previous study of Hickman catheter infections in our hospital.
Results. Of 20 long term CVC inserted in 18 patients who received vancomycin prophylaxis 5 developed an early infection and 2 a late infection (7 total) vs. 7 and 9 respectively (16 total) of 46 Hickman catheters inserted in 44 AIDS controls (p=N.S.). S. aureus was responsible for infection only once in the study group vs. 7/7 early and 14/16 overall catheter infection in controls (p<0.05 and <0.005 respectively). Staphylococcus epidermidis was isolated in the other 4 early catheter infections in the study group. Exit site, hub and transcatheter blood cultures did not reliably predict the organism causing catheter infection.
Conclusions. Perioperative vancomycin prophylaxis was effective in reducing the frequency of early and overall S. aureus catheter infections but was unable to decrease the risk of long term CVC infections in general, and to prolong catheter life in patients with very advanced HIV disease.

Th.B.532 OUTCOME AND PREVENTION OF RELAPSES OF NON TYPHOIDAL SALMONELLA BACTEREMIA IN 55 AIDS PATIENTS

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Objectives: To determine the opportunity of a maintenance therapy after non typhoïdal salmonella (NTS) bacteremia, we rewiewed outcome and management of NTS bacteremia in hospitalized AIDS patients (pts).
Methods: From 1982 to 1989, among 996 hospitalized AIDS pts, all pts with at least one positive blood culture (BC) for a NTS were included.
Results: 55/996 (5.5%) pts developed a NTS bacteremia. They were 48 male and 7 female, mean age : 35.1 ± 10.8 years; 13 pts (23.6%) were of african or caribbean origin - Salmonellosis was the first opportunistic infection (OI) in 41 pts (74.5%), concomitant with 1 other OI or Kaposi sarcoma in 12. Mean CD4 count was 123 (1-734)/mm3. 3 pts received Zidovudine (ZDV) at the time of NTS bacteremia. Fever was constant, ≥ 38°5 in 91.5% of the patients, and ≤ 10 days in 68%. Diarrhea and or abdominal pain were noted in 22/55 pts (40.7%). BC yielded *S. typhimurium* n = 22, *S. enteritidis* n = 18, *S. dublin* n = 12, others n = 3. NTS was also found in stools n = 12, in urine n = 5, or lymphnode n = 1. Resistance to at least 1 drug was noted in 15/49 cases (31.6%): chloramphenicol n = 19(20%), sulfamethoxazole n = 13(27%), ampicillin n = 7(14%) trimetoprim n = 4. Initial antibiotherapy (AB) was: aminopenicillin (n = 21), cephalosporin (n = 8), quinolone (n = 20), cotrimoxazole (n = 5) chloramphenicol (n = 1). Mean duration of therapy was 19.5 ± 10.6 days. Immediate outcome was favorable in 54 pts, with a mean delay to apyrexia of 4(1-20) days in 37 pts without other O.I. One pt died of septic shock. A relapse occurred in 7 pts after a mean follow up of 2.2 ± 1.5 months: 5 bacteremias, 1 urine and 1 stool relapse. In 51 evaluable pts, rate of relapse was dependent upon maintenance therapy (MT):

	AB	ZDV alone	Antitoxoplasmic MT	No treatment
Pts with relapse	0/20	1/11	1/8	5/11
Follow-up (months)	8.2 ± 6	12.7 ± 10.8	11.6 ± 7.3	3.2 ± 4

Conclusion : Those results show that NTS bacteremias (1) have a favorable outcome, (2) needs a maintenance therapy and (3) suggest efficacy of ZDV on prevention of relapses.

Th.B.533 RISK FACTORS FOR CAMPYLOBACTER INFECTIONS IN MEN WITH AIDS/ARC

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Objective: To identify risk factors associated with Campylobacter infection in men with AIDS/ARC, and to determine the extent of food safety counseling among AIDS/ARC patients.
Methods: Men ages 20-59 with AIDS or ARC were enrolled in a case-control study. Cases (N=86) had culture confirmed Campylobacter infections detected by active laboratory surveillance in 4 participating counties. Age-matched controls with AIDS/ARC (N=189) were selected from medical practices attended by the cases.
Results: Based on preliminary univariate analyses, there was an elevated risk for Campylobacter infection associated with eating undercooked chicken ($p<.02$) or "runny" eggs ($p<.02$), and eating ($p<.002$) or drinking ($p<.04$) while preparing raw chicken for cooking. Preliminary analyses of several other possible risk factors, including recent anal sex, showed no elevated risk of infection. Since developing AIDS/ARC, few cases or controls (<40%) had received information regarding prevention of food-borne enteric infections.
Conclusion: Infection with Campylobacter in AIDS/ARC patients is associated with food and not sexual practices. These findings suggest that educating AIDS/ARC patients regarding safe eating and food preparation habits may prevent enteric infections which are common and difficult to treat complications of AIDS/ARC.

Th.B.534 ALTERED SEROLOGIC RESPONSE TO NATURAL HUMAN INFECTION WITH HAEMOPHILUS DUCREYI, DUE TO HIV INFECTION.

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Objective: To compare quantitative serologic reactivity to H. ducreyi during natural infection, in men with and without HIV seropositivity.
Methods: Eighty-eight men with culture-proven chancroid had serial H. ducreyi serology measured with ELISA for IgM and IgG antibody response, mean absorbancy to cutoff ratios were calculated.
Results: Seventy-six HIV seronegative men had peak IgM response at about 3 weeks disease duration, and subsequent decline; 12 HIV seropositive had increasing IgM response beyond 4 weeks. HIV seronegative IgG response peaked at 4 weeks and diminished; HIV seropositive IgG response increased beyond 4 weeks to significantly higher absorbance ratios (mean ± SE: HIV⁻ 2.36 ± 0.18 vs HIV + 3.10 ± 0.25, $p=0.025$).
Conclusions: Altered serologic reactivity, as a delayed and subsequently increased antibody response in natural human H. ducreyi infection due to HIV coinfection, corroborates reported increased H. ducreyi virulence due to HIV infection in clinical epidemiologic studies.

Th.B.535 MYCOPLASMA INCOGNITUS INFECTION IN KIDNEYS OF AIDS PATIENTS WITH AIDS-ASSOCIATED NEPHROPATHY

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OBJECTIVE: To study kidney infection in patients with AIDS by the newly identified human pathogenic mycoplasma, M. incognitus (MI).
METHODS AND RESULTS: We studied renal tissues from 203 autopsies of patients with AIDS submitted to the AIDS Pathology Registry, Armed Forces Institute of Pathology. Of the 203, 20 cases showed light microscopic changes characteristic of AIDS-associated nephropathy (AAN). Fifteen of the 20 (Group A) were examined by immunohistochemistry using MI specific monoclonal antibodies and electron microscopy (E.M.). Renal tissues from all 15 AAN cases showed positive staining for MI antigens within various locations including: glomerular endothelial and epithelial cells, glomerular basement membrane, tubular epithelial cells and casts, and mononuclear interstitial cells. E.M. study of these cases revealed mycoplasma-like structures(MLS) in glomerular epithelial and endothelial cells, glomerular basement membrane, tubular epithelial cells and casts, and mononuclear interstitial cells. In parallel study, kidneys from 15 patients with AIDS with essentially normal renal histology or mild interstitial mononuclear cell infiltration (Group B) were also examined using MI specific monoclonal antibodies and E.M. These tissues showed no evidence of MI infection in renal parenchymal cells or basement membrane, however, scattered mononuclear interstitial cells were positive for the antigens of MI organism. Renal tissues from 5 patients dying with non-AIDS diseases (Group C) showed no staining for MI antigens in any location. E.M. examination of kidneys from Group B and C failed to reveal MLS in tubules or glomeruli.
CONCLUSION: Infection of renal parenchymal cells by M. incognitus in the kidneys of AIDS patients is apparently associated with development of AAN.

Th.B.536 IN VITRO ANTIMICROBIAL SUSCEPTIBILITY TESTING FOR THE NEWLY IDENTIFIED PATHOGENIC HUMAN MYCOPLASMA - M. INCOGNITUS.

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OBJECTIVE: Many AIDS patients were found to be infected by M. incognitus. This study is to test in vitro the susceptibility of M. incognitus to representative antibiotics and to compare the sensitivity for the previously known human pathogenic mycoplasma, M. pneumoniae, to these antibodies.
METHODS: We used the methods of quantitative assays for minimal inhibition concentration (MIC) of representative antibiotics against the growth of the microogranisms in modified SP-4 broth media. The number of organisms used in the test was adjusted in the range of 10^4 to 10^6 per mL.

RESULTS:

Antibiotics	MIC (ug/mL) M.p.*	M.f.*	M.i.*
Ampicillin	>1000	>1000	>1000
Chloramphenicol	1.8	2.5	2.9
Ciprofloxacin	1.25	0.13	0.018
Doxycycline	0.21	0.13	0.26
Erythromycin	0.0084	31.2	41.6
Gentamicin	4.5	15.6	>1000
Kanamycin	16.9	20.8	>1000
Penicillin	>1000	>1000	>1000
Streptomycin	3.2	18.2	>1000
Tetracycline	0.68	0.21	0.62

*M.p.: M. pneumoniae, M.f.: M. fermentans, M.i.: M. incognitus

CONCLUSION: Although M. incognitus is not sensitive to erythromycin, most commonly used antibiotics against human mycoplasma infection, the microorganism is susceptible in vitro to tetracycline, doxycycline, and cipro.

Th.B.537 BACILLARY NECROPELIOSIS OF THE LIVER IN PATIENTS WITH CAT-SCRATCH DISEASE AND AIDS

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Cat scratch disease (CSD) is an infectious process characterized by the presence in one or more organs of a pleomorphic bacillus believed to be transmitted to humans mainly by cats. Patients with CSD who are also immunodeficient may develop a systemic, severe, form of infection which is treatable with antibiotics that interfere with RNA/protein synthesis. When there is hepatic involvement we see it as a protean and dynamic process that can be misdiagnosed as granulomatous hepatitis (early stage), or as peliosis hepatis (intermediate stage). Necropeliotic areas gradually undergo fibroblastic scarring, and eventual mineralization (late stage). To increase peer awareness we have selected from the AFIP files ten cases which are illustrative of this not yet widely-known opportunistic complication. The mean age for this group of men with AIDS was 33 years. Contributors' diagnoses included "designer" drug effect, atypical infiltrating process, fibrovascular proliferation, Kaposi's sarcoma, vascular nodules of uncertain etiology, hemorrhagic ascending cholangitis, inflammatory angioproliferative lesion, and epithelioid hemangiomatosis. Sections prepared by the Warthin-Starry and Manuel's impregnation methods, showed varying numbers of silvered branching bacilli in macrophages and Kupffer cells; bacilli were also free in the center of the peliotic cavities or near the one or more layers of compressed, disintegrating hepatic cells forming the rim. When present in large numbers the bacilli form granular colonies which are seen with most routine stains. EM studies confirm their presence in necropeliotic areas.

Th.B.538 EXTRA-CUTANEOUS BACILLARY EPITHELIOID ANGIOMATOSIS IN TWO IMMUNOCOMPROMISED HOSTS. IS IT CAT SCRATCH DISEASE?

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Objective: We present the clinical course and histopathology of a patient with HIV infection and disseminated bacillary epithelioid angiomatosis (BEA) with visualization of cat-scratch bacillus-like organisms (CSBLO) in visceral lesions.

Results: This HIV infected patient presented with fever, a single nodular cutaneous lesion and regional lymphadenopathy. He developed profound hepatic dysfunction, coagulopathy, encephalopathy, anemia and thrombocytopenia. Computed tomographic scans of the abdomen revealed diffuse foci of decreased attenuation within hepatic and splenic parenchyma. Skin, liver and bone marrow biopsies demonstrated BEA with CSBLO on Warthin-Starry stain. Treatment with oral doxycycline 100 mg BID was initiated, and the patient recovered with normalization of hepatic and hematologic parameters. A second case documenting extra-cutaneous BEA involving liver and spleen with visualization of CSBLO occurred in a non-HIV infected cardiac transplant patient. Treatment with oral erythromycin 250 mg QID resulted in clinical cure. Tissue cultures demonstrated no growth in either case.

Conclusions: BEA is a systemic disease which may be caused by a cat-scratch bacillus. It may result in significant morbidity in HIV infected persons as well as other immunocompromised hosts. Cutaneous lesions are not invariably present. Biopsy and Warthin-Starry stain of suspicious skin or visceral lesions should be performed. Antibiotic therapy, despite unproven efficacy, was associated with resolution of disease.

Th.B.539 GRAM-NEGATIVE BACTEREMIAS (GNB) IN HIV-INFECTED PATIENTS

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Objective: To study the incidence, microbiology, source, predisposing factors, clinical presentation and mortality of GNB in HIV-infected patients.
Methods: Retrospective chart review of patients admitted to the AIDS Unit, Johns Hopkins Hospital, between July 1, 1988 to December 31, 1989, with positive blood cultures for Gram-negative organisms.
Results: We identified 30 episodes of GNB in 26 HIV-infected patients (5% of admissions). Mean age was 36 +/- 6 years. 24 patients had AIDS and 2 had no AIDS defining illness. The organisms isolated were: Pseudomonas aeruginosa (13 episodes), E. coli (4), Salmonella sp. (4), Klebsiella pneumoniae (3), Enterobacter cloacae (2) and one each with Serratia marcescens, Pseudomonas maltophilia, Hemophilus parainfluenza and Campylobacter-like organism. The source of the GNB were: indwelling central venous line (11 patients), respiratory (4), gastrointestinal tract (3), genito-urinary tract (2) and in 10 patients, no source could be identified. Only 4 patients (15%) had a neutrophil count less than 1500/mm3. Mortality during hospitalization was 38%, in spite of appropriate treatment.
Conclusion: GNB is a serious complication in HIV-infected patients. It is more frequent in AIDS patients and carries a high mortality.

Miscellaneous Opportunistic Infections

Th.B.540 FEVER OF UNKNOWN ORIGIN IN AIDS

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Objective: To determine the nature and frequency of the processes responsible for fever of unknown origin (FUO) in AIDS.
Methods: Charts were retrospectively reviewed for patients with AIDS and unexplained fever. Patients included in the analysis had fever greater than 101°F lasting more than one week during an inpatient evaluation without the establishment of a diagnosis. Patients were excluded if they had bilateral infiltrates on initial chest x-ray or if they were in a preterminal condition.
Results: 42 patient charts were included in the analysis (9 F and 33 M). A diagnosis was established in 36 of the 42 cases (85.7%).

Cause of FUO	# (%)	Initial	Secondary	Means of Diagnosis
Mycobacterium avium-complex	13(30.9)	7	6	BM-10, lymph node bx-2 urine culture-1
Tuberculosis	11(26.2)	9	2	BM-1, LN bx-3, BAL-3, lung bx-1, brain bx-1, ascitic cul-1, pericardial bx-1
Cause unknown	7(16.7)	3	4	
PCP	4(9.5)	4	0	BAL-4
Histoplasmosis	2(4.8)	4	0	BM-2
Salmonellosis	2(4.8)	2	0	blood culture-2
Crypto meningitis	2(4.8)	1	1	lumbar puncture-2
Cerebral toxo	1(2.4)	1	0	CT brain
TOTALS	42	29	13	

Conclusion: A cause of fever can be established in the majority of AIDS patients with FUO. Opportunistic infections account for virtually all of the cases, with mycobacterial infections predominating. Bone-marrow biopsy is a useful procedure in the evaluation of FUO.

Th.B.541 PRIMARY CHEMOPROFILAXIS IN AIDS

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Objective: Evaluation of the efficacy and benefit of Isonicid[R] prophylaxis (IP) and Fansidar[R] prophylaxis (FP) as primary chemoprophylaxis in PWA.
Methods: Patients (pts) enrolled in this study were PWA or PWH having a CD4+ cell count less than 200/mm^3 and p20 antigenaemia was present. All pts had Toxoplasma antibodies. Exclusion criteria for IP were as follows; clinical impairment of hepatic function and/or active mycobacteriosis. Exclusion criteria for FP were the following: history of adverse reaction to sulphonamide and/or granolopenia and/or thrombocytopenia. For IP Isonicid[R] (isoniazidum, 5 mg/kg/day), whereas for FP Fansidar[R] (sulphadoxine 500 mg, pyrimethamine 25 mg tablets), two tablets/week and folic acid 9 mg/day were given.
Results: 12 pts were enrolled in the IC mean duration was 11,2 months (3-15 months), FC was given to 18 pts mean duration was 12,7 months (3-17 months). During the observation period neither failure of primary prophylaxis (PCP, Toxoplasma reactivation) nor adverse reactions or side effects were observed.
Conclusion: Based on our experience with small groups of pts we conclude that the primary chemoprophylaxis with Isonicid and Fansidar may prove to be beneficial in the treatment of PWA and advanced symptomatic PWH.

Th.B.542 EVALUATION OF MEASLES AND RUBELLA VACCINATION AMONG HIV-INFECTED ADULTS

Sprauer, Mary[1]; Markowitz, L.[1]; Dales, L.[2]; Khoury, N.[3]; Nicholson, J.[1]; Stewart, J.[1]; Atkinson, W.[1] [1]Centers for Disease Control, Atlanta, Ga., USA, [2]Department of Health Services, Berkeley, Ca., USA, [3]Department of Corrections, Sacramento, Ca., USA.

Objective: Live virus measles-mumps-rubella vaccine is recommended by the Immunization Practices Advisory Committee for all eligible persons, including HIV-infected (HIV+) adults. Data are limited to the response to measles antigen among HIV+ children. The purpose of this study was to obtain data concerning response to measles and rubella antigens among HIV+ adults.
Methods: Because of concern of measles and rubella outbreaks in 2 institutions, 39 HIV+ and 19 healthy adults received measles-rubella (MR) vaccine. Data were collected on clinical adverse events (AE). Pre- and 3 week post-vaccination specimens were obtained to measure serologic and immunologic response.
Results: The incidence of clinical AE did not differ between groups. All had measles and rubella antibody (Ab) by ELISA pre- and post-vaccination. There were 3 HIV+ p24 antigen-positive patients post-vaccination, all of whom were p24-antigenemic pre-vaccination. Among HIV+ adults the mean percentage of CD4 T-lymphocytes pre-vaccination was 24% (range 1%-42%). The mean change in CD4 and CD8 percentage pre- and post-vaccination did not differ between groups: 18 (46%) HIV+ adults had a decline in CD4 percentage versus 9 (47%) healthy vaccinees (p=.76); 24 (62%) HIV+ vaccinees had a decline in CD8 percentage versus 15 (79%) healthy adults (p=.25). There was no difference in mean change in CD4 and CD8 percentage among HIV+ adults when stratified by initial CD4 percentage.
Conclusion: Questions remain concerning response to MR vaccination in measles and rubella Ab-negative HIV+ adults. Our findings indicate no clinical AE nor adverse effects in the HIV and immunologic laboratory parameters we measured after MR vaccination among HIV+ adults with pre-existing measles and rubella Ab.

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TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Epidemiology & Prevention: Various Topics

Th.C.543 CLINICAL MANIFESTATIONS OF HIV-1 INFECTION AMONG WOMEN WORKING AS PROSTITUTES IN NAIROBI

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Objective: To determine the frequency of clinical manifestations of HIV-1 infection in a community based population of women working as prostitutes.
Methods: A community based population of women from 1 Nairobi section was established in 1985. Five hundred and thirty-nine women were initially HIV-1 positive or seroconverted in follow-up and have been followed serially at intervals of 3-6 months.
Results: Thirty-seven women (6.8%) have died of AIDS during follow-up. Diarrhea/wasting was the main manifestation prior to death in 31 (83.7%). The following clinical conditions have been observed in survivors: oral candidiasis - 8.9%, pruritic rashes - 8.2%, herpes zoster - 4.6%, oral ulcers - 4.2%, unexplained fever - 2.8%, typical prurigo nodularis - 1.8%, bacterial pneumonia - 1.8%, hairy leukoplakia - 1.4%, diarrhea/wasting - 1.0%, persistent soft tissue infection - 1.0% and Kaposi's sarcoma - 0.6%.
Conclusion: In this group of women, diarrhea/wasting is the most frequent cause of death. Identifying the etiology of this syndrome in Africa is important in rationalizing AIDS therapy.

Th.C.544 USE OF POLYMERASE CHAIN REACTION (PCR) IN THE DIAGNOSIS OF PEDIATRIC HIV INFECTION

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Objective: To determine the reliability of PCR in detecting pediatric HIV infection.
Methods: The study population included children known to be infected with HIV, children born to HIV-seropositive mothers and healthy uninfected adults. PCR, using SK 38/39 (gag), SK 29/30 (LTR) and/or SK 68/69 (env) HIV primers and 35 to 40 cycles of 94°, 55° and 72° C (for 1, 2 and 2 minutes respectively) was performed on DNA from lysed peripheral blood mononuclear cells. Reaction products were then electrophoresed on 8% polyacrylamide gels, electrotransferred to nylon membranes, and positives detected with an appropriate, usually biotinylated, probe (SK 19, SK 31 or SK 70).
Results: Adequate specimens from each of 29 HIV-infected pediatric patients (16 in CDC category P2 and 13 in category P1) were HIV positive in 1 or more PCR tests. PCR of individual specimens from these patients detected infection as follows: with SK 38/39, 42 (91%) of 46; with SK 29/30, 1 (20%) of 5; with SK 68/69, 16 (67%) of 24 tests were positive. Forty-five PCR tests of 28 specimens from healthy children and adults were appropriately negative. Seven (21%) of 33 pediatric patients classified as P0 (9 of 43 specimens) tested PCR-positive for HIV. Thus far, 3 of the P0 PCR-positive children have been found to be definitely HIV infected.
Conclusion: PCR is a promising tool for detecting pediatric HIV infection. The use of more than 1 primer pair appears to be necessary for maximum sensitivity.

Th.C.545 USE OF PCR FOR AN EARLY DETECTION OF HIV GENES IN SERONEGATIVE EXPOSED PREGNANT WOMEN.

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We studied by PCR the eventual infection by HIV of an heterogeneous exposed population composed of seronegative pregnant women: drug users or sexual partners of seropositive men. We designed a complete set of primers covering the entire genomes of the HIV1 and of the HIV2. They were tested for their specificity and their efficiency and they allow the detection of the *gag, pol, env, nef1, nef2, vif1, vif2, vpr, vpx*,and *vpu* genes (the index *1* corresponding to HIV1 and the index *2* to HIV2).
The screening of this population shows a preferential detection of regulatory genes: *nef1* , *vpr* and *vpu*. The respective percentages of detection are: 91%, 82% and 55% when they drop to 18% and 9% for the *gag* and *pol* genes. Interestingly only 10% of the patients were detected as entirely negative while the use of classical structural genes only (*gag, pol, env*) should have given about 75% of PCR-negative patients. It should be noted that one of the patient, who was only PCR positive for the *nef1* gene, has seronverted during her pregnancy.
We are currently performing the follow-up of the babies born to these seronegative mothers to detect an eventual transmission of HIV to the babies. It would be interesting to define patterns of PCR which would correlate to high transmission of the virus to infants.

Th.C.546 PRESENCE OF THE HIV DETECTED BY PCR IN SERONEGATIVE BABIES BORN TO SEROPOSITIVE MOTHERS.

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* Unité d'Oncologie Virale, Institut Pasteur, Paris, France; **Institut Pasteur du Brabant, Brussells, Belgium; *** Department of Pediatry, Hôpital Saint-Pierre, Brussells, Belgium.

The presence of HIV genes was studied by PCR in an homogeneous exposed population composed of 35 babies born to seropositive mothers. We designed a complete set of primers covering the entire genomes of the HIV1 and of the HIV2. They were tested for their specificity and their efficiency and they allow the detection of the *gag, pol, env, nef1, nef2, vif1, vif2, vpr, vpx*,and *vpu* genes (the index *1* corresponding to HIV1 and the index *2* to HIV2).
Results show a preferential amplification of some genes, equally shared between regulatory and structural genes: *gag, pol,nef* and *vpr*, with respective percentages of 73%, 69%, 81% and 78%; the *env* gene being rarely detected. One should note that only 18% of the patients were detected as entirely negative and that the use of classical structural genes only (*gag, pol, env*) should have given 26% of PCR-negative patients.
All the 35 babies (but 2) remained seronegative after 15 months and did not present any noticeable immunological alteration. These data may suggest a higher frequency of maternal transmission of HIV than previously inferred from serological and clinical detection, with HIV genes remaining in a latent state.

Th.C.547 PEDIATRIC AIDS: EPIDEMIOLOGICAL AND CLINICAL CHARACTERISTICS AND SURVIVAL.

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** Federal University of Minas Gerais; FIOCRUZ.

Objectives: To investigate the epidemiological characteristic and clinical course of children with AIDS and evaluate survival after the AIDS outcome.
Methods: From January/1986 to December/1989, 25 children with AIDS have been followed up at our immunology clinic. Patients were serolooically tested for HIV-1 antibodies (ELISA, IF and WB) and HIV-1 antigen detection (EIA). Immunological evaluation consisted of immunoglobulins (IgG, IgA and IgM) dosage; total T lymphocyte, T helper and T supressor and B lymphocyte count. Clinical classification was based on CDC criteria for pediatric AIDS. Incubation time was computed from date of birth to age at diagnosis for perinatally-acquired (PA) and from date of blood or bloodcomponents transfusion to date of diagnosis for transfusion-associated (TA). Survival was evaluated by product-limit function (Kaplan-Meier).
Results: Of the 25 children studied 13 (52%) were perinatally infected and 12 (48%) were blood transfused infected; 18 (72%) were male and 13 (52%) were white. In mothers risk group of PA children; 5 (38,5%) were IVDU, 5 (38,5%) were blood recipients and 3 (23%) were sexual patners of HIV infected individuals. Clinical manifestations observed were: secondary infections diseases - 20 (80%), non-specific findings - 14 (56%), progressive neurologic disease - 3 (21,4%) and other diseases - 2 (8%). Among the secondary infections diseases 23 (92%) were recurrent bacterial infections. For the PA children the median and mean for incubation time were respectivaly 9 months and 13,84 ± 3,97 mo. and for TA children were 18,5 months and 23,16 ± 6,72 mo. The mean time of survival was 7,48 ± 1,37 mo for the PA 31,42 ± 6,27 mo for the TA.
Conclusion: 1) There is a greater proportion of TA cases whem compared to other countries. 2)Mothers risk factors od PA cases are similars to those described in other studies. 3)Clinical feature most commonly observed is the development of recurrent bacterial infections concomitant with non-specific findings. 4) Children with PA AIDS presented a shorter incubation time and survival when compared to TA AIDS.

Th.C.548

LYMPHOCYTE-ASSOCIATED p24 ANTIGEN: A NEW TECHNIQUE FOR DIAGNOSIS OF HIV INFECTION IN PEDIATRIC PATIENTS

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Objective: To determine the utility of assessment of lymphocyte-associated HIV-1 p24 antigen for the diagnosis of HIV infection in pediatric patients.
Methods: Small (2-4ml) peripheral blood samples (n=11) were obtained from 9 patients age 7mo to 5½yrs. All patients were born of HIV infected women and were classified according to the CDC criteria. Dextran sedimented leukocytes were permeabilized, stained by indirect immunofluorescence using a murine monoclonal antibody specific for HIV-1 p24 and assayed by flow cytometric analysis. Results are reported as % $p24^+$ lymphocytes. Uninfected adult controls were used to set an arbitrary cut-off value of 0.1% for negative samples. Adult samples having more than 1% $p24^+$ lymphocytes generally give positive viral culture results. For this study, 0.1-1.0% were considered equivocal, >1.0% positive.
Results: The patients were followed after sampling to determine whether infection did occur.

% $p24^+$ lymphs	Most recent CDC Classification P-0	P-1	P-2	not inf
<0.1	-	-	-	1
.1-1.0	2	1	1	-
>1.0	0	4	2	-

In this small sample, complete concordance was demonstrated between an equivocal or positive lymphocyte-associated p24 antigen assay and evidence of definite infection by CDC criteria.
Conclusion: The flow cytometric analysis of lymphocyte-associated p24 antigen has promise in the diagnosis of HIV infection in pediatric patients as a rapid technique utilizing small sample volumes and equipment available in most major laboratories.
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Th.C.550

Impact of HIV on Pediatric Outpatient Clinic Use in Kigali, Rwanda

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Objective: To compare outpatient health care costs for HIV+ and HIV- children in Kigali, Rwanda.
Methods: 472 HIV+ mothers and 997 HIV- mothers enrolled in a prospective study of the predictors and natural history of HIV infection in Kigali, Rwanda were offered an HIV blood test for their children aged 12 months to 16 years. HIV+ and HIV- children were compared during a 5-month period with respect to number of clinic visits, presenting symptoms (cough, fever, diarrhea, dermatitis among others), number of laboratory tests ordered, and type and cost of medications prescribed.
Results: Of the 153 children who were tested, 18 children were HIV+. 50% of the HIV+ children and 24% of the HIV- children had at least 3 clinic visits in a 5 month period (p=.02). The distribution of symptoms was not different in HIV+ and HIV- children, but the proportion of HIV+ children requiring care for dermatitis, cough, and diarrhea was higher (50% vs. 13%, p<.001; 56% vs. 34%, p=.08; 33% vs. 20%, p=.20, respectively). There was no difference between the two groups in the number of tests performed or positive results obtained for malaria or stool pathogens. Specific medications such as oral rehydration therapy, vitamins and Bactrim syrup were prescribed significantly more often for HIV+ children resulting in a 1.7 times higher cost for the HIV+ children (US$4.30 vs US$2.80).
Conclusion: HIV+ children required more frequent attention for common symptoms in an outpatient clinic than their HIV- counterparts, and the cost per child was higher.

Th.C.551

SEROEPIDEMIOLOGY OF HTLV-I INFECTION EN THE VENEZUELAN POPULATION.

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Objective: To evaluate the seroprevalence of HTLV-I in a population with a - previously reported high rate of infection.
Methods: A total of 2.297 individuals were tested for HTLV-I antibodies by - EIA (Abbott); all reactive samples were confirmed by WB (Dupont) and RIPA -- (Abbott).
Results: The individuals were grouped according to the risk for sexually -- transmitted diseases. Healthy mestizos came from rural and urban areas and amerindians from 5 different ethnic groups. The following table sumarizes - the results.

		EIA	WB/RIPA	PREVALENCE
1. Low Risk				
* Mestizos	(1.667)	5	4	0.24%
* Amerindians	(216)	0	-	0%
2. High Risk				
* Prostitutes	(99)	2	2	2%
* Homosexuals	(315)	1	1	0.72%

Conclusion: The seroprevalence of HTLV-I in Venezuela is significantly lower than previously reported. Noticeably, the amerindians showed no evidence of exposure to HTLV-I. In spite of its proximity to the Caribbean basin, Venezuela should not be considered as an endemic country for HTLV-I infection.

Th.C.552 THE TALKING SEX PROJECT: RESULTS OF A RANDOMIZED CONTROL STUDY FOR THE PREVENTION OF AIDS.

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Objective: To evaluate the effect of two models of small discussion-group education on change in knowledge and behaviour in a non-clinical study population of gay and bisexual men.
Method: The 612 subjects were recruited from the community and assigned by randomized block design to either a single session group led by peer-volunteers, a four session group led by professionals or a control group. Questionnaires were completed prior to group assignment and 3 months post intervention.
Results: Groups were comparable on demographic characteristics, knowledge and behaviour. For follow-up, 501 (81.9%) returned; dropout rates and characteristics were similar across groups. The mean increase in HIV–Transmission Knowledge Scores for the two treatment groups of .74 and .97 differed significantly from the control group score of .31 ($F=4.8$ $p<.009$). Both +ve and -ve behaviour change (Δ) related to anal intercourse occurred in all groups. In the table **Overall Change** is [(+veΔ)+(-veΔ)] / N, and the **Index of +ve Change**, from unprotected to protected or abstinence, is +veΔ / [(+veΔ)+(-veΔ)].

Group	N	% unsafe at pretest	Overall Change	Index of +ve Change
Single Session	200	15.0	.21	.74
Four Session	87	20.7	.15	.62
Control	208	18.3	.20	.57

Within-group change for the single sessions was significant (McNemar symmetry $\chi^2=12.5$ d.f.=4 $p<.006$).
Conclusions: An unscreened non-clinical population is able to benefit from a single, volunteer peer-led discussion group. Multiple groups may be more appropriate for persons with special needs and may require participant screening. The difference in behaviour change in the two treatment groups may be attributable to unidentified group dynamics. Further study of leadership characteristics and group dynamics which promote change is required.

Biology of HIV Transmission

Th.C.553 PREVALENCE AND TEMPORAL VARIATION OF HIV-1 IN SEMEN

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Objective: Various approaches were used to detect HIV in semen from seropositive men to assess the prevalence and temporal variation of HIV in semen and associations with disease stage and genital tract inflammation (GTI).
Methods: Individual semen specimens from 56 seropositive homosexual men, and 6-7 additional samples collected monthly from 11 of these men were analyzed for HIV-1 by a modified microculture technique, and by p24 antigen ELISA; 34 of the specimens have also been analyzed by transmission electron microscopy (TEM), and 12 by polymerase chain reaction (PCR) assay.
Results: HIV was detected in 10% of individual semen samples by microculture, in 8% by ELISA, in 0% by TEM, and in 8% by PCR. HIV was detected at a significantly higher frequency in semen from patients with advanced stage disease (<200 peripheral CD4+ cells; $p<0.03$), and was significantly associated with GTI (elevated numbers of peroxidase-positive granulocytes in semen; $p<0.007$). However, HIV-1 was also detected intermittently in serial semen samples from 9/11 men who had >200 peripheral CD4+ T cells and no evidence of GTI.
Conclusion: HIV-I is present more frequently in the semen of men with advanced stage disease and in men with GTI; however, virus was also detected intermittently in semen of men without these conditions. These data indicate that a high percentage of seropositive men may be capable of sexual transmission of HIV.

Th.C.554 PREVALENCE OF HIV IN THE CERVICOVAGINAL SECRETIONS OF WOMEN SEROPOSITIVE FOR HIV : CORRELATION WITH THE CLINICAL STATUS AND IMPLICATIONS FOR HETEROSEXUAL TRANSMISSION

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Objective : This study was undertaken to detect HIV in cervicovaginal secretions of seropositive pregnant and non pregnant women.
Methods : Vaginal secretions were obtained after injection of RPMI 1640 medium (5 ml) in the vagina. The medium was recovered by aspiration, then centrifuged (800 g, 15 min) to separate the supernatant and the cell-containing pellet. The supernatant was ultracentrifuged at high speed (36 K rpm for 320'). The resulting pellet was resuspended in 1 ml of culture medium, tested for HIV-1 antigen filtered, and then added to PHA stimulated PBMC or CD4+ cell lines. Cells of the pellet were disrupted by several freeze and thaw cycles. The resulting supernatant was tested for infectivity. Every 7 days, dosage for reverse transcriptase assay (RTA) and MTT assay or tritiated thymidine incorporation were performed.
Results : This study included 46 pregnant and non pregnant seropositive women, with age ranging from 20 to 35 years. Infectious HIV was isolated from the medium used to rince the vagina of 14 out of the 46 seropositive women. Isolation was positive in 5 out of 21 LAS or asymptomatic patients and in 9 out of 25 AIDS patients. The isolation was more frequent from supernatants than from disrupted cellular material (1 infectious from 21). HIV-1 antigen was found in 4 secretions out of 25 tested.
Conclusion : These results demonstrate that HIV can be isolated from the medium used to rince the vagina or supernatant of disrupted cells. The relatively high incidence (30 %) of HIV isolation from vaginal secretions confirms the risk of HIV contamination from women to men. Several question remains open : to be able to correlate more precisely the incidence of HIV isolation with the CDC status of women and with the transmission risk to foetus and newborn.

Th.C.555 SEXUAL BEHAVIOR, SMOKING, AND HIV-1 IN HAITIAN WOMEN

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Objective: To determine if unrecognized behavioral factors confounded the association between smoking and HIV-1.
Methods: A case-control study of women recently pregnant compared female Haitian smokers (n=83), and former smokers (n=34) with non-smokers (n=303).
Results: Current smokers were similar to non-smokers in age (28.7 vs 28.0 yrs), economic status, employment, contraceptive use, health status, alcohol use, frequency of intercourse, sex and health beliefs, and age of sexual partners. Smokers were: more likely to have had first intercourse earlier (17.1 vs 18.6 yrs, $p<.01$) and more lifetime sexual partners (2.6 vs 1.9, $p<.01$); less likely to be married (OR=4.9, $p=<.001$); and differed in religion. The unadjusted odds ratio for HIV and smoking was 3.6(95% CI 1.8, 7.4). Adjustment for multiple variables weakened but did not eliminate the association.
Conclusion: In this population, smoking was associated with high risk sexual behavior and HIV-1 infection. Further analysis and additional studies are needed to determine if smoking has a biologic effect.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.556 IMMUNOLOGICAL AND CLINICAL STATUS OF PCR POSITIVE, HIV ANTIBODY NEGATIVE MULTITRANSFUSED HAEMOPHILIACS

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Immunological disorders occuring in seronegative haemophiliacs, multitransfused before 1985, led us to hypothetize a possible latent infection by HIV. In this view 35 seronegative multitransfused haemophiliacs (FVIII-IX > 250 IU/kg/Y.) and 10 seronegative sexual partners of seropositive patients were investigated for HIV markers.
Virological and Immunological long term study (1985-90) revealed 2 delayed seroconversions in late 1986, in 2 haemophilic children and absence of virological markers for HIV1 and HIV2 (anti-HIV1 Ab., anti-HIV2 Ab., HIV P24-25 Ag., virus isolation) in the 33 remaining seronegative haemophiliacs (in 5 years follow up).
Moreover 13/33 had persistent Immunological disorders (CD4 < 400 in 10/33, IgA > 3 g/L in 5/33, β2m > 2,5 mg/L in 5/33 patients) and 9 other had episodic similar disorders.
PCR analysis using a complete set of primers (gag, pol, env, nef, vif, vpr, vpx and vpu), on PBL, revealed a partial genomic detection in 23/28 seronegative haemophiliacs and in 7/7 seronegative partners and it is interesting to note a higher prevalence for regulation genes : nef1 (77%), vpr (77%) and vpu (74%).
A clear difference appears in clinical and Immunological status in PCR (+) and PCR (-) haemoph. Full AIDS occurs in 1 late seroconverted haemophiliac (latent phase 35 months from the PCR detection) and minor clinical signs are noted in 4 PCR(+) while all PCR(-)subjects are asymptomatic Persistent or transient Immunological disorders had seen in 16/23 PCR positive and none in the other 7 as well as in 4/5 PCR negative haemophiliacs.
In general the number and nature of genes detected by PCR varied with the clinical and Immunological status.
CONCLUSION : Some clinical and Immunological disorders of seronegative haemophiliacs could may be due to latent HIV infection.

Th.C.557 DETECTION OF HIV-1 INFECTION BY POLYMERASE CHAIN REACTION (PCR) AND CULTURE IN HIV-1 SERONEGATIVE PATIENTS ATTENDING AN EMERGENCY DEPARTMENT

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Objective: To evaluate the prevalence of HIV-1 infection and HTLV-1 infection among intravenous (IV) drug users attending an emergency department (ED), and to assess the frequency of HIV-1 infection by PCR and/or viral culture in HIV-1 antibody negative patients.
Methods: Sera and mononuclear cells were collected from 144 consecutive IV drug users presenting to the Johns Hopkins ED. Sera were analyzed for antibody to HIV-1 by EIA, and for HTLV-I by EIA (Dupont). Repeatedly reactive sera were analyzed by Western blot (WB) for immunoreactivity to HIV-1 and HTLV-1 antigens (Dupont). Co-cultivation was performed with normal peripheral blood mononuclear cells for 42 days. Positive cultures were detected by HIV-1 antigen in culture supernatant. PCR was performed by amplifying gag and env regions of HIV-1. Specimen was considered positive for PCR if both gag and env regions were positive with a positive HLA control. Results were considered valid if repeatable.
Results: Of the 144 patients, 49 (34.0%) were WB seropositive for HIV-1 and 7 (5%) were WB seropositive for HTLV-1/2. Of 54 HIV-1 seronegative patients who had PCR completed, 5 (9.3%) were PCR positive. Of 85 HIV-1 seronegative patients who had viral cultures performed, one (1.2%) additional specimen was positive. Thus, 6 (7.0%) of 86 HIV-1 seronegative patients had evidence of HIV-1 infection by either PCR and/or viral culture. None of these six patients were positive for HTLV-1/2. Of 28 HIV-1 WB seropositive patients, 25 were PCR positive (sensitivity 89.3%), and 32 of 35 WB positive patients were culture positive (sensitivity 91.4%).
Conclusion: In high risk patients, a negative serologic result on HIV-1 testing may be insufficient to rule-out infection. Current guidelines regarding HCW exposures in such situations may need to be revised to include PCR and/or culture when required.

Th.C.558 DETECTION OF HIV-1 INFECTION IN SERONEGATIVE IVDU'S BY POLYMERASE CHAIN REACTION (PCR).

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OBJECTIVE: To determine the prevalence of HIV-1 proviral DNA detected by PCR technique in seronegative intravenous drug users (IVDU's).
METHOD: In a prospective study of the natural history of HIV-1 infection among IVDU's, 80 participants with masked serological markers HIV-1 infection were tested for presence of HIV-1 viral DNA by PCR. Primer pairs sk38/39 using sk19 probe and sk101/145 using sk102 probe for gag gene were utilized to amplify and identify HIV-1 DNA after 30 cycles of amplification. Seronegative and seropositive controls were also included.
RESULTS: All 5 seropositive IVDU's showed positive amplification. Of 68 seronegative IVDU's, 60 (88%) were PCR negative, 4 (6%) were positive by both primer pairs, and 4 (6%) were equivocal by PCR. Equivocal meant that peripheral blood mononuclear cell lysates from these IVDU's contained DNA that was persistently amplifiable by either sk38/39 or sk101/145, but not both. All 7 IVDU's with indeterminant Western blots had equivocal PCR results.
CONCLUSION: Using stringent criteria for PCR determination of amplifiable target DNA, i.e., amplification with at least two primer pairs as criteria for PCR positivity, 6% of seronegative IVDU's were PCR positive. Sixteen percent IVDU's showed indeterminant PCR which was persistently positive by only one primer pair. These participants, as well as PCR positive seronegative IVDU's will be followed up every six months to determine the status of HIV-1 infection.

Th.C.559 INDETERMINANT WESTERN BLOT ASSAYS IN A COHORT OF HOMOSEXUAL MEN.

Phair, John; Hoover D; Wright P; Saah A; Detels R; Rinaldo C; and Kaslow R. for the Multicenter AIDS Cohort Study, Chicago, IL, Baltimore, MD, Los Angeles, CA, Pittsburgh, PA, and Bethesda, MD.

Objective: To determine the frequency and significance of non-diagnostic Western Blot (WB) reactions in homosexual men with positive and negative enzyme linked immuno-absorbent assays (ELISA).
Methods: Participants in the Multicenter AIDS Cohort Study (MACS) have been seen and serum obtained every 6 mo. since 84-85. Serology diagnostic of infection with HIV-1 was defined as a positive ELISA and a WB with reactions to products of 2 of 3 gene regions, gag, pol and env. The frequency of indeterminant WB in seroconverters (SC) and in persistently ELISA negative (E-neg) men was compared.
Results: Reactions to gag, pol, and env products were noted in 15.2%, 9.8%, and 16.7% of 204 E-neg men at the visit 6 months before a diagnostic serology was obtained. A similar proportion of 151 and 104 men tested 12 and 18 months before seroconversion (C) had bands on WB. In addition 82 SC had a positive ELISA but indeterminant WB 6 months before C. Reaction to gag, pol, and env products were noted in 45.1%, 21.9%, and 32.9%. In contrast, of 1644 persistently E-neg men, 8.03%, 4.02%, and 6.58% had bands to gag, pol, and env products at first visit.
Conclusion: Indeterminant WB were present frequently in homosexual men at least 18 months before C. An indeterminant WB was found in 45% of 82 men who had a positive ELISA at a visit 6 months before serologic diagnosis of HIV-1 infection.

Sexual Transmission in Homosexual and Bisexual Men

Th.C.560 A COMPARISON OF RISK FACTORS FOR HIV-1 AND HEPATITIS B VIRUS (HBV) IN HOMOSEXUAL MEN

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Objective: To directly compare the risk factors for HIV and HBV prevalent and incident infections, singly and concurrently, in a single population of homosexual men.
Methods: Polychotomous multiple logistic regression was used to determine odds ratios and 95% confidence intervals for risk factors for HIV alone, HBV alone, and both HIV and HBV seroprevalence in 1062 non-HBV-vaccinated homosexual men. Among 89 susceptible men followed for 2 1/2 years, Markovian probabilities were compared for incident infections with HIV alone, HBV alone, both, and neither virus.
Results: Factors independently associated with HIV and/or HBV seroprevalence were: duration of homosexual practice, anal receptive intercourse (ARI), history of gonorrhea, rectal douching (RD), sexual activity with a person who developed AIDS, lifetime number of male sexual partners, and the lifetime sum of sexually-transmitted diseases (all $p < .005$). ARI and RD appeared to be more important for HIV compared to HBV. Six HIV and 19 HBV infections occurred in the 89 men followed prospectively. Reporting 2 or more male sexual partners/6 months was associated with incident infections for both viruses. ARI was associated with both viruses, but appeared more important for HIV compared to HBV. RD was associated with HIV but not HBV infections.
Conclusion: HIV and HBV have many common risk factors. ARI and RD may be more important for HIV than HBV infection. Effective prevention strategies must include HBV vaccination in addition to practicing "safer sex" guidelines.

Th.C.561 LITTLE EVIDENCE FOR GENITAL ULCERATIVE INFECTIONS AS A RISK FACTOR FOR HIV-1 ACQUISITION AMONG HOMOSEXUAL MEN

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Objective: To study the role of genital ulcerative infections for acquisition of HIV-1 among homosexual men.
Methods: We studied a cohort of 1000 homosexual men in Amsterdam between 1985-1988. Among 53 HIV-1 seroconverters serological and anamnestic data were gathered regarding HSV-2 and syphilis in the 6 months before seroconversion. For statistical analysis a HIV-1 seronegative was selected at random and matched in time for each HIV-1 seroconverter.

Results:	seroconverters (n = 53)	controls (n = 54)	O.R. (C.I.)
- HSV-2 seroconversions (%)/ HSV-2 initially seronegative	3/17 (17)	3/36 (8)	2.2 (0.4-12.1)
- Self reported anogenital herpes infections (%)/ HSV-2 initially seropositive	8/36 (22)	4/18 (22)	- -
- Early infectious syphilis	1	1	- -
- Total no. of genital ulcerative infections (%)	12 (23)	8 (15)	1.7 (0.63-4.62)

Conclusion: Data suggest little evidence for genital ulcerative infections being an independent risk factor among homosexual men.

Th.C.562 LONGITUDINAL FOLLOW-UP OF HIV-1 DISCORDANT COUPLES IN THE BALTIMORE MACS STUDY

Palenicek John G, Fox R, Odaka N, Harris J, Hardy W, Taylor E, Margolick J, et.al. The Johns Hopkins School of Hygiene and Public Health, Baltimore, MD, USA

Objective: To determine ongoing sexual behaviors and changes in infection status of HIV-1 serologically discordant couples in Baltimore MACS.
Methods: Among 34 gay male couples who were initially found to be discordant for HIV-1 infection (based on results of ELISA, Western blot, viral culture and PCR tests), biologic samples and information on sexual practices were collected at six months and one year following initial evaluation including ELISA, T-cell subsets and interval sexual history.
Results:

	DISCORDANT NEGATIVE PARTNERS		
	Baseline visit	6 month visit	12 month visit
HIV-1 antibody ELISA	0% (0/34)	0% (0/31)	0% (0/27)
HIV-1 culture	0% (0/34)	[PENDING]	
HIV-1 PCR	0% (0/34)	[PENDING]	
Mean CD4	1193	1136	1192
Mean CD8	716	681	668
% unprot.sex	85% (29/34)	18% (5/28)	26% (7/27)

Conclusions: Because no apparent seroconversions have occurred in HIV-1 seronegative men, sexually active discordant couples exist regardless of continued unsafe sexual practices. In spite of knowledge of discordant HIV-1 serostatus and safer sex practices, some men continued to engage in unsafe practices. Further information regarding HIV-1 DNA and cultures may indicate a change in infection status for the HIV-1 negative partners.

Th.C.563 RECENT HIV INFECTION IN MEN IN THE ARMY: A CASE-CONTROL STUDY

McNeil JG*; Peterman, Tom**; Renzullo P*; Lasley-Bibbs V*; Levin L*; the Study Group. *Walter Reed Army Institute of Research, Washington DC, USA; **Centers for Disease Control, Atlanta, GA, USA

Objective: To identify risks for recent HIV seroconversion.
Methods: In this ongoing case-control study at 23 sites, civilians conduct blinded, voluntary interviews of soldiers with HIV seroconversion, and HIV-matched controls. Standardized interviews focus on the interval beginning 6 months before the last HIV- test and ending with the HIV+ test.
Results: Since April 1988, 110 male soldiers with documented HIV seroconversion have been available for recruitment. Of those contacted, 79% of cases and 90% of controls volunteered to participate. 43 case-control pairs are described. 21 cases and 4 controls reported behaviors that put them at high risk for HIV, including: sex with men (18 cases, 0 controls), IV drug use (0 cases, 2 controls), sex with women who use IV drugs (5 cases, 2 controls), sex with a woman from Africa or Haiti (2 cases, 0 controls). 13 of 18 men who had sex with men also had sex with women. Cases with none of these identified risks (NIR) were compared to cases with identified risks (IR) and controls (C) by: % currently married (NIR=50, IR=33, C=77), median number of sexual partners (NIR=3.5, IR=9 [3 were female], C=3), % of those with female partners who had anal sex with a female partner (NIR=9, IR=38, C=14), % who had sex with a female prostitute (NIR=14, IR=29, C=9), % who had a sexually transmitted disease since the HIV- test (NIR=18, IR=38, C=9), % whose partner bled as the result of sex (NIR=32, IR=10, C=12). Some interviewers were more successful than others in obtaining sensitive information.
Conclusions: Many seroconvertors were bisexual men. Many reported anal sex with women. Seroconvertors not reporting traditional risks may be unwilling to discuss them or have other important risks for infection.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Sexual Transmission in Heterosexuals

Th.C.564 HETEROSEXUAL COTRANSMISSION OF HUMAN IMMUNODEFICIENCY VIRUS (HIV) AND HEPATITIS C VIRUS (HCV).

Eyster, M. Elaine, Alter, H., Medort, L., Hatzakis, A., Goedert J.J., et al.
NCI Multicenter Study of AIDS in Hemophiliacs, Bethesda, MD, USA.

Objective: To study the sexual transmission of HCV by multitransfused hemophiliacs (H) coinfected with HIV. Methods: Sera stored frozen from 239 female sexual partners (FSP) of H from 8 U.S. centers located in PA, NY, OH and LA were tested for antibodies for HCV and HIV by EIA. 48 FSP of 46 H were tested at one center where HCV tests were available on 37 H.
Results: Ten (4%) of 239 FSP were anti-HCV+, 2 (1%) were indeterminate, and 227 (94%) were anti-HCV-. Anti-HIV prevalence among the FSP was 25/239 overall and 25 (12%) of 206 FSP of anti-HIV+ H. 4 FSP were coinfected with HCV and HIV, substantially more than would be expected by chance (p = .01 Fisher's exact test). The mean CD4 count in their 4 H partners was 125 cells/pl.

FSP	Anti-HCV+	Anti-HCV-
Anti-HIV+	4	21
Anti-HIV-	6	208

At one center, 34 (92%) of H with FSP were anti-HCV+.
Conclusions: (1) The prevalence of HCV infection in female sexual partners of multitransfused hemophiliacs is at least 4%. (2) HIV is transmitted more frequently than HCV by men infected with both HIV and HCV (12% vs. 4%). (3) HCV transmission is 6 times higher (4/25 = 16% vs. 6/214 = 2.8%, p=.01) in immune deficient men who cotransmit HIV, suggesting that HIV-related immune deficiency may allow active replication and transmission of HCV.

Th.C.565 HIV INFECTION IN CHILDREN TRANSMITTED BY SEXUAL ABUSE.

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Objective: To describe and discuss two cases of transmission of HIV infection to children via sexual abuse.
Methods: Among the patients who present to our pediatric infectious disease clinic for HIV screening, we have identified two children who acquired HIV infection by sexual abuse. HIV infection was documented by ELISA and confirmed by Western blot. Children were examined clinically for signs of HIV infection, and evidence of sexual abuse was ascertained by physical exam, cultures and verbal disclosure by the child.
Results: A 7 year old Hispanic female allegedly abused sexually by her stepfather presented to the ER with venereal warts. Sexual abuse evaluation was positive and, because of IV drug use in the alleged perpetrator, the girl was tested and found to be HIV positive. Subsequent testing of the stepfather revealed him to be seropositive. A 4 year old Hispanic female underwent routine HIV screening along with two younger half-siblings and her mother after her stepfather presented with AIDS. She was found to be seropositive with lymphadenopathy while her mother and siblings were negative. A history of sexual abuse by the stepfather was then elicited, and physical findings consistent with sexual abuse were noted.
Conclusion: The finding of sexually transmitted diseases in a child should arouse suspicion of HIV infection, and the finding of HIV positivity in a child in the absence of likely maternal transmission suggests sexual abuse. Psychosocial issues relevant to stigmata of sexual abuse and HIV infection are discussed, and criteria for HIV testing in these situations are offered.

Th.C.566 RISK OF HIV HETEROSEXUAL TRANSMISSION IN WOMEN FROM BUENOS AIRES CITY.

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**DEPARTMENT OF MICROBIOLOGY. SCHOOL OF MEDICINE. BUENOS AIRES UNIVERSITY.

OBJECTIVE: To determine the risk of HIV heterosexual transmission in women unique and stable sexual partner of HIV reactive men.
METHOD: A group of 100 women who made a consult at the Hospital were selected. Their ages were between 18 and 44 year old and they didn't get another factor except the risk of being stable sexual partner of HIV reactive men. It was asked about the type of sexual relations before and after the knowledgement of the partner infection besides a physical examination had been made in every consult. The HIV 1 antibodies were detected by EIA and confirmed by W.blot every three months. They were all informed about the prevention measures.
RESULTS: Nine women(9,5) had antibodies in the first determination. From the 91 negative ones, 56 were controlled even 24 months after, watching 2 seroconversion(to the 3th and 21th month respectively). The period of time of sexual relations before the knowledgement of the infection varied between 2 and 144 months(mean 32,6) and the time after between 3 and 24 months(mean 10,3). Among the 11 infected women, nine(82,5) of them accepted to practice receptive anal intercourse more than once a month and one(9,5) seldom use condom. Among the 54 kept negative, 9(16,6,5) had anal relations at the beginning and only 25 women (47,5) used condom.
CONCLUSION: The rate of infection between women partner of HIV reactive men, was 11,5 in 24 months. The practice of the receptive anal intercourse was significantly higher between the infected ones. The use of condom was infrequent before knowing the infection and only the 47,5 used it after informed. *p<0.01.

Th.C.567 LACK OF FEMALE TO MALE TRANSMISSION IN HUSBANDS OF HIV INFECTED WOMEN - GAFFRÉE & GUINLE UNIVERSITY HOSPITAL, RIO DE JANEIRO, BRAZIL.

Sion, Fernando Samuel*; Santos, EA*; Salerno-Gonçalves, R*; Almeida, MCR*; Morais-de-Sá, CA*; Vanderborght, B**; Carvalho, MA*; Brandão, ACC*; Rocha, JTG*.
* University of Rio de Janeiro (UNI-RIO), Brazil, ** Imunogenetics, Gent, Belgium.

Objective: To study female to male transmission of HIV in married couples with stable sexual life.
Methods: Among 53 blood-transfused women attending our outpatient care unit concerned with AIDS or presenting symptoms suggestive of HIV infection, 29 (54,7%) were seropositive. Eleven of these women were selected on account of marriage as well as regular and stable sexual life. Their husbands were interviewed about specific parameters of sexual contact such as number per week, mode, trauma during sexual intercourse, use of condoms, posthetomy, STD, infedility and mean time between blood transfusion and diagnosis of HIV infection. The following serological tests were performed on the couples. ELISA (Genetic Systems. Abbott) and Immunofluorescense for anti-HIV-1; ELISA (Genetic Systems) for anti-HIV-2; Inno-LIA (Innogenetics)anti-HIV-1 and anti-HIV-2; Antigenaemia (Virosnostika HIV antigen EIA).
Results: All 11 husbands were negative for anti-HIV antibodies (HIV-1 and HIV-2) and antigen detection tests. This 11 seronegative husbands had a mean of three sexual intimate contacts per week without use of condoms including oro-oral (100%); vaginal intercourse (100%); oral-vaginal (45,5%); anal intercourse (45,5%); oral-anal (36,4%); vaginal intercourse during menses (27,3%). Three of them referred sexual trauma with small wounds in penis after intercourse. None of them presented S.T.D. The mean of intimate sexual contact from blood transfusion to the diagnosis of HIV infection was approximately 46 months. All 11 women were HIV-1 positive and HIV-2 negative.
Conclusions: 1) Heterosexual transmission from HIV infected female to male was not observed in the present study. 2) Husbands of wives infected by blood transfusion should be the best model for research of heterosexual female to male transmission in countries where the quality control of blood and blood products is still less than adequate.

Th.C.568 HETEROSEXUAL HIV TRANSMISSION: A MULTICENTER PARTNER STUDY IN MEXICO CITY.

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Directorate of Epidemiology, Secretariat of Health, Mexico

Objectives: To determine the risk factors associated with heterosexual HIV infection and prevent transmission between couples.
Methods: As part of a multicenter cohort study of heterosexual HIV transmission in Mexico, City, we analyzed the retrospective information obtained from female partner interviews in a case-control design. All subjects enrolled in the study were women, and none had risk factors for HIV infection besides sexual contact with their HIV seropositives husbands. All were interviewed with a standardized questionnaire, Elisa and WB tests were performed.
Results: As of January 1990, a total of 58 female partners were included. 16 (27.5%) tested HIV positive and 42 (72.4%) tested negatives. On the crude analysis the variables with increasing risk of infection were: <30 years [OR=1.4 (95% CI=0.40-5.4)], and being pregnant [OR=2.2 (95% CI=0.3-16.3)]. A protective effect was observed associated with: knowledge of partner's infection [OR=0.2 (95% CI=.07-1.2)], being married [OR=0.2 (95% CI=.06-1.0)] and condom use [OR=0.4 (95% CI=.08-2.2)]. These variables selected from the univariate analysis were fitted stepwise in a logistic regression model. The two significant (p<0.001) variables were behavior change following partner's notification [OR=2.8 (95% CI=1.0-8.4)] and years of schooling [OR=0.020 (95%CI=0.015-0.026)].
Conclusion: The study demonstrates that behavior change following counseling may effectively reduce inter-partner heterosexual transmission and emphasizes the importance of partner notification.

Th.C.569 Risk Factors for HIV-2 Infection in Guinea-Bissau.

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*CDC, Atlanta, Georgia, USA, **Ministry of Public Health, Bissau, Guinea-Bissau, ***Global Programme on AIDS, WHO, Geneva, Switzerland.

Objective: To identify risk factors for HIV-2 infection among adults.
Methods: We conducted a case-control study of HIV-2 infection among patients admitted to the major hospital in Bissau, Guinea-Bissau in October 1989. Sera from 128 patients were tested for HIV-1 and HIV-2 by viral lysate and synthetic peptide antigen ELISAs and by Western blot. Cases consisted of all seropositive patients. An equal number of controls, frequency matched by age, were randomly selected from HIV seronegative patients. All cases and controls were given a physical examination and a questionnaire on risk behaviors, symptoms and signs related to HIV infection by investigators blinded to serologic results.
Results: Overall, 18% (23/128) of patients were HIV-2 positive by both ELISA and Western blot; one was dually reactive for both HIV-1 and HIV-2. Seropositive patients had a mean age of 37; 52% were men. The principal risk factor for men was sex with prostitutes (50% for cases, 0% for controls, OR-undefined, p=0.04). Among women, a history of blood transfusion was the most significant risk factor (55% for cases, 8% for controls, OR=13, p=0.03). Diarrhea was reported more frequently among cases (45%) than controls (14%, p=0.03) and cases were more likely to have adenopathy in at least 1 node group (77%) than controls (38%, p=0.01). Only 17% of all study participants and 50% of men reporting sex with prostitutes used condoms in the previous year.
Conclusions: This study supports previous studies indicating that HIV-2 is associated with clinical disease and identified sex with a prostitute and blood transfusions as probable risk factors. Transfused blood is now screened for HIV-2 in Bissau; additional efforts to reduce HIV-2 infection should emphasize the risk of sexual transmission.

Th.C.570 CERVICAL ECTOPY AND LACK OF MALE CIRCUMCISION AS RISK FACTORS FOR HETEROSEXUAL TRANSMISSION OF HIV IN STABLE SEXUAL PARTNERSHIPS IN KENYA

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OBJECTIVE: To determine the frequency of and risk factors for heterosexual transmission of HIV within couples.

METHODS: HIV+ individuals attending a Nairobi STD clinic were enrolled in a prospective study along with their spouses.

RESULTS: Of 90 couples, 39 (43%) were concordant (CON) for HIV infection. Of 51 discordant (DIS) couples, in 31 the index case was male (DIM), and in 20 the index case was a female (DIF). In a stepwise logistic regression analysis HIV+ women were more likely than HIV- women to have cervical ectopy(OR = 4.1, p = 0.02); HIV+ men were more likely to have a positive H. Ducreyi IgG (OR = 6.9, p = 0.002) and a history of prostitute contact since 1980 (OR = 4.4, p = 0.02). CON and DIS couples were similar with respect to age, length of partnership, frequency of sex, sex during menses, CDC stage of HIV disease, history of genital ulcers, and STD diagnosis at study entry. Compared to DIS couples, the presence of cervical ectopy in women (27/37 vs 19/49, OR = 4.3, p = 0.003) and the lack of circumcision in men (23/39 vs 19/50, OR = 2.3, p = 0.08) were more common in CON couples. In a stepwise logistic regression analysis controlling for age, oral contraceptive use, and pregnancy, the presence of cervical ectopy (OR = 4.3, p = 0.01) and lack of male circumcision (OR = 3.3, p = 0.04) were predictors of concordance.

CONCLUSION: The presence of cervical ectopy in women and lack of male circumcision were predictive of HIV seroconcordance among couples in stable sexual partnerships in Nairobi, Kenya.

Th.C.571 INCIDENCE OF HIV-1 SEROCONVERSION IN WOMEN WITH GENITAL ULCERS

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Objective: To determine the incidence of male to female transmission of HIV-1 and to examine the risk factors which facilitate transmission.
Methods: Ninety-seven HIV-1 seronegative women presenting with a genital ulcer to a sexually transmitted disease (STD) clinic in Nairobi were interviewed with respect to sexual behaviour, past history of STDs, contraceptive use and parenteral exposures. Their ulcers were treated appropriately and they were asked to return for follow-up at monthly intervals for a total of 6 months to determine the incidence of HIV-1 infection and risk factors associated with HIV-1 acquisition.
Results: Sixty-two of the 97 women (64%) were followed from one to six months after baseline assessment. Seven of them seroconverted to HIV-1 during the follow-up period as confirmed by Western Blot. The crude incidence of HIV-1 infection is therefore 11% (7/62) for the six month follow-up period. However, assuming that only 25% of the women were actually exposed to HIV-1 (25% of males with genital ulcers from the same catchment area are HIV-1 positive), a more accurate estimate of the incidence of HIV-1 infection might be 45% (7/15.5). Risk factors which facilitate HIV-1 transmission will be presented.
Conclusion: Heterosexual (male to female) transmission of HIV-1 in this population is highly efficient, in the order of 10 to 40%.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Th.C.572 PREVALENCE OF HIV AMONG MEN AND WOMEN WITH H.DUCREYI AND NEISSERIA GONORRHOEAE INFECTION IN NAIROBI, KENYA

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Objective: To determine incidence and prevalence of HIV among a high risk group with H.ducreyi and Neisseria gonorrhoeae infection in Nairobi, Kenya.
Methods: We studied the epidemiology of genital ulcer (GU) and gonococcal infection (GI) among high risk groups in Nairobi. We were interested to determine if specific sexually transmitted diseases among these high risk groups were associated with high prevalence of HIV. We were also interested in determining if there is any association linked between Penicillinase Producing N.gonorrhoeae (PPNG) and HIV. We evaluated men and women among the high risk groups who presented themselves at the Nairobi City Commission and the Special Treatment Clinic with serological evidence of HIV infection and microbiological evidence of GU and GIs.
Results: Of 120 cases of GU confirmed as H.ducreyi by culture, 59.2% were HIV positive. Of 120 confirmed GI, 37.5% were HIV positive, 25/44 (56.8%) PPNG were confirmed HIV positive. This rate is substantially higher than expected suggesting that H.ducreyi and PPNG are associated with HIV infection in both men and women.
Conclusion: The mechanism of increased risk remains to be determined, but possible mechanisms are that both GU and GI increase transmission of HIV; that HIV infected men and women are susceptible to these infections or that GU, GI and HIV are all related to sexual behaviour. We believe that control of both H.ducreyi and GIs offer an indirect control of HIV infection.

Th.C.573 RISK FACTORS FOR HIV INFECTION AMONG WOMEN IN A LOW-RISK POPULATION IN NAIROBI, KENYA

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Objectives: To determine factors associated with HIV seropositivity in a population of women not believed to be at high risk of HIV infection.
Methods: From Oct. 1989 - Jan. 1990, 726/762 (95%) women attending 2 Nairobi family planning clinics consented to screening for HIV and other sexually transmitted diseases (STD), interview and examination including Neisseria gonorrhoea (GC) culture. HIV status was determined by ELISA with Western Blot. Odds ratios (OR) and 95% confidence intervals (CI) were calculated.
Results: 39/726 women were HIV+ve (5.4%; 95%CI 3.7-7.0). In interim analyses 36 +ves with complete information were compared with 587 -ve women. Median age (26yrs) and marital status (80% married) were equivalent. HIV+ves were more likely to have <5 years of education (28%) than -ves (14%). In multivariate analyses factors associated with HIV+vity were: early 1st sexual intercourse [OR=2.1, 95%CI 1.0-4.4 for <16yrs vs ≥16yrs], having ≥5 lifetime sex partners [OR=3.0, 95%CI 0.9-9.5 for ≥5 vs 1;median for +ves=4], usual sex partner uncircumcized [OR=3.7, 95%CI 1.5-9.0], history of syphilis [OR=4.9, 95%CI 0.8-32.4], having a +ve GC culture [OR=5.6, 95%CI 1.5-21.1], and transfusion (last 5 years) [OR=3.1, 95%CI 0.8-12.3]. The attributable risks for most factors were low due to the low prevalence of the exposures.
Conclusions: Higher risk sexual behaviour and STD were associated with increased HIV risk, but most women reported few sex partners or STD episodes. Risk behaviour by spouses may determine HIV risk among these women.

Th.C.574 VAGINAL TIGHTENING AGENTS AS RISK FACTORS FOR ACQUISITION OF HIV.

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OBJECTIVE: To determine whether women using vaginal tightening agents (VTA) have an increased risk of HIV-1 infection.
METHODS: 1482 pregnant women presenting for routine care to the antenatal clinic of a major urban hospital in Malawi were interviewed about their use of topical agents to produce tightening of the vagina. The participants were also tested for HIV-1 antibody.
RESULTS: 177/1482 (12%) interviewees reported using one or more VTA's in the previous 3 years, 168/1152 (15%) multiparous women and 9/330 (9%) primiparous women (p <0.001). VTA's included herbs (56%), aluminum hydroxide (ALOH) (33%), stones (silica gel, potassium permanganate, pumice-like stone) (23%) and cloth (2%). The HIV status of VTA users was as follows:

	HIV+ (n=32)	HIV- (n=141)	OR	p-value
Stones	11 (34%)	29 (21%)	2.02	0.09
Aluminum Hydroxide	6 (19%)	51 (36%)	0.41	0.05
Herbs	18 (56%)	79 (56%)	---	NS
Cloth	1 (3%)	2 (1%)	2.24	0.50

CONCLUSION: The use of VTA's was not uncommon in this population and was markedly more common in multiparous than in primiparous women. This data suggests that stone, but not ALOH and herbs, increase the risk of HIV infection among users of VTA's. Stones have an irritating and erosive effect on vaginal mucosa and may facilitate viral entry. The use of VTA's may help explain the high rate of HIV-1 infection in females and their sexual partners in this population.

Th.C.575 HIV-1 SEROPOSITIVITY AND SEXUAL HISTORY AMONG RWANDAN WOMEN

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Objective: To investigate the relationship between sexually transmitted diseases (STDs), multiple partners and HIV seropositivity in Rwandan women.
Methods: 357 pregnant women were screened for HIV (ELISA, Western blot); detailed sexual histories were also obtained.
Results: Using women who denied a history (Hx) of any STD as a refernece, a POR (prevalence odds ratio) of 3.3(1.7,6.5) was obtained for women with Hx of any STD and a POR of 4.9(2.5,9.7) for STDs excluding abnormal vaginal discharge. This association was most striking among women who reported multiple sexual partners, and held equally for rural and urban women. The possibility of more than an additive effect between Hx of STD and multiple partners is seen in the POR below:

	No Hx	Hx STD
One partner	1.0 (reference)	2.2 (0.95,5.1)
Multiple Partners	2.5 (0.64,9.4)	13.5 (5.3,34.2)

Among women reporting STDs, POR greatly increased with increasing number of partners (X^2trend=14.6, p<.001); among those without Hx of STD only a weak trend was observed (NS). Among women reporting husbands with multiple partners a weak trend was seen only for women with Hx of STD. Accepting money for sex was a risk factor for HIV seropositivity for those reporting Hx of STD (POP=12.5) but not for those who denied Hx of STD.
Conclusion: The markedly increased prevalence of HIV-1 seropositivity among those reporting history of STD, even after stratifying by number of partners, underscores the importance of STD control for prevention of HIV transmission.

Th.C.576 RISK FACTORS FOR HIV-1 SEROPOSITIVITY AMONG RURAL AND URBAN PREGNANT WOMEN IN RWANDA.

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OBJECTIVE: To study risk factors associated with HIV seropositivity among rural and urban pregnant Rwandan women. METHODS: Upon consent, 357 pregnant women 193 seen at a rural and 164 seen at an urban health center Nov-Dec 1989 were tested for HIV antibodies. A detailed questionnaire of sociodemographic variables, health habits, sexual and reproductive history and traditional practices, was administered by trained nurses.
RESULTS: 8 rural women (4%) and 33 urban women (20%) were HIV seropositive. Among women with a household income below US $50 per month (82% of the sample), the prevalence odds ratio (POR) was 12.1(95%CI:3.5-41) for urban vs. rural women. History of genital ulcers (HGU), five or more injections in the past 3 years (INJ) and having had sex for money were significant risk factors for HIV infection. The below table indicates that HGU and INJ may be more important risk factors for rural women then for urban women.

RISK FACTOR	RURAL WOMEN-POR (95% CI)	URBAN WOMEN-POR (95% CI)
HGU	8.6 (1.8-40)	2.4 (0.9-6.7)
INJ	9.4 (1.8-50)	2.0 (0.9-4.5)

Other factors tending to be more strongly associated with HIV seropositivity in rural than in urban women include: low parity and intake of traditional medicines during the pregnancy.
CONCLUSION: Our results suggest potential areas of intervention among the rural population of Rwanda in order to prevent further spread of the HIV-1 epidemic to a level similar to that of the urban population.

Th.C.577 HIV INFECTION AMONG PATIENTS IN A UGANDA STD CLINIC

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Objective: To investigate the magnitude of the association between HIV infection and STDs (sexually transmitted diseases) in an adult African population.
Methods: 803 (608 males, 195 females) consecutive patients of the Mulago STD Clinic underwent a standardized STD history and physical exam between 9/1/89 and 12/31/89. 469 (58.4%) patients were randomly selected for HIV testing (Cambridge Bioscience Recombigen). Mantel-Haenszel adjusted odds ratios (OR) were calculated for HIV risk factors.
Results: HIV seropositivity rates were 42.5% (151/357) for males and 62.5% (70/112) for females. The table describes the features associated with HIV:

	Males			Females		
	HIV+	HIV-	OR(CI)	HIV+	HIV-	OR(CI)
Median age	25	23		19	22	
Past GU*	68%	37%	4.2(2.6-6.6)	42%	37%	1.3(0.5-3.1)
PAst DC**	80%	69%	1.7(1.1-2.9)	43%	37%	1.3(0.6-3.2)
Current GU	45%	27%	1.9(1.2-3.1)	40%	28%	1.7(0.7-4.4)
Current DC	47%	45%	1.1(0.7-1.8)	52%	59%	0.8(0.3-1.8)
Circumcision	10%	17%	0.54(0.3-1.0)	--	--	

*GU = Genital ulcers, **DC = Urethral or vaginal discharge
Prostitute behavior was rare among female patients: < 2% reported ever receiving pay for sex, and < 5% reported > 20 sex partners in the past 10 years.
Conclusions: The extremely high seroprevalence in this STD Clinic population supports the significant role of STDs, especially GU, in transmission of HIV in Uganda. The magnitude of HIV seroprevalence among the young, non-prostitute females has enormous implications for design of HIV control strategies.

Th.C.578 SPECIFIC HETEROSEXUAL RISK BEHAVIORS AND HIV SEROPOSITIVITY IN A UGANDA STD CLINIC.

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Objective: Heterosexual contact is the major route of HIV transmission in Africa. We investigated specific heterosexual practices and their association with HIV seropositivity in Ugandan STD Clinic patients.
Methods: A standardized questionnaire was administered to randomly selected patients presenting to Mulago STD Clinic. HIV testing was performed by ELISA (Cambridge Bioscience Recombigen). Univariate analyses (M-H) were performed comparing seropositive to seronegative male and female patients.
Results: 401 patients had interview and HIV serology from 10/1/89 to 12/31/89 Of 305 males, 133 (43.6%) were seropositive, and of 96 females, 60 (62.5%) were seropositive. Significant risk factors in males included genital bleeding due to sex (OR = 1.93, p = 0.01), genital bruising due to sex (OR = 2.26, p<0.001), and sex during menses (OR = 2.4, p = 0.02). Among females, genital bleeding due to sex was a significant risk factor (OR = 2.96, p = 0.03), but bruising and sex during menses were not significant. Married men were more likely to be seropositive (OR = 2.4, p<0.001), and >5 sexual partners during the previous 10 years was a significant risk factor in both sexes (OR = 2.26 in men and 3.6 in women). Too few patients (15%) used condoms to allow evaluation of a protective effect.
Conclusions: These data suggest that trauma and/or exposure to blood during sexual activity are significant risk factors for HIV infection in a high-risk African STD Clinic population. These results should be confirmed in the general population, as they have important implications for AIDS education and prevention efforts.

Th.C.579 HIV RISK FACTORS IN STEADY MALE PARTNERS OF KINSHASA PROSTITUTES.

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Objectives: To identify HIV associated risk factors among steady male sex partners of female prostitutes.
Methods: As of December 1989, 160 steady male sex partners (SMSP) of female prostitutes attending a STD clinic were interviewed, examined and tested for HIV antibodies (ELISA + Western blot) and syphilis (TPHA and RPR) in a cross-sectional study.
Results: 17/54(31%) SMSP of HIV(+) women were also found to be HIV(+) [concordant couples=CC] compared with 10/95(10%) of SMSP of HIV(-) women [discordant couples=DC] p=0.0004, RR=3.34. No significant differences were observed between men in CC and DC regarding mean age (30 years vs 27 years, p=0.1), receipt of a blood transfusion in the previous 5 years (6% vs 0%), duration of relationship with the female prostitute (23 months vs 22 months), sex contacts per week with the female prostitute (2.5 vs 2.7), contacts with other prostitutes in the previous 12 months (23% vs 22%), circumcision (100% vs 97.3%), sexual practices and frequency of condom use.

	M+F+ (n=17)	M-F+ (n=37)	P value	R.R
% History of H. zoster in men	11.8	0	0.0033	3.47
% TPHA(+) in men	23.5	5.6	0.049	2.46
% GUD in the last 5 years in women	70.6	37.8	0.025	2.58
	M+F- (n=10)	M-F- (n=96)	P value	R.R
% painful GUD in men	10	2	0.26	3.88

Conclusions: These results support ulcerative STD syndromes (GUD and syphilis) as risk factors for increased infectiousness or increased susceptibility to HIV-1 infection.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.580 ANTI-HIV EFFICACY OF BARRIER CONTRACEPTIVES IN HIV-DISCORDANT COUPLES

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Objective To measure the efficacy of condoms and spermicides in preventing HIV infection in seronegative sexual partners of seropositive persons.
Methods In September 1988 we initiated a study of condom and spermicide use among the HIV-discordant couples who regularly visit the U.T.H. STD clinic. After informed consent, the couples are counseled on the use of condoms and spermicidal suppositories, gel and film. Blood is drawn for HIV antibody tests, an admission questionnaire is completed, and the couple is given a pictorial coital log to maintain between visits. At quarterly follow-up visits contraceptive supply, counseling and blood tests are repeated, information on sexual activity is summarized from the logs, and the physical status of both partners is assessed.
Results A total of 125 couples have been enrolled; follow-up data are available for 85 couples, including 62 male-positive and 23 female-positive couples. Three, 6, 9 and 12-month follow-up visits have been completed by 100%, 55%, 31% and 7% of the couples. Mean follow-up is 6 months per couple. 73% of coital episodes have been protected by condoms, and 89% by spermicides. Eight confirmed seroconversions have occurred (9.4%), a rate of 1.6 per 100 couple-months. Twelve pregnancies have occurred.
Conclusion Despite good barrier acceptance, seroconversions have occurred. Some couples deliberately take risks, and barrier efficacy is not 100%. The incidence of infection is lower in this study than the 21% per year reported for U.T.H. discordant couples before the study began, however.

Th.C.581 HIV INFECTION IN URBAN MEN IN ZIMBABWE.

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Objective To determine behavioral and social factors associated with HIV seropositivity in a group of urban men.
Methods Male factory workers found to be HIV positive at blood donation formed the case group and were interviewed along with 2 previously negative donors. Repeat ELISA confirmed serological status.
Results The sample contained 188 subjects: 69 HIV positive and 119 HIV negative. Age, duration of employment, income,schooling, marital status, duration urban residence did not differ. HIV positive men were more likely to live apart from their wives (23/45 v 28/76, $p<0.05$). They more often reported girlfriends (61/67 v 87/119, $p<0.02$) and more lifetime partners (16 v 10, $p<0.02$). Both groups often paid money for sex (47/69 v 66/119, NS). Sexually transmitted disease (STD) was common in HIV positive and HIV negative men (63/69 v 88/119, $p<0.05$),increased risk was due to history of genital ulcer (40/67 v 37/94,$p<0.01$). HIV positive men were more likely to report fever,lymph node enlargement, weight loss, diarrhoea, pruritis and skin rash.
Conclusion These findings confirm established risk factors in Africa: multiple partners and genital ulcer. The high prevalence of STDs and money for sex in the seronegative comparison group point to widespread high risk behavior in the urban setting.

Th.C.582 HIV TRANSMISSION RATES AND CO-FACTORS IN HETEROSEXUAL COUPLES

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Objectives: To investigate HIV transmission rates and co-factors for HIV transmission in heterosexual couples.
Patients and methods: We investigated transmission rates and co-factors in 184 couples with known index person. 40 discortant couples were prospectively monitored for HIV seroconversion after unprotected sexual contacts.
Results: Male to female transmission rate was 33%, but 6% from female to male. Patients having infected sexual partners were more likely positive for p24 antigen in serum than those not [illegible] infected (35% vs. 12%). 53% of HIV transmitters but only 13% of non-transmitters had a CD_4 cell count below 200 at first presentation. Transmitters also had a more aggressive course of disease and a more rapid progression to AIDS. We found no correlation between HIV transmission and duration of exposition [illegible] the number of sexual contacts. Previous hapatitis B/lues was a co-factor only in bisexual men, not in index persons of other risk groups. Transmission occurs most likely during the first 2 years of relationship. Long term monitoring of 40 discordant couples who had unprotected sexual contacts showed no seroconversion.
Conclusion: We conclude that more infectious patients deteriorate faster than less infectious patients in their respective clinical courses. HIV may be transmitted at any stage of disease of the index [illegible] The period of highest risk for HIV transmission seems to be soon after the start of sexual relationship.

Th.C.583 RISK FACTORS IN HETEROSEXUAL TRANSMISSION OF HIV

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Objective - To assess risk factors in HIV heterosexual transmission by a study on HIV infection incidence among stable partners (S.P.) of HIV infected subjects (Index Cases - I.C.).
Methods - From 1985 to 1989, we have examined 216 heterosexuals which have had a stable relationship (at least for 9 months) with HIV Ab +ve subjects. All subjects underwent HIV serology (ELISA & WB), and 96 of them answered a questionnaire about sexual habits. From this sample, a cohort of 69 HIV Ab negative partners took part in a follow-up program.
Results and Conclusion - Initially, 10/70 (14.3%) male and 22/146 (15%) female partners were found to be HIV Ab +ve. The difference between male-to-female and female-to-male rate is not statistically significant. Frequency in sexual contacts, vaginal sex during menses for males, and anal sex for females, all seem to be the most important factors in HIV contagion. The epidemiological analysis of seroconverted partners (10/69 = 14.5%; annual rate = 5.8%) outlines that all contagions occurred in 21 partners (47,6%; annual rate = 22.6%) among couples which did not use condoms regularly (< 50% of sexual contacts). In detail, all stable partners becoming HIV Ab +ve are females who have not changed sexual behavior and continue, at times, to have anal sex, and almost always internal ejaculation. There seems to be no relation between HIV seroconvertion and p24 antigenaemia. The adoption of "safe sex" shows to be linked to marital condition, to social and cultural status of both I.C. and S.P., and to the occasional use of condoms before knowing the HIV status of I.C..

Th.C.584 ORAL CONTRACEPTION, IUD, CONDOM USE AND MAN TO WOMAN SEXUAL TRANSMISSION OF HIV INFECTION

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Objective: to evaluate the role of contraceptive practices in man to woman HIV sexual transmission.
Methods: 368 women who were steady partners of HIV infected men were enrolled and investigated by interview and laboratory test. Data were analyzed by multivariate analysis.
Results: oral contraceptive (OC) and condom users showed a decreased risk of HIV infection, the use of an intra uterine device (IUD) was associated with a three to four fold increased risk. When the multivariable analysis was carried out these differences in the risk of infection were not explained by frequency of intercourse, anal sex, history of sexually transmitûted diseases, CD4+ cell count of the infected man (see table).

	Use of OC		Use of condom		Use of IUD
	or*	c.i.^	or*	c.i.^	
Never	1		1		1
sometimes	0.4	(0.3-1.8)	0.7	(0.3-1.8)	4.1 (0.7-23.4)
always	0.5	(0.2-1.2)	0.2	(0.1-1.1)	3.1 (1.1- 9.1)

* multivariable odd ratio ^ confidence interval
Conclusions: these results confirm the preventive efficay of condom and suggest a protective effect of oral contraceptives. The use of IUD may be on the contrary a relevant co-factor of HIV sexual transmission.

Th.C.586 INCIDENCE OF SEROCONVERSION (SC)IN WOMEN WHO ARE STEADY PARTNERS OF HIV INFECTED MEN (IC).

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Objective: to investigate the incidence and risk factors in man to woman sexual transmission of HIV infection.
Methods: 158 seronegative women who were steady partners of IC were followed-up for a total of 107 person/yrs. Information was collected by direct interview and laboratory tests.
Results: 6 women seroconverted providing an incidence of SC of 55.8*1000 prs/yrs. Incidence of SC was higher for women with an AIDS or ARC partner, and for those performing anal sex (see table). No difference was found for all the other variables investigated.

	HIV+	Person/yrs	Incidence *1000
IC Disease			
LAS	1	63.63	15.72
ARC	2	15.83	126.72
AIDS	2	11.72	170.64
Unknown	1	16.35	61.18
Sexual Behavior			
Anal sex			
no	4	94.02	42.54
yes	2	13.01	15[illegible].78

Conclusion: The main risk factors for seroconversion were partner's disease and sexual behavior.

Th.C.585 DIFFERENT SUSCEPTIBILITY OF WOMAN AND MAN TO HETEROSEXUAL TRANSMISSION OF HIV.

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National Council of Research, ITBA, Milan, Italy.

Objective: to evaluate the risk of man to woman and woman to man sexual transmission of HIV infection.
Methods: we performed a cross sectional study on steady partners of HIV-infected subjects (IC) attending Italian Centers for HIV infection monitoring and treatment. No subjects enrolled had risk factors for HIV-transmission other than that of being sexual partners of an IC.
Results: In our population, the prevalence of seropositivity was 27% (99/368) among women and 8.9% (8/90) among men. Significant risk factors for women were: history of genital disease, history of STD, low CD4+ cell number of IC, passive anal sex, relationship length, and weekly frequency of sexual intercourse. Among men, a non-significant risk increase was found for active anal sex and for intercourse with infected woman during menses. The different prevalence of infection between women and men was not explained by differing sexual behavior, nor by different characteristics of the infected partner.
Results:These results suggest a higher susceptibility of women to acquire heterosexually HIV infection.

Parenteral Transmission in Drug Users

Th.C.587 SEXUAL PARTNERS OF INTRAVENOUS DRUG USERS IN SAN FRANCISCO

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Objective: To examine the risk of heterosexual transmission from intravenous drug users to their sexual partners.
Methods: We screened 1078 IVDUs in various methadone maintenance and detoxification clinics in San Francisco in 1988 and 1989. Participants are interviewed about their sexual partners, and seropositives are urged to enroll their partners in the study.
Results: Sixty-eight seropositive IVDUs (30 men and 38 women) reported a total of 116 sexual partners over the last year with whom they could get in touch. Fifty-five (47%) of these partners were also IVDUs with whom they had shared drug using equipment. In general, women reported more sexual partners than men, (58% of the women reported only one partner, whereas 67% of the men reported one partner; not significant). Comparable proportions of men's and women's partners were also IVDUs (46% versus 50%). There were no differences in reported partners by race.

We were able to recruit 29 (25%) of the partners into the study, 19 women and 10 men. Fifty-nine percent of these partners were also IVDUs. Thirty-four percent of the partners were HIV-positive, although HIV infection was not associated with IVDU among the partners nor with gender or race.
Conclusion: HIV transmission rates from IVDUs to their sexual partners continues to be quite high, and cannot be explained by concomitant drug use among the partners. Sexual partners of IVDUs are a difficult group to access, but continued efforts need to be made in this area so appropriate treatment and prevention programs can be developed.

Th.C.588 HETEROSEXUAL TRANSMISSION OF HIV ASSOCIATED WITH THE USE OF SMOKABLE FREEBASE COCAINE (CRACK).

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Objective: To determine the prevalence of and behaviors associated with HIV infection in patients at a New York City STD Clinic in an area where the cumulative incidence of AIDS in adults is 6.6/1000.
Methods: Volunteers in this ongoing study were HIV antibody tested and an interviewer administered questionnaire was used to collect data on demographics, drug use and sexual behavior. Data from 1,834 of the 2,100 enrollees are presented.
Results: Overall HIV seroprevalence was 14% (249/1834); 56/141 gay men, 88/180 IVDU, 54/394 sex partners of bisexual men or IVDU, 7/73 other risk, and 44/1046 (29 men, 15 women) no identified risk (NIR). In a multiple logistic regression model for NIR males also including >10 partners per year and crack use, behaviors significantly associated with HIV were history of syphilis (aOR=5.1) and sex with a crack using prostitute (aOR=3.4). For NIR women, crack use was significant (aOR=12.9) adjusting for prostitution and history of syphilis. Prostitution was reported by 7/10 of the NIR seropositive women who used crack.
Conclusion: Most seropositives in the study reported established risk behavior; however, unexpectedly high proportions of NIR men (3.7%) and women (5.6%) were infected and crack-related sexual behavior was strongly associated with HIV infection. Our results suggest that in areas where HIV infection and crack use are common, increased sexual activity including exchange of money or drugs for sex may enhance heterosexual transmission of HIV.

Th.C.589 PATTERNS OF COCAINE USE IN RELATIONS TO HIV INFECTION AMONG INTRAVENOUS DRUG USERS IN NEW YORK CITY

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Objective: To investigate patterns of cocaine use and its association to HIV infection among cohorts of intravenous drug users (IVDUs) in 1987 and 1988.
Method: 440 subjects (218 in '87 and 222 in '88); 61% males; 51% Blacks, 42% Hispanics, and 7% Whites were recruited from methadone clinics in New York City. After obtaining informed consent, a structured questionnaire was administered by trained interviewers. Also, sera was collected and tested for HIV antibody by ELISA and Western blot techniques.
Results: The overall HIV infection rate was 60% in 1987 and 52% in 1988. Older IVDUs were significantly more likely to engage in intravenous use of cocaine and speed-ball (cocaine mixed with heroin). Younger IVDUs were significantly more likely to use cocaine intranasally or smoke crack. There were significant differences between ethnic groups in terms of frequencies of using cocaine by snorting or smoking. Discriminant analysis revealed that IV cocaine use was the most significant factor to differentiate HIV positive IVDUs from negative IVDUs, even after controlling age, sex, and ethnicity.
Conclusion: Intravenous use of cocaine and speed-ball was the strongest predictor of HIV positive IVDUs. Age and ethnicity were associated with patterns of cocaine use. Research investigating polydrug use is needed for AIDS prevention.

Th.C.590 COCAINE USE AND HIV RISK AMONG INTRAVENOUS OPIATE ADDICTS

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Objective: To explore increased risk for HIV infection associated with cocaine use among intravenous opiate addicts.
Methods: A nonblinded HIV seroprevalence study was conducted with intravenous opiate addicts admitted to methadone treatment in 8 U.S. cities between March 1987 and June 1989 (n=3904). Subjects were tested for HIV (ELISA/Western blot confirmation) and interviewed using a standardized questionnaire. Subjects were categorized into 4 groups based on self-reported cocaine use over the past 5 years and compared using chi square analyses and analysis of variance.
Results: Subject groups included no cocaine use (NC=543; 13.9%); non-parenteral cocaine use only (NPC=182; 4.6%); parenteral cocaine use only (PC=1279; 32.8%); and combined parenteral and non-parenteral use (CC=1900; 48.7%). Overall, 86.1% had used cocaine and 81.5% had used it parenterally. Non-users and non-parenteral users were less likely to be HIV+ (7.4% and 5.5% respectively) than parenteral users (19.7%) and combined users (15.9%). Comparisons of AIDS-risk (drug use and sexual) behaviors found few differences between NCs and NPCs and between PCs and CCs, while NCs/NPCs generally had lower levels of AIDS-risk behaviors than PCs/CCs. Demographically, NPCs were somewhat younger and had injected drugs over a substantially fewer number of years. Given media attention focused on "sex for crack," it is interesting that female NPCs had the fewest number of sexual partners and were least likely to engage in prostitution, compared with other female groups.
Conclusion: Widespread parenteral use of cocaine and increased AIDS-risk behaviors among such users suggest the importance of prevention initiatives targeting such users.

Th.C.591 CRACK USE AND RELATED RISK FACTORS IN IVDUs IN SAN FRANCISCO

Wolfe, Hannah; Vranizan, K.M., Gorter, R.G., Cohen, J.B., Moss, A.R.. University of California, San Francisco/SF General Hospital, California, USA.

Objective: To determine patterns of crack use and related high-risk behaviors in IVDUs in treatment in San Francisco.
Methods: IVDUs in methadone maintenance and detoxification treatment in San Francisco are offered anonymous HIV testing with notification of results. Here we report on 1078 IVDUs tested in 1988 and 1989 and interviewed about drug use and sexual behavior.
Results: Sixteen percent report light crack use (1-9 days in last 30), 9% report heavy crack use (> 10 days). Twenty-three percent (70/310) of Blacks, 4% (923/615) of Whites, and 3% (4/153) of Hispanics report heavy crack use. Twelve percent of women and 7% of men report heavy use. Crack use is highest among Black women, with 29% reporting heavy use, and 66% reporting one or more days of use in the last 30 days. Overall HIV seropositivity is 16% in heavy crack users (HCUs), 8% in those with little or no use (LCUs) (p=.02). Controlling for race and sex, however no association is found. HCUs inject more cocaine, but no association is found between crack use and frequency of IV heroin or speed use. HCUs report more sexual partners (p<.0001) but do not report more needle-sharing partners than LCUs. Twenty-four percent of HCUs versus 10% of LCUs report 5 sex partners in the last 12 months. HCU reporting 5 sex partners by race and sex are: 12% Black women, 33% Black men, 31% White women, 20% White men. The higher number of sex partners in HCUs may be explained by paid sex: among females, 45% of HCUs versus 20% of LCUs report receiving payment for sex.
Conclusion: Significant numbers of IVDUs especially Black women, report crack use. Crack use is not found to be associated with HIV seropositivity, but is associated with sexual risk behavior.

Th.C.592 HIV-1 CULTURES FROM SHOOTING GALLERY NEEDLES AND SYRINGES

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Objective: To determine if HIV-1 virus could be cultured from drug paraphernalia.
Methods: As part of a follow-up to a study which determined that antibodies to the HIV-1 virus were detectable in IV drug using paraphernalia, needles and syringes were obtained from "shooting galleries" in three high risk areas: Miami and Belle Glade, Florida; and San Juan. Forty six needles and syringes were collected from three galleries. Blood bank HIV-1 seronegative leukopaks were cultured in a medium designed to increase IL-2 and CD4 receptors. Syringes and needles were rinsed with a phosphate buffer solution, and then with PHA stimulated and dextran treated donor cells. After pelleting and mixing, this material was resuspended in culture medium for HIV isolation. Freshly pelleted PHA stimulated and dextran treated donor cells were added to the HIV culture once per week. Every three to four days, one half of the culture medium was removed for study, and replaced by fresh medium.
Results: Of the 16 samples from Miami, p24 (EIA-Abbott) was detected from the culture supernatant (two consecutive elevated values, three days apart) in one sample. The presence of HIV was confirmed by passaging p24 AG positive supernatants in PHA stimulated donor cells. None of the other samples showed evidence of the virus.
Conclusions: The establishment of a single viral culture has profound implications for the potential infectivity of IV drug paraphernalia, and these data provide the next piece of crucial evidence that the HIV-1 virus is viable within used and shared IV drug equipment.

Parenteral Transmission in Blood Product Recipients

Th.C.594 BLOOD TRANSFUSION AND AIDS IN THE CARIBBEAN: A SUCCESS STORY?

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Objective: To describe the status of blood transfusion associated AIDS in the Caribbean.
Methods: Data reported to the Caribbean Epidemiology Centre (CAREC) on transfusion associated (TA) AIDS cases from 19 Caribbean countries and on HIV screening to blood donors were reviewed. Only cases meeting WHO/CDC case definition were included.
Results: Between 1983 and 1989, a total of 11 TA cases were reported from the 18 English-speaking countries and Suriname (combined population 6.3 million), comprising 1.1% of all AIDS patients. All were adults; male to female ratio was 5:1 HIV screening of donated blood which began in 1985, is now routinely carried out in all countries. Levels of HIV seroprevalence in 1988 have ranged from 0.19% in Barbados to 0.96% in St. Vincent; an overall average of 0.48%. All countries now participate in voluntary proficiency testing program coordinated by CAREC. Some of the smaller islands which do not have adequate blood banking facilities are now using rapid HIV tests as an emergency measure.
Conclusion: Although transfusion associated AIDS cases in the Caribbean have been rare, it is important to ensure continued safe blood transfusion service. HIV seroprevalence of 0.48% suggests that transmission through blood transfusion, if unscreened, is a potential danger.

Th.C.593 RISK FACTORS OF HIV. INFECTION IN SPANISH PRISONS

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Objective of the study is to describe the risk factors which determine HIV infection in spanish prisons in order to avoid or to reduce them.
Methodology: a transversal study has been performed all over the spanish prison population in mars 1989, except Catalonia's area, which voluntarily accepted a sociosanitary interview and a blood test (nº 19.946 persons). The studied population was 79% in relation to the total prison population. Relative risks (RR) were calculated with confidence intervals of 95%. Also, a factorial analysis was performed through the BMDP87 program, excluding IVDU and including the rest of the customary risk factors.
Results A) The risk factors statistically significants ($p<0,05$)were the following 1) Use of syringes: RR=6,3 (6,6-6,0); 2) Tattooing: RR=2,0 (2,1-1,9); 3) Acupuncture: RR=1,2 (1,4-1,1); 4) Previous blood transfusions to 1987: RR=1,2 (1,3-1,2); 5) Annual sexual partners (2^+): RR=1,5 (1,5- 1,4). B) Other associated factors were: 1) Males: RR=1,2 (1,3-1,1); 2) Age:(<30 years): RR=2,6 (2,7-2,4); 3) Gonorrhea antecedents: RR=1,2 (1,3-1,2); 4) Anti-HBc+: RR=3,9 (4,1-3,7). C) No found association ($p>0.05$) with hemodialysis or syphilis. D) The factorial analysis determines two factors for males: the first associates homosexuality (r=0,75) and acupuncture (r=0,68) and the second one associates tattooing (r=0,72) and heterosexuality. For non drug addicts males, risks found were the same, but weighter. In regard to females first factor associates prison behaviors (toshare cutting objects; tattooing and homosexual relations).
Conclusions: 1) Apart from the risk factors customarily described for general population, tattooing is found to be an habitual risk factor in prisons. 2) The association of sexual partners-HIV infection is not directly proportional 3) Different risk factors were found for males and females.

Th.C.595 Is the Cure Worse than the Disease: Anemia, Malaria, Blood Transfusion, and Child Mortality in Western Kenya

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Objectives: To develop guidelines for the prevention of severe anemia and for the appropriate use of blood transfusion in children in malaria-endemic areas of Africa, and thus limit transfusion-related HIV transmission.
Methods: We evaluated a cohort of 2,634 children from May to December 1989 in a rural hospital in Western Kenya to assess risk factors for severe anemia, transfusion, and mortality.
Results: Sixty-nine percent of outpatient children were anemic (Hb < 10.0 g/dl). Children under two years of age were at greatest risk for moderate and severe anemia (prevalence ratio (PR) of Hb < 7.0 g/dl = 3.53, 95% CI = 2.12, 5.89). Among these children, parasitemia was a risk factor for anemia (PR for Hb < 7.0 g/dl = 2.47, 95% CI = 1.6, 2.6; attributable risk = 50.1%). Children diagnosed with anemia accounted for 46% of the 772 pediatric admissions and 67% of the 57 deaths. Children under two years were at greatest risk for receiving transfusions (PR = 4.16, 95% CI = 2.65, 6.53) and for mortality (PR = 3.28, 95% CI = 1.04, 11.54). Once ordered, blood transfusions could often not be given due to lack of donors and/or supplies. Survival of children with severe anemia (Hb < 5.0 g/dl) who received blood transfusions did not differ from that of children who did not receive transfusions (PR = 1.03, 95% CI = 0.91, 1.16).
Conclusion: Blood transfusion is an intervention of undetermined benefit that can transmit HIV. Despite the high prevalence of HIV infection among blood donors in Africa, treatment of severe anemia with blood transfusion remains a leading cause for pediatric hospitalization. More effective preventive and therapeutic interventions for malaria and other causes of anemia are needed to reduce mortality and risk of blood transfusion in children under two years of age, the population at increased risk for malaria-associated anemia, transfusion, and mortality.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.596 TRANSMISSION OF HIV-1 THROUGH BLOOD TRANSFUSIONS DESPITE SCREENING WITH HIVCHECK(TM)

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Objective. To evaluate the performance of HIVCHECK(TM) under field conditions and to identify possible sources of error.
Methods. The study was performed in the Mbeya Region of Tanzania where 9-10% of the blood donors are infected with HIV-1 and 80% of the blood transfusions take place in settings without blood bank. The test was introduced in all 7 peripheral district hospitals with an in depth training. Serum and the HIVCHECK device was kept from every test. The staff of the regional reference laboratory reevaluated the sera from the first 1000 tests with ELISA and Western Blot.
Results. 8 of 91 HIVCHECK positive sera were false positive, of 909 initially negative tests were 9 false negative. Further analysis revealed that 3 (of 8) false positive and 3 (of 9) false negative HIVCHECK results were caused by errors of the laboratory personnel. 10% of the HIVCHECK devices were unusable because the buffer was not soaked properly into the porous membrane. This was a main cause for the errors.
Conclusion. In the Mbeya Region of Tanzania, transmission of HIV-1 occurs in 1% of the blood transfusions despite the use of HIVCHECK. The performance of the HIVCHECK could be improved with more training and better motivation of the laboratory personnel. However, the sensitivity of HIVCHECK is not satisfactory for blood screening in high prevalence areas. The high percentage of unusable devices is a source of errors. Improved rapid, manual screening tests are urgently needed for settings without blood banking facilities in areas with high prevalence of HIV.

Th.C.597 ANTI-HBc TESTING CAN DECREASE THE RISK OF TRANSFUSION RELATED HIV TRANSMISSION BY MORE THAN ONE THIRD.

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Objective: To evaluate the potential of anti-HBc testing in reducing the risk of inadvertent HIV infection after blood transfusion.
Methods: Assuming a lognormal distribution for seroconversion delay and a yearly number of donations of between one and four in regular blood donors, a simulation technique is used to estimate the rate of false negative donations (FND). FND is calculated as a function of the rate of positive HIV tests, and of the mean and standard deviation of the seroconversion delay.
With anti-HBc testing, the remaining risk is due to FND given before HIV seroconversion of an anti-HBc negative donors. Knowing the seroprevalence of anti-HBc in blood donations and among HIV false negative donations, Bayes's rule is used to calculate the probability that anti-HBc negative blood donations are HIV false negative
Results: With a rate of positive donations of 0.7 per 10,000 (French 1988 figures) and a mean seroconversion delay ranging from one to three months, we estimate the rate of FND between 0.14 and 0.43 per 10,000. The seroprevalence of anti-HBc is 4.6% in blood donors and 40% in HIV seroconverting regular donors. Application of Bayes's rules demonstrates that 37% of HIV false negative blood units could be eliminated by anti-HBC testing. This 37% figure does not depend on the mean and standard deviation of the seroconversion periods.
Conclusion: The risk of distributing an HIV infected unit and the rate of HIV positive donations have decreased of 61% between 1987 and 1988. The routine introduction of anti-HBc testing would decrease by more than one third the risk of HIV transmission by HIV seronegative blood.

Th.C.598 HIV ANTIGEN TESTS ON SELECTED BLOOD DONORS

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There may be a 'window-phase' when no evidence of antibody (Ab) but only antigen (Ag) could be demonstrable in sera. Following exclusion of 6 seropositives during 1985/86 our yearly 55,000 repeat donations did not show any seroconversion. However, during 1988/89, 2 repeat donors showed recent seroconversion. We have therefore studied the efficacy of Ag-testing in selected sera consisting of prior donations of recent seroconverters, known seropositives, tricky sera with indeterminate Western Blot (P55/P24) and donors with history of being in a risk group.
Samples were tested in parallel for Ab (Wellcome) and Ag (Organon) - both tests are based on EIA method.
Results:

source	number	Ab (Wellcome)	AG (Organon)
seropositive	5	pos.	neg.
donor with risk	4	neg.	neg.
'tricky sera'	3	neg.	neg.
recent seroconversion	2	pos.	neg.
last donation from above	2	neg.	neg.

5 seropositive and 2 recent converters were Ab positive only but all others in this study were negative for Ab and Ag. This limited study suggests Ag tests have good specificity but did not identify early seroconverters. Its routine application for further safe-guarding blood transfusion is rarely justified in healthy European donor population.

Parenteral Transmission in Health Care Workers

Th.C.599 ASSESSMENT OF RISK FOR OCCUPATIONAL HIV-1 INFECTION IN HEALTH CARE WORKERS (HCW) AND FOLLOW-UP OF HCW ELECTING ZIDOVUDINE (AZT) CHEMOPROPHYLAXIS

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Objective: To assess the risk for HIV-1 infection associated with varying adverse exposures (AE) and to monitor HCW electing AZT chemoprophylaxis following AE.
Methods: Since 1983 more than 1300 HCW have participated in this longitudinal study. Exposure and demographic information is gathered by questionnaire. Participants are periodically tested for antibody to HIV-1. HCW reporting AE currently undergo extensive clinical and laboratory evaluations, including antibody, antigen and gene amplification (PCR) studies. Beginning in April 1988, HCW sustaining AE were offered AZT chemoprophylaxis.
Results: Since 1983, 525 AE (179 parenteral; 346 mucous membrane) have been reported. 1/179 (0.56%) parenteral AE resulted in HIV-1 seroconversion; 0/346 mucous membrane AE resulted in HIV-1 infection. 52 HCW sustaining AE have been studied by PCR at 6 months and 1 year following AE. None are PCR positive. Since 4/88, 23 HCW sustained AE and were offered chemoprophylaxis; 17 elected to take AZT; 6 declined. Of those taking AZT, 4 did not complete the 42 day course due to AZT intolerance (decrease in hematocrit of >12% [2]; hepatic enzyme elevations [1]; and severe nausea and vomiting [1]).
Conclusion: These data are consistent with the other 2 large prospective studies of occupational risk for HIV-1 infection (CDC, UCSF). The risk for occupational HIV-1 infection associated with AE has remained constant; prolonged follow-up and PCR have yet to identify a late seroconversion or a seronegative infection in HCW studied. Chemoprophylaxis has been reasonably well-tolerated; however, 24% of courses were stopped because of drug intolerance. Toxicities observed were mild to moderate, and all were reversible.

Th.C.600

HIV INFECTION IN HEALTH-CARE WORKERS WHO ARE BLOOD DONORS

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Objective: To estimate the rate of HIV infection acquired by occupational transmission among health-care workers (HCWs) who are blood donors (BDs).
Methods: Occupational information is not routinely collected for BDs. However, HCWs would be expected to comprise the majority of BDs who donate at hospitals or other health facilities. Since May 1988, HIV seropositive BDs at 20 blood centers have been interviewed using a standard protocol to assess transmission modes. To estimate the proportion of BDs who are HCWs, these 20 centers are currently being surveyed to determine the proportion of donations collected at health facilities. Beginning in Jan 1990, 3 of the 20 centers are asking BDs at health facilities to complete a brief questionnaire to determine demographic and occupational data.
Results: From June 1988 through Aug 1989, these 20 centers collected >3 million donations. Of the 849 seropositive BDs identified, 513 (60%) have been interviewed, including 22 HCWs. Ten (45%) of these HCWs acknowledged behavioral risks (e.g., male homosexual contact or IV-drug use). Follow-up is underway to evaluate the role of occupational transmission for the remaining 12 BDs. Eleven (50%) of the 22 HCWs donated at health facilities. Preliminary data suggest that 3%-5% of all donations are collected at health facilities and that >90% of health facility BDs are HCWs.
Conclusion: These data suggest that among the large number of HCWs who donate blood, HIV infection is uncommon. Seropositive HCWs likely represent both behaviorally and occupationally acquired HIV infection.

Th.C.601

LONGTERM FOLLOWUP OF HEALTH CARE WORKERS WITH POLYMERASE CHAIN REACTION AND ANTIBODY TESTING TO DETECT DELAYED SEROCONVERSION

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Objective: To evaluate the incidence of delayed seroconversion (DS) & latent infection among health care workers (HCW) occupationally exposed to HIV.
Methods: Since 1984, 721 HCW lacking established risks for HIV at SFGH were enrolled in a prospective cohort study of occupational HIV risk and tested annually/post-exposure for HIV Ab. Since 2/88, HCW with HIV needlesticks (NS) or at high risk for HIV NS had serial peripheral blood lymphocytes tested for early or latent HIV infection using polymerase chain reaction (PCR), WB Ab, & p24 Ag.
Results: 1/273 (.37%) NS caused early seroconversion (ES) (<6mo post-NS) in 1/189 HCW with HIV NS; 0/379 mucousal splashes (SP) in 172 HCW (76 sans NS) caused ES. No post-exposure DS were detected in 179 HCW @ 1yr, or in 106 @ 2yr, or in 62 ≥ 3yr post-exposure. 133 HIV exposed HCW (98 NS and 35 SP) and 87 at high risk (37 surgeons / 10 path / 13 L&D / 25 ER / 2 AIDS ward) had PCR; 3 were + & 6 indeterminant; none had WB Ab or p24 Ag. 1 remains PCR + and seronegative on followup.
Conclusion: Occupationally exposed HCWs have not experienced delayed seroconversion. The predictive value of a positive or indeterminant PCR test result in HCWs lacking serologic evidence of HIV infection requires further followup investigation, but the possibility of seronegative latently infected HCWs cannot yet be excluded. Until the role of PCR in diagnosing occupational infection is clarified, current recommendations for Ab testing up to 6mo post-exposure remain appropriate.

Th.C.602

EXPOSURE OF HEALTH CARE WORKERS (HCW) TO BLOOD DURING VARIOUS PROCEDURES: RESULTS OF TWO SURVEYS BEFORE AND AFTER THE IMPLEMENTATION OF UNIVERSAL PRECAUTIONS (UP)

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Objective: To assess the frequency of blood contacts (BC) and needle-stick injuries (NSI) associated with various procedures before and one year after the implementation of universal precautions, as well as the compliance to these recommendations.
Methods: In a 1000-bed hospital, nurses of all services were asked through a questionnaire to record during one working shift, all procedures performed, the number of times gloves were worn, and when not wearing gloves, the number of times they experienced BC. In addition, all injuries which had occurred that day and during the 5 preceding days were noted. Universal precautions were introduced through mailings to all HCW, in-service education accompanied with presentation of results of the first study, and by providing adequate supplies of gloves and disposal containers for sharp objects.
Results: Response rates of 70 and 80 percent were recorded for the first and second studies respectively.

	First study (565 nurses)		Second study (541 nurses)		
Procedure	BC/procedures (%)		BC/procedures (%)		% not wearing gloves
Venous puncture (closed system)	57/824	(7)	46/797	(6)	82
Blood drawn by i.v. cath.	35/193	(18)	10/184	(5)*	58
Capillary puncture	111/190	(58)	67/212	(32)*	70
Hemoculture	8/33	(24)	2/68	(3)*	43
I.V. line insertion	51/157	(33)	43/256	(17)*	76
Arterial compression	7/44	(16)	1/92	(1)*	51
Dressing change	29/186	(16)	11/208	(5)*	83
Resuscitation	4/13	(31)	4/10	(40)	67
NSI: day of study	6 (1.06%/nurse/day)		6 (1.10%/nurse/day)		

*p < .005

Conclusion: The results show that overall BC have decreased significantly despite only partial compliance to UP. Frequency of NSI was stable and is very hi[illegible] differences in study design. These findings may help i[illegible] the protection of HCW.

Th.C.603

BLOOD AND AMNIOTIC FLUID CONTACT DURING OBSTETRICAL PROCEDURES

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Objective: To assess the nature and frequency of blood contact (BC) and amniotic fluid contact (AFC) during vaginal and cesarean deliveries (Ds).
Methods: Trained observers monitored a sample of Ds at a large, urban, public hospital from May to October 1989. Data recorded included the type of D and for each person observed, his/her occupation, protective devices used, and number and type of BC and/or AFC.
Results: During 202 vaginal and 28 cesarean Ds involving 1,388 obstetrical (OB) personnel, 118 BCs (112 skin contacts, 2 eyesplashes, and 4 needle-sticks) and 38 AFCs (all skin contacts) occurred. At least 1 BC occurred in 30.2% of vaginal and 42.9% of cesarean Ds; a needlestick occurred in 4 (2.0%) vaginal Ds. All needlesticks occurred during performance/repair of episiotomy or laceration. BC or AFC occurred in 9/21 (43%) Ds in which the mother was known by the OB team to be HIV seropositive (N=3), a carrier of hepatitis B virus (N=3), or an IV drug user (N=18), in 49/117 (42%) Ds in which the mother was known to be negative for these factors, and in 18/48 (38%) Ds in which the mother's status for all three factors was unknown.
Conclusion: The risk of BC and AFC during D is substantial and in this study, their occurrence was not substantially [illegible]

Th.C.604 CONTACT WITH BLOOD OF PATIENTS INFECTED WITH HIV AMONG EMERGENCY CARE PROVIDERS (ECPS)

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Objectives: To estimate: 1) HIV seroprevalence in hospital emergency department (ED) patients in high AIDS-incidence areas in the USA; 2) frequency of blood contact (BC) experienced by ECPs, including HIV BC; and 3) efficacy of universal precautions in preventing BC.
Methods: In each of 3 cities, data were collected for 8 months from an inner city and suburban ED. Blinded HIV antibody testing was performed on a sample of ED patients, and ECPs were observed for BC (percutaneous inoculation or skin or mucous membrane contact) and use of infection precautions.
Results: Preliminary analysis of 20,000 specimens reveals patient HIV seroprevalence of 4.2%-8.9% in inner city EDs and 0.4%-6.4% in suburban EDs. Rates were highest in patients aged 15-44 years (inner city: men 10%-24%, women 3%-9%; suburbs: men 1%-15%, women 0%-4%). Glove-use rates were higher in inner city EDs; e.g., during phlebotomy, 90% in inner city, 66% in suburbs. BCs were observed in 388/9385 (4%) procedures observed; 98% of BCs were skin contacts. BC rates for ungloved vs. gloved ECPs were: 16/156 (10.3%) vs. 2/383 (0.5%) in obtaining an arterial blood sample (Relative Risk [RR]-19.6; 95% CI-4.6-84.4); 76/448 (17.0%) vs. 33/2133 (1.5%) while starting an IV (RR-11.0; 95% CI-7.4-16.3); 33/571 (5.8%) vs. 22/1820 (1.2%) during phlebotomy (RR=4.8; 95% CI-2.8-8.1).
Conclusions: HIV seroprevalence rates are highest in male inner city patients, aged 15-44 years. HIV infections were also found in other age groups and in suburban EDs, indicating the need for using universal precautions with all patients. Gloves significantly reduce the risk to ECPs of BC during procedures commonly performed in EDs.

Vertical Transmission

Th.C.605 PERINATAL HIV TRANSMISSION DESPITE MATERNAL/INFANT AZT THERAPY

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Objective: Report experience with AZT therapy throughout pregnancy coupled with early AZT therapy of the newborn.
Method: Serial immunologies and F/U of HIV(+) pregnant mother on AZT including pharmacokinetics. Serial immunologies, cultures and clinical assessments on her newborn including AZT therapy with pharmacokinetics.
Results: Mother was on AZT prior to pregnancy taking 500mg/day and opted to continue AZT. Her CBC and platelets were normal during pregnancy but her CD4 counts reached a low of 153 at delivery. A pharmacokinetic study at 36 weeks revealed a trough of 0.12 umol/l, a peak of 1.27 umol/l, a half-life of 0.71 hours and an oral clearance of 2550 ml/min, values comparable to those reported in men. At birth the infant was culture neg, PCR neg with CD4's of 1850. At 11 days of life the infant was enrolled in a Phase I AZT trial. Pharmacokinetics following an IV dose of 3mg/kg revealed: area under the curve of 2.2 hr*mcg/ml; half-life of 2.18 hrs; and clearance of 22.7 ml/min/kg. Bioavailability calculated from oral dosing was 91%. At 21 days of life the dose was increased to 4 mg/kg Q6h and he completed a 6 week course. A lymphocyte culture drawn at 53 days of life at completion of AZT was subsequently positive. At time of culture draw, CD4 count was 2958 with a T4/T8 ratio of 1.1. At 4 months of age AZT was restarted due to the (+) culture result. At 5 months, the infant was symptomatic with fever, hepatosplenomegaly, elevated AST and ALT with a CD4 count of 1643.
Conclusions: (1) AZT in a dose of 500 mg/day during pregnancy did not prevent vertical transmission; (2) Early (11 days) AZT treatment in the newborn did not prevent acquisition of HIV nor delay onset of symptomatic disease; (3) AZT may not prevent perinatal transmission or may require higher maternal dosing and/or neonatal therapy within 24 hours of birth.

Th.C.606 PERINATAL TRANSMISSION OF HIV TO INFANTS OF SEROPOSITIVE MOTHERS IDENTIFIED BY PRENATAL SCREENING

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Objective: To describe perinatal transmission rates and factors which might be related to transmission of HIV in a prospectively followed population-based cohort of infants born to seropositive mothers identified by prenatal testing or testing at delivery.
Methods: Seropositive mothers were identified by routine testing (with counseling and consent) during pregnancy or at delivery in a hospital with 8,000 deliveries/year primarily serving a black indigent population. Infants were followed by clinical examination and laboratory testing for evidence of HIV disease.
Results: From 7/1/87 to 6/30/89, 101 infants were identified, 78 of whom have had adequate follow-up (median 15 months). The infants' status as of 1/90 are shown below:

Age	Infected	Seronegative	Indeterminate	Unknown	Total
>15 mo.	6	31	0	23	60
<15 mo.	4	7	30	0	41
Total	10	38	30	23	101

None of the mothers breast-fed and one was symptomatic at delivery. Maternal age was significantly greater in the mothers of infected infants (28 vs 25 yrs, p=0.05). Maternal risk factors include intravenous drug use - IVDU (50%), sex partner of IVDU or other high-risk males (20%), transfusion (3%), no identified risk (27%). Risk factors of mothers of known infected infants were: IVDU 7/10, partner of IVDU 1/10, no identified risk (2/10).
Conclusion: The fact that not only at-risk women have been tested may explain the apparently lower rate of transmission in this cohort. If further follow-up corroborates a low transmission rate, the finding may be explained by the very low rate of symptoms in the women tested or the absence of breast feeding. It might also be attributable to a difference in transmission rates when IVDU mothers are compared to women of no identified risk.

Th.C.607 PERINATAL INFECTION WITH HUMAN IMMUNODEFICIENCY VIRUS 1 (HIV) IN NEWARK, NEW JERSEY

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Objective: To assess the natural history of infants born to HIV-infected women in Newark, including the rate of perinatal transmission of HIV.
Methods: Beginning March 1987 HIV-infected mothers who delivered babies at University Hospital in Newark were invited to participate. Maternal data were collected & infants prospectively monitored from birth as follows: q month x6mo, q2mo x6mo, q3mos thereafter. Clinical, retrovirologic, and immunologic data were collected at each visit.
Results: Between 1987-1990, 87 infants enrolled, 68 (78%) had sufficient data for analysis. Ninety-one % were black, 7% hispanic, 1% white; mean gestational age 36.7wks; 32% were premature & 9% were small for gestational age. Seventy-six % of mothers were intravenous drug users; 94% were asymptomatic at delivery, 4.5% had ARC and 1.5% AIDS. Sufficient data was available for 32 infants to determine infection status: 6/32 (19%) were HIV-infected (HI), 26/32 (81%) were seroreverters (SR). Among HI, 4/6 had clinical symptoms by age 6mo, abnormal immunologic studies (including decreased CD4) & retrovirologic evidence of infection; 2/6 were well and had normal immune parameters for >15mo. Seroreverters lost HIV antibody at median 12 months, all are clinically and immunologically well.
Conclusion: These data suggest that the rate of perinatal transmission of HIV is at least 19%. HIV-infected infants had two patterns of clinical presentation: early (<6mo) and late (>15mo). The median time for loss of antibody by SR is 12 months.

Th.C.608 SEROLOGICAL FOLLOW UP STUDY OF INFANTS BORN FROM HIV-SEROPOSITIVE MOTHERS IN BUENOS AIRES ARGENTINA

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Objective: To evaluate the serological and clinical evolution of newborns from IVDA (85,7%) and heterosexual (14,3%) seropositive mothers.
Methods: Serum samples were tested for HIV-1 antibodies (abs) by ELISA(Abbott Laboratories). Samples reacting positive were tested by Immunofluorescence; Env/Core serological status was evaluated by a competitive ELISA (Abbott) and HIV antigen by an ELISA test (Abbott).
Results:

	STUDIED WHEN (months)					
WHEN	< 2	3	6	9	12	> 12
No pts. followed	49	35	25	19	15	12
HIV-pos.(%)	48(98)	32(91)	20(80)	12(63)	6(40)	5(42)
HIV-neg.(%)	1(2)	3(9)	5(20)	7(37)	9(60)	7(58)
Ag. pos.	0	0	2(8)	0	0	0
AIDS cases	1	-	-	3(25)	-	5(100)*

* Two new cases.

Conclusion: In our study, 42 % of the patients showed persistent HIV abs after 15 months of age. In addition, all the children with persistent abs during 15 months developed AIDS. Moreover, upon birth 98% of the children show HIV abs. and after some time some of them may become seronegative, especially within 6 to 15 months. This clearly points out the importance of follow up of every newborn from a high risk mother, at least for a two year period.

Th.C.609 MATERNAL-INFANT HIV-1 TRANSMISSION (MIT) IN BREASTFED HAITIAN INFANTS

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Objective: To determine the rate of MIT in a breastfed population and the impact on childhood survival.
Methods: The offspring of women enrolled during pregnancy were followed at 3 month intervals using standard methods.
Results:

	Mom HIV-1+ n = 377	Mom HIV-1- n = 3589	p value
Birthweight (gms)	2944	3111	<0.001
% <37 weeks	18.6%	11.4%	<0.01
Survival to 12 mos.	76.7%	89.2%	0.003
Survival to 24 mos.	68.7%	85.8%	<0.001

No infants lost HIV-1 antibodies after 12 mos. of age and 25% of infants acquired HIV infections. Factors not associated with MIT included maternal antibodies to specific HIV proteins by Wb, age, parity and weight. Nutritional status and mortality for uninfected infants born to HIV+ women were similar to those of infants born to HIV- women.
Conclusions: Maternal HIV-1 infections resulted in a negative impact on birthweight, nutritional status and survival. The rate of MIT in this breast-fed population was similar to that observed in non-breastfed populations. No specific maternal factors were identified that predicted the likelihood of MIT.

Th.C.610 MOTHER-TO-CHILD TANSMISSION OF HIV VIRUSES : A COHORT STUDY IN WEST AFRICA : BURKINA FASO

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*G.E.E.P. : Villeneuve-Saint-Georges, **C.E.S.I.S. (O.C.C.G.E.) and Center Muraz , ***Banfora Hospital, ****National Comitee Against AIDS, *****ORSTOM

Objectives : 1°) To determine the mother to child transmission rate of HIV viruses (HIV1, HIV2, HIV1+2). 2°) To assess the outcome of the disease in seropositive mothers and children according to the type of virus.
Methods : A cohort study was initiated in 1987 with systematic HIV screening and clinical examination at delivery of pregnant women in Banfora hospital. Each seropositive mother-child couple was matched with two seronegative couples as control.A clinical examination of mother and child was performed every 3 months.
Results : The rate of infection measured on 1400 women showed a significant increasing of the prevalence rate between 87-88 and 89 from 2.3% to 5.1.%. 41 children were born form HIV positive mothers (24 HIV1 (51%), 7 HIV2 (19%), 10 HIV1+2 (24%). 21 of them were followed up during a 16 months period ; 4/21 remained positives. There is a differential transmission according to the type of virus since all children really infected were only HIV1+. The HIV1 mother to child transmission rate could be 33% (4/12). 3 out of the 4 children 75% deceaded after 16 months from symptoms related to AIDS. At 16 months survival rate of children HIV+ is comprised between 0.74 to 0.81 compared to 0.95 for controls (children HIV-). At this time, no case of HIV2 or HIV1+2 tansmission was observed.
Conclusion : This study shows : an increasing of HIV prevalence rate in pregnant women in this area, a HIV1 mother-to child transmission rate of 33%, and an absence of HIV2 and 1+2 trnsmission. Clinical analysis is on the way.

Th.C.611 HIV-1 SEROLOGY IN INFANTS BORN TO HIV-1 INFECTED MOTHERS IN NAIROBI, KENYA

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OBJECTIVE: To determine the rate of serologically determined HIV-1 infection in infants born to HIV-1 infected mothers.

METHODS: Infants born to HIV-1 infected mothers at Pumwani Maternity Hospital in Nairobi, Kenya were enrolled at birth and followed at age 6 weeks, at 3, 6, 9 and 12 months post-partum, and then every 6 months thereafter. Cord blood and venous sera were tested for HIV-1 antibody by ELISA and immunoblot (IB).

RESULTS: One hundred and thirty-six of 141 infants tested between 0 and 3 months of age (96%) were HIV-1 seropositive by ELISA. Maternal passively acquired antibody appeared to disappear by 9 months of age, and seropositivity by ELISA decreased to 22% by 12-18 months of age. Among 40 infants tested at greater than 18 months of age, 13 were HIV-1 positive by ELISA and IB.

CONCLUSIONS: Almost all infants of HIV-1 positive mothers in this population have antibodies to HIV-1 at birth. Among infants surviving to 18 months, 33% are HIV-1 infected as defined by serological criteria.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.612 PERINATAL TRANSMISSION OF HIV-1 IN ZAMBIA.

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Objectives:To determine perinatal transmission rate; to determine morbidity and mortality of HIV-1 infection in children.
Methods:A prospective study was conducted on 1954 women in labor at the University Teaching Hospital in Lusaka, Zambia. 227 (11.6%) of women were WB confirmed seropositive for HIV-1 in January 1987. Excluding pregnancy wastages and those lost to followup, 109 sets of seropositive mothers and their babies and 40 sets of seronegative mothers and their babies (control) were followed regularly for 3 years.
Results: 21.6% (49/227) of seropositive mothers were symptomatic. Low birth weight was significant among infants born to seropositive mothers. 93.7% (192/205) of cord blood specimens were positive. During followup, 18 children died under age of 8 months, 14 with clinical AIDS. Remaining 91 were tested at 8 months and 23 (25.3%) were positive. Thereafter serology fluctuated in some children upto the age of 18 months. By 3 years, another 9 infected children died, 5 were terminally ill, 14 had ARC and none were asymptomatic. Thus, including 14 deaths under 8 months, perinatal transmission rate was 38.5% (42/109). Mortality rate among infected children was 54.8% (23/42) during 3 years. Mortality was significantly higher among those who were persistently positive. 11.9% (5/42) developed tuberculosis. All children had received live attenuated vaccines during first 8 months without apparent ill effects.
Conclusion:Perinatal transmission occurred in 44.8%; 100% manifested clinical disease.

Th.C.613 MOTHER TO CHILD TRANSMISSION OF HIV INFECTION. RESULTS OF A FOLLOW UP STUDY.

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OBJECTIVE: In this study we wanted to evaluate the incidence of HIV mother to child transmission and the possible correlation between maternal immunological parameters and the development of AIDS in their children.
METHODS: From 9/1/87 to 9/1/89 we have followed 46 HIV positive pregnant women (past or current intravenous drug users). Immunological and virological assessments (total lymphocytes, circulating CD4+ - CD8+ values and p24 HIV antigen) were performed, every 3 months, in all pregnant women and their 48 children (2 twin births). Now these children (30 females and 18 males) range in age from 3 months to 27 months.
RESULTS: Twenty-nine HIV positive pregnant women presented circulating CD4+ values higher than 600/mm3, 11 between 400 and 600/mm3 and 6 lower than 400/mm3. Fourteen children became HIV seronegative between 8 and 13 months of age, 30 children are now in PO stage and 4 children have a HIV infection (two of them died at 3 months of age, one is in P2AB and one in P1B stage).
CONCLUSION: 1) In our population (excepted PO children) the incidence of HIV mother to child transmission war 22%.
2) No correlation between maternal immunological parameters and the development of AIDS in their babies was found.

Th.C.614 MOTHER-TO-INFANT TRANSMISSION OF HIV : PREDICTIVE VALUE OF VIRUS ISOLATION FROM PLACENTAL TISSUE AND PERIPHERAL-BLOOD MONONUCLEAR CELLS DURING PREGNANCY

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Objectives : To investigate maternal virological markers that could predict HIV infection in infants born to seropositive mothers and to estimate the incidence of placental tissue infection in mother-to-infant HIV transmission.
Methods : 2 groups of HIV-1 seropositive mothers in CDC class II, intravenous drug addicts, were studied : 10 transmitting mothers whose children were all HIV infected; 10 non-transmitting mothers whose children (>18 months of age) were HIV-seronagative,symptom-free and provirus negative (PCR gag/pol).
Cultures of PBMC collected during pregnancy and placentas whashed several times were performed by cocultivation with PHA-stimulated PBMC from normal cordons. HIV replication was monitored by detection of p24 antigen and reverse transcriptase activity in culture supernatants twice weekly for up to 45 days.
Results :Culture of PBMC from transmitting and non-transmitting mothers resulted in the same overall recovery rate of the virus. None of the 10 placentas from non-transmitting mothers gave a positive culture. Of the 10 placentas from transmitting mothers, only one was positive.
Conclusions : HIV isolation from PBMC during pregnancy is not a predictive marker for HIV infection in infants. While the possibility exists that the fetal infection may at times occur due to placental tissue infection, it seems relatively rare. In utero infection could occur via transplacental transmission of cell-free virus; in this case, plasma viremia actually under investigation would be an important factor.

Th.C.615 MATERNAL ANTIBODIES TO gp120 HYPERVARIABLE LOOP REGION MIGHT CONTROL MOTHER-TO-CHILD HIV-I TRANSMISSION.

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Objective: To define the role of maternal antibodies to selected HIV-I peptides in preventing mother-to-child transmission.
Methods: Sera from 30 HIV-I infected mothers who gave birth to 19 uninfected and 11 infected infants were collected at delivery. The children HIV-I status was determined either according to CDC definition or to the identification or not of HIV-I viral sequences by polymerase chain reaction technique.
Antibody reactivities were assayed in a Peptide-Elisa using as antigen a panel of env, gag and pol synthetic peptides.
Results: Eleven of 19 sera from mothers of uninfected children reacted to the cysteine-containing peptides of the gp120 hypervariable loop region. Only two of the 11 mothers of infected children reacted to the same cysteine-contained conserved sequences ($p = 0,01 > 0,05$). No significant difference was found to any other tested peptide.
Conclusion: Antibodies against selected epitopes of the V3 gp120 region might play a protective role in controlling mother-to-child HIV-I transmission.

Th.C.616 VIRUS CULTURE, POLYMERASE CHAIN REACTION AND IN VITRO ANTIBODY PRODUCTION FOR EARLY DIAGNOSIS OF PEDIATRIC HIV1 INFECTION

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The diagnosis of HIV1 infection in infants born to HIV seropositive mothers is critical. Passively acquired maternal antibodies generally hamper the serological diagnosis. In vitro anti-HIV1 antibody production (IVAP) by peripheral blood mononuclear cells (PBMC) reflect a persistent viral antigenic stimulation and so might help with the diagnosis of HIV1 infection in Po children.
Methods : 62 infants or children born to HIV seropositive mothers were followed for 2 years. IVAP was detected by Western Blot assay (Diagnostics Pasteur) in supernatants of 5.10^6 PBMC cultured for 6 days. Reverse transcriptase activity was detected in supernatants of PBMC cultured at least 36 days. PCR used 2 primers for GAG and POL regions of HIV1 with 39 amplification cycles.
Results : All the 35 asymptomatics (IOO %) infants and PO children were negative for VC, PCR and IVAP assays. 9 others PO infants were IVAP negative but VC or PCR positive transitory not confirmed through the one year follow up. In I8 P2 children, VC were positive I6 cases, PCR I4 and IVAP I6. So, IVAP assay is able to discrimine HIV infected children as VC or PCR assays. The new test is easily done and can be applied to the HIV1 pediatric investigations in developping countries.

Th.C.618 PROSPECTIVE STUDY OF HTLV-I TRANSMISSION FROM MOTHER TO CHILD IN GABON:CLINICAL AND SEROLOGICAL FOLLOW-UP.

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Objective: To study the natural history of HTLV-I infection from children born to seropositive mothers and to determine the rate of perinatal transmission of HTLV-I in an area where the HTLV-I seroprevalence rate is high (8%) and HIV seroprevalence rates are still relatively low (<1%).
Methods: Clinical and serological follow-up (at birth and then every 3-6 months) from infants born to 30 HTLV-I seropositive mothers(group 1) and from infants born to negative control mothers(group 2). Screening for HTLV-I antibodies of the other infants (<12years old) of this mothers. Criteria of HTLV-I positivity were the presence of antibodies to at least 2 different gene products.
Results: Neonatal mortality, sex-ratio, mode of delivery, Apgar score, birth weihgt, amniotic fluid and placenta gross examination were identical for both groups at birth.Clinical and serological follow-up are still ongoing. The mean period of follow-up is 9 months (3 to 24). All the infants are in good health. Morbidity in the two groups was identical. One cord blood of group 1 did not show HTLV-I antibodies.In infants the disappearance of maternal antibodies was observed after 6 months,except for 3 infants who still showed antibodies to the viral core proteins at 9 months. The first antibodies to dissappear were the anti-env, the last were the anti-p19.At 12 (n=11) and at 24 (n=5) months all the infants tested remained seronegative.The HTLV-I seroprevalence rate among siblings of group 1 was 18.8% versus 0 in group 2 ($p<0.01$).
Conclusion: In these preliminary results, the lack of early seroconversion and the higher HTLV-I seroprevalence rate among infants from seropositive mothers are arguments for post-natal infection (breastfeeding is usual in this area).

Th.C.617 MATERNAL-INFANT TRANSMISSION OF HTLV-I INFECTION IN HAITI

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Objective: To determine the rate of and factors associated with maternal-infant transmission of HTLV-I.
Methods: Pregnant Haitian women were screened for HTLV-I and HIV-1 (ELISA and WB). Children of HTLV-I seropositive mothers who survived to 18 months or greater were examined and tested for HTLV-I (WB).
Results: Of 2592 women, 114(4.4%) were seropositive for HTLV-I and 242(9.3%) for HIV-1. Sera were available from 41 infants 18-34 months of age born to HTLV-I seropositive mothers. Five of 41(12.2%) children were HTLV-I seropositive and 3(7.3%) were indeterminate. Maternal-infant transmission was not associated with mother's age, parity, or HIV-1 status. The mean median weight for age at birth was 98% for seropositive and 102% for seronegative children.
Conclusion: The rate of maternal-infant transmission was lower than observed in some other studies, but the indeterminate Western blots may represent early infection and the rate does not account for children who died before 18 months of age. Risk factors for transmission will be re-evaluated as additional children reach 18 months of age.

Natural History: Homosexual and Bisexual Men

Th.C.619 PROGRESSION TO AIDS IN HIV POSITIVE MEN: 5-YEAR FOLLOWUP OF THE SAN FRANCISCO GENERAL HOSPITAL COHORT.

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Objective. 288 HIV-positive homosexual men have been followed at SFGH since 1983-4. We examined progression rates to AIDS by baseline values of prognostic markers at five years of followup or about eight years after infection.
Methods. Consenting subjects are seen at six month intervals at SFGH for physical examination,interview and bloodwork
Results. 30% of men had progressed to AIDS and 54% to AIDS or ARC. Five year actuarial progression rates to AIDS by baseline marker values were as follows:

CD4 < 200	90%	Beta-2M > 5.0	92%
200 < CD4 < 400	47%	3.0 < Beta-2M < 5.0	43%
CD4> 400	23%	Beta-2M < 3.0	17%
p24 antigen present	69%		
p24 antigen absent	22%		

10/104 men with no markers abnormal progressed (9%), 24/98 with 1 abnormal (27%), 45/74 with 2 or more abnormal (62%). In nonprogressors at 5 years median CD4 count was 300, median CD4 proportion was 18%., median Beta-2M was 3.6 mg/l, median hematocrit was 40.3 and 24% had detectable p24.
Conclusion. At five years of followup half of the infected men had progressed to AIDS/ARC. Half of the remainder were abnormal on at least one marker highly predictive of AIDS.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.620 THE SYDNEY AIDS PROJECT: DEVELOPMENT OF AIDS IN A COHORT OF HIV SEROPOSITIVE HOMOSEXUAL MEN.

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Objective: To describe the incidence rates of AIDS and risk factors for the development of AIDS in a large cohort of homosexual men monitored for five years.
Methods: In 1984, 1057 homosexual men were enrolled in this cohort. Of these men, 414 (39%) were HIV seropositive. We examined the most antecedent information available (at the time of the first seropositive test result) to determine which clinical and laboratory markers had the best predictive value for the development of AIDS.
Results: Of the total 414 HIV seropositive men, 111 (26.8%) had developed AIDS by October, 1989. Estimated median time to development of AIDS in this prevalent cohort was 1650 days (95% CI 1500 - 1750 days). In a proportional hazards model, three variables retained significance as predictors for the development of AIDS: an absolute number of CD4+ cells less than 200 X 10^6/L, a CD4+:CD8+ ratio less than 1.0 and a lymphocyte count less than 1500 X 10^6/L. A CD4+ cell count less than 200 X 10^6/L had the greatest relative risk for the development of AIDS.
Conclusion: The incidence rate of AIDS has continued to increase during the course of five-year follow-up and is consistent with the observed rates reported from other major cohort studies. These results emphasise the importance of regular monitoring and T-cell subset enumeration of HIV seropositive persons. Updated results to May 1990 will be presented.

Th.C.621 RELATIONSHIP BETWEEN AIDS LATENCY PERIOD AND SURVIVAL TIME

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Objective: To investigate the relationship between AIDS latency period (time from HIV seroconversion to first AIDS diagnosis) and AIDS survival time (AIDS diagnosis to death) in a cohort of homosexual and bisexual (H/B) men.
Methods: We identified 263 H/B men diagnosed with AIDS whose HIV seroconversion dates (ranging from 1977-1985) could be well approximated. These men were from a cohort of 6,706 H/B men originally recruited in San Francisco from 1978 through 1980 for studies of sexually transmitted hepatitis B. We first examined the overall relationship between latency and survival time. We then evaluated the association of the following variables with latency or survival times: initial AIDS-defining disease, year of seroconversion, year of initial AIDS diagnosis, age at seroconversion, and ethnicity.
Results: We found no significant overall correlation between latency and survival time. Using Kaplan-Meier and Cox analyses we found initial AIDS diagnosis to be the only significantly associated variable with latency and survival times. Individuals presenting with Kaposi's sarcoma (KS) had a shorter latency but longer survival than those with Pneumocytis carinii pneumonia (PCP) and other diagnoses. Individuals with KS tended to be diagnosed earlier in the epidemic compared to those with PCP and other AIDS diagnoses.
Conclusion: In these analyses, time from HIV seroconversion to death did not differ among men presenting with different AIDS diagnoses, but individuals presenting with KS developed disease earlier in the course of infection and lived longer following their diagnosis than those who presented with PCP and other opportunistic infections or malignancies.

Th.C.622 THE MODELLING OF PROGRESSION TO AIDS: IS IT WISE TO COMBINE DIFFERENT AIDS MANIFESTATIONS?

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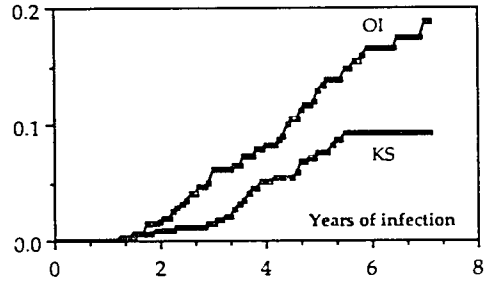
*The Vancouver Lymphadenopathy-AIDS Study, University of British Columbia and St. Paul's Hospital, Vancouver, Canada; **Federal Centre for AIDS, Ottawa, Canada.

Objective: To investigate progression to the development of Kaposi's sarcoma (KS) and opportunistic infections (OI) separately in our cohort of seropositive homosexual men.
Methods: Kaplan-Meier (KM) methods were used. Time zero=seroconversion date for seroincident subjects; a lead time of 18 months was used for seroprevalent men. AIDS-free men were censored at 10/89. For analysis of a given Dx, subjects were right censored at the time of any other AIDS Dx.
Results: Among 348 seropositive men, 82 cases of AIDS arose over 7 years (25 KS, 48 OI, 9 other). These yield KM curves for OI and KS as shown with cumulative progressions to OI and KS at 7 years of 19% and 9% respectively. There is an obvious fall-off in the number of new KS cases in the cohort recently. Both curves deviate from respective Weibull models on the first 5 years of observations. This is particularly more marked for KS than OI.



Conclusion: To date, studies of the natural history of HIV infection have modelled progression to AIDS as a single entity. The present data suggest that progression to KS and OI behave differently. We suggest that models of HIV disease should account for different manifestations separately.

Th.C.623 AZT USE IN AIDS-FREE HIV-1 SEROPOSITIVE MEN IN THE MULTI-CENTER AIDS COHORT STUDY (MACS) 1987-1989.

Graham Neil MH, Zeger SL, Kuo V, Jacobson LP, Phair JP, Detels R, Rinaldo CR, Saah AJ. Multicenter AIDS Cohort Study, Bethesda, MD.

Objective: To determine: 1. if the proportion of pre-AIDS participants (i.e., CD4 <200 or ARC) taking AZT is high enough to explain the 15% deficit in expected U.S. AIDS cases observed since mid-1987; 2. which factors are associated with starting AZT and clinical trials of AZT; 3. if pre-AIDS patients, as a group, are being undertreated.
Methods: Data on AZT use, clinical trial participation, sociodemographic, clinical and hematologic variables were collected 6-monthly from 1184 AIDS-free HIV-1 seropositive gay men from April 1987 to April 1989. Variables from the study visit prior to starting AZT therapy were analysed using chi-square, T-tests and logistic regression.
Results: Overall, prevalence of AZT use rose from 3.6% in mid 1987 to 22% by early 1989. Of those with <200 CD4 lymphocytes AZT use rose from 23% to 54% while in those with ARC it rose from 20 to 54%. In multivariate analyses CD4 number consistently predicted initiation of AZT therapy at each visit (OR 2.3-2.0 for each decrement of 100 cells). Clinical symptoms and education status were less consistent predictors of AZT therapy. Clinical trial participants had similar characteristics to non-AZT users.
Conclusion: The magnitude of AZT use in the MACS appears to be conditionally consistent with a treatment effect on AIDS incidence. Pre-AIDS patients as a group have been significantly undertreated. The relatively low predictive power of clinical factors suggests that factors like drug cost and individual preferences may influence who starts AZT. Clinical trial results should be generalisable to the rest of the MACS.

Th.C.624 AIDS RISK CAN BE PREDICTED WITH CD4%, NEOPTERIN AND BETA-2-MICROGLOBULIN ONLY ONE (1) YEAR AFTER HIV SEROCONVERSION

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Objective: To determine if early changes in immune parameters predicted increased 5-year AIDS incidence rates.
Methods: A cohort of 131 HIV-positive homosexual men was studied from 1982-88. They consisted of 47 seroconverters, 42 prevalent positives from New York City (NYC), and 42 prevalent positives from Washington (DC). Using estimated dates of seroconversion, the cumulative AIDS incidence rates for the 3 groups were almost exactly the same. Sequential changes of CD4%, serum neopterin and beta-2-microglobulin (B2) after seroconversion were evaluated with respect to the AIDS predictive potential of the markers. The method of Kaplan and Meier was used to calculate cumulative incidence rates of AIDS.
Results: AIDS rates differed significantly (p=0.001) in subjects with different CD4% levels measured 1 year after seroconversion. Fifteen of 29 subjects (52%) with low CD4 (<25%) developed AIDS until the end of 1988, compared to only 10 of 39 (26%) with medium CD4 (25-35%), and none of 12 (0%) with relatively high CD4 (>35%). AIDS rates were also higher (p=0.02) for subjects with high neopterin levels (>15nmol/l), compared to those with medium levels (10-15nmol/l), and with normal neopterin levels (<10nmol/l), measured 1 year after seroconversion. In addition, AIDS rates were also significantly higher (p=0.01) in homosexual men with high B2 levels (>3mg/l), compared to those with medium levels (2-3mg/l), and with clearly normal B2 levels (<2mg/l).
Conclusion: We conclude that it is possible to predict AIDS risk in HIV-positive homosexual men as early as 1 year after HIV-seroconversion. The biologic factors that influence immunity following HIV seroconversion will have to be elucidated. Therapies that affect the early response to HIV might have an important role in delaying AIDS onset.

Th.C.625 RESIDUAL AIDS-FREE TIME AND CHANGES IN CD4% IN HOMOSEXUAL MEN SEROPOSITIVE FOR HIV-1.

Munoz, Alvaro; Hoover D, Wright P, Detels R, Kingsley L, Graham N, Schrager L, Phair J;
for the Multicenter AIDS Cohort Study (MACS), Bethesda, MD, USA.

Objective: To estimate and compare transition probabilities between levels of CD4% and AIDS in homosexual men infected with HIV-1. Methods: 2075 seropositive men followed during 1984-89 provided 12,180 pairs of observations 6-months apart while free of medications for AIDS. Transition probabilities between CD4% categories with cutoff values of 10%, 15%, 20%, 25% and 35% were computed using methods to redistribute individuals with missing intermediate visits. Redistribution was done according to transitions between CD4% categories estimated from pairs with non-missing data. For those developing AIDS we compared transitions to KS and PCP from prior CD4% categories and tested for trends. Results: The table rows give 6 months transition probabilities for asymptomatic, untreated HIV-1 positive individuals. Transitions are from a category of CD4% (1st column) to AIDS or AIDS-free with CD4% in one of six categories

CD4%	AIDS	AIDS-free %CD4: <=10	10-15	16-20	21-25	26-35	>=36
<=10	32.9%	52.0%	9.3%	3.4%	1.0%	0.3%	1.0%
11-15	9.4%	29.6%	34.0%	19.1%	5.2%	2.3%	0.4%
16-20	3.7%	6.6%	22.6%	36.4%	19.1%	9.7%	1.9%
21-25	1.7%	1.9%	6.9%	25.2%	32.6%	28.4%	3.4%
26-35	0.3%	0.3%	1.4%	7.7%	20.0%	54.6%	15.6%
>=36	0.1%	0.2%	0.3%	1.1%	3.3%	32.4%	62.6%

For those developing AIDS, the proportions with KS in <=10, 11-15, 16-20 and >=21 CD4% categories were 24%, 28%, 31% and 46% respectively (p=.012). Corresponding proportions with PCP were 68%, 53%, 58% and 39% respectively (p=.001). Proportions AIDS-free 2 years after a CD4% level of <=10, 11-15, 16-20, 21-25, 26-35 and >35 were 11%, 46%, 69%, 82%, 92% and 97% respectively. Conclusions: AIDS is considerably more likely to develop within six months in individuals with CD4% of 10% or less. Among those developing AIDS, KS is significantly more likely in higher categories of CD4%. The reverse association was found for PCP. The methods used here adjust for temporary drop outs and are useful for the evaluation of therapies in observational studies.

Th.C.626 PERCENTAGE OF CD4 CELLS AS A PREDICTOR OF PNEUMOCYSTIS CARINII PNEUMONIA IN A COHORT OF HOMOSEXUAL MEN.

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*Department of Public Health, San Francisco, California, USA, **Centers for Disease Control, Atlanta, Georgia, USA.

Objective: To determine the risk of developing Pneumocystis carinii pneumonia (PCP) in HIV-1-infected homosexual and bisexual men.
Methods: We examined the relationship between baseline percentage of CD4 cells (%CD4) and the cumulative risk of PCP, as determined by Kaplan-Meier analysis, in a cohort of homosexual and bisexual men. The predictor variable, %CD4, was stratified as <20%, 20-29%, 30-49% and >50% of total lymphocytes. The outcome variable was initial diagnosis of PCP; men with another initial AIDS diagnosis were censored at the date of their diagnosis, and men who did not develop AIDS were censored as of December 15, 1989.
Results: Of 480 HIV-infected men with available T-lymphocyte subsets whom we follow prospectively in our study, 36 (7.5%) have progressed to PCP and 52 (11%) to other AIDS diagnoses. The cumulative risk of PCP as a function of time since initial %CD4 determination is:

%CD4 at Baseline	N	PCP	Cumulative Incidence of PCP 6 mo	12 mo	36 mo	p
<20%	165	21	5.2	9.9	31.3	-
20-29%	165	11	0.6	1.3	13.7	0.0036
30-49%	138	4	0	0	5.5	0.0005

Conclusions: We conclude that men with <20% CD4 cells are at greatest risk of progressing to PCP and, consistent with CDC recommendations, should receive anti-PCP prophylaxis. However, men with 20-29% CD4 cells are at intermediate risk, and physicians should consider prophylaxis for this group as well.

Th.C.627 EPIDEMIOLOGY AND NATURAL HISTORY OF KAPOSI'S SARCOMA (KS) AND PNEUMOCYSTIS CARINII PNEUMONIA (PCP)

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Objectives: Compare AIDS cases presenting with KS or PCP according to: time trends of incidence; behavioral risk factors, clinical findings, and biological markers during 24 months before diagnosis.
Methods: Subjects were selected for the San Francisco Men's Health Study by area probability sampling in 1984. Data were obtained at six month intervals for 54 months. Variables examined included: smoking, amyl nitrite use, and numbers of sexual partners; constitutional symptoms, lymphoid mass, and oral lesions; CD4+ and CD8+ cell counts, and P24 antibody and antigen.
Findings: During the first 30 months of observation, 10 KS and 26 PCP cases occurred. In the subsequent 24 months, 18 KS and 15 PCP cases occurred. Risk factors were similar for KS and PCP. Constitutional symptoms, lymphoid mass depletion, and thrush were more common in PCP cases six months before diagnosis. Hairy leukoplakia was more frequent in KS cases. CD4+ and CD8+ counts were similar at 24 months before diagnosis. CD4+ counts declined much more in PCP cases and CD8+ actually increased in KS as time to AIDS decreased. P24 antibody was consistently higher in KS and P24 antigen was consistently higher in PCP.
Conclusions: Differences in clinical findings, CD4+ and CD8+ cell counts, and P24 antibody and antigen levels indicate that the occurrence of KS may be independent of HIV induced severe immunodeficiency.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Th.C.628 PROGRESSION OF HIV DISEASE DURING THE EARLY STAGES: ESTIMATING RATES OF DECLINE OF CD4+ T-LYMPHOCYTES

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Objective: To estimate rates of decline of CD4+ T-lymphocytes in early stage HIV disease.
Methods: For this analysis, the unit of observation was the slope, the change of T4 cells from one clinical evaluation to the next (ΔT4/Δmonths). Observed slopes were aggregated into distributions based on the T4 cell count at the beginning of each interevaluation period. Distributions were defined by overlapping T4 cell intervals, eg, 1200-1100, 1150-1050,..., 550-450, 500-400. For each distribution, the median slope was used to estimate the rate of decline through the corresponding T4 cell interval, and the estimated slopes for all intervals were used to describe the overall decline function. T4 cell data were then transformed to produce an approximately linear decline, and linear regression analyses were conducted to estimate rates of decline of T4 cells, overall and in age defined subgroups.
Results: 1,595 HIV infected individuals were routinely evaluated at least twice at Army medical centers. 2,880 slopes were calculated from interevaluation periods in which the beginning T4 count was between 1200 and 400. From higher to lower T4 cell intervals, estimated slopes became progressively less steep, from -41.6/month (interval:1200-1100) to -1.4/month (interval: 500-400). Overall, T4 cells declined in a linear fashion after natural log transformation. By linear regression analysis, the overall rate of decline of T4 cells (on the ln scale) was -0.018/month (se: .001). Age stratification revealed a more rapid decline among older patients (<20 years: -.015/month; 21-25: -.014/month; 26-30: -.016; >30: -.020).
Conclusions: Through the early stages of HIV disease, T4 cells decline exponentially, ie, the decline of ln(T4 cells) is approximately linear. Older patients progress more rapidly than younger. These findings summarize experience on a population basis and do not reliably predict the courses of individual patients. We recommend validation of these findings in other groups who receive periodic clinical care during the early stages of HIV disease.

Th.C.629 EVOLUTION OF LYMPHADENOPATHY IN HIV-1 SEROPOSITIVE HOMOSEXUAL MEN AND INVOLUTION AMONG THOSE WHO DEVELOP AIDS

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Objective: To examine the natural history of HIV-induced lymphadenopathy (L), with particular attention to its involution late in HIV infection.
Methods: We quantified L at each 6 mo examination of HIV-seropositives (SPs) at entry and seroconverters (SCs). Mean # of abnormal nodes and generalized L (GL = abnormal nodes at ≥2 or more sites other than inguinal) were determined for SPs who developed AIDS ≤6 mo after the last visit and SCs.
Results: Focusing on the 6 visits (36 mo) prior to AIDS, we evaluated 73 SPs and 11 SCs with persistent GL (PGL) at ≥2 of the 3 earlier visits (18-36 mo before AIDS). In SPs the mean number of abnormal nodes and % with GL during that period was 6.3 and 84%, respectively. During the later 3 visits (0-18 mo) before AIDS, the proportion with GL in SPs with AIDS dropped to 57% of its earlier level. Complete loss of GL occurred in only 32% of SPs who developed AIDS. In SCs, mean # of nodes and prevalence of GL showed a rapid rise during the first 18 months after infection to a plateau of 48%. We compared two groups of SCs for loss of GL: the 11 who developed AIDS and 75 who did not. During a comparable 18 mo period in SCs with and without AIDS the proportion with GL dropped to 39% and 57% of their earlier levels, respectively. Complete loss occurred in 27% and 35% of these two groups of SCs.
Conclusions: GL rose abruptly after HIV infection, was highly prevalent in SPs until 18 mo before AIDS. Late disappearance in only 27-32% limits its prognostic value for AIDS, but differences may have therapeutic implications.

Th.C.630 EVIDENCE FOR A SEXUALLY TRANSMITTED COFACTOR FOR KAPOSI'S SARCOMA IN A COHORT OF HOMOSEXUAL MEN

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Objective: To study risk factors for the development of Kaposi's sarcoma (KS) in our cohort study of homosexual men.
Methods: A case-control design was used to compare antecedent risk factors in those developing KS relative to those developing OI. As well, Kaplan-Meier curves of KS incidence were stratified over putative KS cofactors. Logistic regression and Cox regression were used to simulaneously model several factors.
Results: A total of 25 KS and 48 OI arose in 348 HIV+ men as of 10/89. At enrolment, the KS men had reported significantly more sex partners, receptive anal intercourse, and fisting than OI. KS also reported greater use of nitrites at enrolment but were similar with respect to use of other illicit drugs. The strongest predictor for the development of KS was a history of elevated numbers of sexual contacts in high risk areas (SF, LA, NY) in the 5 years prior to enrolment (roughly 1978-83). Neither nitrite use nor early sexual contact appeared to have been confounded by duration of infection.
Conclusion: Based on these data, we postulate a KS cofactor which is sexually transmitted in the same manner as HIV but with a far lesser degree of efficiency. This would account for our finding that KS cases reported higher risk behavior than OI. Widely documented changes in sexual behavior would have had an earlier effect on spread of the cofactor than on HIV and so the cofactor would have remained more highly concentrated in the original epicentres. This would explain our strong association between high numbers of sexual contacts in those areas and KS. Use of nitrite inhalants could be hypothesized to enhance the transmission of the cofactor. Both the declining use of nitrites and the earlier curtailment of the cofactor can serve to explain the widespread decline in KS. Investigators in smaller centers should study whether early sexual contact in epicentres is associated with the development of KS in their settings.

Th.C.631 EXAMINATION OF TIMING OF POTENTIAL KAPOSI'S SARCOMA COFACTOR RELATIVE TO HIV-1 INFECTION

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Objective: Determine the timing of a possible cofactor for Kaposi's sarcoma (KS) relative to HIV-1 infection amongst HIV-1 seroconverters in the MACS, a longitudinal study of homosexual/bisexual men. Methods: Men who have seroconverted under observation and have developed KS (cases) were each matched to 5 other seroconverters (controls) by length of study time prior to seroconversion (SC), time remaining free of KS after SC, and timing of visits. Self-reported sexual practices, sexually transmitted diseases (STD), history of other infections, and popper usage were used as surrogate markers for exposure to a cofactor before and after SC. Results: In 5-1/2 years of follow-up, 347(11%) men who entered HIV-1 seronegative have seroconverted; 8(2.3%) of these men have since developed KS. Prior to SC, the cases reported performing sexual activities with more men than did their controls; the median number of partners of cases having anal/oral contact in which the participant's role was oral (rimming) was significantly different (P<.05). This relationship did not persist after SC. The following table delineates the median numbers of partners for each sexual activity for cases and controls (the subjects' type of sexual contact is in uppercase).

Median Number of Total Partners for Each Sexual Activity

		Anal/ORAL	ANAL/Oral	ORAL/Genital	Oral/GENITAL	ANAL/Genital	Anal/GENITAL
Before SC	KS	25.8	26.8	34.0	53.1	29.8	28.3
	Controls	4.0	6.8	21.8	21.9	13.9	11.2
After SC	KS	1.0	0.5	12.0	14.0	5.5	4.5
	Controls	1.0	1.0	11.5	10.5	5.0	4.0

Slightly more of the cases reported episodes of STDs before and after SC. Only prior to SC did more cases use poppers or had herpes zoster. Conclusion: The rimming differential prior to SC is consistent with an earlier analysis of all men with KS in the MACS. The data support the theory that a sexually transmitted cofactor for KS may exist and exposure to it may have occurred prior to infection by HIV-1 in this population.

Th.C.632 EUROPEAN NON-AGGREGATE AIDS DATA SET: KAPOSI'S SARCOMA STUDY

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Objective: To analyze data on Kaposi's sarcoma (KS) collected up to March 1989 through the European Non-Aggregate AIDS Data Set (ENAADS) supplied by 12 countries to date (Czechoslovakia, France, German DR, FR Germany, Hungary, Iceland, Israel, Italy, Poland, Spain, United Kingdom, USSR) in view of testing the hypothesis of a "KS cofactor".
Methods: The preliminary version of the ENAADS contains standardized individual data on reported AIDS cases (N = 18,357). Frequency distributions, associations, and trends by year of diagnosis (chi-square test for linear trends) of KS are presented by risk group.
Results: Of 18,357 AIDS cases, 2,434 (13.3%) were diagnosed with KS alone as initial diagnosis. 85.7% of KS occurred among homosexuals (HO), 1.9% among HO + IVDU (intravenous drug users), 2.1% among heterosexual contact cases (HE), 5.1% among IVDU, 0.7% among transfusion recipients (TR) and 0.4% among haemophiliacs (HA). The percentage of KS was 23.7% among HO, 11.2% among HO + IVDU, 4.5% among HE, 2.3% among IVDU, 2.4% among TR and 1.5% among HA. The proportion of KS decreased over time from 28.2% (1982) to 20.7% (1988) among HO ($P < 0.00001$), from 18.2% (1983) to 8.2% (1988) among HO + IVDU ($P = 0.07$), from 7.4% (1983) to 3.4% (1988) among HE ($P = 0.02$), from 4.4% (1985) to 1.7% (1988) among IVDU ($P = 0.006$), from 3% (1984) to 2.9% (1988) among TR ($P = 0.75$) from 1.5% (1985) to 0.5% (1988) among HA ($P = 0.24$). A similar trend was observed among AIDS cases initially diagnosed with KS associated with opportunistic infections.
Conclusion: The percentage of KS by risk group is decreasing over time only among HO, HE and IVDU. Two major causes may explain this: a surveillance bias such as change in reporting and/or diagnostic procedures (other diseases diagnosed earlier) or the existence of a cofactor for KS (the decrease in KS frequency observed among HO may be associated with the decrease in exposure to a yet unknown cofactor). Given the distribution by risk group, the hypothesis of sexual transmission of a KS cofactor is not excluded. Further studies are needed to explain this change in proportional morbidity among AIDS cases. Data will be updated and more countries will be included.

Th.C.633 IMMUNESTATUS AS A DETERMINANT OF HUMAN PAPILLOMAVIRUS DETECTION AND ITS CORRELATION WITH ANAL EPITHELIAL ABNORMALITIES.

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An increase in anal carcinomas has been reported recently among gay men.
Objective: To characterize the role of the immunostatus and lifestyle factors on type-specific anal HPV expression and HPV's potential association with anal epithelial abnormality.
Methods: A well established cohort (initiated 1981) of 120 homosexual men had anal swabs taken and screened for presence of HPV using hybridization techniques. All positive scores were typed using the Viratype assay. A second swab was used for anal cytology. T-lymphocyte subset markers were determined and HIV serology performed.
Results: Detection of HPV was found strongly correlated with immunosuppression and rose nearly linearly from 7.3% among subjects with CD4/CD8 ratios above 1.0 to 35.3% among those with a ratio below 0.4 (p trend=0.003). No association was found with a wide range of lifestyle factors. However, self-reported history of anal condyloma in the past year was correlated with HPV ($p<0.001$). Anal smears were abnormal in 19.5% of the men and correlated strongly with presence of HPV (odd's ratio 6.1, $p<0.0001$) (specifically 31/33/35 (odd's ratio =8.5) and HPV 16/18 (odd's ratio=3.1)). HPV was found in all subjects with abnormal smears and a CD4/CD8 ratio below 0.4, compared to only 3 of 14 subjects with abnormal smears and a ratio >= 1.3.
Conclusion: HPV appears to play a central role in the development of anal epithelial abnormality. We speculate that HPV expression is controlled by a functioning immune system but when immunodeficiency occurs, expression of HPV can be detected more easily. Whether the expression of HPV, immunodeficiency, or both are related to progression from atypia to malignancy needs further study.

Th.C.634 INFECTION WITH SYPHILIS AND/OR HIV AMONG INITIALLY ASYMPTOMATIC HOMOSEXUAL MALES, BOSTON, MA., 1985-1989

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Objective: To assess the seroprevalence, seroconversion, and natural history of syphilis in relation to HIV among initially asymptomatic gay Boston males followed every 6 months in an ongoing cohort study of HIV infection (initial HIV prevalence: 25%).

Methods: HIV+ (N=74 already + and 8 seroconverters) and HIV- (N=75) subjects underwent RPR and MHA-TP testing of sera stored from their initial entry into the study (1985-86) and most recent specimen (1988). Medical charts were reviewed and subjects re-interviewed to obtain more history of syphilis sx's and rx's, antibiotic use, and health status (x f/u 3.5 yrs).

Results: 20 % of HIV+ and 9% of HIV- men had at least one (+) lues marker. 70% of subjects with a history of syphilis were HIV+. One HIV+, one HIV seroconverter, but no HIV- men developed syphilis during the study. Of 8 RPR+ men who got syphilis rx, 5/7 HIV+ and 0/1 HIV- men lost a +RPR at f/u; 2/12 HIV+ and 1/7 HIV- rx men lost MHA reactivity during the study. Three/14 +RPR's were felt to be false +. 3/14 HIV+ and 0/4 HIV- rx men had new or increased lues markers at f/u. 9/24 (38%) of subjects with a +RPR or MHA gave no history of lues. Subjects with lues markers were not more likely to develop CDC IV sx's.

Conclusion: Despite increased safer sex in this cohort, new, as well as undiagnosed cases of syphilis were noted over the past 4 years. Concomitant syphilis seroconversion was seen in 1/8 HIV seroconverters. Intensive safer sex education is still warranted among these motivated and educated men. Although lues did not clearly increase the risk of developing HIV-related sx's; seroreversions, a 21% false (+) RPR rate, and unexplained MHA+/RPR- (ie., with occult infection) subjects underscore the need to do specific lues serologies when screening persons at risk for sexually acquiring HIV.

Natural History: Transfusion Recipients and Hemophiliacs

Th.C.635 THE CONDITIONAL INCUBATION DISTRIBUTION AND SURVIVAL IN A GROUP OF TRANSFUSION ASSOCIATED AIDS CASES SEEN IN MEXICO CITY

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Objective. There is very little information on the incubation period of AIDS in Latin American populations. This study reports the incubation period and survival for a group of Mexican persons infected with HIV as a result of contaminated blood transfusion. *Methods.* We analyzed data from 36 adult patients for whom date of transfusion and diagnosis were known. Hemophiliac patients, multitransfused, and subjects with high risk sexual practices were excluded from the analysis. The analysis included nonparametric estimates of the conditional incubation distribution, and Kaplan-Meir estimates of survival. *Results.* Given that AIDS developed within 46 months after infection; 20% of infected persons developed AIDS within 12 months after transfusion, half after 27 months; and three-quarters within 3 years. The estimated overall median survival time was 8 months. *Conclusion.* Based on these findings, the conditional latency distribution in this Mexican population is similar to that described in the United States. Once the diagnosis of AIDS is made, the survival in this group of Mexican AIDS patients is similar to that observed in other HIV exposed risk groups in Mexico.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.636

HIV PROGRESSION IN RECIPIENTS ACCORDING TO DONOR TYPE.

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Objective. Determine if AIDS progression in infected blood recipients is more rapid when the donor developed AIDS soon after donation.
Methods. As of October 1989, 538 HIV infected former donors were categorized into 3 groups: 1) developed AIDS <29 months (mos.) following donation; 2) developed AIDS >29 mos. following donation; and 3) without AIDS. Outcome data is available for 275 HIV+ recipients according to donor type.
Results. Recipients (23%) of donors in Group I developed AIDS rapidly (<29 mos.), whereas only 5% of recipients of donors from Group 2 and 3% of recipients of donors from Group 3 donors did so (X^2=18.07, P>.001). The association between rapid donor and recipient progression was limited to a subset of recipients of donors from Group I: 57% of the recipients of Group I donors had not progressed to AIDS 6 years following infection. Moreover, the overall risk of developing AIDS was similar for the majority of recipients transfused either from donors who developed AIDS >29 mos. after donation or from donors who remain AIDS free (30% vs. 39%; X^2=1.28 P=>.50).

	RECIP. NO AIDS	RECIP. AIDS <29 mo.	RECIP. AIDS >29 mo.	TOTAL
1. DONOR AIDS <29 mo.	20 (57%)	8 (23%)	7 (20%)	35
2. DONOR AIDS >29 mo.	64 (70%)	5 (5%)	23 (25%)	92
3. DONOR NO AIDS	91 (61%)	4 (3%)	53 (36%)	148
TOTAL:	175 (64%)	7 (6%)	83 (30%)	275

Conclusion. The donor's outcome has no predictive value for the vast majority of recipients whose donors have not developed AIDS rapidly, or who remain AIDS free.

Th.C.637

LACK OF ASSOCIATION IN ANTI-HIV(+) HEMOPHILIACS BETWEEN DECLINE IN CD4 AND TREATMENT WITH CLOTTING FACTOR CONCENTRATES

Transfusion Safety Study (TSS)* Group represented by Giersel, George** *Participating Institutions in New York City, Miami, San Francisco, Detroit, Seattle, Los Angeles **Puget Sound Blood Center, Seattle, WA, USA.

Objective: To determine whether changes in CD4 counts in HIV-infected hemophiliacs are related to treatment with clotting factor concentrates.
Methods: Treatment between entry and 6-month follow-up visits was recorded and CD4 counts determined for 505 anti-HIV(+) subjects with congenital clotting disorders. Treatment as units of Factor VIII and/or Factor IX activity of intermediate purity concentrates was analyzed by quartiles. Subjects were classified by CD4 level at study entry.
Results: The change in CD4 count was comparable for subjects receiving no treatment and any of 4 levels of treatment. The Table gives the change in CD4 values from entry to the first 6-month follow-up visit.

Entry CD4 (n)	Treatment level with concentrates x 10^3/6 months: None	<10	to 29	to 68	>68
<200 (61)	-6	-17	-9	-22	18
200-499 (227)	-42	+25	0	-7	+5
≥500 (217)	-79	-49	-132	-121	-76

Conclusion: There was no association between treatment with intermediate purity clotting factor concentrate and change in CD4 counts. (Supported by NHLBI Contracts No. NO1-HB-4-7003 and 9-7074).

Th.C.638

FALL OF CD4 LYMPHOCYTES IN HIV-1 INFECTED PATIENTS WITH COAGULATION DISEASES

Transfusion Safety Study (TSS) Group* represented by Hilgartner, Margaret W.** *Participating institutions in New York, Miami, San Francisco, Los Angeles; ** Cornell University Medical Center, New York, New York, USA.

Objective: To determine among HIV-1 infected persons with congenital clotting disorders (CCD) whether changes in absolute CD4+ counts predict progression to AIDS.
Methods: Since 1985, 593 HIV-1 infected persons with CCD have been followed clinically at 6 month intervals for a median of 2.8 years. Lymphocyte subpopulations were followed by standard 2-color flow cytometry.
Results: The CD4 fell steadily in the majority of patients; 73 (12.3%) have developed AIDS. While the CD4 count on entry was predictive of progression to AIDS, the rate of decline was substantially different for those who entered the study with a CD4 above or below 500.

CD4+ on entry	No. of subjects	No. (%) to AIDS	CD4+ change (95% CI) in 6 mo. AIDS	No AIDS
≥500	254	9 (3.5%)	-81 to -126	-35 to -48
200-499	270	34 (12.6%)	-9 to -60	-3 to -9
<200	69	30 (43.5%)	+18 to -40	-13 to -23

Conclusion: The rate of decline in absolute CD4+ counts 6 months after first observation discriminated between persons who progressed or did not progress to AIDS if the initial value was ≥200. The rate of fall for those patients entering the study with a CD4 between 200-500 is substantially less than previously recognized. These data may be useful in predicting the treatment needs of this patient population.

Th.C.639

IN FRENCH HEMOPHILIACS, PROGRESSION TO AIDS IS MORE FREQUENT IN CHILDREN AND IS NOT RELATED TO CMV INFECTION.

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Objective: Determine whether the development of AIDS in hemophiliacs was related to age as claimed by Goedert et al. and CMV infection as claimed by Webster et al.
Methods: 161 persons with hemophilia (A 146, B 15) ranging in age 1-34 at the time of first HIV antibody positivity (105 ≤ 17 y, 56 > 17), HIV seropositive for 5-10 y, were prospectively followed since 1984 and clinically assessed at 4-6 m interval. In 1989, CMV serology was performed.
Results: The overall incidence of AIDS was 2.29 per 100 person-years.

Age at 1st HIV sero +	No. of patients	No. of AIDS cases	Incidence of AIDS per 100 person-years
1-11	60	8	2.47
12-17	45	7	2.73
18-25	39	5	2.51
26-34	17	0	--

The 8 year cumulative rate of AIDS ± SE was 27.0 ± 7.7 in the 1-17 age group and 14.2 ± 18.6 in the 18-34 age group (p= >0.05). AIDS developed in 11/69 (16%) CMV seropositive patients less than 18 y of age and 4/39 (11%) CMV seronegative (NS).
Conclusion: In French hemophiliacs, progression to AIDS is not related to CMV seropositivity & occurs at a higher rate in children than adults. Findings in British & American hemophiliacs were not reproduced.

Th.C.640 COMPARISON BETWEEN THE EVOLUTION OF THE HIV POSITIVE HEMOPHILIACS AND TRANSFUSION- ASSOCIATED CASES. BORDEAUX, FRANCE, 1985-1989

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Objective: To compare the clinical evolution of two groups of HIV patients infected with blood products(hemophiliacs [He] and transfusion-associated patients[Ta]) studied in the cohort study in an epidemiologic Hospital based surveillance system at the Bordeaux University Hospital since 1985.

Methods: Patients aged over 13 and without any other high risk behavior were selected. The follow-up study was restricted to Centers for Disease Control classification stage II or III patients; the starting-point of our study was the date of inclusion and the events under study were the occurrence of AIDS and death. The evolution of the two groups were compared with Cox model.

Results: From 1985 to 1989, 30 He and 86 Ta patients have been included in the Hospital based surveillance system. Mean age was 32 years in He and 43 years in Ta (p<0.01). On october 15th 1989, 5 He(17%) and 36 Ta (42%) have reached the AIDS stage. Two He (7%) and 22 Ta (26%) have died. Sex ratio M:F is 1.1:1 in Ta; there is no significant difference in AIDS proportions and deaths according to sex. For the 25 He and 31 Ta patients, reexamined at least once, the probability of reaching the AIDS stage after 18 months is 13.9% in He (95% Confidence Interval [CI]=0%-29%) and 23.8% in Ta (95% CI=0.7%-46.9%). The survival probability after 18 months is 90.9% in He (95% CI=78.9%-100%) and 83.3% in Ta (95% CI=63.3%-100%). The relative risks of He versus Ta for AIDS and death were not significantly different, even after controlling for age and CD4 lymphocytes level at inclusion.

Conclusion : We have not found any difference of evolution between He and Ta, even though the evolution of these groups were shown to be different. An appropriate comparison must be carried out on subjects with the same clinical status at the time of diagnosis ; the apparent difference could be explained by the fact that Ta are generally diagnosed at a latter stage of disease than He.

Th.C.641 TEN YEAR FOLLOW-UP OF A COHORT OF 111 ANTI-HIV SEROPOSITIVE HAEMOPHILIACS

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Objective To assess the natural history of HIV disease in 111 infected haemophiliacs.

Methods Patients were reviewed at frequent intervals from the time of seroconversion (established by retrospective testing in 63 (57%) patients) until November 1989.

Results The first seroconversion was October 1979 and the last was July 1985. The median length of follow-up from the first positive anti-HIV result was 5 years 7 months. By the 30 November 1989, 77 of 111 (69%) patients were symptomatic and 31 (28%) had developed AIDS. There had been 17 AIDS-related deaths. Calculated cumulative incidence (Kaplan-Meier estimate) after 10 years of sero-positivity in 63 haemophiliacs with a known date of seroconversion:

Whole population	symptoms	85%	[95% CI 97 - 73]
	AIDS	49%	[95% CI 67 - 31]
CMV-negative	AIDS	28%	[95% CI 48 - 8]
CMV-positive	AIDS	64%	[95% CI 80 - 38]
Age > 25 years	AIDS	50%	[95% CI 68 - 32]
Age < 25 years	AIDS	46%	[95% CI 72 - 20]

Conclusion CMV positivity and increasing age are associated with a more rapid onset of AIDS in haemophiliacs.

Th.C.642 CUMULATIVE RISK FOR AIDS: CHANGING PATTERN OF PRIMARY AIDS DIAGNOSIS IN A COHORT OF HEMOPHILIACS IN WESTERN PENNSYLVANIA.

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Objective: To describe the distribution of AIDS and other HIV outcomes, and the pattern of primary AIDS diagnoses (Dx) in a cohort of hemophiliacs.

Methods: A well-characterized cohort (n=64) of HIV-infected hemophiliacs from Western Pennsylvania, on whom HIV seroconversion dates are known, has been followed prospectively for development of AIDS, AIDS-related complex (ARC), and CDC-Class IV infection. Kaplan-Meier estimates of cumulative risk for AIDS and other HIV outcomes were determined. The initial AIDS-defining illness was recorded, and use of azidothymidine (AZT) and pneumocystis (PCP) prophylaxis was noted.

Results: Of the 84 HIV (+) hemophiliacs, 35 (42%) have developed AIDS and 9 (11%) have developed ARC or CDC-Class IV symptoms. The Kaplan-Meier estimate for the cumulative proportion developing AIDS at 4,6,and 7-1/2 years duration of infection was 12,27,and 47%, respectively. The cumulative estimate for developing either AIDS or ARC/IV by 7-1/2 years duration was 56%. PCP was the 1° AIDS Dx in 14 (40%) of the 35 AIDS cases, occurring in 9 of 14 (64%) 1° AIDS Dx prior to 1987, but only 5 of 21 (24%) since 1987. A significantly lower percentage of 1989 cases were PCP, one of 10 (10%), when compared to prior years (p=.024, Fisher's Exact test).

Conclusion: Over half of this cohort has developed AIDS or other HIV outcome by 7-1/2 years duration of infection, and there was a decrease in incidence of PCP as 1° AIDS Dx, concomitant with introduction of AZT and aerosolized pentamidine in this cohort.

Th.C.643 WHY THE SLOWER PROGRESSION RATE TO AIDS IN YOUNG HIV-INFECTED PATIENTS ?

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OBJECTIVE To explain the slower progression rate to AIDS in young HIV infected patients.

METHODS The study of serial CD4 lymphocyte counts in a group of 248 haemophiliacs, of whom 111 were HIV infected.

RESULTS In the anti-HIV positive patients there was no difference in the rate of decline in CD4 lymphocyte count between younger (≤25 yrs) and older (≥25 yrs) patients (median slope = -.089 $x10^9$/l per year). However, for patients whose CD4 lymphocyte count had fallen beneath .2 $x10^9$/l, the older patients experienced a higher risk of developing AIDS (14 AIDS cases in 38 patient-years of follow up vs. 8 AIDS cases in 44 patient years; p<.05). In the 137 anti-HIV negative patients, the younger patients (age < 25 yrs) had higher CD4 lymphocyte counts than the older patients (1.17 vs 0.84 $x10^9$/l, p<.001).

CONCLUSION CD4 lymphocyte counts do not decline more slowly in younger than older patients. This represents evidence against the hypothesis that there is a slower replication rate of the virus in young adults and children. The slow progression rate in young patients may be largely explained by higher CD4 lymphocyte counts at the time of seroconversion which take more time to become severely depleted. In addition, for a given low CD4 lymphocyte count, there appears to be a lower risk of AIDS in younger patients.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Natural History: Drug Users

Th.C.644 PROGRESSION OF HIV DISEASE IN INTRAVENOUS DRUG USERS

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Objective: To evaluate markers for progression of HIV+ IVDUs in San Francisco.
Methods: 160 HIV+ heterosexual IVDUs recruited from drug treatment programs (enrolled 1987-present) are evaluated clinically and for laboratory markers and followed at San Francisco General Hospital. Data were compared with HIV+ gay men (enrolled 1983-1984) and with HIV- IVDUs and gay men.
Results:

	HIV+ IVDUs (N=160)		HIV+ Gay Men (N=288)			
	baseline	1 yr	baseline	1 yr	3 yrs	5 yrs
med CD4	397	387	573	526	346	338
CD4 200	11%	13%	4%	7%	18%	39%
med B2M	3.59	3.96	2.7	2.6	3.0	3.4
B2M 3.0	67%	70%	40%	32%	45%	52%
p24 AG+	8%	7%	16%	18%	20%	19%

Forty-three percent of IVDUs were symptomatic at baseline compared to 41% of gay men at 3 yrs of follow up or estimated 6 yrs of infection. Four out of 160 have developed AIDS over a period of 18 months. HIV+ IVDUs had a greater yearly incrase of B2M ($p < .001$) than gay men for all one yr intervals but comparable decline in CD4 count. HIV- IVDUs have higher B2M ($p < .001$) and ratio ($p < .05$) and lower CD8 count ($p < .001$) than HIV- gay men.
Conclusion: HIV+ IVDUs in San Francisco are sick, appear to be more immune stimulated and might progress more rapidly than gay men. At baseline IVDUs are comparable with gay men at 3 years of follow up or at 6 years of infection.

Th.C.645 INCREASED RISK OF AIDS IN OLDER INTRAVENOUS DRUG ABUSERS AND RATES OF HIV SEROCONVERSION: 5-YEAR FOLLOW-UP FINDINGS FROM THE NEW JERSEY (NJ) INTRAVENOUS DRUG ABUSER (IVDA) COHORT STUDY.

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Objectives: Assess the risk of HIV acquisition amongst previously seronegative IVDA, and evaluate risk factors for the development of AIDS amongst HIV seropositive IVDA.
Methods: AIDS and death registries, medical records, and clinical follow-up were utilized to ascertain AIDS among 341 IVDA who were HIV+ in 1984. 285 HIV- cohort members were re-bled in 1985, 1986 and/or 1989, mean follow-up of 25 months. Stored & fresh sera were re-tested by blot to confirm seroconversion. Questionnaire risk analyses are in progress.
Results: Older age was significantly associated with AIDS ($p<.01$). AIDS was independent of race, sex & drug use history.

Percent Developing AIDS Over the 5 Year Follow-up

AGE(at entry)	<30	30-35	35-39	40 +
HTLV -	15% (n=97)	21% (n=103)	23% (n=61)	35% (n=31)
HTLV +	17% (n= 6)	0% (n= 15)	29% (n=17)	55% (n=11)

27 subjects seroconverted, annual rates ranging from 3.9%-5.7%.
Conclusions: Our finding (5th International Conf AIDS) that older age was associated with an increased risk of AIDS amongst IVDA was maintained with continued follow-up and extension to our entire cohort (6 cities). Continuation of HIV seroconversions amongst IVDA indicate inadequacies in current prevention measures and risk counseling.

Th.C.646 PROGRESSION TO AIDS AND PREDICTORS IN A LARGE COHORT OF INJECTING DRUG USERS WITH ARC TREATED WITH ZIDOVUDINE

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Objective: to estimate the risk of developing AIDS and to identify predictors of disease progression in injecting drug users (IDUs) with early or advanced ARC treated with zidovudine (AZT).
Methods: data on 793 patients with ARC who started AZT treatment between July 1987 and June 1988 were analyzed. Seventy-seven patients were excluded from the data analysis either because of incomplete information or occurrence of AIDS within 3 months after AZT treatment was started. The median follow-up time was 17 months. IDUs represented 70% of all subjects; 25 % of patients were females; mean age was 29 years. Clinical (weight loss, oral candidosis, herpes zoster, persistent fever, etc.) and immunological findings in the patients were analyzed in order to evaluate predictors of severe outcome. Mean CD4+ cell count at enrollment was 212/mm3. Data analysis was performed using Kaplan-Meier survival estimates and log-rank tests.
Results: the overall estimated probability of progression to AIDS was 28 % at 22 months after the start of AZT treatment. The risk of developing AIDS was significantly higher in patients with less than 200 CD4+/mm3 (e.g. 39% at 22 months) than for those with 200-400 CD4+/mm3 (18%) and those with more than 400 CD4+/mm3 (5%) ($p<.0001$). Oral candidosis and weight loss were associated with higher risk of developing AIDS.
Conclusions: a low CD4+ cell count, the presence of oral candidosis, and other clinical signs are predictors of quicker progression to AIDS in IDUs who undergo AZT treatment. This study confirms the indications for early beginning of zidovudine treatment.

Th.C.647 AIDS-FREE TIME AFTER SEROCONVERSION IN INJECTING DRUG USERS AND OTHER RISK GROUPS.

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Objective: To describe the natural history of HIV infection in injecting drug users (IDUs); to compare the risk of developing AIDS in IDUs with that of male homosexuals (MHs) and heterosexual contacts (HTs).
Methods: 338 IDUs, 111 MHs and 73 HTs were enrolled from 12 Italian clinical facilities. Hundred and twenty-three out of the 522 subjects enrolled were females (75 IDUs and 48 HTs). The mean age of IDUs, MHs and HTs was respectively 26, 35 and 29 years. The enrollment criteria were represented by the identification of the seroconversion period (availability of a negative serological test followed by a positive confirmed one within 18 months). Clinical and laboratory evaluation was performed each 6 months. A modified CDC clinical definition was used to classify the clinical stage of the patients. The median follow-up time for IDUs MHs and HTs was respectively 37, 26 and 35 months. The disease progression was analyzed according to estimations based on Kaplan-Meier survival curves. Differences between groups were assessed by log-rank test.
Results: Twenty-three subjects (15 IDUs and 8 MHs) developed AIDS during the follow-up period. The risk of developing AIDS in IDUs was 8.9% by 52 months after seroconversion. By 4 years after seroconversion the risk of developing AIDS was respectively 7.5% in IDUs and 9% in MHs. None of the HTs enrolled developed AIDS during the follow-up period.
Conclusions: More than 90% IDUs were AIDS-free by 52 months after seroconversion. IDUs do not seem more likely to develop AIDS than MHs. The risk of AIDS by 4 years after seroconversion appears to be lower than previously reported.

Th.C.648 THE IMPACT OF FREQUENT INJECTING ON THE IMMUNE STATUS OF INTRAVENOUS DRUG USERS (IDU).

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Objective: To investigate the influence of hard drug use and injecting on the immune status of HIV+ and HIV- IDU.
Methods: Cross-sectional study of 282 IDU,(110 HIV+ and 172 HIV-) from april 1989 to september 1989. A standard questionnaire on drug use and medical history was taken. AIDS cases and seroconverters were excluded.
Results: Total lymphocytes and subsets were severely depressed in HIV+ compared to HIV-. Frequency of injecting depressed lymphocyte function as measured with anti-CD3 and PHA, but had no influence on number of cells

Number of injections per month

	HIV seronegatives			HIV seropositives		
	<10	11-49	>50	0	1-49	>50
	n=105	n=29	n=32	n=31	n=48	n=32
CD4 ($x10^9$/l)	0.96	0.87	0.96	0.44	0.46	0.43
PHA (c/m)*	1322	1234	1165	1130	1245	919
anti CD3 (c/m)*	200	175	105	105	106	73

* in counts per minute in 15 microlitre whole blood per 1000/CD3 cells

By multivariate regression analysis frequency of injecting was the strongest independant predictor of anti-CD3 in HIV+ and HIV- and PHA in HIV+. Type of drug used, duration, recent injecting nor age had an independant influence on immune function.
Conclusion: Frequent injecting depresses lymphocyte function in seropositive and seronegative IDU.

Th.C.650 BETA-2-MICROGLOBULIN (B2M) LEVELS IN EDINBURGH DRUG USERS

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Objective: To evaluate the usefulness of B2M levels in assessing progressive HIV infection and cofactors amongst drug users (IDU) attending primary care and hospital outpatients.
Methods: An EIA was used to measure B2M levels in 100 randomly selected blood donors to establish a normal range of 0.85-2.25 mg/l (mean+/- 2 SD) and in 212 drug users.
Results: Significantly elevated levels of B2M were found in both HIV+ve IDUs (4.24mg/l, n=132) and repeatedly HIV-ve IDUs (2.89mg/l, n=80). Significance was unchanged on reanalysis which excluded those with abnormal liver and renal function. High B2M levels reflected clinical progression in HIV+ IDUs with mean levels of 4.05 in CDC stage 2/3 (n=29) vs 4.87 in CDC stage 4 (n=103, p=0.0025). A further analysis of an asymptomatic subgroup of 94 HIV+ IDUs showed that 18 continued injectors have higher levels than 76 ex-injectors (4.57 vs 4.02) but this failed to reach statistical significance (p=0.11). The difference may reflect greater immunostimulation as the percentage of activated T cells is also higher in injectors (47% vs 33%, p=0.0004). B2M levels correlate with both % activated T cells (r=0.42) and inversely with CD4+ count (r=-0.41).
Conclusion: B2M levels rise with clinical progression of HIV. The continued immunostimulation of frequent drug injection and its attendant infections (other than HIV) may contribute to changes in B2M and T cell activation.

Th.C.649 PROGRESSION TO AIDS IN INTRAVENOUS DRUG USERS, COFACTORS AND SURVIVAL

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Objective: Survival analysis of drug users infected with HIV was carried out and relationship of progression with cofactors such as age, sex and continued drug use assessed.
Methods: In a cohort of 352 known intravenous drug users 143 were found to be positive. These individuals were followed where possible and serial testing for indicators of immunosuppression were carried out (CD4 counts, Beta 2 microglobulin, antigen and antibody core index) over a 3 year period. Three estimates of seroconversion dates were used. Firstly, using last negative sample (or 1st June 1983 if later or missing as this was the time when HIV was thought to enter the cohort), n=119. Secondly, using the first positive sample, n=112. Thirdly, using the mid point of these (where seroconversion date was known to < 1 year), n=58. Using a Cox Regression, survival to AIDS was analysed and cofactors tested.
Results: Sex was not significantly associated with progression but age at seroconversion was significant in group 1 and 2, p<0.1 and 3 p<0.05. In group 3 (the most accurate date of seroconversion) 12% of those <20 years had AIDS, 18% of those between 20 and 25, and 32% over 25 years. Continued drug use was not significantly associated with progression in any of the groups.
Conclusions: Progression was found to be associated with age at seroconversion, the older individuals becoming ill earlier. Drug use was not found to be associated with progression or, putting it another way, abstinence was not found in this group to prevent progression.

Natural History: Women

Th.C.651 INFLUENCE OF GESTATION ON HIV INFECTION.

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OBJECTIVE. In order to compare the influence of time alone to be influence of time plus pregnancy on infection with HIV, we report results of a three year follow-up of two group of women. (A) 84 HIV antibody positive, asymptomatic, pregnant patients (42 live births, 42 medically indicated abortions) (B) 94 age and sex matched HIV antibody positive, asymptomatic patients without gestation.
METHOD. In these two populations, the following parameters were compared : clinical stage, sedimentation rate, white cell count, relative lymphocyte count, relative and absolute T4 lymphocyte count, the T4/T8 ratio, the serum level of IgA, and the presence of the P24 HIV antigene. These parameters were measured during pregnancy, at termination of pregnancy, and one, two, and three years thereafter.
RESULTS. No statisticly significant differences between the two groups were found. In 18 % of the pregnant population, we found a transient appearance of the HIV P24 antigene during pregnancy.
CONCLUSION. Over a period of three years, no difference in the progression of HIV disease was observed between a population with and one without pregnancy. The transient appearance of HIV P24 antigene during pregnancy, does nos seem to be a poor prognostic marker for progression of HIV disease.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.652

EFFECT OF PREGNANCY ON PROGRESSION OF HIV INFECTION.

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Objective: Recent reports on the effect of pregnancy on HIV disease progression have been conflicting. The present study focused on certain clinical, serological and immunological parameters in HIV infected pregnant (group 1) and non-pregnant (group 2) women in an attempt to assess the risk of disease progression in the post-partum period.
Methods: Fifty-five group 1 patients were prospectively monitored before, during and after pregnancy for a mean follow-up period of 16 months, as compared with 51 group 2 patients who were followed for a mean period of 24 months. Subjects were investigated every 3 months on clinical status, CD4 cell counts p24 antigen (Ag), beta$_2$ microglobulin, immunoglobulins: G,M,A and HTLV-1 antibody. All subjects were counseled on safe sex practices and needle sharing.
Results: The majority of patients in both groups were intravenous drug users (IVDU). Mean age and racial composition of both groups were similar. Seven (13%) group 1 patients had multiple pregnancies during the study period. At enrollment 35/55 group 1 and 39/51 group 2 patients were in CDC stage 3. Thirteen group 1 and 14 group 2 patients progressed from one CDC stage to another over a mean follow-up period of 21 and 16 months respectively. One group 1 and four group 2 patients progressed to CDC stage 4C$_1$. HIV p24 Ag was detected in 6/36 group 1 and 11/41 group 2 patients during the follow-up period. Among group 1 patients, no statistically significant differences were noted in serologic and immunologic parameters studied pre and post-partum.
Conclusions: Pregnancy (single or multiple) did not appear to adversely affect HIV infection. Counseling had minimal effect on safe sex practices and needle sharing. Co-infection with HIV-1 and HTLV-1 were seen only in IVDU.

Th.C.653

HIV INFECTION AS A RISK FACTOR FOR SPONTANEOUS FIRST TRIMESTER ABORTION

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Objective: To determine whether HIV infection and other sexually transmitted diseases (STD) are risk factors for spontaneous first trimester abortion.
Methods: A case-control study was carried out at the Dept. of OBS/GYNE, Kenyatta National Hospital, Nairobi, Kenya. 135 pregnant mothers presenting with signs and symptoms of a first trimester abortion were enrolled as cases. Excluded from the analysis were women whose abortion was probably induced (based on the history and/or physical examination). 135 controls were selected at random from mothers at the antenatal clinic, with a gestation beyond 20 weeks. Data collection included sociodemographic features, sexual and medical history, clinical signs and symptoms, serology for HIV and syphilis, and microbiology for N. gonorrhoeae, C. trachomatis, S. agalactiae, M. hominis, U. urealyticum, T. vaginalis and bacterial vaginosis.
Results: 20 out of 135 women were excluded based on the suspicion of the abortion being induced. Although the HIV seroprevalence was higher in the abortion group as compared to the controls (10.4 % versus 5.2 %, p = 0.12; p = 0.12) the difference did not reach statistical significance. Spontaneous first trimester abortion was associated with positive syphilis serology (13.7 % of the cases versus 1.3 % of the controls, p = .009, OR = 12.2, 95 % CI 1.5-79.5) and with maternal colonisation with S. agalactiae (16.8 % vs 3.8 %, p = .001, OR = 5.1, 95 % CI 1.7-16.4). No association was found between other STD and spontaneous first trimester abortion
Conclusion: These preliminary results suggest that maternal HIV infection is not significantly associated with spontaneous first trimester abortion in the population studied.

Th.C.654

NATURAL HISTORY OF HIV INFECTION IN FEMALE BENEFICIARIES OF THE ARMY HEALTH CARE SYSTEM

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Objective: To evaluate the effect of age and other demographic factors on HIV disease progression to the occurence of an opportunistic infection or to death (Walter Reed (WR) Stages 6-7) in a cohort of women, controlling for initial clinical stage.
Methods: Since 1985, we have identified 139 seropositive women who completed at least 2 staging exams and presented with WR Stages 1-5. The median length of observation was 19 (range 3 to 50) months. Kaplan-Meier life table methods and the Cox proportional hazards model were used to assess predictors of disease progression.
Results: At initial evaluation, 82 women were at WR Stages 1-2 (CD4+ > 400), 29 were at WR Stage 3 (CD4+ < 400), 9 were at WR Stage 4 (CD4+ < 400 and partial anergy), and 19 were at WR Stage 5 (CD4+ < 400 and complete anergy or thrush). The median age was 31. A total of 18 women progressed to death or were diagnosed with an opportunistic infection. Women age 30 and over progressed to these endpoints more rapidly than women under age 30 (p = .0001). In a Cox proportional hazards model that included initial stage, age and race (white vs. non-white), initial clinical stage and age were independent predictors of progression to WR Stage 6 or death.
Conclusion: The results of this preliminary report suggest that progression to WR Stage 6 or death occurred more rapidly in older women in this population. This finding is consistent with that reported from studies in hemophiliacs. Since this observation is based on a relatively small group and followed for a relatively short period, these findings need to be replicated in other cohorts of women and in this cohort as longer follow-up experiences become available.

Th.C.655

PATTERNS OF PREGNANCY AND REPRODUCTIVE MORBIDITY AMONG HIV-INFECTED WOMEN IN THE UNITED STATES ARMY: A RETROSPECTIVE COHORT STUDY

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Objective: Surveillance of HIV infection in women of childbearing age, by heel stick and/or cord blood analyses of newborns, is an important part of the national effort to measure the presence of HIV infection in the general US population. This surveillance may potentially underestimate HIV seroprevalence if, in fact, HIV-infected women are less likely to become pregnant, or are more likely to have medical complications associated with their pregnancies, and thus less likely to be sampled at the time of delivery. This study investigates these potential biases by comparing rates and trends of pregnancy and pregnancy-associated morbidity, including spontaneous abortion (SA), among female soldiers over a period prior to their earliest HIV infection diagnosis, and a matched seronegative comparison group.
Methods: HIV infected women were identified through the U.S. Army HIV Data System (USAHDS). Four women, known to be uninfected with HIV, were matched to each case on key demographic variables. All discharge diagnoses associated with pregnancy, occurring over the 8 year period prior to HIV infection diagnosis for each case, were obtained from a Department of Army-maintained database of inpatient morbidity in Army hospitals.
Results: A total of 69 HIV-Ab positive female soldiers and 276 matched seronegatives were identified for this study. Cases had a significantly higher rate of pregnancy(177/1000 Person-Years(P*Y)) than controls(122/1000 P*Y) [RR=1.5; 95% C I =1.1 , 1.9). The proportion of pregnancies resulting in live births was significantly higher in the uninfected cohort [RR=1.42; 95% C I =1.14 , 1.76], while cases had significantly greater proportions of pregnancies that were complicated [RR=2.0; 95% C I = 1.4 , 2.8] or resulted in SA [RR=4.4; 95% C I =1.5 , 13]. Cases were most likely to have complicated pregnancies in the 2 years preceding their infection diagnosis.
Conclusions: This study demonstrates an association between reproductive morbidity and HIV-Ab status in a cohort of female soldiers who were infected with HIV, or at high risk for subsequent infection with HIV. Cases had a significantly higher pregnancy rate vs. their comparison group, however their pregnancies were significantly more likely to terminate by spontaneous abortion. These data help to define potential bias in population-based estimates of HIV seroprevalence based upon surveillance of women and newborns.

Natural History: Children

Th.C.656 MORTALITY AND HIV1 INFECTION RATES IN INFANTS BORN TO SEROPOSITIVE MOTHERS: A COHORT STUDY, BRAZZAVILLE, CONGO.

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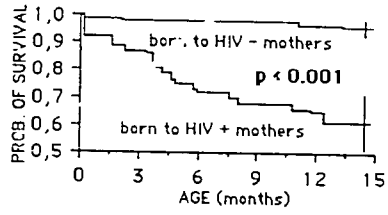
Objective : To evaluate the mortality rate in infants born to HIV1 positive and negative mothers respectively and the infection rate in the former group.

Subjects and methods : Follow up of 64 babies born to seropositive mothers compared to 124 babies born to seronegative control mothers. Mean follow up: 24 months (18-28 months). Probabilities of death evaluated by the Kaplan-Meier method. Infants were considered as : 1) infected if seropositive after 18 months and/or deceaded of AIDS, 2) uninfected if seronegative after 18 month .

Results : Probability of death among infants born to seropositive mothers was 0.36 (standar error 0.06) at 1 year and 0.45 (s.e. 0.09) at 2 years compared with 0.03 (s.e. 0.02) at 1 year and 0.04 (s.e. 0.02) at 2 years in the control group. Of the babies born to seropositive mothers, 42% (27/64) were infected, 36% (27/64) uninfected and 22% (14/64) indeterminated ; only 9 infants were alive and infected at the end of the second year.



Conclusion : The mortality observed in infected infants is much higher and death occurs much earlier than that observed in industrialised countries. This might be due to differences in environmental conditions. Mortality and infection rates, taken together, suggest a particularly high rate of mother-child transmission.

Th.C.657 MORBIDITY AND MORTALITY IN THE FIRST 30 MONTHS OF LIFE IN 477 INFANTS BORN TO SEROPOSITIVE MOTHERS IN ZAIRE.

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Objective: To describe the morbidity and mortality in the first 30 months of life in children born to HIV(+) mothers and in children born to age-matched HIV(-) mothers.

Methods: Deaths and all episodes of illness in 120 children (Group I) with HIV(+) mothers and perinatally-acquired HIV infection (PI) (HIV IgG at 12/18 months and/or clinical AIDS), 357 children (Group II) with HIV(+) mothers but without PI and 590 control children (Group III) of HIV(-) mothers have now been observed for 2350 child-years of observation.

Results: Table. Morbidity and mortality in study children according to age and HIV infection status.

	Age of study children								
	0-12 mos.			13-24 mos.			25-30 mos.		
Group	I	II	III	I	II	III	I	II	III
MORBIDITY*									
Diarrhea.)15 days*	-16-	12	85	22	27		0	3	2
Fever)15 days	-22-	7	76	22	15		6	3	3
Pneumonia*	-56-	46	111	60	78		29	7	7
Otitis Media*	-30-	13	88	40	26		12	2	2
Oral thrush*	-29-	11	64	16	12		6	1	1
AIDS (%)^	-14-	N/C	49	8	N/C		51	9	N/C
MORTALITY N(%)	100(21)	23(4)	14(25)	5(2)	12(2)		4(10)	1(0.1)	0(0)
Prematurity %	-18-	8	-	-	-		-	-	-
Diarrhea	-28-	17	50	20	17		50	0	0
Pneumonia	-16-	8	7	20	17		0	0	0
Meningitis	-9 -	13	0	0	0		0	0	0

*episodes/infant year of observation X100) ^Cumulative incidence

Conclusions: GpI children had the highest rates of morbidity and mortality. Pneumonia, purulent otitis media and oral thrush were especially common in GpI children. GpII and III children had similar rates of morbidity and mortality after age one year.

Th.C.658 MORBIDITY AND MORTALITY IN SUCCESSIVE BIRTH COHORTS OF CHILDREN AND THEIR HIV(+) MOTHERS IN ZAIRE.

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Objectives: To better define HIV-induced maternal risk factors associated with early childhood morbidity (MB) and mortality (MT) including perinatally-acquired HIV infection (PI).

Methods: 249 HIV(+) mothers (MO) and 310 age-matched HIV(-) MO were enrolled in 1986-87 in a prospective cohort study at the time they presented at a Kinshasa maternity in active labor with their first study infant (FSI). MO were placed in 3 groups. GpI had 71 HIV(+) MO whose FSI had documented PI. GpII had 178 HIV(+) MO who did not infect their FSI. GpIII had 310 HIV(-) control MO. All MO, their FSI and the additional 269 second study infants (SSI) subsequently born to these same women in 1988-89 have been followed up (F/U) during the 30 month period since delivery of the FSI.

Results:

	GpI	GpII	GpIII
Maternal morbidity and mortality			
Had been hospitalized during F/U period (%)	31	23	6
Had AIDS at the time FSI born (%)	44	19	N/C*
Had AIDS at end F/U (%)	68	37	N/C
Developed tuberculosis during F/U (%)	14	6	0.3
Died during F/U (%)	14	11	4
Child factors			
No. SSI	32	62	175
% SSI with PI	50	8	N/C
Mean birth Wt - FSI	2782	3007	2997
- SSI	2917	3045	3056

N/C = not calculated

The infant mortality rate (IMR) for GpI and II FSI was 98 and 500 for SSI. The IMR for GpIII infants was 6 for FSI and 242 for SSI.

Conclusion: GpI MO and infants had the highest rates of MB and MT. SSI of GpI MO had a higher incidence of PI than SSI of GpII MO. HIV(+) MO who infected their newborn children were likely to be more advanced in their HIV infection than HIV(+) MO who did not infect their newborns.

Th.C.659 NATURAL HISTORY OF HIV-1 INFECTION IN AFRICAN CHILDREN A PROSPECTIVE COHORT STUDY IN RWANDA.

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+ INSERM U 330, University of Bordeaux II, Bordeaux, France

Objective : 1) to identify, over a 2-year period, the mother-to-child transmission rate of HIV-1 infection and 2) to describe the natural history of HIV-1 infection in children

Material : A prospective cohort-study consisting of 218 infants born to HIV-1 + mothers (Group 1) and 218 infants born to HIV-1 - mothers (Group 2) has been followed up since birth at the Pediatric Department of the CHK, in Rwanda. Mothers are matched by age and parity. Enrollment has lasted from Nov. 88 to June 89. Children are assessed every 15 days, either at home, or at the outpatient Clinic of the CHK by social workers. Children have a complete physical, neuro-developmental and ophthalmological exam every 3 months. In case of intercurrent illness, the infants are treated free of charge by physicians from the study

Results : The demographic characteristics of the 2 groups of mothers were similar. The incidence of post-partum gynecological infection was not increased in Group 1 mothers. At enrollment, none of the Group 1 mothers fullfilled the criteria of the WHO definition of AIDS. The rate of prematurity and of low birthweight (< 2,500 g) was not different in the 2 groups of newborns; however, the mean birthweight of newborns from Group 1was lower(2,840 g vs 2,970 g; p< 0.01).In the first trimester of follow-up, fever and conjunctivitis were more often observed in children from Group 1. During the first 6 months of life, hospital contacts were more common in infants from Group 1. As of 1 Jan. 1990, 31 children have died of whom 24 are from Group 1. The major causes of death in children from Group 1 were : pulmonary infections (6) and diarrhea (6). The cumulated probability of survival at 12 months of age is 86% (95% CI : 78-91%) in Group 1 versus 97% (95% CI : 93-98%) in Group 2 (p< 0.01). The rate of HIV-1 mother-to-child transmission at 12 months of age was estimated to be 34%

Conclusions: In this cohort-study 1) Most of the HIV-1+ mothers were asymptomatic at enrollment. 2) The impact of HIV-1 infection in the neonatal period seems limited. 3) The infant mortality of children born to HIV-1 + mothers is significantly increased. 4)The estimated mother-to-child HIV-1 transmission rate is 34%.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Th.C.660 EPIDEMIOLOGY AND NATURAL HYSTORY OF HIV INFECTION IN CHILDREN. RESULTS FROM THE ITALIAN MULTICENTRE STUDY ON 1316 SUBJECTS.

Tovo P.A. , de Martino M. for the Italian Multicentre Study

The "Italian Register for HIV infection in children" was instituted in 1985 by the Immunology Study Group of the Italian Association of Pediatrics. By the end of September 1989, 1316 children with proven infection or born to HIV+ mothers had been recorded by the 70 participating centers. 678/1218 perinatally exposed children were prospectively followed up from birth. Ninety-six acquired infection under 13 years of age through administration of blood products. In 2 infected children the risk factor could not be identified, because the parents were not available.

In Italy, the first recorded child of HIV+ mother was born in 1981. Since then the number has increased progressively up to 230 per year in 1987 with sligth, but costant increase in the following years. A definite proof of infection could be obtained in 351 perinatally exposed children. Among these 274 developed symptoms, 137 full-blown AIDS and 64 died (39 females, 25 males). A detailed description of the protean clinical picture and the prognostic significance of each sympton will be presented. Among the 96 children who acquired infection following administration of contaminated blood products only 51 developed symptoms, 11 full-blown AIDS and 5 died, so demonstrating the less severe outcome of the infection when it occurs later in childhood.

The mother-to-child transmission rate of infection can be estimated to be about 25%, with a possible negative influence of breast-feeding. Preterm delivery and low birthweigth seemed to be related to drug use during pregnancy, not to intrauterine infection.

Th.C.661 INCUBATION TIME FOR AIDS AMONG HOMOSEXUAL AND PEDIATRIC CASES

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Objective: To assess the incubation time of developping AIDS in homosexual and pediatric populations and compare them to the incubation time in transfusion recipients (who were already studied and for which the 90% confidence interval of the median was found to be (4.4 years - 9 years)).
Methods: Cases were those reported to the Direction Générale de la Santé. For the homosexual population a new method, based on the principle that age at diagnosis is equal to age at contamination plus incubation period was used to estimate incubation time. A deconvolution technique was applied to the age distribution of 2,220 homosexual AIDS cases and the age distribution of 172 asymptomatic seropositive blood donors whose only risk factor was homosexuality. For pediatric cases, 137 cases due to the maternal transmission were identified, with the contamination date assumed to be the birth date. For this group, the maximum likelihood estimate was derived assuming one or two Weibull distributions.
Results: For the homosexuals, median incubation time (90% confidence limits) was evaluated at 9.9 years (6.7-13.5). For pediatric cases, two distinct populations were found. The first one develops AIDS within the first 18 months of life (11% of children) and the other develops AIDS following a pattern similar to adults with a median incubation time of 6.4 years.
Conclusion: From data available, at a period when no early treatment was available for seropositive subjects, no significant difference was observed between incubation time among adult transfusion recipients and homosexual cases. For pediatric cases, our data suggest the existence of two risk populations, one developping AIDS quickly and the other resembling the larger incubation period found in adults.

Natural History: Predictions and Markers of Progression

Th.C.662 PROGRESSION OF HIV - DISEASE: STUDY OF 86 INDIVIDUALS BY A NEW STAGING SYSTEM. (WHO, Geneva, 1989).

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Bouzas, M.**. * Hital. Fernandez, ** Academia de Medicina, Buenos Aires-Argentina.

OBJECTIVE: To study progression of HIV disease using a new staging system.
METHODS: We performed a retrospective analysis of 86 clinical records belonging to HIV + patients (pts), examined in a 6 - monthly based schedule, with last examination in 1989. Pts. were classified in the following stages: asymptomatic (A), persistent generalized lymphadenopathy (PGL), early disease (ED), intermediate disease (ID), late disease (LD), following the WHO PROPPOSAL FOR HIV STAGING (JULY 1989). Follow up ranged from 18 to 54 months (mo) (mean 24.4 mo), except for those pts who died before 18 mo. Total follow up was of 2079 pts / mo.
RESULTS: As shown in table I, clinical tage at first evaluation was associated with outcome. (The more advanced pts evolved worsely). Also, the longer time of observation correlated with progession of disease: 6 mo= 28 %; 12 mo= 40.6 %; 18 mo= 48.1 %; and 24 mo= 52.5 % of pts progressed to more advanced stages.

Table I

Initial Stage		Final Stage: A	PGL	ED	ID	LD	DIED
HIV (-)*	4	-	-	-	4	-	-
A	11	4	3	3	1	-	-
PGL	51	-	19	9	17	6	3
ED	7	-	-	1	3	3	2
ID	11	-	-	-	3	8	6
LD	2	-	-	-	-	2	2

(*: Seroconverted during study)

Mortality: No A died; 3/51 PGL (5.8 %) died; 2/7 (28.5 %) of ED died; 6/11 (54.5 %) ID died and 2/2 (100 %) of LD died.
CONCLUSIGN: Outcome of HIV disease is predictable, and appears to be linked with clinical stage at first evaluation. Time is associated with disease progression. WHO STAGING SYSTEM appears to be an accurate method for staging of HIV disease.

Th.C.663 PROGNOSTIC VALUE OF LYMPHNODE BIOPSY IN HIV INFECTION: A LONG-TERM FOLLOW-UP.

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Castagna, A*; Cristina, S*; Costanzi, G*; Lazzarin, A*; Moroni, M*; Parravicini, C*;
Musicco, M**. *University of Milan; **ITBA, CNR, Milan, Italy.

Objective. To assess the prognostic value of the histological findings observed in lymphnode biopsies of patients (pts) at different stages of HIV infection. Methods. We studied the lymphnodes of 121 HIV infected pts, biopsied between 1982 and 1989, and their clinical evolution for a median period of 29 months (mos)(1-90). All biopsies were classified into 4 histological classes (HC1=12 pts; HC2=66; HC3=25; HC4=18) according to the increasing degree of follicular damage and lymphocytic depletion. The pts were clinically classified as PGL (n=84), ARC (n=19) and AIDS (n=18). The estimated cumulative probabilities of survival (ECPS) for HC and clinical stages (CS) were calculated by Kaplan-Meier method. Results. The overall ECPS were 48.09% at 90 mos after biopsy. The ECPS were 100% at 71 mos for HC1, 65.25% at 72 mos for HC2, 32.43% at 47 mos for HC3 and 11.97 at 21 mos for HC4. Both HC and CS were statistically significant variables for predicting survival (p 0.0001). Moreover for the earlier stages of infection (PGL), HC added significant prognostic information (p 0.0001) to clinical data; conversely, for HC2 (but not HC1, HC3 and HC4) pts, clinical classification had a significant adjunctive prognostic value (p 0.0001). Conclusion. Histological findings observed in lymphnode biopsies are clearly correlated with CS and have a highly significant prognostic value for survival prediction, particularly in PGL pts.

Th.C.664 RELEVANCE OF ANTIBODY RESPONSE TO HIV-1 NON -STRUCTURAL PROTEINS FOR UNDERSTANDING THE PATHOGENESIS AND PROGRESSION OF INFECTION.

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*Human Retrovirus Laboratory and **Department of Medicine, Academic Medical Center, Amsterdam, The Netherlands; and Department of Molecular Genetics, Smith Kline and French Laboratories, Pennsylvania, USA.

Objective: To study associations between antibody (Ab) responses to HIV-1 *nef*-, *rev*-, *tat*-, *vpu*-, *vpr*-, and *protease* proteins and the clinical course and pathogenesis of HIV-1 infection *in vivo*.
Methods: Ab to E.coli-produced HIV-1 *nef*, *rev*, *tat*, *vpu*, *vpr*, and *protease* proteins was determined by EIA in sera, taken sequentially from a cohort of initially symptom-free, HIV-1 *gag/env* Ab-seropositive and -seroconverting men. Sera taken within 1 month of diagnosis from 281 of 411 consecutive patients with AIDS, whose presenting diagnoses included KS and/or OI, and who were not receiving anti-retrovirals at the time, were available for detection of *tat*-specific Ab.
Results: Seroprevalence of Ab to *nef*, *rev*, *tat*, *vpu*, *vpr*, and *protease* in the *gag/env* Ab seroconverters, was 83%, 47%, 29%, 61%, 49%, and 72%, respectively. Negative profiles of Ab response to *nef* or *tat* or *protease* (Ab persistently absent or only transiently or intermittently present), were associated with a significantly higher incidence of AIDS, at 39 months follow-up, compared with profiles in which such Ab were persistently detected. No association was found between *rev*, *vpu*, and *vpr* Ab profiles, and clinical outcome. Low Ab reactivity to *nef*, *rev*, or *tat*, from the time of *gag/env* seroconversion, appeared to be associated with rapid disease progression. In combination with persistent HIV-1 antigenaemia and low CD4+ cell counts, negative Ab profiles to either *nef* or *protease*, were equally sensitive and specific in predicting progression to AIDS, as was low anti-core Ab reactivity. No significant difference in prevalence of *tat*-specific Ab was found, between AIDS patients whose presenting diagnosis included KS versus OI without KS.
Conclusion: In view of the limited antigenicity of HIV-1 non-structural proteins, several of which regulate HIV-1 multiplication *in vitro*, Ab responses to these proteins do not reflect protein expression in many subjects, thus limiting their use for understanding the pathogenesis of HIV-1 infection *in vivo*. They may contribute to predict rapid disease progression. Recent findings that HIV-1-*tat* may be a factor in the pathogenesis of KS, are not reflected in a differing prevalence of *tat*-specific Ab in sera from patients whose presenting diagnosis of AIDS includes KS.

Th.C.665 COMPLETE BINDING OF P24 ANTIGEN MAY BE A SUCCESSFUL RESPONSE TO HIV-1 INFECTION

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Objective: To determine the relationship of bound and free p24 antigen with likelihood of developing AIDS.
Methods: Sera from four hundred randomly selected seropositive men were tested for the presence of the p24 antigen before and after pH 2.5-3.0 pretreatment with 0.5 N HCl acid to release p24 antigen bound in immune complexes. The relative hazard using the generalized Wilcoxon test for differences in survival curves (time to AIDS) was compared among the four groups defined as having unbound p24 antigen only (N=18), both bound and free p24 antigen (N=55), bound p24 antigen only (N=224), and neither bound nor free p24 antigen (N=103). P24 status was also compared to other markers of progression.
Results: There was a significant difference (P<.00005) among the four groups in time to AIDS. Setting the group with neither bound nor free p24 antigen as the reference group the relative hazard for those with bound p24 antigen only was 1.02 (.6,1.8), for those with unbound p24 antigen only 2.94 (1.3,6.7) and for those with both bound and unbound p24 antigen 3.32 (1.9,5.9). According to stepwise survival analysis, however, the predictive value for AIDS of p24 antigen either unbound only or both bound and unbound was less than that for CD4 T cell number or serum neopterin, B2M, soluble IL-2 receptor or IgA. No difference was seen in the distribution of bands in the Western Blot assay between the four p24 antigen groups.
Conclusions: The results indicate that the presence of free p24 antigen even in combination with bound p24 antigen is a bad prognostic sign, but less predictive than other markers. Conversely, the complete binding of p24 antigen into complexes reflects a successful response to HIV-1 infection. The absence of p24 antigen may reflect dormant HIV-1 infection. The changes in p24 antigen status in these individuals over time will be compared with changes in the other prognostic indicators and the distribution of immunologic parameters in those with p24 antigen, bound or unbound, compared to those with no evidence of p24 antigen.

Th.C.666 ORAL CANDIDIASIS IN HIV INFECTION: PROGRESSION BY TYPE OF CLINICAL PRESENTATION.

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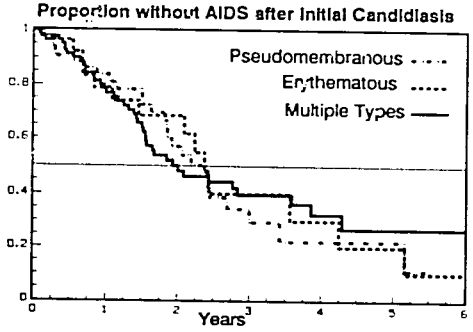
Objective. To determine progression from oral candidiasis to AIDS by type of clinical presentation.
Methods One hundred eighty-seven patients referred to the Oral AIDS center between 1981 and 1989 with candidiasis on first exam were followed prospectively to the development of AIDS. Patients were categorized by their initial presentation: erythematous only (n=34), pseudo-membranous only (n=60), or multiple types of mucosal involvement (n=93).



Results: Progression was observed in 81 individuals during follow-up. The median time to AIDS was 22.1 months for multiple types, 28.5 months for erythematous only and 29.1 months for pseudomemb-ranous only. This trend for more rapid progression with multiple types did not persist. *Conclusions:* There was a wide range of times to progression with all types of presentations of candidiasis. The type of candidal presentation was not correlated with the time to progression.

Supported by NIH PO1-DE-07946.

Th.C.667 PREDICTIVE MARKERS FOR AIDS IN CHILDREN WITH HEMOPHILIA.

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NCI Multicenter Study of AIDS in Hemophilia, Bethesda Maryland USA.

Objective: To determine which laboratory markers best predict the onset of AIDS among 281 hemophilic children and adolescents.
Method: We prospectively evaluated subjects who developed HIV antibodies before age 18. AIDS incidence was calculated from estimated dates of seroconversion for the following markers; first CD4 and CD8 assays (n=250); first serum tested for p24 antigen, β2-microglobulin and neopterin (n=69). χ^2 was used to evaluate differences.
Results: 22 of the 281 hemophilic subjects infected before age 18 have developed AIDS, at an incidence rate of 1.18 per 100 person years. AIDS developed in 1/3 p24 Ag^+ and 9/109 p24 Ag^- children. Laboratory markers associated with AIDS were:

CD4%	Rate	CD4 count	Rate	β2	Rate	Neopterin	Rate
0-19	8.7	0-199	17.7	0-2	3.0	0-9.5	2.3
20-34	1.8	200-499	1.4	2.1-3	3.8	9.6-15.1	3.2
>34	1.0	500-2195	1.7	>3	22.0	15.2-35.1	13.6
p_{trend}<.001		p_{trend}<.001		p_{trend}=.05		p_{trend}=.04	

By Cox regression analysis, AIDS incidence was more strongly associated with CD4% than with CD4 count (χ^2 6.39 vs 2.68, p=0.05) or CD4:CD8 ratio (χ^2 3.25, p=0.08). Similarly, β2 was more predictive than neopterin (χ^2 12.64 vs 7.80, p=0.03). The best bivariate model was CD4% in combination with β2, but data were too sparse to determine whether combined testing yielded added prognostic information.
Conclusion: Our observations show that CD4% and β2 are important predictors of AIDS in pediatric subjects, as observed for adult patients. Further serological testing for β2 and anti-p24 may help define prognostic stages.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.668 NATURAL HISTORY OF IMMUNE ACTIVATION IN HIV INFECTION: SERUM BETA-2 MICROGLOBULIN (B2M) AND NEOPTERIN PRIOR TO THE DEVELOPMENT OF AIDS

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Multicenter AIDS Cohort Study, Los Angeles, CA., USA.

Objective: To characterize the course of immune activation (B2M and neopterin) and immune deficiency (CD4 T cell levels) changes in the 2 or more years prior to development of AIDS.
Methods: 201 men who developed AIDS after 2 or more years of serial observations in the MACS study and a matched control population who did not develop AIDS but were similar at entry into the study were evaluated for B2M and neopterin and CD4 T cell level.
Results: At the time of diagnosis of AIDS, B2M and neopterin were 30% higher and CD4 T cells were 40% of the mean levels in the matched (non-AIDS control group. The non-AIDS control and later-AIDS population, however, were similar in B2M and neopterin 2 years prior to AIDS occurrence, but the former group showed progressive increases in activation markers (and fall in CD4) prior to AIDS.
Conclusion: Elevated levels of the serum immune activation markers, neopterin and B2M, projected CD4 T cell fall and occurrence of AIDS. Their measurement can contribute to establishing prognosis and understanding the course of HIV infection.

Th.C.669 PREDICTORS OF PROGRESSION TO AIDS IN THE TORONTO SEXUAL CONTACT STUDY.

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Objective: To investigate the relationship between certain clinical, laboratory, and therapeutic variables and progression to AIDS.
Methods: Since 1984, a cohort of male sexual contacts of men with HIV disease has been monitored, quarterly, with various laboratory tests, HIV serology, clinical examinations, and the collection of therapeutic data. At recruitment, 143 cohort members were seropositive and 16 seroconverted during followup. Cox proportional hazards models (survival calculated in terms of estimated date of infection with HIV) examined various combinations of these variables in terms of their relationship to progression to AIDS.
Results: 41 cohort members have progressed to AIDS. Many variables (T4/T8, PHA, p24 Ag, level of anti-p24, level of IgA, occurrence of minor OIs (thrush, zoster, oral hairy leukoplakia), and use of AZT) were significantly associated with progression rates in univariate models. Development of persistent generalized lymphadenopathy (PGL) was never a significant determinant of risk. In the final model, only use of AZT (protective), T4/T8 ratio, IgA level, and development of a minor OI remained independently and significantly associated with progressive disease.
Conclusion: Development of PGL is not a significant clinical event in the natural history of HIV infection. AZT protects against development of progressive disease while T4/T8 ratios, increasing levels of IgA and development of a minor OI are important predictors of progressive disease.

Th.C.670 EVALUATION OF HIV p24 ANTIBODY LEVELS, DETERMINED WITH A FLOW CYTOMETRIC IMMUNOREACTIVE BEAD (IRB) ASSAY, IN PREDICTING DISEASE PROGRESSION.

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Objective: To evaluate anti-p24 levels measured by IRB assay to predict HIV disease progression.
Methods: Uniform, 5 µm polystyrene beads coated with rDNA-produced p24 (Chiron) were incubated with test sera (1:1000 & 1:50000), washed and labeled with phycoerythrin labeled anti-human IgG. Beads were then analyzed for immunofluorescence with a flow cytometer. Serial sera were analyzed from HIV infected individuals followed for up to 5.5 years, with (n=13) or without (n=17) development of AIDS or declining CD4 T cells as evidence of disease progression.
Results: IRB anti-p24 values ranged from 230 to greater than 20 million fluorescent units (FU). An anti-p24 value of 14,500 FU was the best discriminator between HIV+ asymptomatic and AIDS groups. Values below 14,500 FU predicted a more rapid progression to AIDS, with a sensitivity of 85%, specificity of 59% and predictive value of 72%. In 10/13 (77%) of cases developing AIDS, the test was positive at least 6 months prior to either the diagnosis of AIDS or the decline of CD4 values to less than 400/µl. Only 2 study subjects in the AIDS group had elevated anti-p24 levels, and both were unusual cases of CNS AIDS with normal CD4 numbers.
Conclusion: Quantitation of anti-p24 by the IRB assay can predict the risk of HIV disease progression. In addition, the IRB assay is well suited for patient monitoring since it is easy to perform and has a wide dynamic range.

Th.C.671 IN VITRO PRODUCTION, MEMBRANE EXPRESSION, AND SERUM LEVELS OF SIL-2R IN HIV INFECTION.

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Objective: The purpose of this study was to study the origin of the lymphocyte activation marker SIL-2R in vitro, to characterize the change in serum SIL-2R, and cell surface IL-2R after HIV seroconversion and later in the infection.
Methods: SIL-2R was measured by ELISA using Becton Dickinson reagents. Cell surface IL-2R are measured by FACSCAN flowcytometry. HIV seropositive subjects were participants in the MACS study at UCLA.
Results: In vitro production of SIL-2R by peripheral blood mononuclear cells could be induced 5-10 fold over baseline by stimulation with the cytokine IL-2 or the polyclonal activator PHA. Separation studies showed that both T and B cells produced SIL-2R after in vitro activation, whereas highly purified (>90%) monocytes did not. A decreased percentage of IL-2R bearing CD4 T cells and B cells was found 59 HIV seropositive subjects when compared to 50 controls. There was, however, no correlation between surface IL-2R reductions and increased serum SIL-2R. Serum levels of SIL 2R in most of 50 subjects who seroconverted during the study showed an increase in the first sample taken 3 months (median) after seroconversion. During 3 years of follow-up the level of SIL-2R slowly decreased, but remained above the normal baseline. The level of SIL-2R was highly predictive for the development of AIDS within three years for 400 seropositive subjects with unknown conversion times. The SIL-2R levels provided additional predictive information when combined with the level of CD4 T cells in a Cox analysis.
Conclusion: SIL-2R is produced in the patient serum by activated T and B cells. Serum SIL-2R levels increase after HIV seroconversion. They are strongly predictive for development of AIDS within 3 years. CD4 T cell and B cell expression of IL-2R is reduced in HIV infection.

Th.C.672 EVALUATION OF BETA-2-MICROGLOBULIN AND NEOPTERIN AS PROGNOSTIC MARKER IN HIV DISEASE

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Objective To elucidate the usefulness of Beta-2-microglobulin (ß2m) and Neopterin in predicting disease progression in HIV disease

Methods A total of 1198 frozen serum samples, collected during 1983-88 in Stockholm from 185 homo- and bisexual men who were or turned HIV seropositive, were analyzed for ß2m and Neopterin. A comparison (Student's t-test) was made between the marker levels for the patients that had developed AIDS (CDC group IV c1, d and e) and the men that were still in CDC II/III at different times before the diagnosis or the last follow up date

Results Mean ß2m and Neopterin values at different times before a clinical end-point, i.e. an AIDS defining complication or last follow-up for men still in CDC group II/III

ß2m (mg/l)	12	24	36	48	60	72 Months
CDC II/III	2.3	2.2	2.1	2.0	1.9	1.8
AIDS	2.7	2.3	2.3	2.3	2.0	-
p	0.0062	NS	NS	NS	NS	-
Neopterin (nmol/l)						
CDC II/III	11.3	11.3	10.7	11.3	10.5	8.8
AIDS	16.9	12.4	12.8	11.8	9.7	-
p	0.0001	NS	NS	NS	NS	-

Conclusion The usefulness of ß2m and Neopterin as prognostic markers seems to be limited to the year prior to a complication indicative of AIDS.

Th.C.673 DEVELOPMENT OF IMMUNE RESPONSE TO HIV p24 PROTEIN.

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Objective: Determine the spectrum of IgG immune response (IR) to p24 HIV protein in seroconverters. Evaluate the clinical significance of p24 antibody (Ab) titer.
Methods: Semiquantitation of p24 Ab using recombinant p24 as capture and probe. Titers are determined by the intercept of a dilution curve of each sample and a calculated cut-off. The calculated slope of the dilution curve reflects quality of Ab.
Results: Of 52 seroconverters followed-up at 6 m interval for 2.5 y, 24 (46%) had a maximum Ab titer ranging 0-67 and 17 remained or became HIV Ag pos. 28 had Ab titer ranging 159-93972, none became HIV Ag positive. The peak of IR was reached 3-36 m post-seroconversion; in 12-36 months for high titer. Past the peak of IR, the titer of p24 Ab declined in 75% of subjects, more in low (93%) than high titer (62%). In most subjects with declining p24 Ab titer HIV p24 Ag was found either free or complexed. Over 2.5 y, 4/24 and 2/28 cases of AIDS developed in low and high p24 Ab titer respectively.
Conclusion: Measurement of p24 Ab level provides a good assessment of humoral IR to HIV. Subsequent decline of p24 Ab titer reflects mostly production and complexing of p24 antigen. Occurrence of antigenemia is primarily related to a poor IR to p24 antigen.

Th.C.674 DETECTION OF HIV-1 GENOMIC SEQUENCES AND DISTINCT CHANGES IN CD4⁺ AND CD8⁺CD38⁺ COMPARTMENT SIZE PRECEDE SEROCONVERSION

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Objective: To identify the earliest indicators of HIV-1 infection and clinical progression to AIDS.
Methods: Homosexual men at high risk to HIV-1 infection as determined by life style, were serially tested every 4 months since 1984 for anti-HIV-1 Ab, viral replication in tissue culture (TC), immune phenotyping and assayed for HIV-1 *gag*, *env*, and LTR sequences by polymerase chain reaction (PCR).
Results: PCR identified among the cohort of asymptomatic, seronegative men a group who were positive for LTR and *gag* HIV-1 sequences. This division correlated with culture of HIV-1 from PBL and significant reductions in Th (CD4⁺) and increases in CD8 activation (CD8⁺CD38⁺) antigens. These cell compartments remained similar to controls in the second, PCR negative group of high risk, seronegative subjects (15/19). Phenotypic changes among all groups compared to each other were significant ($p < 0.0008$).

GROUP	N	WESTERN BLOT	% PCR (+) for: GAG	LTR	ENV	TC [p24⁺]	ABSOLUTE NUMBER CD4⁺	CD8⁺CD38⁺
Control	31	-	0	0	0	nd	1002	135
High Risk HIV-1[-]	15	-	6	0	0	0/15	966	140
	4	-	100	100	25	3/4	630	460
HIV-1[+]/LAS	10	+	90	100	50	10/10	507	539
ARC/AIDS	9	+	89	100	56	9/9	232	596

Conclusion: A number of high risk, seronegative homosexual men possess HIV-1 LTR and *gag* sequences along with significant decreases in the CD4⁺ and increases in CD8 activation antigen (CD8⁺/CD38⁺) compartments. Both virologic and phenotypic parameters were detectable prior to serologic conversion.

Natural History: Cofactors

Th.C.675 INTERACTION BETWEEN HIV-1 INFECTION AND SMOKING ON CD4 LYMPHOCYTE COUNT

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Objective. To investigate the interaction between HIV-1 infection and smoking on the number of CD4 lymphocytes in the seroconverter sub-population of the MACS cohort.
Methods. 285 participants in the MACS cohort were seroconverters whose date of seroconversion (SC) was known within ± 4 months. These 285 men contributed CD4 lymphocyte number and smoking behavior data for a total of 2772 observations (range 1-18) to this analysis. Regression models taking into account intraclass correlation were used to test relationships.
Results. The table below shows the mean CD4 lymphocyte counts by smoking level and time from seroconversion (± 6 months). The number of data points in each category is in parentheses.

		Smoking Level, cigarettes/day: NO	1-10	11-20	21-40	> 40
Years From Seroconversion	-1 year	879(377)	952(24)	1135(42)	1274(105)	1185(42)
	0 year	789(337)	856(22)	891(34)	1051(106)	1019(49)
	1 year	628(407)	620(31)	644(39)	745(90)	724(48)
	2 year	547(335)	793(34)	733(20)	630(77)	660(43)
	3 year	457(345)	571(37)	552(27)	599(67)	501(34)

The positive association observed between CD4 lymphocyte counts and smoking was significant ($p < 0.05$) at all five time points relative to SC. The magnitude of the association was different at different times from SC ($p < 0.001$, test for interaction between smoking and time from SC). The effect of smoking was highest before SC, decreased up to one year after SC, and was of the same magnitude beyond one year after SC.
Conclusion. A positive dose-dependent relationship between smoking and CD4 lymphocyte number before SC has been shown. This relationship persists but is of smaller magnitude after SC, indicating that HIV-1 infection attenuates, but does not eliminate, the changes associated with cigarette smoking. In terms of CD4 percent, smokers have significantly ($p < 0.001$) higher values than non-smokers, but a dose-response relationship was not observed. HIV-1 infection has a similar attenuation effect on CD4 percent. These data indicate the need to take smoking into account when monitoring HIV-1 infected individuals.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.676 GENETIC SUSCEPTIBILITY TO PROGRESSION TO AIDS FOLLOWING HIV-1 INFECTION: THE SAN FRANCISCO MEN'S HEALTH STUDY.

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Objective: To test whether host genotype influences disease progression to AIDS in HIV-1 infected persons.
Methods: We have extracted DNA from blood samples of 104 HIV seropositive Caucasian men in the following three clinical groups: 1) asymptomatic for at least 2 years (n = 29); 2) persistently symptomatic but without AIDS (n = 29); and 3) AIDS cases (n = 46). Genotypes at loci involved in immune response were detected by southern blot analysis and by enzymatic amplification (PCR) followed by hybridization with allele-specific oligonucleotides. The sequences tested to date are T cell receptor alpha (TCRA) and beta (TCRB) chains, immunoglobulin gamma1 heavy chain constant region (IGHG1), interferons alpha (IFNA) and beta (IFNB), and HLA loci DQA, DQB, and DRB. Allele and genotype frequencies of the three clinical groups were compared to each other and to a group of healthy heterosexual Caucasian controls.
Results: The HLA DQA 1.1 allele is more common among AIDS cases (33%) than among seropositive subjects without AIDS (14%, p = 0.02). Also, the HLA-DRB 7^2 allele is more common among asymptomatic subjects (17%) than among symptomatic and AIDS subjects (3%, p = 0.03). No differences were detected among clinical groups at the other loci tested.
Conclusions: Preliminary results suggest that HLA may influence disease progression among HIV-1 infected men. Future analyses will incorporate estimates of duration of infection prior to AIDS diagnosis among cases.

Th.C.677 SERUM COPPER AND ZINC LEVELS PREDICT PROGRESSION TO AIDS INDEPENDENTLY OF CD4 LEVEL

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Objective: To determine if serum copper and zinc levels are associated with HIV-1 seropositivity and progression to AIDS in healthy gay men.
Methods: Frozen serum samples of 54 asymptomatic HIV-seropositives who later progressed to AIDS, 54 asymptomatic matched seropositives who did not progress to AIDS and 54 seronegatives were tested for copper and zinc levels using atomic absorption. Nutrient intakes were estimated from a food frequency questionnaire and CD4 levels using standard techniques.

Results:	Progressors	Non-Prog.	HIV-	ANOVA (p)
S. Copper (mcg/dl)	115.6	109.9	101.9	0.0002
S. Zinc (mcg/dl)	85.2	90.7	92.0	0.016

High S. Copper and low S.Zinc significantly distinguished seropositive progressors from non-progressors. S. Copper was also significantly higher in the seropositive non-progressors when compared to the seronegatives. Copper levels were independent of intake, but the trend in S. Zinc levels was enhanced by higher zinc intake (p=0.007). In a multiple logistic regression model both S. Copper (p=0.04) and S. Zinc (p=0.02) predicted progression to AIDS independently of % CD4 (p=0.0004), and independently of intake of both nutrients.
Conclusions: In asymptomatic HIV-1 seropositive gay men high S. Copper and low S. Zinc predict progression to AIDS after adjusting for %CD4. Copper and zinc are known to be acute phase reactants and high copper and low zinc levels detected in this study may reflect HIV disease activity.

Th.C.678 CHRONIC DEPRESSION PREDICTS CD4 DECLINE OVER A FIVE YEAR PERIOD IN HIV SEROPOSITIVE MEN

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Objective: The goal of the study was to determine if chronic depression in HIV-1 seropositive gay men predicted changes in immune markers of HIV progression over a 5 year period. Methods: Participants in the UCLA Multicenter AIDS Cohort Study (MACS) have filled out the CES-Depression scale and have had blood drawn for immunologic analysis at six month intervals since 1984. Chronically depressed HIV seropositive MACS subjects were selected on the basis of persistently elevated scores on the CES-D (above 16) for the first two years of the study (n=35). Each depressed subject was matched to 2 non-depressed HIV seropositive MACS subjects on age and CD4 values in 1984. Subjects were excluded if they developed an AIDS diagnosis between 1984 and 1986 or had ever taken AZT. The slope over time in the percent of CD4 helper/inducer T cells was calculated from 1984 to 1989. The percent change from 1984 to 1989 was calculated for CD4 values and levels of neopterin and Beta2 microglobulin. Results: Chronically depressed subjects had a significantly steeper slope in the percent of CD4 cells from 1984 to 1989 when compared to non-depressed controls. Specifically, 71% of the depressed and 51% of the controls demonstrated a 20% drop in CD4 values from 1984 to 1989. In contrast, 31% of the controls and only 11% of the chronically depressed group exhibited a "plateau" (less than a 10% drop over 5 years). The findings regarding serum markers of immune activation will be discussed. Conclusion: Chronic depression may precede, and possibly contribute to, a decline in the percent of CD4 T cells, thereby serving as a potential cofactor in HIV progression.

Th.C.679 Does Infection with Hepatitis B Virus or Vaccination with Plasma-Derived Hepatitis B Vaccine Accelerate Progression to AIDS?

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Objectives: To determine whether acute or chronic hepatitis B (HB) infection or receipt of plasma-derived HB vaccine after HIV seroconversion (SC) accelerates progression to AIDS.
Methods: From 1978-1980, we enrolled 6,706 homosexual and bisexual men attending a municipal sexually transmitted disease clinic in studies of HB; in 1983, we began follow-up studies of AIDS. We analyzed data from 489 men with well-characterized dates of HIV SC. Men were categorized as belonging or not belonging to 3 non-mutually exclusive exposure groups: 1)carriers (CAR) had HBsAg present >6 months (N=30), 2)infected (INF) developed anti-HBcAb after HIV seroconversion (N=22) and 3)vaccinated (VAX) received plasma-derived HB vaccine after HIV SC (N=56). AIDS was determined by cross-matching with local and U.S. AIDS surveillance data. We then compared cumulative risk of AIDS for each exposure group using Kaplan-Meier methods.
Results: While controlling for duration of infection, there was no significant difference between CAR versus non-CAR, INF versus non-INF, or VAX versus non-VAX in rates of progression to AIDS.
Conclusions: While in vitro studies have suggested that exposure to viral antigens and specifically exposure to hepatitis B may stimulate HIV replication, we found in our study that men who were acutely or chronically exposed to hepatitis B virus or plasma-derived hepatitis B vaccine following HIV seroconversion did not have higher rates of progression to AIDS.

Th.C.680 CMV IS NOT A COFACTOR IN PROGRESSION OF HIV INFECTION

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Objective: In vitro cytomegalovirus (CMV) and other herpesviruses may enhance HIV replication. To assess the clinical relevance of this observation, 45 patients who acquired HIV infection from blood transfusion have been followed for an average of 30 months. Thiry-two of 45, were CMV antibody positive and 13 were CMV antibody negative.
Methods: The absolute number of CD4 lymphocytes and quantitive titer of p24 antigen have been assayed at approximately 6 months intervals and the clinical status of the patients has been assessed.
Results:

CMV Ab Status (#pts)	Avg mos of follow-up	Dx of ARC/AIDS	P24 Ag Positive	CD4 <100	CD4 <200
+(32)	29	17(53%)	7(22%)	8(25%)	14(44%)
-(13)	32.8	7(54%)	6(46%)	4(31%)	9(30%)

None of those differences were statistically significant. CMV antibody was associated with higher CD8 cell counts. Thirteen of 32 (42%) of CMV Ab + patients had at least one CD8 count >1200 versus only 1/13 (7%) of CMV Ab negative patients.
Conclusion: In the transfusion transmitted HIV patients there is no evidence that CMV is a cofactor in the progression to AIDS.

Th.C.681 UPDATE ON COINFECTION WITH HIV & HTLV-I IN TRINIDAD

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Objective: To determine whether HTLV-I may act as a co-factor for the development of AIDS.
Methods: A prospective study of 34 homosexual men who were singly infected with HIV and 6 who were doubly infected with HIV and HTLV-I has been in progress since January 1984. HTLV-I is an old endemic virus in Trinidad but serosurveys suggest that HIV was not introduced into Trinidad until recently. The dates of seroconversion to HIV antibody seropositivity in these men are not known.
Results: After 42 months, 4 (11%) of the 34 singly infected men and 3 (50%) of the doubly infected men progressed to AIDS. This was statistically significant. After 50 months, 5/34 (14.7%) of the HIV infected had progressed to AIDS as compared to 3/6 (50%) of those coinfected. Trend analysis of the dates of diagnosis of these men revealed a significantly increased risk of development of AIDS among those coinfected (50% ± 20.4%) as compared to those infected with HIV alone (14.7% ± 8.2%). After 72 months, 8/34 (23.5%) of singly infected men have progressed to AIDS, versus the same 3/6 (50%) of coinfected men. This difference is only marginally significant.
Conclusion: The faster progression to AIDS in coinfected men which was observed in the first 3 years of this study has not been maintained at 72 months. Whether this is a reflection of later dates of seroconversion is unknown.

Th.C.682 VIRAL CO-FACTORS IN THE DEVELOPMENT OF CLINICAL SYMPTOMATOLOGY OF HIV-INFECTED SUBJECTS

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Objective: To determine the *in vivo* effect of multiple herpesviruses infections, in compromising the immune system and/or their synergistic action in HIV-infected individuals.
Methods: Cross-sectional quantitative analyses of antibody prevalence to EBV, CMV, HHV-6 and HSV have been performed on HIV seropositive asymptomatic and symptomatic subjects/patients (pregnant women, hemophiliacs, patients with Kaposi's sarcoma and tuberculosis) from urban areas of Uganda and Italy with extension to longitudinal analyses on HIV+/HIV- case/control matched subject populations (matched by age, clinical conditions, geographic and socioeconomic aspects).
Results and Conclusions: Comparing herpesviruses antibody profiles in HIV+ subject/patient groups with those of HIV-matched ones, clear differences were observed in the prevalences of high titer-antibody with a 4 fold increase of geometric mean titers to EBV-VCA and percent of seropositivity to EBV-EA in HIV+ patients with Kaposi's sarcoma and tuberculosis, as well as in Italian subjects with coagulation defects, while no significant difference was observed to CMV, HHV-6 and HSV. Current analyses concerne the determination of herpesviruses antibody profiles on multiple bleedings from HIV+ subjects in follow-up for >5 yrs to identify whether cytopathic herpesvirus infections lead to accelerated disease progression.

Natural History: Disease Outcomes

Th.C.683 CANCER TRENDS ASSOCIATED WITH INCREASING INCIDENCE OF AIDS

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Objective: To determine which cancers have increased in incidence with the HIV epidemic and to quantitate the excess cancer burden due to HIV infection.
Methods: The Surveillance, Epidemiology and End Results (SEER) Program registers all incident cancers in San Francisco (SF) and 8 other geographic areas comprising 10% of the U.S. population. We computed the incidence odds ratios of specific tumors versus selected other cancers for HIV epidemic years relative to a pre-AIDS period (1973-78). We examined trends in single (never-married) men as a surrogate for homosexual/bisexual men, who represent the majority of HIV-infected individuals in the SEER catchment population.
Results:

Incidence Odds Ratios (Relative to 1973-78) for Men Aged 20-49 in SF County and 9 SEER Areas, 1979-87

TUMOR	SINGLE MEN (SF) 79-81	82-84	85-87	MARRIED MEN (SF) 79-81	82-84	85-87	SINGLE MEN (SEER) 79-81	82-84	85-87
Kaposi's sarcoma (KS)	82	2100	5058*	18	14	202*	13	281	733*
Non-Hodgkin's L (NHL)	0.6	2.3	10.[illegible]*	1.3	1.2	1.8	1.0	1.3	3.2*
High grade/Burkitts NHL	5.1	18.2	116.*	4.8	5.5	14.5*	1.1	2.6	9.5*
Hodgkin's disease	0.5	1.3	1.1	1.0	0.7	1.2	1.0	1.0	0.9
Anal/anorectal C (AC)	1.7	0.7	2.6	0	0	0	1.0	0.8	1.6
Hepatocellular C	0.3	2.2	0.4	0.8	1.2	1.2	0.7	1.0	0.7
Oral/pharyngeal/lip C	1.2	1.3	1.3	1.3	0.6	0.6	0.9	1.0	1.0
Melanoma	0.5	0.7	1.2	1.0	0.9	0.7	1.1	1.0	1.1

L=lymphoma, C=carcinoma *p<0.002 for increasing trend

Single young men in SEER had an excess 524 KS, 179 NHL and 3 AC cases in 1987.
Conclusion: Despite large numbers of HIV-infected persons, tumors other than KS and NHL (and possibly AC) do not appear in excess. HIV-induced immunodeficiency has not resulted in a generalized increase in cancer susceptibility.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.684 PROGRESSIVE MULTIFOCAL LEUKOENCEPHALOPATHY (PML) AND HIV INFECTION, SAN FRANCISCO, 1981-1989

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Objective: To describe the epidemiology of AIDS-related PML and to dete rmine the seroprevalence of JC virus (JCV), an etiologic agent of PML, in HIV-infected individuals.
Method: We compared AIDS-related PML cases reported to SFDPH to reported AIDS cases without PML. We also compared unreported PML cases identified through hospital discharge data (5 major sites) to reported PML cases. We tested for JCV antibodies by enzyme-linked immunoassay on sera collected from 1978-81 from 14 men later diagnosed with PML, and from 11 unmatched, and 14 age-, date-, and HIV antibody status-matched men who later died of AIDS without PML.
Results: From 1981 through March 1989, we identified 94 cases of PML in HIV-infected individuals. Of these, 51 (54%) were pathologically confirmed (as required for AIDS case reporting). These 51 cases were significantly older at AIDS diagnosis than AIDS patients without PML (p=0.04). The remaining 43 unreported cases, diagnosed clinically and by neuroimaging, did not differ significantly from definitive cases in demographics or survival following PML diagnosis (median, 4.5 months). We detected JCV antibodies in 9/14 (64%) AIDS-related PML cases, 7/11 (64%) unmatched, and 9/14 (64%) matched controls.
Conclusions: JCV antibody status, prior to AIDS diagnosis , does not predict who will develop PML. The incidence of PML in AIDS patients may be underestimated by as much as 50% by the current surveillance definition.

Th.C.686 CORRELATION BETWEEN IN VIVO HIV-2 REPLICATION MARKERS AND THE CLINICAL STAGE OF INFECTION IN SEROPOSITIVE PEOPLE FROM GUINEA-BISSAU (WEST AFRICA)

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Objective: The objective is to determine a possible correlation between the time of appearance of HIV-2 replication markers and its clinical significance.
Methods: A group of 130 individuals were serially studied during a follow-up period of 36 months (1986-1989). Sera collected in 1986,1988 and 1989 were tested by Elisa (Pasteur); reactives were checked clinically annually.
Results: 43 (33.1%) sera were repeatedly reactive to HIV-2. During the period of the study 3 (2.3%) individuals seroconverted 22 (51.2%) of the positive individuals remained asymptomatic, 8 (18.6%) progressed to lymphoadenopathies, 5 (11.6%) to ARC, 5 (11.6%) to AIDS and 3 (6.9%) died. The correlation between the bands in the WB test and the clinical evolution will be presented.
Conclusion: The results of our study suggest that there is a slower and less agressive evolution of HIV-2 in comparison with HIV-1. We also think we may find HIV-2 replication markers strictly related to the clinical evolution of the illness.

Natural History: HIV-2

Th.C.685 STUDY FOR THE DETECTION OF ANTIBODIES AND FOLLOW-UP OF SEROPOSITIVES SUBJECTS TO HIV AND AIDS PATIENTS.

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Objective: Determination of the seroprevalence of HIV and contribute to a proper follow-up of subjects infected with this virus.
Methods: More than 6 million subjects from different groups of population,including those with high-risk conduct,were studied for HIV-1, This work included also 30,031 subjects for the study of HIV-2 antibodies. An ELISA technique was used for the screening,and Western blot as supplementary test. For the follow-up was carried out the detection of HIV antibodies and antibodies response to p24 using Western blot.
Results: Highest figures of HIV-1 antibodies detection were obtained in seropositives sexual contacts. Only 2 subjects presented HIV-2 antibodies in the studied population. During the follow-up, no HIV antigen was detected,neither decrease of p24 antibodies in symptomless seropositives,changing these profiles in proportion with the development of the disease.
Conclusion: Was confirmed a low rate of positivity to HIV-1 and HIV-2 in the Cuban population. The presence of antigen and the dicrease of antibodies to p24 were more frequent at the final stages of the disease.

Natural History: Survival

Th.C.687 AIDS MORTALITY TRENDS AMONG HOMOSEXUAL/BISEXUAL MEN

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Objective: To describe mortality and survival trends for homosexual/bisexual men with AIDS in the United States, relative to trends in AIDS cases.
Methods: We analyzed national surveillance data on AIDS incidence, deaths, and survival for 37,689 homosexual/bisexual men diagnosed with AIDS from 1984 through 1987 (survival follow-up through 1988).
Results: In 1986, the rate of increase in AIDS deaths slowed among men who have had sex with men, one year before a similar change occurred in AIDS incidence. The proportion surviving at least 12 months increased from 40.0% (±0.8%) to 56.6% (±0.4%) for those diagnosed in 1984 and 1987, respectively; this corresponds to an increase in median survival from 10 to 16 months. Improvements in survival were greater for men diagnosed in the New York City, Los Angeles, and San Francisco metropolitan areas compared to those diagnosed elsewhere and for whites compared to blacks and Hispanics. For 1987, men diagnosed in these three areas had a median survival of 17 months compared to 12 months for men diagnosed elsewhere, and nationally whites had a median survival of 17 months compared to 12 months for blacks and Hispanics. Survival times were greater for whites in these three cities and elsewhere. Subsequent changes in AIDS incidence mirrored geographic and race/ethnicity-specific changes in mortality trends.
Conclusions: Despite incomplete reporting of AIDS deaths, these data provide strong evidence of improved AIDS survival among homosexual/bisexual men, which has not been uniform. Comparison of AIDS incidence and mortality trends suggest that advances in care may have first postponed AIDS deaths and later AIDS onset.

Th.C.688 AIDS-FAMILIARITY AND IN-HOSPITAL MORTALITY FOR PATIENTS WITH INITIAL EPISODE OF PNEUMOCYSTIS CARINII PNUEMONIA (PCP) IN VA HOSPITALS (1986-1989).

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OBJECT: We evaluated both time trends and the relation of familiarity with PCP and in-hospital mortality for patients (pts) in the 93 VA hosps.
METHODS: We identified all pts with first episode PCP by reviewing all VA computerized discharge abstracts for 1986 to 1989 (n=4 million). Hosps were subgrouped according to (a) high-incidence (hi) AIDS cities (NY, LA, SF, Northern NJ, Chi, Wash DC, Hous, and Miami) and low-incidence (lo) cities and, (b) in each incidence subgroup, low-fam hosps (≤median number (n) of PCP pts/hosp) and hi-fam hosps (>median n of PCP pts/hosp).
RESULTS: The n for pts with PCP (1st time) increased in both hi- and lo-incid cities between 1986-89. In lo-incid cities, in-hosp mortality rates (m%) were lower at high-fam than at lo-fam hosps in 1986 and 1987 (p=.05); but not, in 1988 and 1989. Bronchoscopy use (b%) and length of stay (los) decreased in hi-fam hosps; in low-fam hosps only b% decreased.

	Pts at High-Incidence Cities							Pts at Low-Incidence Cities						
		Lo-fam			Hi-fam			Lo-fam				Hi-fam		
Yr	n	m(%)	b(%)	los	m(%)	b(%)	los	n	m(%)	b(%)	los	m(%)	b(%)	los
86	146	39	52	19.3	23	71	24.8	83	24	63	21.7	12	43	21.4
87	358	24	46	14.4	22	45	19.0	419	27	25	17.1	17	37	18.5
88	451	15	27	14.5	22	33	19.7	570	18	24	15.4	21	20	15.6
89	583	16	19	18.2	7	15	9.9	724	21	19	16.2	15	15	13.3

CONCLUSION: Hi-fam hi-incid hosps in '89 had very low death rates and los (possibly due to out-patient services and quality of care changes). Lo-fam lo-incid hosps may have improved their care of PCP pts in 1988 and 1989 (with smaller m rate differences).

Th.C.689 **DIAGNOSIS AT DEATH: AN INDICATOR OF FAILURE OR SUCCESS?**

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Objective: To identify factors related to the time of diagnosis of AIDS cases in Florida, a state with >10,000 cases. Methods: Adult cases diagnosed at death (DXD) were compared to cases diagnosed while alive (DXA). Odds ratios (OR) and 95% confidence intervals (CI) were calculated for differences in race, gender and transmission category. The role of medical examiners and surveillance staff was evaluated. Results: Through 1989, 15.6% of Florida AIDS cases were diagnosed at death (DXD).

OR (CI) for DXD by race and selected transmission category:

CATEGORY	BLACK:WHITE	HISPANIC:WHITE
Homosexual(HOMO)/Bisexual	2.0(1.6-2.5)	1.1(0.8-1.4)
IV Drug User(IVDU)	1.5(1.1-2.1)	1.0(0.6-1.8)
HOMO/IVDU	4.0(2.3-6.9)	2.3(0.9-6.1)
Heterosexual	2.5(1.3-4.8)	1.0(0.3-3.5)

Among all AIDS patients, DXD's were almost twice as likely to be black than white (OR 1.9, CI 1.7-2.2). Among the heterosexuals, DXD's (data not shown) were slightly more likely to be male than female (OR 1.5, CI 1.2-2.0). County-specific data will be presented. Conclusion: The large proportion of DXD's may represent a failure of surveillance and patient care systems to detect AIDS cases. DXD's may also indicate the success of active surveillance (including ME's) in detecting cases that might otherwise be missed. The overrepresentation of black DXD's may indicate a need for better surveillance and/or increased access to health care for this group.

Th.C.690 SURVIVAL WITH AIDS IN MASSACHUSETTS, 1981-1988.

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Objective: To determine survival time after diagnosis with Centers for Disease Control (CDC)-defined AIDS, and to identify predictors of survival. Methods: All adult MA resident cases meeting the CDC definition for AIDS, and reported to the Massachusetts AIDS Surveillance Program (MASP), through 12/88 were included in the analysis. A match was performed between MASP and the Massachusetts Death Index for 1983-87. Vital status as of January 1990 was obtained from reporting sources for individuals not found in the death match. A Kaplan-Meier survival analysis was used to calculate median survival time. A proportional hazards model was used to identify predictors of survival adjusting for year, initial diagnosis, case definition, age, race, gender, and transmission category. Additional proportional hazards models were performed stratified by initial diagnosis. Results: A total of 1918 cases meeting the CDC case definition were diagnosed as of 12/31/88. Vital status as of 12/31/89 was complete for 81% of the cohort. Median survival was 459 days. After controlling for confounding, age greater than 40 (p=.001), and non-Kaposi's Sarcoma (KS) diagnoses (p=.001) were associated with shorter survival, while survival increased as year of diagnosis became more recent (p<.0001). This year effect was observed for all diagnostic groups except individuals with KS. Conclusion: With the exception of cases initially diagnosed with KS, recently diagnosed AIDS cases survive longer than cases diagnosed earlier in the epidemic. Further work is needed to determine if this effect is due to lead time bias or better treatment after diagnosis.

Th.C.691 SURVIVAL STATUS OF CASES FROM THE N.J. AIDS REGISTRY

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Objective: To better ascertain survival status in AIDS, specifically cases in an AIDS case registry listed as not known to be dead.
Methods: As part of a statewide survey of needs of AIDS patients, samples totalling 275 cases listed as "not known dead" were drawn from the New Jersey AIDS Registry on 3 occasions. Sufficient information was not available on 17 patients, leaving 258 for analysis. The Registry was matched with available State mortality files after the first two samples were drawn (200 cases) and before drawing the third (75 cases). New Jersey AIDS surveillance includes follow-up of all reported patients every 3 months by contact with the reporting health care provider to determine vital status. By this method, many patients are lost to follow-up. For those sampled, we provided further follow-up by contact with health care providers, patients, families, and others; in the course of these efforts further information was ascertained on vital status.
Results: 19 (10%) of cases in the first two subsamples were subsequently determined through the death record matches to have died before sampling. Of the remaining total (all 3 subsamples) not matching death records and not known dead, 43 or 18% were established by field investigation as having died before sampling. An additional 17 (7%) were determined to have died but date of death (before or after sampling) could not be determined, while others were still under followup. The combination of death record matching and field investigation found that 24% to 31% of supposedly alive patients had died before sampling. Even after death record matching, 18% to 25% of patients supposedly alive were found by field investigation to have died.
Conclusions: New Jersey follows up with reporting health care providers on patient vital status every three months, a followup not provided in many other jurisdictions. However, even this followup did not identify many AIDS patients who had died. Nationally, reported survival time is longer than that reported in New Jersey, but many apparent survivals may be due to loss to followup. Study findings suggest that national AIDS survival data may be showing an longer apparent survival time than is actually the case.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.692 EPIDEMIOLOGY, COSTS, AND UTILIZATION OF PEDIATRIC AIDS IN NYS MEDICAID, 1983-1987.

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Objective: To investigate the epidemiology, survival, and costs of pediatric (< 13 years) AIDS cases in a poor population.
Methods: The Medicaid claims for one and one-half million children in the New York State over a five year period, 10/82-09/87, were screened for AIDS associated diagnoses. For presumptive pediatric AIDS children, the date of first HIV related diagnosis and date of death were captured. Monthly Medicaid costs were accumulated. Descriptive statistics were developed for incidence by year, age at onset, months of survival, and average cost per month.
Results: We found 554 presumptive AIDS children (5.5% of all Medicaid PWAs). Only 18 had evidence of hemophilia or blood product use. The 554 PWAs compares with 238 cases reported to the NYS State AIDS Registry with a diagnosis prior to August 1987. Annual incidence for the Medicaid cases grew rather rapidly from 67 in 1983 to 165 in 1986, an increase of 146%(1987 incidence was undercounted by file truncation). We found 291 children, or 53 percent, with death dates on file by 09/87. Unadjusted average survival times were 7 months for those with death dates and 17 months for all cases. Average monthly expenditures were $1410 per month for the time prior the first AIDS related DX and $2960 per month after that date. Costs with AIDS averaged $50,506 per child.
Conclusion: We found that children with AIDS were concentrated in the under two years age group (70%), most likely an indication of perinatal infection. The large discrepancy between the Medicaid and Central registry numbers is likely a function of under-and-lagged reporting to the Registry, particularly in the early years of the epidemic and to the inclusion of false positives in the Medicaid study, perhaps due to non-AIDS related pediatric cases. Pediatric AIDS cases are more costly than adult cases, in part because of their long hospitalizations. Costs per child exceeded $200,000 in 21 cases. Average months of survival (7-17months) were found in the range of other national studies.

Th.C.693 SURVIVAL FOLLOWING DIAGNOSIS OF AIDS-RELATED OPPORTUNISTIC INFECTIONS IN SAN FRANCISCO (SF)

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Objective: To determine lengths of survival following diagnosis of specific AIDS-related opportunistic infections (OIs).
Methods: We calculated median survival (Kaplan-Meier) for AIDS patients presenting with OIs in SF from July 1981 to December 31, 1987.
Results: Median survival for AIDS patients presenting with *Pneumocystis carinii* pneumonia (PCP) was 12.3 months, and median survival for patients presenting with OIs other than PCP was 8.0 months ($p<0.01$). Median survival for patients presenting with esophageal, tracheobronchial, or pulmonary candidiasis was 13.6 months; with cryptosporidiosis 10.4 months; with cytomegalovirus(from an organ other than liver, spleen, or lymph nodes) 8.0 months; with non-pulmonary cryptococcosis 7.9 months; with disseminated *Mycobacterium avium* complex or *M. kansasii* 5.3 months; and with cerebral toxoplasmosis 3.9 months. Survival increased significantly in 1986-87 vs. 1980-85 for patients diagnosed with PCP (14.7 vs 10.0 months, $p<.001$) and candidiasis (15.9 vs 6.8 months, $p<.001$), but not for patients diagnosed with toxoplasmosis (3.6 vs 3.9 months), *M. avium* (4.2 vs 5.9 months), cryptosporidiosis (10.5 vs. 10.4 months), or cryptococcosis (8.7 vs. 6.7 months).
Conclusion: With the exception of candidiasis, patients presenting with OIs other than PCP have significantly shorter survival than patients presenting with PCP. Survival for patients diagnosed with PCP or candidiasis has increased in recent years.

Th.C.694 SURVIVAL EXPERIENCE AFTER TB DIAGNOSIS IN 1452 AIDS CASES: IMPLICATIONS FOR THE EXPANSION OF THE AIDS CASE DEFINITION

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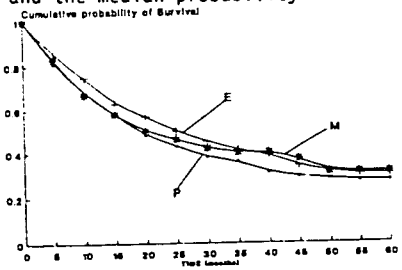
Objective: The CDC AIDS case definition only recognizes extrapulmonary TB in HIV infected as being indicative of AIDS. We analyzed the survival of TB cases reported as AIDS to determine if disease site was a significant determinant of survival.
Methods: A match of TB, AIDS, and vital statistics registries for 1980-89 was performed. Analysis included survival from TB diagnosis in AIDS cases using Lifetest@ and Cox proportional hazard methods(CPH).
Results: A total of 1452 TB/AIDS cases were identified: 8% of TB cases (1452/18,259) & 6% of AIDS cases (1452/22,634). TB/AIDS cases were: 84% male; 84% nonwhite; 49% homosexual; 67 % 25-44; 65% had pulmonary TB. The crude mortality ratio was 62% (818/1452) and the median probability of survival(MPS)from TB diagnosis was 20 mo. and from AIDS diagnosis was 18 mo. Survival by TB site for pulmonary (MPS=19mo), extrapulmonary(MPS=26mo), and multiple sites(MPS=20mo) was not significantly different (fig). Age was the only variable significantly(.007) associated with survival using CPH.
Conclusion: Pulmonary and extrapulmonary TB in HIV infected have equally poor prognoses and both should be included in the AIDS case definition.



Th.C.695 CUMULATIVE RISK OF MORBIDITY IN 65 PATIENTS INFECTED WITH BOTH HIV AND CRYPTOCOCCUS NEOFORMANS

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Objective: To determine the cumulative risk of morbidity in HIV infected (HIV+) patients diagnosed with a Cryptococcus neoformans (Cn) infection.
Method: Hospital records of all HIV+ patients found to be infected with Cn either by microbiological or histopathologic evidence were reviewed retrospectively. All patients presented to Charity Hospital of New Orleans, Veterans Administration Medical Center, or Tulane Medical Center between January 1, 1985 and December 1, 1988. Patients were followed to death through 12/31/89. Life tables were calculated by the incidence density method.
Results: Demographic and initial clinical data on the identified 68 patients was presented at the V International Conference (W.B.P.8). Sixteen of the deaths occurred after 12/1/88. Three patients were lost to followup immediately after presentation and were not included in the lifetable analysis. There were no other withdrawals. Only 3 of the 65 (5%) patients are currently living. The overall cumulative risk of morbidity at 6, 12, 18 and 24 months was 62%, 78%, 87% and 95% respectively. Of 9 patients with Cn limited to pulmonary involvement, 6 month cumulative risk of morbidity was 72%; of 9 patients with simultaneous pulmonary and CNS involvement, 6 month cumulative risk of morbidity was 100%.
Conclusion: The cumulative risk of morbidity in patients with Cn pulmonary involvement only is similiar to patients with extrapulmonary Cn infection. Only 5% of HIV infected patients with a Cn infection live longer than 24 months.

Th.C.696

THE ROLE OF ZIDOVUDINE IN INCREASED SURVIVAL IN AIDS PATIENTS

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Objective To study the contribution of zidovudine towards the increased survival time of people with AIDS treated at St. Mary's.

Methods Two year survival of patients with AIDS was recorded by year of diagnosis. Zidovudine was introduced in April 1987. Therefore we analysed the difference in survival between those taking zidovudine and those not taking zidovudine between April-December 1987.

Results 63 patients were diagnosed with AIDS between April-December 1987. 47 were started on zidovudine. Of the 16 not taking zidovudine, 5 died within one month of index diagnosis and were excluded from analysis. Other variables that covary with zidovudine include PCP prophylaxis, earlier diagnosis and improved management of opportunistic infections. Prophylaxis for PCP (nebulised pentamidine, fansidar, or dapsone and pyrimethamine) was routinely offered from May 1988. 47% of patients taking zidovudine were on PCP prophylaxis, compared with 11% of those not on zidovudine.

	1986 (n=67)	1987 (n=79)	April-Dec 87 (zidovudine group)	April-Dec 87 (non-zidovudine group)
Median Survival (mths)	10	20	>24	7

Conclusions 1. The increased survival of our AIDS patients since 1987 is partly due to the introduction of zidovudine.
2. Comparative studies within the same cohort are valuable in addition to historical comparisons because the former can more clearly delineate the role of individual variables, such as the introduction of zidovudine.

Th.C.697

CHANGING MORBIDITY AND MORTALITY PATTERNS IN BRITISH AIDS PATIENTS

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Objective: Describe Morbidity and Mortality trends in AIDS patients treated at St. Mary's Hospital.

Method: Index diagnosis, subsequent morbidity and cause of death of AIDS patients diagnosed 1982-89 obtained from casenotes. Two-year survival calculated using Logrank Test (SAS)

Results: 347 patients, 51% with index diagnosis PCP, 25% with KS. Proportions were constant over time. Linear relationship observed between number of cases with PCP or KS and total new AIDS cases/year. Average number of episodes of PCP per patient remained constant (1.4),1984-89. Prevalence of KS during this period was constant, 3[illegible] live cases/year, while AIDS patients developing PCP per year decreased from 56% to 24%. For 141 patients who died, PCP was the cause in 31%, KS in 21% and Lymphoma 8%. Linear relationship observed between PCP or KS with total AIDS deaths/year. KS increased as a percentage of deaths/year, but inverse relationship found for percentage of PCP deaths/year. Two-year survival curves for total population by year of diagnosis showed a significant difference in survival rate between the 1984-86 and 1987 cohorts. Similar patterns were observed in patients with PCP.

Conclusions: 1) There has been a significant reduction in mortality from PCP in AIDS patients since 1987. Several factors are implicated; (a) earlier recognition PCP infection; (b) more effective management;(c) introduction of Zidovudine in 1987; (d) introduction of prophylactic regimes in 1988.
2) The reduced PCP mortality has primarily been replaced by an increased mortality due to KS and Lymphoma.

AIDS Surveillance: North America

Th.C.698

COMPLETENESS OF AIDS SURVEILLANCE, UNITED STATES

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Objective: To assess the completeness of reporting of CDC-defined AIDS and the extent of severe HIV disease not included in surveillance criteria.

Methods: Published and unpublished evaluations of AIDS surveillance were reviewed and previous analyses of national vital statistics extended.

Results: Various methods have been used to identify and investigate unreported cases of CDC-defined AIDS. By comparing surveillance data to medical records or disease registries, completeness ranged from 90%-99% through 1985-1988 in 7 states or counties where health departments actively sought case reports (since 1988, CDC has funded all states to use this approach). In 3 areas that had previously relied on more passive methods, completeness ranged from 55%-70%. Comparison of AIDS reports to death certificates in 7 areas demonstrated that surveillance was 85%-90% complete (1986-early 1989). Measures of HIV disease beyond CDC-defined AIDS have varied, depending on the use and recording of tests for HIV and associated diseases and on the characteristics of HIV-infected persons. In several areas, studies estimate that up to half of hospitalizations or deaths in HIV-infected persons are missed by AIDS surveillance. For 1986-1988, estimates from vital statistics of the number of HIV-related deaths (regardless of surveillance criteria) among men 25-44 years of age indicate that national AIDS surveillance has identified 70%-90% of such deaths.

Conclusion: The completeness of AIDS surveillance depends largely on state and local health department contacts with care providers. Monitoring the full spectrum of HIV disease will require improved use of HIV testing, reexamination of surveillance methods, and analyses of alternate data sources.

Th.C.699

CHANGES IN U.S. AIDS INCIDENCE TRENDS

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Objective: To describe recent changes in trends in U.S. AIDS incidence and to determine which behavioral, demographic, and geographic subgroups account for observed changes.

Methods: Reported monthly AIDS cases were adjusted for reporting delays and smoothed using robust locally weighted regression (lowess). Reporting delays were estimated separately within subgroups.

Results: In 1987 the trend in national AIDS incidence changed abruptly from quadratic to linear while the increase in cases diagnosed per month (slope) dropped substantially. The decrease in slope was due almost entirely to white homosexual and bisexual men not using intravenous (IV) drugs, particularly in, but not restricted to, New York City, San Francisco, and Los Angeles, where incidence appears to have leveled. The change to a linear trend also occurred among heterosexual IV drug users, with leveling of incidence among both white and non-white heterosexual IV drug users in New York City and New Jersey beginning in early 1988. Current trends are also linear in other adult risk groups.

Conclusion: Nonparametric smoothing techniques are effective in detecting changes in incidence trends. Possible explanations for these changes include decline in HIV incidence in the early 1980's, lengthening of AIDS incubation time, and recent changes in reporting practices. These and other causes must be considered in evaluating models used to predict future AIDS incidence.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.700

NATIONAL SURVEILLANCE FOR PEDIATRIC AIDS IN UNITED STATES

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Objectives: To describe the epidemiology of AIDS in children < 13 years old.
Methods: AIDS cases reported to CDC prior to January 1, 1990 were analyzed.
Results: Of the 1995 children under 13 reported with AIDS, 81% of cases were perinatally acquired(PA), 5% were in hemophiliacs, 11% were transfusion associated(TA) and 3% had no identified risk. From 1988 to 1989, cases reported due to TA decreased (40%), while PA cases continued to increase (17%). Of the 583 PA cases born before 1985, 66% were from the New York City, Newark, and Miami areas compared to 45% of the 1031 cases born during 1985-89. Although the median age at diagnosis of the PA cases is 13 months, in 1988-89, 104 (10%) were in children aged 5 years or older. Of the 1015 cases reported in 1988-89, 53% of infants <1 year had Pneumocystis carinii pneumonia (PCP) compared to 19% of those aged 1-4 years, and 20% of those ages 5-12 years. Lymphocytic interstitial pneumonitis (LIP) was present in 16% of the group <1 year, 38% of the children aged 1-4, and 30% of those 5 or older. For cases reported 1986-88, median survival (MS) in months was calculated from diagnosis to death or 12/31/88. In infants <1 year who had PCP, MS was 3 months compared with 18 months for infants without PCP. MS in the older group (>4 years) was 13 months with PCP and 21 months without PCP.
Conclusion: More children outside the initially affected metropolitan areas are being reported. The number of older children infected perinatally is increasing. In all age groups, PCP is associated with early death but the decreased survival and the incidence of PCP is most striking in children less than one year. Increased HIV testing is needed to identify potentially infected infants for clinical intervention in an attempt to improve survival.

Th.C.701

AIDS SURVEILLANCE AMONG AMERICAN INDIANS AND ALASKAN NATIVES

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Objective: To examine and compare demographic characteristics among American Indians/Alaskan Natives (AI/AN) and other racial/ethnic groups with AIDS.
Methods: We examined U.S. AIDS cases reported to CDC through 12/31/89 by racial/ethnic group.
Results: There were 157 AIDS cases reported among AI/AN through 12/31/89 of which 61 were reported in 1989. Cases resided in 32 states and the District of Columbia; however, 54% were from 5 states (CA, NY, OK, AZ, and NM). Of the 157 AI/AN cases, 8% were initially diagnosed in an Indian Health Service facility. Characteristics of AI/AN AIDS cases differed from other racial/ethnic groups:

Characteristic	AI/AN	White	Black	Hispanic
% Increase, 1988-1989	91	8	13	5
Median Age (Range)	33 (0-68)	36 (0-90)	34 (0-88)	34 (0-84)
Male:Female Ratio	4.8	20.6	4.4	6.8
% Male Homo/Bisexual Contact	50	76	36	40
% IVDU*	17	7	37	39
% Heterosexual Contact	6	2	11	5
Male:Female Ratio Among IVDU	0.9	3.2	2.8	5.4

*IVDU=Intravenous drug use among females and heterosexual males only.
Conclusion: Reported cases of AI/AN with AIDS have a wide geographic distribution and increased markedly during 1989. The distribution of cases by exposure category for AI/AN is distinct from other racial/ethnic groups, and AI/AN is the only racial/ethnic group for which more females than heterosexual males have been reported among IVDU.

Th.C.702

AIDS AMONG HOMOSEXUAL/BISEXUAL INTRAVENOUS DRUG USERS IN THE UNITED STATES

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Objective: To determine whether male homosexual/bisexual intravenous drug users with AIDS (H/B-IVDUs) resemble male homosexual/bisexuals with AIDS (H/Bs) or male heterosexual intravenous drug users with AIDS (IVDUs) or are unique in their disease patterns.
Methods: We examined reports of adult H/B-IVDUs, H/Bs, and IVDUs reported to CDC from June 1981 through September 1989. Data were analyzed by age, race, geographic region, and mortality.
Results: Of the 89,965 patients, 73% were H/Bs, 19% IVDUs, and 8% H/B-IVDUs. H/B-IVDUs were younger than H/Bs or IVDUs (median ages: 33, 36, 35, respectively). Geographic distribution among H/B-IVDUs was similar to H/Bs with 24% and 27% from the Northeast, 7% and 10% from the Midwest, 30% and 29% from the South, 35% and 33% from the West, and 4% and 1% from U.S. territories. In contrast, 66% of IVDUs were from the Northeast and 8% from the territories. H/B-IVDUs were more likely to reside in metropolitan areas of less than 500,000 population than H/Bs or IVDUs ($p < 0.01$). Racial/ethnic distribution among H/B-IVDUs was intermediate between H/Bs and IVDUs (26%, 16%, and 48% black; and 14%, 10%, and 32% Hispanic, respectively).
Conclusion: Younger age distribution and a larger proportion of cases outside large metropolitan areas suggest that H/B-IVDUs may have unique features. AIDS prevention strategies may need to be modified to reach H/B-IVDUs.

Th.C.703

EPIDEMIOLOGY OF AIDS AND HIV AMONG CALIFORNIA WOMEN

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Objective: To summarize data on AIDS and HIV among California (CA) women, with regard to recent trends and in comparison to the rest of the US.
Methods: Female intravenous drug use (IVDU) and heterosexual contact (HC) AIDS cases reported in CA through October 1989 are analyzed and compared with female cases from the rest of the US. Data from a blinded survey of HIV infection among CA childbearing women (N=135,762) conducted as part of the Centers for Disease Control HIV Family of Surveys are also summarized.
Results: In CA, AIDS cases are increasing more rapidly among women than among men; the relative increase in cases from November 1988 to November 1989 was 73.4% for women (IVDU & HC), 62.6% for heterosexual men (IVDU & HC) and 38.1% for gay/bisexual men (including gay/bi IVDU). Among female cases, roughly equal numbers acquired infection through IVDU and HC; this differs significantly from other US female cases, where the ratio of HC to IVDU cases is closer to 3:5 (OR=1.66, 95% CI=1.35-1.98). However, the HC to IVDU ratio for CA black female cases is approximately 1:2 while that for Hispanic women is roughly 2:1 (OR=2.7, 95% CI=1.06-4.33). HIV infection rates estimated from screening newborn blood samples in the fall of 1988 were lowest among white women (0.030%); the rate for Hispanic women was more than twice that for whites (OR=2.42, CI=0.97-3.87) while the rate for black women was about twelve times that for whites (OR=12.14, CI=4.93-19.35).
Conclusion: Heterosexual transmission plays a significant role in the rapidly increasing numbers of CA female AIDS cases. The higher rates of AIDS/HIV infection among black women may reflect more extensive spread of HIV among black drug users in the state.

Th.C.704 INCREASING AIDS CASE REPORTING DELAY IN LOS ANGELES COUNTY, 1984 - 1989

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**Centers for Disease Control, Atlanta, Georgia, USA.

Objective: To describe temporal trends in the timeliness of AIDS case reporting in LAC.
Methods: AIDS cases reported to the LAC surveillance registry between 1/1/84 and 12/31/89 were analyzed by dates of diagnosis and report, patient characteristics, and AIDS-indicator disease. The 135 reporting hospitals were grouped by type (public [n=6], health maintenance organization [HMO, n=10], or private [n=119]) and surveillance method (active [n=6] and non-active [n=129]). Reporting delay (RD) was calculated as the interval from the diagnosis of AIDS to case report entry into the surveillance database.
Results: The median RD was 2 months (range 0 - 92, mean 4) for the 8,314 cases reported. For each report year, the overall RD mean and range increased over the previous year. The proportion of cases reported within 2 months of diagnosis declined from 70% in 1984 to 54% in 1989. By hospital type, 70% of cases from public hospitals (n=2,373) were reported within 2 months of diagnosis compared to 57% from private hospitals (n=5,084), and 55% from HMOs (n=857). For each report year, the mean RD increased for all hospital types but was consistently lowest for public hospitals. Compared to active surveillance hospitals, the RD mean, median and range was greater from non-active surveillance hospitals. Only half of the cases with Kaposi's sarcoma (KS) were reported within 2 months of diagnosis from both active and non-active surveillance hospitals. Of the cases with *pneumocystis carinii* pneumonia, 70% from active compared to 59% from non-active surveillance hospitals were reported within 2 months of diagnosis. From 1984 to 1989, the mean RD by race increased from 3 months to 7 months for whites, from 2 to 6 months for blacks, and from 2 to 4 months for Hispanics.
Conclusion: The delay in reporting to the LAC AIDS surveillance registry is increasing. Analysis of RD can be used to prioritize sites for active surveillance which may reduce RD.

Th.C.705 CLASSIC EPIDEMIOLOGICAL MAPPING OF AIDS AMONG SAN FRANCISCO DRUG INJECTORS, 1987-1989

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Objective: To evaluate mapping of the spread of AIDS among San Francisco drug injectors (DIs) by neighborhood, race/ethnicity, and sexual orientation, 1987-89, to target prevention efforts.
Methods: Reported heterosexual and homosexual/bisexual DI AIDS incidence was computer-mapped by census tract neighborhoods and ethnicity for 1987, 1988, and 1989. Prevention efforts (bleach and condom distribution, DI contacts) by outreach workers of the YES/MidCity Consortium to Combat AIDS were similarly mapped.
Results: AIDS incidence varies widely by neighborhood, sexual orientation and ethnicity. Heterosexual DI AIDS is clustered in 3 neighborhoods, rapidly increasing in 2 others, with 27% non-SF or address unknown. Gay/bisexual DI AIDS clusters in different neighborhoods (some differing from gay/bisexual non-DI AIDS), with 11% non-SF or address unknown. Gay/bisexual DI AIDS is 82% white, while heterosexual DI AIDS is 35% white, 46% black, 17% Latino and 2% other ethnicity, also varying by neighborhood.
Conclusions: Classic epidemiological mapping by neighborhood, pioneered by John Snow (1854) during London's cholera epidemic, is valuable in directing present and future outreach efforts. Long-term outreach effectiveness can be evaluated by maps which can be used in any area tracking incidence by these variables.

Th.C.706 THE EPIDEMIC OF AIDS IN INTRAVENOUS DRUG USERS (IVDUs) AND THEIR HETEROSEXUAL PARTNERS IN THE SOUTHEASTERN UNITED STATES

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Objective: To examine the trends and characteristics of AIDS cases among female and heterosexual male IVDUs and their sex partners (SP) in the Southeastern United States (SE).
Methods: CDC surveillance data for women and heterosexual men reporting IVDU or sexual contact with an IVDU (SP-IVDU) were examined by year of diagnosis (adjusted for reporting delay) through 1989 for 6 states in the SE (AL,FL,GA,MS,NC,SC) and were compared with other U.S. areas.
Results: The proportion of U.S. AIDS cases residing in the SE is increasing for IVDUs and SP-IVDUS.

Years of	IVDUs			SP-IVDUs		
Diagnosis	SE	U.S.	% in SE	SE	U.S.	% in SE
1984-1986	551	5,978	(9.2)	88	568	(15.5)
1987-1989	2,836	20,513	(13.8)	854	3,066	(27.9)

In the SE, the proportion of SP-IVDU among all IVDU-related AIDS in women and heterosexual men increased from 13.8% for cases diagnosed from 1984-86 to 23.1% for cases diagnosed from 1987-89. In the SE, 75% of IVDUs and SP-IVDUs with AIDS are black, compared to 22% of the population. Over half (58%) of cases and 75% of the population reside in rural areas or in metropolitan areas with <1 million population.
Conclusions: In the SE, AIDS in IVDUs and SP-IVDUs is increasing more rapidly than elsewhere, is not limited to major urban centers, and predominantly affects blacks. The increasing proportion of SP-IVDUs among IVDU-related cases emphasizes the importance of efforts to decrease IVDU and heterosexual tranmission in the SE.

Th.C.707 DECREASED INCIDENCE OF REPORTED AIDS CASES, NEW YORK CITY.

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Objective. To evaluate a decreasing incidence of reported NYC AIDS cases.
Methods. Incident cases as defined by CDC are examined by half-year of diagnosis in a continuous hospital-based surveillance having a median reporting lag of 3-4 months. Completeness is assessed by comparison with alternate data sources (death certificates, discharge lists, pathology logs, outpatient clinic lists).
Results. Incidence by date of diagnosis and % change mid-88 to mid-89:

Half-year	1986 1	1986 2	1987 1	1987 2	1988 1	1988 2	1989 1	Unadj. change* 7/88-6/89
Men	1599	1867	2021	2023	2344	2139	1825	-24%
Women	201	245	342	368	440	418	386	-13%
Children	36	58	54	70	60	67	46	-19%
MSM**	974	1144	1165	1092	1216	1017	905	-27%
IVDU***	616	705	857	940	1170	1164	916	-22%

*After adjustment for unreported cases (reporting lag) the changes remain negative (-5% to -19%) **Men having sex with men ***Intravenous drug users
Underreporting of cases identified through alternate sources is 12% (death certificate), 20% (discharge and pathology log), and 27% (outpatients). Underreporting is similar by patient group.
Conclusion. The data, previously showing leveling of cases in MSM in 1986, now indicate a peak in children in 1987 and in IVDU in 1988. Leveling may be partly due to slowed HIV to AIDS progression. These data are provisional, as further evaluation is underway to measure possible changes in underreporting, underdiagnosis, and reporting delay.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.708 COMPLETENESS OF AIDS CASE REPORTING AND THE SPECTRUM OF HIV-RELATED DISEASE AMONG OUTPATIENTS IN NEW YORK CITY

Greenberg, Alan E.*,** Evans R*, Bryan E*, Lopez E*, Thomas P* and the NYC Expanded Outpatient Surveillance Project. *AIDS Surveillance Unit, NYC Dept of Health, **Division of HIV/AIDS, CDC, USA.

Objective: To assess the completeness of AIDS case reporting and the spectrum of HIV-related disease among outpatients in New York City.
Methods: Medical records of AIDS and HIV (non-AIDS) outpatients followed through 1989 at 4 NYC hospital HIV clinics and 2 private physicians' offices (PPOs) were reviewed; AIDS cases were also reviewed at 4 other PPOs. AIDS cases were matched against the NYC case registry; HIV records were reviewed anonymously. Patients were classified hierarchically as CDC AIDS, probable AIDS (no biopsy or HIV serology), HIV illness (e.g. thrush), lymphadenopathy and/or constitutional symptoms (LA/CS), and asymptomatic. For each patient, the lowest available CD4+ count regardless of stage of illness was recorded.
Results: 73% of 2,026 AIDS cases had been reported previously: 86% of cases diagnosed 1982-86, 78% of 1987 cases, and 63% of 1988-89 cases. Among 2,866 AIDS/HIV cases (%M/F 80/20, %W/B/H (race) 34/35/31, %men sex men/IVDU 38/39):

	CDC AIDS	Prob AIDS	HIV Ill	LA/CS	Asympt
No. of cases	1545	279	414	328	300
CD4+ available	323	27	316	250	246
CD4+ 1-199	82%	78%	51%	23%	30%
CD4+ 200-499	15%	22%	38%	52%	45%
CD4+ 500+	3%	0%	11%	25%	26%

Conclusion: AIDS case reporting among outpatients in NYC was 73% complete, and even higher among cases diagnosed before 1987. However, the majority of HIV non-AIDS outpatients under treatment have CD4+ counts of less than 500.

AIDS Surveillance: Latin America and the Caribbean

Th.C.710 TRANSITION FROM TYPE 1 TO TYPE 2 TRANSMISSION OF HIV IN THE AMERICAS: HOW WIDESPREAD THE TREND?

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Objective: To review, describe, and analyze regional surveillance information and complementary national information suggesting the trend of increasing cases of AIDS in women (attributed to heterosexual transmission) is being seen in Central America and Brazil.
Methods: Regionally reported case information from 1986-1988 were reviewed using rates of cases in women per one million population as the indicator as well as male: female case ratio. Complementary national information on serology of infection was reviewed. Finally, a case-control study in Honduras has been initiated with national authorities and the assistance of CDC, Atlanta to further identify transmission variables in that country.
Results: Honduras and Brazil are the two countries in Latin America where reported data suggest increasing cases due to heterosexual transmission of HIV in women. The 1988 rate of AIDS cases in women is 20.76 per million population for Honduras and 5.21 per million in Brazil compared with 34.33 per million for the Caribbean subregion. In Honduras, case rates are highest for Caribbean costal areas of the country. Additional investigation is ongoing.
Conclusions: More cases of AIDS are being reported and attributed to heterosexual transmission in at least two Latin American countries. Additional field investigation is being carried out to further identify factors which may facilitate such transmission in Honduras. Other countries in Central America bordering the Caribbean have not reported a similar trend. National programs MTPs in Central America include an emphasis on sentinel serosurveillance to facilitate monitoring of this phenomenon to insure a timely public health response.

Th.C.709 THE AIDS PATTERN AMONG CANADIAN ABORIGINALS

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Objective: to characterize the pattern of AIDS spread in the Canadian aboriginal population for the purpose of shaping prevention strategies.

Methods: the AIDS data for aboriginals, caucasians and blacks in Canada is examined and compared to the AIDS epidemiology models of pattern I and II countries.

Results:

	Female/Male	Perinatal	Heterosexual
Caucasian/other (n=3131)	1:22	0.3%	2.9%
Blacks (n=221)*	1:2	14.5%	67.0%
Aboriginals (n=21)	1:3	4.8%	9.5%
Pattern I**	<1:20	<2.0%	<5.0%
Pattern II**	1:1	>10.0%	>85.0%

* 60.0% had heterosexual contact in a Pattern II country
** approximations

Conclusion: when subpopulation data are examined for Canada, a pattern I country, there appears to be a trend toward pattern II spread in the aboriginal population. This is an important consideration in designing prevention strategies. When the central importance of other sexually transmitted disease (STD) to pattern II spread is measured against the current high STD rates among aboriginals the need for a strong STD control effort to be integrated into the AIDS prevention strategy for this target group is reinforced.

Th.C.711 FEATURES OF THE INTRAVENEOUS DRUG USERS EXPOSURE CATEGORY AMONG AIDS CASES. BRAZIL. 1980-1989.

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Objective: To describe clinical and epidemiological differentials between IVDU exposure category individuals and homo/bisexual exposure category individuals among adult male AIDS cases.
Methods: The data are from the Brazilian National AIDS registry. Product-limit survival functions, Mann-Whitney test, and chi-square were used.
Results:

VARIABLE	HOMO/BISSEXUAL GROUP	IVDU GROUP	P-Value
Age(yr)			
mean	34.7	28.8	0,0001
Educational level(%)			
graduate	35.7	6.2	0.0001
PCP(%)			
Yes	31.1	31.8	0.6349 NS
Kaposi's sarcoma(%)			
Yes	13.4	2.4	0,0001
Tuberculosis(%)			
Yes	18.0	25.0	0,0001
Survival(months)			
mean	20.2	5.6	0,0001

Conclusion: There is a significant difference between the characteristics of the two groups. These results certainly will change the profile of AIDS epidemic in Brazil due to the observed increased number of IVDU cases in the last years.

Th.C.712 EPIDEMIOLOGICAL APPROACH TO PEDIATRIC AIDS CASES IN BRAZIL, 1985-1989

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Objective: To update the analysis of pediatric AIDS cases in Brazil, identifying high-risk groups.
Methods: The analysis was based on all pediatric cases reported to the Ministry of Health from 1980 to 1989 and was carried out by means of cross tabulations and statistical tests. The main variables studied were category of transmission and risk factor of the parents.
Results: There have been 359 pediatric AIDS cases reported up to December, 1989 in Brazil representing 3.8% of the total number of cases. The great majority of pediatric cases (79%) occurred in São Paulo and Rio de janeiro (67% and 12%, respectively). Regarding the categories of transmission, 48.7% of the total number of cases were due to blood transmission; 47.9% became infected before, during or shortly after birth; 0.3% became infected through sexual contact, and in 3.1% the mode of transmission was not known. The trend which showed a sharp drop in the frequency of blood trasmission through blood transfusion and/or components, accompanied by an increase in the proportion of cases who became infected before, during or shortly after birth, can now be reenforced by the cases occurred in 1989. The cases among drug users younger than 15 years increased from 3 cases in 1988 to 10 cases in 1989. Among perinatal cases not counting those whose parents's risk factor was not known, 65% were born to drug using parents.
Conciusions: Pediatric AIDS in Brazil must be seen as a growing problem, with clear reflex of the increase of cases among intravenous drug abusers. This epidemiological pattern orients the definition of a population to be targeted in prevention programmes.

Th.C.713 PROFILE OF IVDU IN A AIDS REFERENCE CENTER. SÃO PAULO, BRAZIL, 1988.

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Objective: To determine the profile of the IVDU registered in the "Center of Reference and Training in AIDS", São Paulo, Brazil.
Methods: Four thousands medical charts of outpatients registered in 1988 were reviewed .From those,541 were IVDU.Socio-demographic, clinical and epidemiological data were collected.Patients who met the CDC AIDS GIV b, c, d, e case definition were not included in this study.
Results: From the 541 patients,73% were single and 82%, male. The 15-29 age group corresponded to 73%.Sexual practice:homo/bisexuals 20%, heterosexuals 80%.Cocaine was the most frequent drug used-80%.Positivity for HIV by repeated ELISA was 74%,for siphylis(FTA-Abs)26%; for HbsAg 15%,and HbsAc 20%. From 43 patients submited to KB exam,16% were positive.Diarrhea,fever, asthenia(≥1 month)or≥10% weigh loss were found in frequencies that varied from 3 to 10%.Cervical,axilar and inguinal limphadenophathy were found in 65,51 and 32% of the patients,respectively.Eight percent of the cases were classified in the CDC IVa group.The FTA-Abs positivity in homosexuals(53%)was significantly greater than that observed in bisexuals(27)and heterosexuals(24%) Many other statiscally significant associations were found according to HIV positivity,e.g.,the prevalence of HIV was 78%, 69% and 58% among heterosexuals, bisexuals and homosexuals, respectively.
Conclusion: The high positivity for HIV as well as the high proportion of individuals with multisexual partners is an important factor for HIV transmission through blood as well as sexual route.

Th.C.714 Epidemiological Characteristics of Aids in Women in Rio de Janeiro, Brazil.

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Objetive: To determine the epidemiological changing patterns among female aids cases in Rio de Janeiro.
Methods: All known female aids cases in the city of Rio de Janeiro reported during 1984-89(151 cases, cumulative incidence of .04/100.000 women) have been studied by hospital interviews.This paper presents some epidemiological descriptive characteristics of those women and discusses possible trends for aids epidemics among women in Rio de Janeiro.:
Results: The aids epidemic among women in Rio de Janeiro has fastly progressed doubling the number of new cases in subsequent years: 2 cases in 1984,5 in 1985,16 in 1986,35 in 1987 and 63 in 1988(updated count for 1989 is 30 cases). The major exposure category are women(70 cases) infected by blood/components recipients(BCR), around 46.7% of all cases. Heterosexual transmission(HET)occurred in 37 women (25.2%) and intravenous drug users (IUD) were found in 17(11.3%). In the last years the relative importance of both HET and IUD groups has increased after improvement measures for blood donors control.

The age distribution of these exposure categories is markedly different: 76% of IUD cases and 35% of HET cases are 20-29 years old. On the other hand BCR cases are more prevalent at older ages, possibly reflecting increased trauma and surgery risks. Tuberculosis was reported in 35% of HET women, 29% of IUD and 16% of BCR group. Nine women were prostitutes, 3 of them in the IUD group, but no case was found among BCR group.

Th.C.715 DISTRIBUTION AND TRENDS OF AIDS CASES BY SOCIOECONOMIC STRATA IN MEXICO

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General Directorate of Epidemiology.Ministry of Health. Mexico.

OBJECTIVE. To analyze distribution and trends of AIDS cases in the different socioeconomic strata in Mexico.
METHODS. 2195 cases older than 12 years old notified to the National Aids Registry were analyzed. Occupation rates were estimated from the National Health Serosurvey (1986). Patients were classified as belonging to high, medium and low socioeconomic strata according to occupation.
RESULTS. Occupations with higher risk were: administrative employees (rate of 191 per million), public and personal services -hairdressers, waitress, drivers- (163 per million) technicians and specialized personnel (191 per million) professionals (104 per million) and teachers (94 per million). Low risk occupations were: industry workers (38 per million) peasants (13 per million) housewifes and students (8 per million). Socioeconomic strata distribution by transmission category was as follows:

TRANSMISSION CATEGORY	SOCIOECONOMIC STRATA(%)		
	HIGH	MEDIUM	LOW
HOMOSEXUAL	45.5	46.8	26.1
BISEXUAL	28.9	28.3	31.7
HETEROSEXUAL	17.9	16.0	28.4
BLOOD RELATED	7.7	8.9	13

Cases belonging to high and medium strata are proportionally diminishing, while cases belonging to lower socioeconomic levels are increasing.
CONCLUSIONS. Extension of HIV/AIDS epidemic to lower socioeconomic strata, which are less educated and non-organized, will contribute in the recent future to increase the demand of public medical care as well as impact over the productive infrastructure.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.716 CLINICAL AND EPIDEMIOLOGICAL FEATURES OF PEDIATRIC AIDS CASES IN MEXICO.

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General Directorate of Epidemiology, Ministry of Health, Mexico.

OBJECTIVE. To analyze the clinical and epidemiological features of pediatric AIDS cases in Mexico.
METHODS. Pediatric registries of AIDS National Registry were analyzed.
RESULTS. Pediatric cases represent 3.8% (134/3512) of total AIDS cases. Transmission categories are as follows: hemophiliacs 24.6%; transfusion recipients 40.2%; perinatal 28.3%; sexual 2.2% and unknown 4.4%. Male: female ratio is 2:1. Hemophiliacs explain male predominance. Cases associated to sexual transmission correlate with sexual abuse. First perinatal cases appeared during the second semester of 1986. In 16/39 (41%) perinatal cases parent's risk factors were established: 6 mothers acquired infection through transfusion of contaminated blood, 10 mothers were infected heterosexually; 2 fathers were bisexuals, 1 was a transfusion recipient, 1 had multiple factors and 6 were infected heterosexually. Early clinical entities in 52 patients are as follows: infectious diseases (non P. carinii pneumoniae) 81%, wasting syndrome 23%, P. carinii pneumoniae 6%, neurological syndrome 6%, neoplasias (non Kaposi Sarcoma) 4%. Most frequent infections were: Candida albicans (64%), non specified pneumoniae (22%), Herpes simplex (9%), P. carinii pneumoniae (7%) and salmonellosis (4%). Thirty-one percent of perinatal cases have begun symptoms before 6 months, and 38% before 12 months of age. Duplication period of total pediatric cases is 8 months.
CONCLUSIONS. The greatest proportion of Mexican pediatric cases are associated to hemophilia and transfusion. The appearance of perinatal cases indicates spread of the epidemic to heterosexual population through transfusion of contaminated blood and bisexuality.

Th.C.717 DEVELOPMENT OF HIV/AIDS EPIDEMIC IN THE COUNTRY RANKING 4TH IN NUMBER OF CASES IN THE AMERICAS.

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General Directorate of Epidemiology, Ministry of Health, Mexico.

OBJECTIVES: To analyze the development of the HIV/AIDS epidemic in Mexico which holds the 4th place in number of cases in the Americas.
METHODS: Data of the AIDS National Registry were analized. Estimates of infected population and projections of cases foreseen for the coming four years were based on the HIV-1 seroepidemiologic surveys.
RESULTS: Mexico, with a population of more than 85 millions inhabitants, occupies the 4th place in the number of AIDS cases reported in the Americas, with 3,512 reported cases up to December, 1989. Real number is estimated as 6,025 cases; this discrepancy is possibly due to delay in reporting and undernotification. The male female ratio is of 7 to 1, with an accelerated trend in females; 3% of cases occur in children. In male adults, cases are distributed as follows: 49% homosexuals, 26% bisexuals, and 16% apparently heterosexuals (recent analysis of the "heterosexual" cases indicates that only 3.8% had been contacts of HIV or AIDS cases which may overestimate this proportion). Paid blood donors represent 1.5% and the IVDU less than 0.4%. In adult females, 68% of the cases are due to blood transfusions, 30% to heterosexual transmission and 1.5% are paid blood donors. Yearly studies of HIV-1 seroepidemiology are carried out on more than 700,000 individuals in 70 cities in the nation and in 19 groups of different communities. The prevalences are: homosexual and bisexual males 1% to 35%; individuals attending HIV detection centers; 8% (male), 7% (female), hemophiliacs 21% to 67%; female prostitutes <1% to 5%; male prostitutes 7% to 14%; male prisoners <1%; female prisoners <0.6%; pregnant females 0%, street children 4%; volunteer blood donors <0.2%. HIV-2 has not been confirmed. Seropositivity for HTLV (I and/or II) has been detected. Estimate of HIV-1 infected is 95,000 most of them asymptomatic. The increase in cases continues to be damped exponential. It is expected that the number of new cases for the next four years will surpass 48,000 taking into consideration the undernotification and delay in reporting of cases.
CONCLUSIONS: HIV epidemiological infection patterns in Mexico show similar characteristics to Latinamerican countries where transmission through bisexual males and blood transfusions is creating the rapid increase in the transmission to females and children. These patterns demonstrate intermediate characteristics between patterns I and II. The National AIDS Prevention Program has had an impact on the rate of infection; nevertheless, no impact has yet been observed on cases.

Th.C.718 UPDATE ON THE EPIDEMIOLOGY OF AIDS IN TRINIDAD

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Objectives: To describe the epidemiology of AIDS in Trinidad.
Methods: Surveillance for cases of AIDS was conducted throughout the country and demographic and interview data collected.
Results: From 1983 to December 31, 1989, 551 cases of AIDS have been reported in Trinidad (cum. rate - 46/100,000). In 1983/84 the risk group was exclusively homosexual/bisexual men. However, in 1988 and 1989 heterosexuals were the largest risk group (42% and 43% respectively). The Male:Female ratio was 19:0 in 1984 and 3:1 in 1989. Although Trinidad's population comprises people of African descent (42%) and Indian descent (41%), 90% of AIDS cases have been in Afro-Trinidadians, and only 48 (8.7%) in Indo-Trinidadians. This may reflect cultural differences, but also a genetic factor may be an added component in that the HLA profile of Indo-Trinidadians show an absence of HLA-DR1 and Mann et al (1) showed that AIDS developed in HLA-DR1 positive men more frequently than in people with other HLA-DR phenotypes. Only 8 cases of K.S. were seen in AIDS patients here. 4 in homosexual and 4 in heterosexual men. I.V. drug abuse is not practiced in Trinidad. K.S. has been associated with HLA-DR5 and this phenotype is absent in a study of the HLA profile of 170 Afro-Trinidadians.
Conclusions: The epidemiology of AIDS provides a model for sexual transition from homosexual/bisexual to heterosexual AIDS and also suggests that genetic factors may contribute to K.S. and progression to AIDS.
(1) Mann et al, JAIDS, 1988;1:13-17.

AIDS Surveillance: Africa

Th.C.719 AIDS IN COTE D'IVOIRE: PROGRESSION OF THE EPIDEMIC IN WEST AFRICA

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Objectives: To provide descriptive characteristics of AIDS, and to calculate minimum cumulative incidence of AIDS in Cote d'Ivoire.
Methods: Case records of major hospitals and reference laboratories for AIDS were reviewed. AIDS was diagnosed if a patient was HIV-positive, and met criteria of the WHO clinical case definition (Bangui 1985), or of the revised CDC case definition for AIDS (1987). Children were excluded from analysis. Results of Western blot and synthetic peptide ELISA were analysed for type of HIV-reactivity when possible.
Results: Between 1986 and 1989, 3,574 AIDS cases were diagnosed. Eighty percent were male, and 20% female; the M:F ratio decreased from 6.9:1 in 1986 to 3.8:1 in 1989. In males, 86% were aged 20-49 years; 79% of females were aged 15-39 years. Sixty-seven percent of AIDS patients were reactive to HIV-1, 12% to HIV-2, and 22% to both. Eighty-four percent met the WHO definition, and 16% only the criteria of the HIV wasting syndrome (CDC). Minimum cumulative incidence of AIDS in Cote d'Ivoire is 32.5/100,000 population, or approximately 65/100,000 adults. The ratio of recognized AIDS cases to estimated numbers of HIV infected persons in Cote d'Ivoire suggests significant underdiagnosis of AIDS.
Conclusions: (1) AIDS is epidemic in parts of West Africa; (2) Cote d'Ivoire ranks fourth in Africa in numbers of reported AIDS cases; (3) HIV-1 is more prevalent than HIV-2 in Cote d'Ivoire.

AIDS Surveillance: Europe

Th.C.720 IMPACT OF THE 1987 REVISION OF THE CDC/WHO CASE DEFINITION ON THE SURVEILLANCE OF AIDS IN EUROPE

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Objective: To assess the apparent impact of the 1987 revision of the CDC/WHO case definition on the surveillance of AIDS in Europe.
Methods: Analysis was carried out on data reported by December 1988 by 23 European countries. Information was recorded on 5 of 12 newly included definitively diagnosed indicator diseases, and presumptively diagnosed indicator diseases. The apparent impact is defined as the percentage of cases satisfying solely the new criteria.
Results: Of 13,146 cases reported by December 1988, 1,774 (13.5%) fitted the new case definition (apparent impact 13,5 %; only 6 countries reported presumptive cases). Of these, 53% (914/1774) were diagnosed in 1988 giving an apparent impact of 22% (914/4293). Impacts by country for 1988 vary as follows: 0% (Czechoslovakia,Iceland,Israel,Poland); 10%(France); 46%(Spain). Some countries reported retrospective cases resulting from active inquiries or passive acceptance. Opportunistic infections were reported in 72.8% (1291/1774) and extra-pulmonary tuberculosis, noted among 5 definitively diagnosed indicator diseases, was reported in 44% (406/915). Transmission groups reported reflect overall distribution of groups in each country.
Conclusion : The apparent impact for 1988 reached 22% and varied between 0% and 46% according to the country. As some of the presumptive cases would have been definitively diagnosed and an unknown proportion of definitive cases would have been diagnosed at a later stage, the apparent impact levels provide over-estimates of the true impact (percentage of cases which would never have been diagnosed had the definition not changed)

Th.C.722 THE EPIDEMIOLOGY OF HIV AND AIDS IN SCOTLAND

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To the end of 1989, a total of 132 cases of AIDS had been reported to the Communicable Diseases (Scotland) Unit, the majority of which were homosexual/bisexual (70 (53%)). By contrast 1729 HIV antibody positive cases had been reported, 910 (52.6%) of which were heterosexual injecting drug users (IDUs) and only 280 (16.2%) homosexual/bisexual. This compares with England, Wales andNorthern Ireland where 5381 (54%) of 9947 HIV antibody positive cases were homosexual/bisexual and only 817 (8.2%), IDUs. Even within Scotland there seems to be major geographical differences in HIV prevalence particularly among IDUs; up to 50% in Edinburgh are known to be infected whilst in Glasgow, 44 miles away, where the IDU population is much larger, the estimated prevalence has never been greater than 6%. These figures clearly demonstrate that Scotland's HIV problem lies predominantly amongst certain IDU populations and that there is likely to be an explosion in the number of new cases of AIDS within these populations in the early 1990s.
As a response to Scotland's HIV epidemic and the resulting awareness of the real potential for spread of HIV into the wider heterosexual community a comprehensive range of epidemiological methods have been or are currently being developed to monitor the prevalence of HIV among high and low-risk group populations in Scotland. These include - 1. The surveillance of all diagnostic HIV tests using a standard national HIV request form, 2.Voluntary testing surveys of antenatal clinic attenders and injecting drug users, and 3. Unlinked anonymous testing studies of Genitourinary Medicine Clinic attenders, newborn infants and hospital in-patients/out-patients. Set against the background of HIV in Scotland this surveillance programme willbe discussed.

Th.C.721 IMPACT OF THE 1987 REVISED AIDS CASE DEFINITION ON THE DANISH AIDS EPIDEMIC. A FOLLOW-UP.

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Objective: To analyze the epidemiological, clinical and laboratory data of the notified Danish AIDS patients meeting only the 1987 AIDS case revision.
Methods: All notified Danish AIDS cases were reevaluated in order to find those meeting only the 1987 AIDS case definition (ACD). A retrospective follow-up was done on epidemiological, clinical and lab. data by 31.XII.1989.
Results: Up till 31.XII.1989, 518 AIDS patients have been notified, 278 since 1.I.1988, when the 1987 ACD was introduced in Denmark. Sixty (22%) met only the 1987 ACD, 35 (58%) are still alive. Forty-seven (78%) did not meet the pre-1987 ACD by 31.XII.1989, of these 25 (53%) are still alive 30-716 (mean: 291) days after the AIDS diagnosis. Life tables will be presented. The diagnoses were HIV wasting syndrome in 22 (37%), cerebral toxoplasmosis in 10 (17%) and 8 (13%) had a presumptive diagnosis of PCP. Compared with patients meeting the pre-1987 ACD a higher proportion were female (15% v.5%), heterosexual cases (15% v.7%), transfusion cases (12% v.1%) and age ≥50 years (33% v.14%). AZT was taken by 50 (83%) and primary PCP prophylaxis by 15 (25%), most (79%) receiving cotrimoxazole. CD4 percentage at the time of the AIDS diagnosis was 0-55 (mean: 14), but at time of the latest follow-up had fallen to a mean of 8%. By AIDS diagnosis: 47% had a detectable HIV-antigen level.
Conclusion: The 1987 AIDS case revision has affected the distribution of reported cases in Denmark. During a 2 year period 22% met only the 1987 ACD. This sub-group of AIDS patients seems to differ from the rest in most epidemiological parameters and disease progression.

AIDS Surveillance: Oceania

Th.C.723 AIDS AND HIV INFECTION IN AUSTRALIA : A FOURTH PATTERN?

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Objective: To monitor the incidence of AIDS and the prevalence of diagnosed HIV infection in Australia.
Methods: National surveillance for HIV infection and AIDS in Australia is carried out by a central epidemiological unit in collaboration with State and Territory Health Authorities. The Unit is responsible for quality control and statistical analyses, and releases 4-weekly tabulations. Information collected includes date of diagnosis, age, sex and transmission category.
Results: The cumulative number of AIDS cases reported to Dec 31 1989 was 1544, or 92.8 per million, the seventh highest rate among developed countries. The proportion of cases in women is low (3%) and 93% of cases are in homosexual/bisexual men, figures which have remained virtually unchanged over the past four years. Only 1.2% of cases has occurred among heterosexual intravenous drug users (IVDU). Of 3839 HIV antibody-positive diagnoses, 82% are in homosexual/bisexual men, 4.[illegible]% are heterosexual IVDU and 2.7% reported heterosexual contact as the only risk category.
Conclusion: The AIDS epidemic was first recognised in Australia in homosexual/bisexual men at about the same as in the US and Europe. However, it has remained largely confined to this group, in contrast to most other developed countries. Possible explanations for the difference between Australia and other developed countries are a relatively smaller number of IVDU, less needle sharing between homosexual/bisexual and heterosexual IVDU, or the success of prevention through needle exchange and other programmes.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

AIDS Surveillance: Opportunistic Infections

Th.C.724 **DISTRIBUTION OF OPPORTUNISTIC INFECTIONS IN AIDS CASES BY COUNTRY OR REGION OF BIRTH, UNITED STATES, 1981-1989**

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Objective: Identify differences in the distribution of opportunistic diseases in United States (US) AIDS cases born in developing countries.
Methods: AIDS cases reported to CDC through December, 1989 were stratified by transmission category and analyzed for frequency of opportunistic diseases by country or region of birth. US-born cases were used as the comparison group.
Results: Country of birth was available for 111,111 AIDS cases; 13% were born outside the US. Duration of residence in the US is unknown. 153,809 opportunistic diseases were reported in these patients. Pneumocystis carinii pneumonia (PCP) and Kaposi's sarcoma (KS) accounted for >50% of these diseases, except for Haitian-born cases, in whom PCP and KS accounted for 35%. Although less frequently reported, tuberculosis, toxoplasmosis, isosporiasis, and salmonellosis were significantly more common in cases born in Haiti than in those born in US (Risk ratio [RR] 5.6, 4.9, 7.6, and 2.2 respectively; $p<0.01$). Latin American-born persons were significantly more likely to have toxoplasmosis, histoplasmosis, and isosporiasis (RR 3.2, 3.1, and 16.5 respectively, $p<0.001$); persons born in Africa were more likely to be reported with cryptococcal infection, toxoplasmosis, and tuberculosis (RR 2.0, 3.1, and 3.0, respectively, $p\leq0.02$).
Conclusions: Although the majority of AIDS cases continue to be reported with PCP and KS, knowledge of country of birth will help anticipate, diagnose, and promptly treat other less frequently encountered opportunistic diseases.

Th.C.725 **REPORTED AIDS PATIENTS WITH TUBERCULOSIS IN THE UNITED STATES**

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Objective: Determine the number of reported AIDS patients with tuberculosis (TB) in the United States.
Methods: AIDS and TB registers through 1988 were matched in 49 States, 3 large California cities (San Francisco, Los Angeles, and San Diego), Puerto Rico, and Guam. These areas accounted for 96.3% (79,329/82,406) of AIDS cases through 1988. The number of AIDS patients with TB (AIDS-TB patients) by year of AIDS report were sent to CDC.
Results: Four percent (3,301/79,329) of reported AIDS patients had TB. The number of AIDS-TB patients by year of AIDS report are: 2 in 1981, 45 in 1982, 103 in 1983, 238 in 1984, 371 in 1985, 628 in 1986, 972 in 1987, and 942 in 1988. AIDS-TB patients were reported from 44 States. Four States and 2 California cities accounted for 76.8% (2,535) of all AIDS-TB patients: New York 37.3% (1,231), Florida 15.8% (522), New Jersey 9.6% (318), Texas 7.7% (254), San Francisco 3.2% (106), and Los Angeles 3.2% (104).
Conclusion: Each year since 1982, 4% of cumulative AIDS patients have had TB. The number of AIDS-TB patients in the United States will probably continue to increase in direct proportion to the number of reported AIDS patients. While the great proportion of AIDS-TB patients are concentrated in a few States and large cities, they have been identified in nearly all States.

Th.C.726 **HIV SEROPREVALENCE IN PATIENTS ATTENDING TUBERCULOSIS CLINICS IN THE UNITED STATES, 1988-90.**

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Objective: To evaluate the seroprevalence of HIV among patients attending tuberculosis (TB) clinics in the United States.
Methods: Blinded serosurveys are being conducted among patients attending TB clinics in 33 metropolitan areas (MAs). Sera from consecutive TB patients are tested for antibody to HIV after routine tests are performed and personal identifiers are removed. Information on age group, race/ethnicity, sex, clinical status, and anatomic site of infection were collected.
Results: We tested 3,039 TB patients at 29 clinics in 17 MAs. HIV seroprevalence rates in the MAs ranged from 0% to 47% (median, 3%) with the highest rates in the Northeast. Median rates of 5% occurred in males compared to 0% in females, and 6% in Hispanics compared to 5% in whites and 5% in blacks. HIV seroprevalence was highest (median, 15%) in the 30-34 year age group. Confirmed TB patients had a rate of 3% compared to 4% in suspect cases. Patients with extrapulmonary TB had an 8% HIV infection rate compared to 3% for patients with pulmonary TB. TB patients born in the U.S. had a median rate of 7% compared to 2% for foreign born patients.
Conclusion: Large numbers of patients infected with HIV receive services at TB clinics. Rates varied markedly by sex, age group, geographic area, and site of TB infection. Patients with extrapulmonary TB have a high rate of HIV infection. Nonblinded (voluntary) studies of TB patients are needed to obtain more complete data on clinical status and to assess behaviors that may be associated with HIV infection.

Th.C.727 **ASSOCIATION BETWEEN MYCOBACTERIAL CULTURES AND HIV INFECTION IN A LARGE MUNICIPAL HOSPITAL**

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Objective: Determine the prevalence of HIV-associated mycobacterial infections (MI) at GMH, which serves the indigent population of Atlanta.
Methods: Positive mycobacterial cultures from GMH, Jan- Nov 1989 were analyzed by patient's gender, HIV status, organism, specimen source, and compared with 1982.
Results: MI occurred in 345 patients. Of these, 217 (63%) were M. tuberculosis (TB), a 38% increase from 1982; 116 (34%) had Mycobacteria other than TB (MOTT), a 673% increase from 1982. Twelve (3%) had multiple MIs. HIV status was unknown for 118/345 (34%) patients; these were excluded from subsequent analyses. Of the remaining 227 (66%), 137 (60%) were HIV-positive (HIV+). Compared with HIV-negative (HIV-) patients, HIV+ were more likely to be male (Odds Ratio [OR]=3.7, $p<0.001$), and to have MOTT (OR=17.2, $p<0.001$). There were 139 patients with TB; frequency of pulmonary TB in HIV+ persons (39/56=70%) was similar to that in HIV- (63/83=76%). TB was isolated from multiple sites in 6 patients; this was not significantly influenced by HIV status. Compared with HIV- TB patients, HIV+ were more likely to be male (OR=2.7, $p<0.03$). M. avium complex (MAC) occurred in 68 patients; 65 (96%) were HIV+.
Conclusions: Remarkable increases were documented in both TB and MOTT since 1982, when HIV/AIDS was relatively uncommon at GMH. TB continues to be the most common MI; its clinical site did not differ by HIV status. While less frequent, MAC and mixed MIs mostly occurred in HIV infected patients. HIV+ persons accounted for 40% of culture-positive MIs. Thus, all patients with mycobacterial isolates should be tested for HIV and all HIV+ patients should be evaluated for MI.

Th.C.728 HIV SEROPREVALENCE IN PATIENTS ATTENDING NEW YORK CITY DEPARTMENT OF HEALTH (NYCDOH) TUBERCULOSIS (TB) CLINICS

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OBJECTIVE: To determine the seroprevalence of HIV-1 infection in NYCDOH TB clinic patients.
METHODS: A blinded serosurvey has been conducted since January, 1989 in patients who have bloods drawn for liver function tests. Serum specimens are tested by ELISA with confirmatory Western Blot. Demographic information includes age, sex, race/ethnicity, disease site and diagnostic class of TB.
RESULTS: 95/303 (31.4%) patients are HIV-1 positive. Rates by diagnostic class were: 21.1%, 44.6%, 39.6% and 33.4% for classes II (PPD pos., CXR neg.), III (active disease), IV (healed disease), and V (suspect TB) respectively. Excluding class III patients 24.7% of the patients tested positive. Seropositivity was highest in 30-50 year olds. Males had higher prevalence than females; 63/168 (37.5%) versus 33/135 (24.4%), p=.02. Rates were similar by race; 8/24 (33.4%) for White non-Hispanic (NH); 55/158 (34.8%) for Black NH; 25/86 (29.1%) for Hispanics; and 7/33 (21.2%) for other races. Source of referral to the clinic was known for 62 HIV-1 positive patients. Only 8 (12.9%) were referred from drug treatment centers.
CONCLUSIONS: There is an association of TB and HIV-1 infection with active pulmonary TB (class III) and in patients in other classes who may not considered at high risk for HIV-1. Because medical management of HIV positive TB patients differs from other TB patients, HIV counselling and testing should be recommended to all patients.

Th.C.729 HIGH RATES OF HIV AMONG MUNICIPAL TUBERCULOSIS (TB) CLINIC PATIENTS WITH INACTIVE AS WELL AS ACTIVE TB

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Objective: To determine HIV seroprevalence rates in persons with TB infection with or without disease attending a municipal TB Clinic.
Methods: Unlinked HIV testing was performed (by EIA & Western blot) on specimens from persons with confirmed or suspected TB attending a municipal TB Clinic in Boston from 5/88-11/89. For those with suspected TB, final TB class (Cl) was determined prior to HIV testing using Centers for Disease Control/American Thoracic Society (CDC/ATS) criteria.
Results: Of 188 persons with confirmed TB (Cl 3) or suspected TB (Cl 5) at the time of specimen collection, 51 (27%) were HIV seropositive. The 25% rate (30/118) in those with active TB (Cl 3) did not differ significantly (p=.15) from the 36% rate (17/47) in those with TB infection without disease (Cl 2).
Conclusions: In our cohort, HIV seropositivity rates were high in persons with TB infection but no active disease as well as in those with active TB. Additional studies are underway to elucidate specific HIV risk factors in this cohort. Our data suggest there is a large reservoir of persons with asymptomatic TB/HIV coinfection who are likely to progress to active TB.

Th.C.730 TUBERCULOSIS IN HIV INFECTED PATIENTS FROM 1985 TO 1989 AT THE NATIONAL AIDS REFERRAL CENTER - HUGG - RIO DE JANEIRO, BRAZIL.

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Objective: To study trends of Tuberculosis (TB) infection in HIV infected patients in Rio de Janeiro, Brazil.
Methods: We studied HIV infected pts. from 1985 to 1989 at the National AIDS Referral Center, Gaffrée & Guinle University Hospital, University of Rio de Janeiro, presenting pulmonary and/or extrapulmonary TB including inpatients and outpatients. Mycobacterium tuberculosis was confirmed by culture or presence of acid-fast bacilli on smears or biopsies associated with favorable response to antituberculous chemotherapy. Extrapulmonary TB includes involvement of lymphnodes, liver, GI tract, spleen, kidney, pericardium, CNS or miliary TB with or without pulmonary or pleural infection. TB/HIV infected pts. attending our clinic were compared to all TB patients reported in the same period in the State of Rio de Janeiro.
Results: The annual rate of TB among our AIDS patients was:

AIDS PTS. / YEAR	PULMONARY PER 100	EXTRAPULMONARY PER 100
1985 (n = 36)	13,8	30,5
1986 (n = 58)	6,9	20,7
1987 (n = 90)	15,5	21,1
1988 (n = 146)	15,8	14,4
1989 (n = 90)	22,2	15,5

Although not significant, there is an upward trend in the number of TB/HIV infected pts. TB is turning to be frequent in HIV infected pts and may be attributed to high regional prevalence of TB and to better diagnosis. There is a great frequency of atypical and extrapulmonary TB.
Conclusion: 1) There is an upward trend in the number of TB in AIDS patients.
2) Typical and Atypical TB are very common among Brazil AIDS patients and both should be taken into account for BRAZIL AIDS CASE DEFINITION.

Th.C.731 AIDS AND TUBERSULOSIS IN THE STATE OF RIO DE JANEIRO, BRAZIL.

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Objective: The purpose of this work was to undertake an in-depth analysis of the relationship between tuberculosis (TB) and AIDS, according to risk group, in Rio de Janeiro.
Methods: We investigated all subjects who died of AIDS until Dec., 1989, as reported in the files of the Health Secretary of State. Only the cases of dead subjects were considered, in order to reduce the bias resulting from short follow-up periods after the onset of the disease.
Results: From the total of 1183 cases analysed, 289 had TB of which 263 (91%) were males with a mean age of 36.6 years at the time of diagnosis of AIDS. Homosexual men suffering from AIDS were more likely (chi-squared 9.85; $P < 0.002$) to be infected by TB than members of the other risk groups. A positive but somewhat weaker association (chi-squared 4.36; $P < 0.037$) was also found between the presence of TB and the AIDS risk group of parenteral drug users. A significant but negative association (chi-squared 7.41; $P < 0.007$) was observed between TB and the group of risk of blood transfusion. A similar but not significant ($P < 0.109$) trend was found between TB and the risk group of Hemophilia.
Conclusion: In the cases analysed, TB was a common, early-onset disease. This was probably due to its high virulence and the high exposure of the population to the bacilli. The profile of the incidence of TB according to risk-group of AIDS indicates a possible relationship of the disease with social-economic condition prevailing on each group in Rio de Janeiro.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.732 HIV INFECTION AND TUBERCULOSIS: TUBERCULOSIS TRENDS IN ABIDJAN, COTE D'IVOIRE, 1985-1989

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Objectives: To determine the effect of HIV infection on trends in tuberculosis (TB) incidence and natural history in Abidjan between 1985 (when AIDS was first recognized) and 1989.
Methods: Records of all ambulatory patients treated for TB in Abidjan's two TB Treatment Centers from 1985-1989 were examined. From mid-1989 HIV testing was performed on all new patients, using ELISA, Western blot and synthetic peptide ELISA for HIV-1 and HIV-2. Demographic estimates of Abidjan's population for 1985-1989 from census data were used for calculation of TB incidence.
Results: Between 1985 and 1989, TB incidence (cases/100,000/year) increased by 2% in males and by 5% in females in Abidjan. In persons aged < 20 years, absolute numbers of cases and incidence declined; increases occurred in older groups with high HIV infection prevalence.

Age (yrs)	% Change in TB Incidence 1989/1985		1989 HIV Infection Prevalence	
	Males	Females	Males	Females
<20	-46%	-34%	19%	22%
20-39	+21%	+13%	47%	37%
40+	+26%	+ 9%	53%	21%

HIV infection prevalence was higher in prior attenders presenting in 1989 with a second episode of TB (52/80; 65%) than in those treated for the first time (547/1405; 39%) (p< 0.001).
Conclusions: (1) TB incidence is increasing in Abidjan in adults with high rates of HIV infection. (2) HIV-positive TB patients have an increased risk of further episodes of TB after treatment.

Th.C.733 TUBERCULOSIS AND HIV INFECTION : A LONGITUDINAL STUDY IN WEST AFRICA : BURKINA FASO

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*G.E.E.P. : Villeneuve-Saint-Georges, **AntiTB Regional Center : Bobo Dioulasso, ***O.C.C.G.E. : Bobo Dioulasso.

Objectives : 1°) To determine the prevalence of HIV infection in a TB population in a West African area. 2°) To evaluate the predictive value of symptoms encountered in that particular population. 3°) To assess clinical and bacteriological evolution of patients under anti-TB treatment, according to their serological status.
Methods : Since November 1988, all new TB patients diagnosed, at the Bobo Dioulasso AntiTB Regional Center were enrolled. Clinical examination and HIV testing were perfomed ; clinical status was re-evaluated every 3 months. Patients were followed up during a 14 month period. Each patient was matched with a TB+ HIV - control patient.
Results : On 11/30/89, 310 TB patients were enrolled, with a 12 month follow up for 152 of them. Mean age was 38. A significant rise up of the HIV prevalence in TB population was observed from 12.5% in 1987 to 22.5% in 1988 and 29.3% in 89. 37 out of them were HIV+ : 26 HIV1 (70%) ; 3 HIV2 (8%) and 8 HIV1+2 (22%). Seropositivity was associated with : - TB other than common pulmonary tuberculosis (p=0.03) (particularly, miliar form and lymph nodes TB in 60 to 100% of cases). -weight loss over 10% (p<0.02) - presence of lymph nodes (p<0.03) - diarrhoea (p=0.05) - failure cases (p=0.03). Clinical and bacteriological analysis according to the type of virus is on the way.
Conclusion : Increase of the HIV prevalence rate in the TB population points out two problems : the care management of such patients and the consequences of HIV infection on anti-TB control programs.

Th.C.734 IMPORTANCE OF CEREBRAL TOXOPLASMOSIS AS AN AIDS PRESENTING FORM IN A SOUTH-EUROPEAN AREA

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Objectives: 1- To describe the demographic and epidemiologic characteristics of AIDS patients presenting with an indicative neurologic disorder (IND); 2- to evaluate a possible temporal trend of such a presenting form; and 3- to evaluate its possible influence on the patients' survival.
Methods: Data from all AIDS patients reported to the population-based registry of Catalonia (6.000.000 inhabitants) up to August 1989 were used. Reports were classified with regard to their initial diagnoses, according to the 1987 CDC AIDS definition. Contingency-table data were analyzed with standard chi-square methods. The Mantel-Haenzel test was applied to test for trends. The life table method was used to assess long-term survival.
Results: Out of 1250 reported cases, 252 (20.16%) presented with one of the IND as the first AIDS manifestation. Neither sex nor age differences were found between patients presenting with and without an IND. IVDUs were more likely to present with an IND than patients within other transmission categories (p=0.024). Cerebral toxoplasmosis (CT) was the only IND with a significant proportional increase over time. Patients presenting with an IND lived shorter than those presenting with any of the other indicative disorders (p<0.0001). The type of IND did not have a significant effect on the survival function.
Conclusions: Our proportion of AIDS cases presenting with IND is greater than elsewhere, mainly because of CT. The increment of CT over time may be in part explained by the change in its diagnosis criterion (CDC 1987). Although some of the IND have a specific treatment, they have a poorer prognosis as a whole.

AIDS Surveillance: Methodologic Issues

Th.C.735 USING INTERNATIONAL CLASSIFICATION OF DISEASES-9TH REVISION (ICD-9) CODED HOSPITAL DISCHARGE DATA TO AUGMENT AIDS SURVEILLANCE

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OBJECTIVE: To evaluate the use of ICD-9 coded hospital discharge data to identify previously unreported AIDS cases in LAC.
METHODS: Lists of patients with AIDS-indicative ICD-9 coded discharge diagnoses (042, 043, 044, 279.10, 279.19, 279.30, 136.3, 130.0, 117.5, 321.0, 078.5 and 484.1) were obtained from five hospitals in west LAC, for the time period September 1, 1986 through December 31, 1988. The patient lists were matched with the LAC AIDS surveillance registry. Medical records of hospital patients not reported to the surveillance registry were reviewed to determine if they met the AIDS case definition.
RESULTS: Of 755 hospital patients identified by the set of AIDS-indicative ICD-9 codes, 610 (80%) had previously been reported to the surveillance registry. Following the investigation of 147 patients not previously reported 100 (68%) satisfied the AIDS case definition used for surveillance; 87 (87%) of which were LAC residents Of the 610 cases previously reported, 581 (95%) met the case definition and 546 (89%) were LAC residents. The 87 new LAC AIDS cases increased the number reported through usual methods from 546 to 633. Thirteen non-LAC cases were reported to their respective health departments for follow-up.
CONCLUSIONS: Retrospective medical record review yielded 16% more AIDS cases than the regular reporting mechanisms in the five hospitals selected. Use of AIDS-indicative ICD-9 coded hospital discharge data may be a valuable AIDS surveillance tool in augmenting usual surveillance methods and assessing under-reporting by hospitals.

Th.C.736 AIDS CASES DIAGNOSED AS OUTPATIENTS

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Objective: To determine whether the characteristics of AIDS cases diagnosed as outpatients differ from those diagnosed as in-patients.
Methods: Physicians reporting AIDS cases in Oregon are asked to indicate on the case report form whether the diagnosis of AIDS was made in the inpatient (IP) or outpatient (OP) setting. This information is verified by reviewing the IP medical records of all reported cases. AIDS cases reported in Oregon since 1981 were divided into two groups based on the setting of initial diagnosis.
Results: Of the 628 AIDS cases reported in Oregon through July 1989, 175 (28%) were OP diagnosed. OP diagnosis increased from 25% (44/171) of cases reported before 1987 to 38% (40/105) of cases reported in the first half of 1989. Neither age nor race predicted setting of diagnosis. Of gay and bisexual men with AIDS 30% (163/553) were OP diagnosed compared to 16% (12/63) of patients with other risks (RR=1.8, p=.01). Of cases reported by urban-based physicians 31% (154/505) were OP diagnosed compared to 17% of cases reported by other physicians in the state (RR=1.8, p=.003). Patients with Kaposi's sarcoma were 2.4 times more likely to be OP diagnosed than were those with Pneumocystis carinii pneumonia (43/61 vs 71/408,p=.0001). Controlling for year of diagnosis, cases OP diagnosed were 2.1 times more likely to be alive than IPs (p=.003), and 2.3 times more likely to be identified by the 1987 revised case definition (p=.001).
Conclusion: The proportion of OP diagnosed AIDS cases is increasing. To the extent that there is selective underreporting of OP diagnosed cases, surveillance data could lead to misconceptions about the evolution of the AIDS epidemic.

Th.C.737 SPECTRUM OF HIV-RELATED DISEASES AND CONDITIONS AMONG OUTPATIENTS

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Objectives: (1) To enumerate persons with HIV infection at different types of outpatient sites in Seattle. (2) To characterize and classify infections, conditions and medical service usage in this population. (3) To examine the use of CD4 counts in treatment and prophylaxis decisions made at these sites.
Methods: As part of a CDC surveillance initiative on the spectrum of HIV-related disease, a pilot study was done at 5 locations starting November 1989. Medical records from 32 HIV infected adults were abstracted. Data were collected for the most recent visit to the site and the 12 preceding months.
Results: Of the 32 patients, 23 had CD4 counts available. None of the 4 patients with CD4 counts > 500 received AZT or PCP prophylaxis. Of the 10 patients with CD4 counts between 200 and 500, 7 received AZT and 4 PCP prophylaxis. Of the 9 patients with CD4 counts < 200, all were on AZT and PCP prophylaxis. The 3 groups had a mean of 11, 16, and 20 inpatient and outpatient visits during the preceding year. Of the total group, 15 presented with one or more upper respiratory, 12 with skin, and 11 with genital infections.
Conclusion: This surveillance system will monitor multiple aspects of HIV infection. We will present findings from the first several months of data collection.

Th.C.738 MODELING OF STDs AND HIV: THE VALUE OF STD SURVEILLANCE AND CONTROL IN AIDS CONTROL PROGRAMS

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Objective: To examine the relationship between STD surveillance and control, and AIDS control programs.
Methods: A Monte Carlo simulation model is used to analyze the dynamics of HIV transmission given various levels of STDs and STD control programs. Initial model conditions are studied to achieve stable STD prevalence. The following ranges of values are considered: STD transmission probability: .1 to .4; duration of male STDs: 5 to 15 days; duration of female STDs: 10 to 60 days. Then HIV infection is introduced, followed several years later by the introduction of control measures. A range of 5 to 20 is used for the relative risk of HIV transmission in the presence of STDs. HIV and STD prevalence levels are followed in various population groups after introduction of control measures adequate to slow the adult HIV epidemic.
Results: Modeling of heterosexual transmission confirms observations from studies of the homosexual HIV epidemic: reduced transmission of HIV is associated with dramatically decreased STD levels. Improving STD control reduces HIV transmission.
Conclusions: STD surveillance is likely to provide rapid evidence of the impact of HIV control programs. STD surveillance and control are important parts of an AIDS control program.

Th.C.739 THE WHO CLINICAL CASE-DEFINITION OF AIDS (WCCDA) IN PATIENTS WITH ACTIVE PULMONARY TUBERCULOSIS (APT): A PROSPECTIVE STUDY.

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Objective: To test the WCCDA in patients with APT.

Methods: From Feb. 1987 to Dec. 1989 we performed a physical examination and a standardized questionnaire which covered all parts of the WCCDA was applied to 567 adults inpatients with APT at Santa Maria and Ari Parreira State Hospitals who agreed to be tested for HIV infection. This test was considered positive if at least 2 of the 3 methods (ELISA, IF and WB) were positive.

Results: 9/26(34.6%) HIV positive and 157/541 (29%) HIV negative patients met the WCCDA (P = N.S.). The sensitivity was 35%, the specificity was 71% and the positive preditive value (PPV) was 5%. Excluding the cases where fever, weight loss and cough was used as the only criteria for AIDS diagnosis we found 7/26(27%) HIV positive and 39/541(7%) HIV negative patients who met the WCCDA (P<0.01). The sensitivity was 27%, the specificity was 93% and positive preditive value was 15%.

Conclusion: The current WCCDA presented a high rate of false positive diagnosis of AIDS in patients with APT. When fever, cough and weight loss were excluded as the only criteria for AIDS diagnosis we observed an increase in the specificity.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.740 A CLINICAL CASE DEFINITION FOR HIV INFECTION AMONG UGANDAN PATIENTS WITH KAPOSI'S SARCOMA (KS).

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Objective: HIV testing is expensive and not widely available in rural Africa. Aggressive KS is an easily recognized manifestation of HIV infection in African patients. We evaluated the sensitivity and specificity of a case definition for disseminated (epidemic) KS in predicting seropositivity.
Methods: All patients presenting to the UCI for KS from 1/88 to 12/89 underwent physical exam to identify sites of KS. Before HIV ELISAs were performed (Cambridge Bioscience Recombigen), patients were classified as epidemic KS if they had one or more of the following: 1) oral KS, 2) genital KS, 3) disseminated skin KS, 4) lymph nodes larger than 2 cm at 2 or more sites, 5) pulmonary KS, or 6) gastrointestinal tract KS.
Results: HIV ELISA results were available in 141 of 188 evaluable patients.

	Epidemic KS	Endemic KS
HIV Positive	100	7
HIV Negative	1	33

Sensitivity = 100/107 = 93.4% Specificity = 33/34 = 97.1%

Note: Oral KS alone: Sensitivity = 64.5%, Specificity = 100%

Conclusion: Our clinical case definition for epidemic KS has a high sensitivity (93.4%) and specificity (97.1%) in predicting HIV infection. Since KS is not uncommon in African patients without HIV infection, it is essential for clinicians to perform a careful physical exam, especially an oral exam, as oral KS in our patients was 100% specific for HIV seropositivity.

Th.C.742 SPECTRUM OF HIV INFECTION IN CHILDREN: RESULTS OF ACTIVE SURVEILLANCE IN 6 GEOGRAPHIC AREAS IN USA

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OBJECTIVES. To describe clinically recognized pediatric HIV infections.
METHODS. In 1/89 active surveillance for living children <13 yrs infected with HIV or born to infected mothers was established in 6 areas which report 40% of pediatric AIDS cases in the U.S. Demographic, clinical and social service data were collected.
RESULTS. Classification: Of the first 556 children 28% had indeterminate infection (P0); 15% were asymptomatic (P1) (68% of these with immune dysfunction); and 57% were symptomatic (P2). Of P2 children, 120 (38%) met the CDC AIDS case definition. Of 71 hemophilic children (HI) 45% were P1 and 55% P2; of 103 children with transfusion-associated infection (TI) 15% were P1 and 85% P2; of 370 children with maternally-acquired infection (MI) 40% were P0, 10% P1 and 50% P2. By hospital, the percent of MI with P0 status ranged from 0-80%. Diagnosis/treatment: At initial HIV evaluation, 20% of HI, 59% of TI and 45% of MI already showed HIV-related symptoms. Among MI, 25% were identified by age 1 month, 47% between 1-12 months and 28% after 12 months. In the course of clinical care for HIV, at least 24% of P2 children had received AZT and 31% IV immune globulin. Social aspects: Of MI 68% had mothers who were IV drug users or had a partner who used IV drugs; 59% were under care of a parent and the rest in a variety of foster/adoptive settings.
CONCLUSIONS. Many children are diagnosed only after they develop symptoms. Most require extensive social and medical services. This surveillance approach supplements AIDS surveillance and HIV seroprevalence, providing a more complete picture of HIV-related morbidity, health care needs and diagnostic practices.

Th.C.741 RETROSPECTIVE REVIEW OF NON-AIDS REPORTS IN LOS ANGELES COUNTY BASED ON THE REVISED 1987 AIDS CASE DEFINITION

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Objective: To describe non-AIDS cases reported to LAC and to assess the impact of the 1987 revised case definition (87CD) on reclassification of non-AIDS cases.
Methods: Reports of suspected AIDS cases which do not meet the case definition applicable at the time of the initial investigation are retained and periodically matched with newly reported AIDS cases. Of 1710 reports received through 12/31/89 which were classified as non-AIDS, a sequential sample of 322 (19%) have been reviewed for comparison to reported AIDS cases, evaluated for reclassification according to criteria for the 87CD, and categorized according to the CDC Classification System for HIV.
Results: Compared to AIDS cases, non-AIDS cases were significantly ($p<10^{-4}$) more likely to be female (OR 3.5, 95%CI 1.3,5.2); to have a risk factor associated with IV drug use (OR 2.4, 95%CI 1.7,3.4), blood transfusion (OR 4.1, 95%CI 2.3,7.3) or hemophilia ($p=0.01$; OR 4.6, 95%CI 1.4,13.6); and were less likely to be homosexual/bisexual (HB) males (OR 0.4, 95%CI 0.3,0.6). There were no significant differences noted by race, age or heterosexual contact risk category. HIV antibody (Ab) results were positive in 42% (134/322) and negative in 4% (12/322). Of 176 (55%) reports for whom the HIV Ab result were missing, 74% (130/176) were reported after 3/85, when the test was first available. One report met criteria for the 1985 CD; 6 (2%) met the 87 CD (2 definitive, 4 presumptive); 18 (6%) did not have HIV-related illness; 25 (8%) had asymptomatic HIV infection (CDC HIV Group II); 20 (6%) had AIDS-indicator diseases and would have met 87CD if HIV Ab or T4 count results were available; and 252 (78%) had other HIV-related illness not fulfilling 87CD (CDC HIV Group IV A,B,C-2,D,E). Of the patients with HIV-related illness, 40% (100/252) were dead at the time of initial report to LAC.
Conclusions: Non-AIDS cases are less likely be HB males. Review of non-AIDS reports resulted in 2% being reclassified as AIDS cases; an additional 6% would have met 87CD had HIV serology or T4 counts been reported. The 87CD may underestimate severe clinical manifestations of HIV infection.

AIDS Surveillance: Attributable Mortality

Th.C.743 MORTALITY DUE TO HIV INFECTION IN ADOLESCENTS AND YOUNG ADULTS

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Objective: To assess the impact of HIV infection on mortality in adolescents and young adults in the United States.
Methods: Using national vital statistics data for 1987, we compared deaths for which the underlying cause was HIV infection with other leading causes of death in 10-24 year olds (y.o.). Analysis was done by five-year age groups, race, and sex.
Results: We found 501 deaths due to HIV infection. The highest numbers occurred in 20-24 y.o. white males (266) and 20-24 y.o. black males (138). As seen in the table below, HIV accounted for over 2% of all deaths in 20-24 y.o black males and females (where HIV ranked as the 4th leading cause of death) and in 20-24 y.o. white males (where HIV ranked 5th).

	Percent of all Deaths		
	10-14 y.o.	15-19 y.o.	20-24 y.o.
Black males/Black females	0.00 /0.34	0.34 /0.59	3.87 /2.83
White males/White females	0.22 /0.09	0.18 /0.06	2.04 /0.52

Conclusion: By 1987, HIV was an important cause of death in 20-24 y.o., particularly for black males and females. The rapid rise in deaths due to HIV during young adulthood suggests substantial rates of infection in both early and late adolescence.

Th.C.744 IMPACT OF HUMAN IMMUNODEFICIENCY VIRUS EPIDEMIC ON MORTALITY AMONG WOMEN 15 TO 44 YEARS OF AGE, UNITED STATES

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Objective: To assess the impact of HIV infection on mortality in women of reproductive age in the United States.
Methods: We used final (1985-87) and provisional (1988) data from national vital statistics to describe HIV-related deaths among women aged 15-44 years.
Results: While other causes of death among women 15-44 years of age have remained relatively stable over the last decade, the death rate for HIV/AIDS quadrupled from 0.6/100,000 in 1985 to 2.5/100,000 in 1988 (representing 1,430 deaths). The age-adjusted death rate for black women (10.3/100,000) was 9 times the rate for white women (1.2/100,000). Most deaths occurred in women 25-34 years of age, for whom HIV-related deaths accounted for 11% and 3% of all deaths in black and white women, respectively. More detailed analyses were possible using final mortality data for 1987, when HIV infection became the eighth leading cause of death in women of reproductive age. The death rate in the Northeast (5.3/100,000) was 26 times the rate in the Midwest (0.2/100,000). Among black women 15-44 years of age in New York and New Jersey, HIV/AIDS was the leading cause of death, surpassing malignant neoplasms and heart disease. Among 1,157 death certificates which included any mention of HIV/AIDS, other leading diagnoses included drug abuse (27%), pneumonia and influenza (8%), Pneumocystis carinii pneumonia and other AIDS-defining infections (7%), nephritis (6%), cardiovascular diseases (5%), respiratory diseases (5%), and anemias (4%).
Conclusion: HIV/AIDS has emerged as a leading cause of death in women of reproductive age, especially in the Northeast and among black women, and is associated with a broad spectrum of HIV-related diseases.

Th.C.745 IMPACT OF THE HIV EPIDEMIC ON THE MORTALITY OF CHILDREN IN CALIFORNIA.

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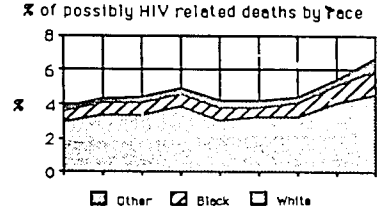
Objective: to assess the impact of AIDS and HIV infection relative to other leading causes of death in children in California from 1979-87.
Methods: the leading causes of death for children less than 15 years of age were obtained from vital statistics data for the state of California. Among them, bacterial, viral or opportunistic infections, nutritional diseases, neurological disorders, LIP and thrombocytopenia were considered as "possibly HIV related causes of death". Rates were analysed for each year, first in general, and then by race and age categories. The comparisons use the test for trends in proportion.
Results:



The total number of deaths among California children has been quite steady over time (about 6300 per year). However after 1984, deaths possibly related to AIDS or HIV infection accounted for an increasing proportion of pediatric deaths from 246 (3.9%) in 1979 to 433 (6.8%) in 1987 (p<0.001). This trend is slighly more significant among infants and highly significant among the black population.

Discussion: (1) not the absolute numbers but only the increasing trends of possibly HIV related causes of deaths (as compared with preexisting rates, up to 84) show the significant impact of AIDS on the mortality of children in California; (2) these data will be matched with the State AIDS data to look for possible under-reporting; (3) the follow-up of these data in the next coming years will be helpful to assess the efficacy of the better cares and treatments proposed to HIV infected children.

Th.C.746 MORTALITY AMONG HOMOSEXUAL MEN IN NEW YORK CITY (NYC), 1978-88

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Objective: To examine all-cause and cause-specific mortality rates (MRs) from 1978-88 among a cohort of homosexual men in NYC.
Methods: Subjects were 8925 homosexual men; 8833 participated in studies of hepatitis B from 1978-83 of whom 758 were recruited into a prospective study of AIDS in 1984; 92 were recruited into the cohort in 1984. Records were linked with the NYC death registry to determine yearly MRs per 10,000 person-years.
Results: Prior to any AIDS deaths in the cohort (1978-79), the all-cause MR was 12.0. All-cause MRs increased to 16.7 for 1980-82; 69.7 for 1983-85 and 137.8 for 1986-88. AIDS-specific MRs for the same time periods were 2.6, 51.8, and 102.2. Although Hispanics were significantly younger at entry, they had two times the risk of dying overall and dying of AIDS compared to whites during 1986-88 (p<.0001). Among those in the AIDS study, the MRs were 296.6 for those first HIV(+) in 1978-82, 222.9 for those HIV(+) in 1983-85, 74.7 for those HIV(+) in 1986-89, and 12.8 for those who were HIV(-). HIV testing of the entire cohort will be conducted to further explore the observed differences. Matching of records with the National Death Index will be conducted to determine the possible effects of outmigration.
Conclusion: In this cohort of homosexual men, mortality rates have increased substantially from 1980 to 1988. Hispanic homosexual men are at especially increased risk of dying and of dying of AIDS compared to white homosexual men. HIV testing of the entire cohort will permit the exploration of the effects of year and duration of infection on these observed differences.

Th.C.747 THE IMPACT OF AIDS ON PATTERNS OF PREMATURE DEATH IN CANADA

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Objective: To assess the impact of AIDS on premature mortality and risk of dying in Canada during the 1980s and evaluate future trends.
Methods: For adults aged 15-64, Potential Years of Life Lost (PYLL) and mortality rates were calculated based on data from Statistics Canada and the National AIDS Surveillance System. Potential years of life were defined as years between age at death and age 65. Time series and regression models were used to estimate the impact for years where no data were available taking into consideration reporting delays and survival distributions.
Results: Prior to 1983, AIDS was not ranked according to PYLL among the leading causes of premature mortality in Canada. In 1983 it ranked 50th, and by 1987, climbed to 10th. Model estimates indicate it now ranks among the top 10 causes. For males, the rise has even been more dramatic and by 1987 AIDS was the 5th leading cause of early death. For males aged 30-39, AIDS has increased from 26th to 4th surpassing such causes as homicide and liver disease. Models indicate that AIDS has displaced coronary heart disease and now ranks after suicide and motor vehicle traffic accidents as a major cause of premature mortality for Canadian males aged 30-39.
Conclusion: Impact of AIDS on premature mortality in Canada has steadily grown. For males aged 20-49, AIDS now rivals the traditional leading causes of premature mortality. This analysis again indicates the urgent need to address the many issues associated with the AIDS epidemic. The modelling methodology to estimate recent impact can be applied to other populations.

TRACK C: EPIDEMIOLOGY & PREVENTION

POSTER SESSION

Th.C.748 THE EFFECT OF HIV INFECTION ON INFANT AND EARLY CHILDHOOD MORTALITY IN RURAL RAKAI DISTRICT, UGANDA: PRELIMINARY RESULTS.

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Objective: To provide a preliminary assessment of the impact of HIV infection on childhood mortality in rural Rakai District, by comparing mortality rates of children born to HIV positive mothers to those of children born to HIV negative mothers.
Methods: In a community based study carried out in Rakai District, individuals from 21 randomly selected clusters of 40 households each were screened for HIV infection. All adult females were also asked about births and infant and childhood mortality in the preceding 2 years.
Results: The death rate in children born in the preceding 2 years to mothers who were HIV positive mothers at the time of the survey, was 17.4% (12/68), while among children born to HIV negative mothers it was 9.2% (18/196).
Conclusions: Preliminary findings reveal an increase in mortality among children born in the preceding 2 years to women sero-positive at the time of the survey. The death rate among children of HIV positive mothers was almost double the rate of children of sero-negative mothers ($p<0.01$) These findings pertain to a rural environment having no specialized health facilities. A larger cohort from the same population is currently being studied and preventive measures are being undertaken.

Th.C.749 PREVALENCE AND IMPACT OF AIDS AMONG HOSPITALIZED INTERNAL MEDICINE PATIENTS OF A GENERAL HOSPITAL IN KINSHASA, ZAIRE: CLINICAL SURVEILLANCE DATA.

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Methods: Between Feb 1 and Oct 31, 1989 all consecutive admissions to the 209 bed internal medicine dept. of Mama Yemo Hospital were evaluated with a surveillance card containing demographic and risk factor information, entries corresponding to the modified WHO defined clinical case definition of AIDS, used to diagnose AIDS. The sensitivity and specificity of this definition was assessed in 325 consecutive patients simultanously enrolled in another study. In-hospital mortality and HIV serology results (if available) were recorded.
Results: A) The sensitivity and specificity of the clinical case definition used were 44 % and 95 % using HIV serology as "gold standard". B) Prevalence of AIDS: 3142 pts were studied. 27.1 % had AIDS, which was more prevalent among female (30.6 %) than male pts (23.6 %, $p<.001$). Male AIDS pts were similarly aged to male pts without (wo.) AIDS (39.8 +/- 12.3 vs 41.2 +/- 17.2 yrs). Females were younger than male pts, and female AIDS pts (33.0 +/- 11.0 yrs) were younger than female pts wo. AIDS (38.4 +/- 17.4 yrs, $p<0.0001$). Of the AIDS pts 3.9 % had cryptococcal meningitis, and 4 % had Kaposi sarcoma. C) The in-hospital mortality of AIDS pts was 64.2 %, vs. 39.7 % in pts wo. AIDS ($p<10^{-6}$). Among pts whose HIV serology results were known, 64.6 % (133/206) of the AIDS pts, 41.7 % (60/144) of the HIV(+) pts wo. AIDS, and 29.9 % (56/188) of the HIV(-) pts died ($p<10^{-6}$). D) Pts with more than 1 sexual partner in the year before hospitalisation were more likely to have AIDS (36.2 %) than pts with $\leq$ 1 partner in the last year (26.8 %, $p = .006$).
Conclusions: AIDS was the leading cause for hospitalisation and in-hospital mortality among patients admitted at medical wards in our hospital.

Th.C.750 INCIDENCE AND MORTALITY FROM HIV INFECTION IN WORKERS AND THEIR SPOUSES AT 2 LARGE KINSHASA, ZAIRE BUSINESSES

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Objectives: To calculate the yearly HIV incidence, prevalence and mortality in 5766 employees of 2 large businesses and their 4917 spouses.
Methods: Between 1987 and 1989 all employees at 2 businesses and their spouses have undergone 3 annual physical examinations and HIV serology testing. A questionnaire to identify risk factors associated with seroprevalence and seroincident cases of HIV infection has also been completed.
Results: Table 1. Seroprevalence in male workers and their spouses

	Factory A			Factory B		
	1987	1988	1989	1987	1988	1989
Prevalence: workers	2.7	3.0	-	-	5.2	6.3
Wives	2.8	3.2	-	-	4.2	5.3
Incidence: workers	-	0.3	1.1	-	-	0.9
Wives	-	0.3	0.8	-	-	0.4

Table 2. 1988 Seroprevalence by age(years) in men at Factory A and B

	20-39	30-39	40+	Total
Factory A	3.9	3.5	1.7	3.0
Factory B	7.3	4.5	4.2	4.9

Table 3. Seroprevalence by place of employment

	Manual	Management	Supervisor
Factory A: Male workers	2.7	3.5	6.2
Spouses	3.0	4.0	3.0
Factory B: Male workers	5.3	5.2	4.6
Spouses	3.0	5.4	3.6

At Factory A during 1988-89, 43% of all deaths in male workers and 22% of 43 deaths in spouses were from AIDS. At Factory B 52% of 25 deaths in male workers and 45% of 11 deaths in spouses were from AIDS.
Conclusions: The annual seroincidence of HIV infection ranged from 0.3% to 1.1% while the seroprevalence ranged 2.7% to 6.3% in this middle-aged population. AIDS was the most important course of death.

Th.C.751 AIDS AS AN EMERGING CAUSE OF PREMATURE DEATH IN ITALY.

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OBJECTIVE: to analyze the impact on premature mortality of AIDS in Italy both in the present time and in the near future.
METHODS: The demographic indicators referred to the Years of Potential Life Lost before 65 years were used to valuate the impact of a mortality cause in the early adulthood in the whole country and in particular metropolitan areas where is the majority of AIDS cases. Having made reasonable assumptions, according to most recent available data, 4 major causes of premature deaths have been considered: AIDS, Leukemia, Liver cirrhosis and Accidents (ICD 800-999).
RESULTS AND CONCLUSIONS: sex-specific YPLL Ratesx1000 have been calculated, and the ones for males are: for AIDS .3, .53 and .78 in 1986, 87 and 88; for Leukemia, Cirrhosis and Accidents .98 2.77 and 13.58 are estimated for 1988. At the present time the impact of premature mortality in Italy due to AIDS is still far from the one due to Accidents, but is becoming near to the 2 other selected causes. To have some pictures of the near future 2 possible developments of AIDS epidemic have been estimated: curves with a doubling time of 1 and 2 years; in the first case Cirrhosis and Leukemia will be reached, in terms of years of life lost, while Accidents will be reached and overtaken in the years just following. These figures of the whole country become more dramatic when analysing data from Milan.

Th.C.752 AIDS INCIDENCE AND CAUSE SPECIFIC MORTALITY AMONG INTRAVENOUS DRUG USERS IN ROME, ITALY.

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OBJECTIVE: To examine AIDS incidence, overall and cause specific mortality rates among intravenous drug users in Italy.
METHODS:- A cohort of 4202 drug users attending (period 1980-88), at least once, three drug treatment centers in Rome followed-up until 12/31/1988;
- AIDS incidence assessed through the Latium HIV Surveillance System;
- Vital status and cause specific mortality ascertained from the Registry Office of the last place of residence;- National population as reference to calculate expected number of deaths and standardized relative risks (sRR).
RESULTS: -Completeness of follow up with regard to vital status, January 10, 1990 = 94.5%. Study base = 24,012 person-years. Overall AIDS incidence = 46 cases (incidence density: 0.96, 3.44 and 9.73 per 1000 person-years for the years 1986, 1987 and 1988, respectively). Overall mortality = 236 deaths (9.8/1000 person years) vs 23.2 expected (sRR=10.2). The excess risk was more pronounced in females (sRR=19.7) than in males (sRR=9.34). The RR decreases with age (from 80.9 in the age group 15-19 to 2.5 in the group 35-39). Deaths due to drug overdose, violence or trauma and cirrhosis account for 65%, AIDS for 7.4%, endocarditis and bacterial infections for 5.2% of total mortality. Cause specific sRR are estimated.
CONCLUSION: These results are in line with previous findings from U.S.A. of an increased overall mortality among drug abusers also for conditions unrelated to the HIV infection and support the need of prevention programs. In modeling the HIV epidemic, the significant effect of competitive mortality should be quantified and considered.

HIV Seroprevalence in North America

Th.C.754 SENTINEL SURVEILLANCE FOR HIV INFECTION IN PRIMARY CARE OUTPATIENTS IN THE UNITED STATES

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Objective: To monitor nationwide levels and trends of HIV infection in an accessible segment of the general population not selected on the basis of HIV risk factors and not self-selected.
Methods: Anonymous, unlinked (blinded) HIV-seroprevalence survey of leftover specimens submitted by 6,000 primary care physicians to a national clinical diagnostic laboratory for complete blood count (CBC) or hematocrit determination. Sampling is systematic, stratified by age, gender, and geographic location.
Results: From 1/89 to 12/89, 656 (0.82%) of 79,972 specimens were HIV positive. Age-adjusted seroprevalence in adult males (1.1%) was 4.3 times that of females (0.27%). Males aged 25 to 34 years had the highest seroprevalence (2.6%). HIV seroprevalence, age- and gender-standardized to the US population was 0.68%. Seroprevalence in specimens that had additional tests ordered for hepatitis (N=1506; 1.1%), HIV antibody (N=410; 5.4%), selected conditions associated with HIV infection (N=111; 7.2%), lymphocyte subtyping (N=27; 88%), or coagulation parameters (N=1103; 1.0%) was higher than in those not having them.
Conclusion: Primary care outpatients may be the most representative, available population for HIV surveillance that includes all ages and both males and females. The 4.1:1 male to female seroprevalence ratio was lower than that for CDC-reported AIDS cases (9.2:1). These data, along with other available empiric data, will yield estimates of the HIV infection prevalence and trends in the US and will assist with evaluating the role of primary care in HIV prevention and treatment.

Th.C.753 UNDIAGNOSED HIV-POSITIVE DEATHS

McCormick, Anna.

Office of Population Censuses and Surveys, London, WC2B 6JP and PHLS Communicable Disease Surveillance Centre, London, NW9 5EQ, UK.

Objective: Standardised mortality ratios for ninety-five possibly HIV-related causes increased for never-married men aged 15-54 years from 100 in 1984 to 119 in 1988. HIV infection was stated as the cause for only 56% of excess deaths. The study aimed to establish for how many of the remainder HIV infection was undiagnosed as the underlying cause.
Methods: The doctor (or coroner) who stated one of five causes which have increased (septicaemia (ICD 038), pneumocystosis (136.3), malignant neoplasm of the lip, oral cavity and pharynx (140-149), other malignant neoplasm of lymphoid and histiocytic tissue (202) and pneumonia, organism unspecified (486)) for men aged 15-54 years over a period of six months in 1989 was asked by letter whether the deceased was HIV-positive.
Results: Of the 222 replies received (90% response rate), 34 were known to be HIV-positive. Based on the number of excess deaths due to these five causes in 1988 compared with 1984 and allowing for population changes, 42/222 (18.8%) would be expected to be HIV-positive if the excess deaths due to these causes were all associated with HIV infection.
Conclusion: The underlying cause among HIV-positive men who died from one of the above five conditions was not stated on the death certificate of 8/42 (19.0%) because the doctor who signed the death certificate did not know that the patient was HIV-positive.

Th.C.755 SIGNIFICANT INCREASES IN THE ANNUAL NUMBER OF REPORTED HIV-INFECTED PATIENTS IN U.S. DIALYSIS CENTERS FROM 1985-1988.

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Objective: To determine the annual number and types of U.S. dialysis centers that report dialyzing HIV-infected patients, that routinely test patients for anti-HIV, and the trends in patient numbers.
Methods: Each year a mailed questionnaire was sent to all HCFA licensed dialysis centers to obtain information on the number of patients with HIV infection. In all years, an average of 90% of centers responded.
Results: Centers that reported providing dialysis for HIV-infected patients increased from 11% (134/1254) in 1985 to 25% (401/1586) in 1988; the number of reported HIV-infected patients increased from 0.3% (244/80,151) to 1.2% (1,253/107,804). In 1988, 53% of HIV-infected patients had clinical symptoms of HIV infection, and 47% were serologically positive for anti-HIV but asymptomatic. Centers that dialyzed HIV-infected patients were located in 35 states and their geographic distribution was similar to that reported for all AIDS cases. HIV-infected patients over this four year period were more likely to be in centers that provided both dialysis and transplant services; were located in hospitals; were government operated; were non-profit; had large patient populations (>40); and accepted HBsAg-positive patients for dialysis. In 1988, 19% of dialysis centers reported routinely testing all patients for anti-HIV. Hospital, government, and non-profit centers were more likely to test their patients than free-standing and for-profit centers.
Conclusion: From 1985-1988 the number of centers that reported dialyzing HIV-infected patients and the number of patients with HIV infections increased 3 and 5 fold respectively. These increases will probably continue in the future. Routine testing for anti-HIV appears to be practiced primarily in hospital, government, or non-profit centers.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.756 THE TEMPORAL TREND OF INCIDENT HIV SEROCONVERSIONS AMONG YOUNG ADULTS IN THE UNITED STATES ARMY:1985-89

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Objective: To describe temporal trends and demographic correlates of incident HIV seroconversion within the United States Army.
Methods: The Department of Defense has provided routine HIV-Ab screening for the uniformed services and for civilian applicants for military service since November 1985. Within the US Army, soldiers have been retested for HIV-Ab about every 16 months. HIV seroconversion rates were directly measured during 3 time intervals: November 1985 - October 1987, November 1987 - October 1988, and November 1988 - October 1989. Interval-specific seroconversion rates were calculated as HIV incidence densities (ID's) among soldiers who were tested during a given interval, conditional on a previous negative HIV-Ab test at least 60 days earlier.
Results: Between November 1985 and October 1989, 473 HIV seroconversions were detected during 1,078,785 person-years (P*Y) of followup (ID=0.44/1000P*Y). Adjusted interval-specific HIV ID's were 0.74/1000P*Y, 0.48/1000P*Y, and 0.37/1000P*Y for 1985-87, 1987-88, and 1988-89, respectively. Seroconversion risk was consistently associated with minority race-ethnicity (especially blacks), age between 25-34 years, and male gender. Most, but not all, demographic subgroups had reductions in interval-specific ID's between 1985 and 1989.
Conclusion: Comprehensive HIV-Ab screening of the uniformed services is an important population-based sentinel for tracking the evolving HIV infection epidemic in the US. Interval-specific HIV seroconversion rates have consistently and significantly decreased between November 1985 and October 1989 in the US Army. Based upon the most recently measured seroconversion rate, 290 soldiers will become infected with HIV over the next year.

Th.C.757 ESTIMATED INCIDENCE OF HIV SEROCONVERSION IN ACTIVE DUTY MEMBERS OF THE US AIR FORCE, AUGUST 1988-DECEMBER 1989.

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Objective: Total-force HIV screening of active duty US Air Force (USAF) members was begun to identify blood donor deferrals and to determine the incidence of seroconversion in this population.
Methods: Seroconverters were defined as USAF members who tested positive for HIV antibodies by repeated ELISA and Western blot tests and who tested negative at least 60 days earlier. Demographic and personnel variables were obtained from patient interviews and verified by USAF records. The USAF "mid-point" population was 571,580. Data were stratified by age, race, rank, sex, marital status, and broad occupational categories.
Results: The crude HIV seroconversion rate in this population was 0.22±.03/1,000 during Aug 88-Dec 89. Highest specific rates occurred among: the 25-34 age group, non-Caucasian races, lower enlisted ranks, males, never-married and divorced/separated members, and non-rated support occupations.
Conclusions: These data suggest that the USAF incidence of HIV seroconversion is considerably lower than US Army and US Navy rates. There are similar patterns in some specific rates, but service demographics vary. There does not appear to be significant heterosexual transmission within the USAF active duty population. These data will be further adjusted and refined to rates per 1,000-person-years.

Th.C.758 TRENDS OF HIV-Ab RATES IN CIVILIAN APPLICANTS FOR MILITARY SERVICE SINCE 1985

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Objective: To describe the demographic and geographic correlates of HIV prevalence, incidence and incidence acceleration in over 2 million U.S. civilian applicants for military service over the past 4 years.
Methods: Prevalence trends are examined by year of age separately for males and females. Geographic aggregation of the prevalence data into AIDS endemic and non-endemic regions allows examination of geographic-specific trends. Temporal trends are examined over 16 calendar quarters of HIV testing. Birthyear cohorts (1963-1972) are used to estimate incidence rates from serial seroprevalence data. Changes in prevalence rates are examined over 4 years for sex, race and geographic sub-groups using a logistic regression model.
Results: From October,1985 until October 1989, 3014 applicants with antibody to HIV were detected, out of a total population tested of 2,300,675 . Prevalence increased in a linear fashion between ages 17 and 30 for males and females, leveling off and dropping slightly thereafter. From the logistic model, relative odds (for later years vs. 1985) of seropositivity progressively declined in white and hispanic males over four years; declined in black males to a lesser degree; increased in black females in two of three years; and declined for white females. Seroprevalence rates were consistently lower over time in AIDS epicenter locations, but not in areas outside of AIDS epicenters.
Conclusion: HIV seroprevalence in military applicants has dropped over the 4 year period. HIV seroprevalence declined in all male applicants over 4 years, but the decline was less significant in females. Declines in birth cohort estimated (indirect) incidence rates from these data are remarkably consistent with declines in directly estimated incidence from active duty Army servicemembers. These decreases in estimated incidence were similar for civilian applicants and active duty personnel in most race-sex subgroups.

Th.C.759 HIV INFECTION AMONG SERIALLY TESTED ADULT AMERICANS

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OBJECTIVES: Assess HIV infection prevalence, incidence, and risk factors in Army Reserve Components (RC) members.
METHODS: Members of the RC are required to be tested for HIV infection every 2 years, providing prevalence and incidence information in a large, primarily civilian, geographically dispersed population. Factors associated with infection are evaluated in multivariate models. Differences between prevalent and incident infection are assessed.
RESULTS: Within the RC, 667,463 members have been tested at least once, and 402,964 have been tested at least twice. Crude prevalence was 1.57 (per 1000) and overall incidence density was 0.20/1000/year. Prevalence and incidence density were higher for Hispanics and black, males, and unmarried males; and were elevated in urban areas with higher incidence of AIDS among civilians. Among civilian AIDS cases (1987-89), 16.2% occurred in non-metropolitan areas; among RC members, 17.8% of prevalent infections occurred in non-metropolitan areas, while 28.2% of seroconversions occurred in these areas.
CONCLUSIONS: Prevalence among RC members exceeds 1% in some areas, and infection continues to occur. RC groups at risk are similar to those at risk of AIDS in the general population, but there is evidence of evolution in the epidemic of HIV and AIDS, with substantial new infection occurring in non-urban areas.

Th.C.760 GONORRHEA AND SYPHILIS TRENDS DURING THE AIDS EPIDEMIC: USA

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Objective: Gonorrhea (NG) and syphilis are markers for sexual behaviors that permit transmission of HIV. We analyzed trends in NG and syphilis incidence to learn how they have changed in the US and its subpopulations.
Methods: We reviewed NG and primary and secondary syphilis reported for 1981-88 to CDC. In this abstract we contrast annual means for 1981-82 with those for 1987-88. We also compared the 6 states with the highest incidence of AIDS (32% of the US population) with the 27 states with the lowest incidence (35% of the population)
Results: Overall, syphilis increased 19% while NG decreased 20%. Analyses by sex and race showed different trends. For example, among white men both syphilis and NG decreased: syphilis by 59% and NG by 67%. Among black men syphilis increased 28% and NG decreased 9%. Trends were similar for white men in areas with high and low AIDS incidence, but for black men they were different: in areas with high incidence, syphilis increased 60% and NG was unchanged; in areas with low AIDS incidence, syphilis decreased by 7% and NG decreased 17%. Trends among women also differed between high and low AIDS incidence areas.
Conclusion: Trends derived from composite data may obscure important divergences between subpopulations. Among US whites, NG and syphilis have decreased; among US blacks living in areas most affected by AIDS, NG has not decreased and syphilis has increased.

Th.C.761 Risk for AIDS in Multiethnic Neighborhoods in San Francisco: The AMEN Study

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Objective: To assess the prevalence of HIV and AIDS risk behaviors in a probability sample of single adults in San Francisco, California.
Method: The Amen Study is a population-based survey of 1781 single adults in three "high risk" San Francisco neighborhoods. A 45-minute interview was conducted in which respondents were asked to donate serum and to respond to questions about their sexual behaviors, about their use of illicit drugs, and about behaviors that would place them at risk of contracting HIV.
Results: Seroprevalence of antibodies to HIV in the sample was 5% among the 1378 respondents who donated blood. The rate of infection was 39% among homosexual/bisexual men, 59% among homosexual/bisexual male IVDUs, and 5% among heterosexual IVDUs. Over half of all respondents (51%) had used marijuna, 31% reported using cocaine, and 4% reported using heroin within the past 12 months. Among men reporting sexual relations with men, whites (25%) were as likely as non-whites (23%) to report more than nine sexual partners in the previous 12 months, but among those not reporting same-sex sexual behavior, black males (8%) were more likely to report more than nine sexual partners than non-black men (3%) or women of any race (0%).
Conclusions: The prevalence of HIV in this population was highest among gay and bisexual men, but both the 5% seroprevalence rate reported for heterosexual IVDUs and the high proportions of black males reporting nine or more sexual partners per year suggest that the next wave of the San Francisco AIDS epidemic may well be among members of these two groups.

Th.C.762 SECOND GENERATION OF HETEROSEXUAL TRANSMISSION OF HIV

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OBJECTIVES: To evaluate the pattern of heterosexual transmission of HIV among adult AIDS cases reported to the Public Health Department (PHD) in a large urban area.
METHODS: An active surveillance program emphasing accurate, systematic retrieval of demographic information, risk information, and HIV disease patterns has been in place since 1986. All data are imputed into a AIDS reporting database. The data files are updated on a daily basis. Summary data are retrieved monthly for evaluation and monitoring of trends.
RESULTS: Between January 1987 and December of 1989, approximately 1,548 adult cases of AIDS were reported by our medical center to the PHD. 353 cases occurred in 1987; 611 cases in 1988; and 584 cases in 1989 (85% complete as of the date of this report). 70 cases (19%) of heterosexual transmission were reported in 1987, 148 cases (24%) in 1988 and approximately 324 cases (55%) in 1989. First generation heterosexual transmission occurred in 53 cases (76%) in 1987; 113 cases (76%) in 1988, and approximately 229 cases (71%) in 1989. Second generation heterosexual transmission occurred in 17 cases (24%) in 1987; 35 cases (24%) in 1988; and approximately 95 cases (29%) in 1989.
CONCLUSIONS: The number of reported adult AIDS cases secondary to heterosexual transmission has increased each year during the past three years. The number of second generation heterosexual transmission cases increased during 1989. Detailed, accurate surveillance information related to heterosexual transmission is needed.

Th.C.763 PREVALENCE OF HIV INFECTION AND DISTRIBUTION OF RISK FACTORS AMONG HETEROSEXUALS IN SOUTHEAST NEW ENGLAND

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Objective: To describe pattern of occurrence of HIV infection in a heterosexual cohort.
Methods: Interviews and serologies from 653 participants of a population-based prospective study of heterosexual spread of HIV infection provided basis for mathematical modeling of exposure to blood, semen, race, gender, and partner characteristics for entire cohort and subgroups enrolled in follow up study.
Results: Within risk categories, the occurrence of HIV infection according to gender was:

	Women		Men		Total	
Risk Category	n	%	n	%	n	%
Hetero. IVDU	44/105	(42)	31/123	(25)	75/228	(33)
Bisexual IVDU	----	--	15/32	(47)	15/32	(47)
Bisexual men	----	--	2/33	(6)	2/33	(6)
Heterosexual	15/188	(8)	7/172	(4)	22/360	(6)
	59/293	(20)	55/360	(15)	114/653	(17)

Among the HIV infected people, 65% were heterosexual IVDU (75% of women and 55% of men) and 19% had heterosexual activity as only risk (25% of women and 12% of men). Nonwhite women (mostly Latina and African-American) were nearly six times more likely to be HIV infected than white women, after controlling for unprotected anal and vaginal sex, IVDU, needle sharing, frequency of ejaculate exposure, genital trauma, and sex with an HIV infected or IVDU partner. Heterosexual infection among men could not be predicted by any of the above variables.
Conclusion: Among women only, race and recent sexual contact with an IVDU or HIV+ man are observed risk factors. Neither of these factors appeared with heterosexual infection in men. Sexual behavioral differences in subgroups do not explain differences in transmission.

TRACK C: EPIDEMIOLOGY & PREVENTION
POSTER SESSION

Th.C.764 HIV-1 SURVEYS OF PREMARITAL BLOOD SPECIMENS IN A HIGH AIDS INCIDENCE STATE

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Objective: Most statewide premarital HIV-1 testing has been done because of laws in low AIDS incidence states, with a low HIV-1 prevalence being found in these premarital specimens. Therefore, such testing was not considered to have public health value. We have looked at premarital HIV-1 testing in the state with the second highest annual AIDS incidence in the U.S.
Methods: New Jersey requires premarital serologic testing for syphilis. For a one-year period in 1987-88, we anonymously tested for antibodies to HIV-1 all premarital specimens coming to the State laboratory. To get a better geographic representation relative to the marriages in New Jersey, in 1989 we similarly tested premarital specimens submitted to 5 commercial laboratories in the State.
Results: In the 1987-88 survey, of 4,247 specimens tested, 0.49% were positive for HIV-1 antibodies; 0.72% in males and 0.28% in females. The highest percentage of HIV-1 positives (1.39%) was in the 35-39 year-old age group. In the 1989 survey, of 4,696 specimens tested, 0.62% were positive; 0.75% in males and 0.50% in females. The highest percentage of positives (1.15%) was in the 25-29 year-old age group.
Conclusion: The relatively high percentage of positive HIV-1 tests in premarital specimens in a high AIDS incidence state raises issues that premarital HIV-1 testing may have public health benefit in such a state.

Th.C.765 HIV-1 SEROSURVEYS OF VARIOUS POPULATIONS IN NEWARK, N.J.

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Objective: The City of Newark has a very high AIDS case rate; in 1988 the AIDS incidence rate was 133/100,000. In order to determine the prevalence of HIV-1 infection in various populations in this high incidence city, we conducted HIV-1 testing of clients attending various Newark-based clinics and of infants born in Newark hospitals.
Method: Utilizing CDC funding and protocols, anonymous HIV-1 antibody testing was conducted in 1988-89 utilizing leftover serum of clients admitted to sexually transmitted disease, drug treatment, family planning, and tuberculosis treatment clinics, and filtered paper specimens from newborns submitted to the State's inborn errors of metabolism laboratory.
Results: Of 234 IV drug using clients tested, 44.46% tested HIV-1 positive; of 1574 STD clinic clients, 9.21% tested positive; of 91 newly diagnosed tuberculosis patients, 27.47% tested positive; and of 1355 clients attending Newark's largest family planning clinic, 1.40% tested positive for HIV-1 antibodies. Among 2219 newborns tested, 2.34% tested positive.
Conclusions: The high AIDS case rate in Newark reflects HIV-1 infection that occurred several years ago. The current HIV-1 serosurveys show a continued high level of HIV-1 infection in Newark, with the anticipation of large numbers of AIDS cases occurring in this city in the future. These HIV-1 infection rates point to the need for prevention programs aimed at HIV-I transmission in the identified populations in Newark, and programs to medically evaluate and treat HIV-1 infected persons to delay the onset of AIDS.

Th.C.766 USING SEROPREVALENCE AND IMMUNOLOGIC DATA TO ESTIMATE AMBULATORY, LABORATORY AND PHARMACEUTICAL NEEDS OF A LARGELY ASYMPTOMATIC POPULATION

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Objective: To project ambulatory, laboratory and pharmaceutical needs of a largely asymptomatic population by utilizing seroprevalence data combined with information on current immunologic status of seropositive persons.
Methods: A blinded, anonymous serosurvey was conducted in Sexually Transmitted Disease Clinics during 1988. A random sample of blood specimens from 5497 male and 3419 female clinic clients was tested, with seropositivity found to be 8.6%. Concurrently, surveys of HIV+ cohort study participants in various studies in NYC (and elsewhere in the U.S.) found that of all seropositives being followed approximately 20% currently have T-cell levels of 200 or less; 30% have levels between 200 and 500; and 50% have levels above 500.
Results: Of the 6880 seropositive persons estimated to be seen in NYC STD clinics each year, 1376 immediately need PCP prophylaxis with most also needing AZT or alternative antiviral therapy; 2,064 with T-cell levels of 200-500 should be assessed for "early" use of AZT; and 3440 with T-cells above 500 should be monitored at least every 6 months within the context of primary care for changes in immune functioning.
Conclusion: Estimating service needs of certain populations is relatively simple when basic seroprevalence data is available. In the case of NYC STD clinic clients, need for service and associated resource requirements are high; although this population is not acutely ill, we estimate that at least 20% of these individuals are already severely immunocompromised. Translating need into demand for service requires expanding the availability of voluntary testing, stimulating providers to offer testing, motivating the population to be tested and providing necessary primary care.

Th.C.767 HIV SEROPREVALENCE STUDY OF INVOLUNTARILY HOSPITALIZED MENTALLY ILL HOMELESS: TWO TIME FRAMES IN NEW YORK CITY

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Objective: To determine the changing rate of HIV seroprevalence and risk taking behavior among a group of high risk psychiatric patients, i.e., the homeless mentally ill who shun health care services and are involuntarily hospitalized by mental health teams in New York City.
Methods: The study is conducted on the Creedmoor Psychiatric Center Intensive Placement Unit, which is part of New York City's largest state hospital. Homeless mentally ill patients removed from the streets are accepted for intermediate care and placement. This population tends to avoid public shelters and is demographically diverse. 28% are female and 72% are male. Ethnically, 46% are white, 39% are black, 13% are hispanic and 2% are Asian. All ages between 18 and 65 plus are well represented. There is a high rate of medical illness including active TB, positive VDRL and hepatitis B antibodies. Approximately 30% of patients abuse substances. Last year 54 anonymous bloods were tested for HIV antibodies. There were 3 (5.5%) positives, all with substance abuse histories. In the new time frame we will report the results of 100 additional bloods and correlate the results with risk taking behavior including IV drug use and male homosexuality. A group profile of these patients will include a description of geographic mobility, patterns of homelessness and psychiatric and medical illnesses.
Results: Thus far 8 of 37 bloods are positive for HIV antibodies. Results of the additional bloods will be presented in June.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Human Sexuality

Th.D.768 PREDICTING RISK BEHAVIOR WITH THE AIDS RISK REDUCTION MODEL (ARRM) IN A RANDOM HOUSEHOLD PROBABILITY SAMPLE OF SAN FRANCISCANS: THE "AMEN" STUDY

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Objective: Data from the AIDS In Multi-Ethnic Neighborhoods survey are used to test Stages 1 & 3 of ARRM (a three stage process model of sexual risk behavior change; Catania, Kegeles, & Coates, 1990). Stage 1 analyses examine predictors of labeling one's sexual behavior in terms of HIV risk; Stage 3 concerns predictors of sexual behavior (e.g., condom use) (Stage 2 was not assessed in this first wave of the study but will be examined in wave 2).
Methods: Data were collected in a random household probability study of 1,781 white (41%), black (26%), and Hispanic (25%) (8% Other), unmarried respondents, aged 20-44, residing in selected "high risk" census tracts of San Francisco (Heterosexual = 83%, Homosexual = 13%, Bisexual = 4%). Labeling defined as making an accurate or inaccurate assessment of one's risk for HIV based on prior and current sexual practices. The behavioral outcome is frequency of condom use averaged across sexual partners for the past year.
Results: Multiple regression (Logisitc & LSQ) analyses indicate that, 1) Accurate labeling of high risk behavior is related to high susceptibility beliefs (Imp. Chi Sq. = 92.46, $p < .0001$), but unrelated to knowing someone with AIDS; gay relative to heterosexual men ($p < .03$), and Hispanics compared to whites ($p < .01$) were more likely to accurately label their behavior, 2) Greater condom use during vaginal or anal intercourse is significantly related to better sexual communication skills, higher perceived benefits and lower costs of condom use, but unrelated to religiosity, self-efficacy, and ethnicity (R's range from .50 - .66); these latter results are substantially the same for men and women, and heterosexuals and gay men.
Conclusion: The findings 1) suggest the ARRM model is applicable to most social groups, 2) underscore the importance of interventions that enhance communication skills and teach methods of facilitating sexual enjoyment of condoms.

Th.D.770 SEXUAL BEHAVIOR OF A FRENCH POPULATION AND PRECAUTIONS FACING AIDS.

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I.The study describes the sexual behavior of the population and focuses on multiple sexual partnership in relation to the diversity of sexual practices and use of condoms.
II.The examined population is a representative sample (drawn by quota-sex, age, place of living) of 1511 people, 18 to 59 years old, living in Rhône-Alpes region (South-East of France), interviewed during spring 1989.
-Number and type of sexual partners (regular, occasional, new); -Sexual practices (sodomy, orogenital); -Use of condoms in various sexual contexts.
III.15,8% of heterosexual respondants declare having more than one partner in the last twelve months (12,5% do not have sexual relationship). Thirty eight persons had homosexual relationships during the past year (less than 3% of the sample), 3/4 having more than one partner.
People with multiple partners have a lower frequency of sexual activity than the monogamous, but their practices are more differentiated (fellatio, sodomy, cunilingus). Use of condom is higher than in the general population. The context of usage is important: 3,3% use condoms systematically with their regular partner, 9,8% with a known occasional partner, 13,1% with a new partner. These proportions rise slowly with the number of partners.
IV.As far as heterosexuals are concern, public policies should try to stimulate the adaptative answer of people who have many partners.

Th.D.769 SEXUAL BEHAVIOUR IN THE CITY OF LISBON - PRELIMINARY RESULTS -

JNICT GRANT 87264/IMU

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OBJECTIVES: 1- Study sexual behaviour of the population in general to obtain more knowledge, in order to elaborate sexual programmes related to AIDS. 2-To develop a methodology to study sexual behaviour in random samples of the population in general.

METHODS: 1- A questionnaire on sexual behaviour was designed upon the experience obtained in an exploratory study. This questionnaire consists of two parts: the first one to be completed upon a personal interview and the second to be completed confidencially by the interviewee. 2- a random sample of the population of Lisbon (N=102) was designed to test the questionnaire.

RESULTS: The information obtained through the questionnaire indicates that: 1 - 93.1% of the sample completed the second part of the questionnaire. 2 - 13.5% of men and 5.4% of women admitted having another sexual partner the previous year. 3 - 69.3% of men and 16.2% of women had their first sexual intercourse by the age of 16. 4 - 30.6% of men and 24.3% of women practice oral sex. 5 - 20.4% of man and 10.8% of women practice anal intercourse. 6 - 14.7% of the interviewees ignore the sexual habits of their partner. 7 - 5.3% of the sample population had sex with prostitutes; 4.2% with drug addicts and 2.2% with a bisexual person.

CONCLUSION: The methodology used in this investigation seems to have been the most adequate in the study of sexual behaviour of this population even when 74.5% had catholic upbringing.
Data results indicate a strong difference in sexual behaviour, between the men and women of this sample which suggest that further studies should be undertaken as to the reasons of such.

Th.D.772 SEXUALITY AND AIDS IN THE NETHERLANDS; RESULTS FROM A NATIONAL SURVEY

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Objective: To describe the sexual behavior of Dutch citizens in the context of HIV transmission as it relates to: potential risk of transmission, awareness of this risk, knowledge about AIDS, the endorsement of misperceptions about transmission. Methods: A representative sample of 1000 Dutch citizens between the ages of 18 and 50 were interviewed face-to-face using a structured questionnaire. The response rate was 58.3%. Results: Regarding sexual behavior, 12% of the respondents is running at least some risk of transmission in the year preceding the interview. Of this group, 44% rule out completely the chance of infection. In general, the level of knowledge about AIDS, HIV transmission and prevention measures is high. The knowledge of those who have potentially been at risk is slightly greater than of those who had not been at risk; the difference in levels of actual knowledge does not correspond with the subjects' own perceptions; the one's who have been at risk, notwithstanding their behavior, claim to know considerably more about prevention than the one's that haven't been at risk.
Conclusions: A relatively small but substantial portion of the Dutch population seems to engage in riskful sexbehavior through sexual contact. Because the level of knowledge is quite sufficient, this might imply that prevention strategies should be more intensively directed at the subgroups who are relatively more at risk.

Th.D.773 SEXUAL BEHAVIOR AND KNOWLEDGE ABOUT AIDS IN STUDENTS

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Introduction: Knowledge about different risk behaviors is an important basis for the sucess of AIDS information campaigns. For this reason, a 26 item questionnaire was given to 604 university students (44% male and 56% female) to evaluate sexual behavior and knowledge about AIDS. Students were divided into three subgroups: Natural sciences, social sciences and medical sciences. Sex differences and differences of study fields were determined. Multiple correlations were calculated to identify interconnections between items. Results: 1. Sex differences were found in drug abuse, condome use, promiscuity and talking about AIDS with sex partners, implying that women are more sensible dealing with AIDS. 2. Effects of studies were seen in the level of information, condome use, drug use, promiscuity and talking about AIDS with sex partners, suggesting that students of social sciences are less informed and show increased risk behavior. 3. Three subgroups of students could be identified: informed, noninformed with promiscuity and drug abuse, noninformed with promiscuity and prejudices against AIDS patients.
Conclusion: These results suggest the existence of different groups of uninformed students with risk behavior. That may implicate the need for different information programs to reach the different target groups.

Th.D.774 AIDS KNOWLEDGE AND SEXUAL BEHAVIOR AMONG UNIVERSITY OF PUERTO RICO STUDENTS

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Objectives: To study sexual behavior, drug experience, and knowledge of AIDS among University of Puerto Rico students and the interrelations of these factors.
Methods: A 122 item questionnaire was administered to a representative sample of 3905 students from 10 campuses of the University of Puerto Rico.
Results: Generally students scored high on AIDS knowledge with more than 70% knowing facts about AIDS and its transmission, but only between 36 and 69% knew that various myths about AIDS were incorrect. 38.3% of women and 67.2% of men admitted to sexual experience with 30.9% of these women and 39.6% of these men practicing anal sex. 95.2% knew condoms protected against AIDS, but only 55.1% of those with sexual experience had used condoms, and only 11.8% of these used them all the time. 18.3% admitted to some drug use; only 3% used heroin and less than 1% were regular users of cocaine and heroin.
Conclusions: University of Puerto Rico students are more at risk for AIDS from sexual practices than drug usage, but they are at risk, because of a discrepancy between their AIDS knowledge and sexual behavior.

Th.D.775 ADOLESCENT EDUCATION FOR SEXUALITY-A STRATEGY FOR AIDS PREVENTION IN DEVELOPING CULTURES

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Objective: Our interest has been to identify,cost minimizing and culturally congruent strategies towards AIDS and STD prevention within the relevant economically handicapped ethos of countries like India.
Method: Effectivity of AIDS and STD prevention,embedded within an education program for Human Sexuality was reviewed by the authors.
Pre and post program impact on about 850 adolescents in urban and periurban areas aroung Bombay were evaluated.
Results: Highlighting the values of intimacy and humanisation of sexual behaviour were found to be the most effective communication strategies for empathetic impact on adolescents.
Conclusion:AIDS and STD prevention should be incorporated within education program centering upon Human Sexuality,for Highschool students as an effective strategy.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.776 BELGIAN ADOLESCENTS AND AIDS.
A SURVEY OF RISK BEHAVIOUR AND PREVENTION.

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Objective: Survey of sexual behaviour of Belgian adolescents.
Methods: A random sample of 800 Belgian adolescents aged between 15 and 23 were asked to answer a predominantly closed-ended questionnaire. It was processed with bi and multivariate statistical analysis techniques.
Results: The nature of sexual contact (vaginal,oral,anal), the number of partners and the type of relationship (monogamy,sequential monogamy,polygamy) revealed a number of consistent sexual behaviour patterns. A subgroup has a pattern of conduct which makes it a permanent risk group. However, it is important to note that the majority of adolescents practice high rish behaviour at one time or another. The dissimilar development of sexual and preventive behaviour (including the abscence of prevention of STD) is problematic. Although there is a lack of knowledge and lax attitude as far as prevention is concerned the main obstacle is insufficient mental preparation for the first sexual contact and weak negotiation skills with regard to prevention.
Conclusion: This survey highlights the necessity of including aids prevention within the framework of a global projekt of sex and relation education. Various social bodies should coordinate and spread specific messages to well defined target groups.

Th.D.777 ANALYSIS OF FACTORS RELATED WITH HIV INFECTION IN 961 FEMALE SEXUAL WORKERS.

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OBJECTIVE: To characterize the prostitution population identifying the risk factors associated with seropositivity and with adoption of preventive methods.
METHODS: 961 female prostitutes attending the AIDS Information Center in Mexico City from April 1987 to december 1989 were analyzed. The prostitutes and prostitute's leaders participated in the study voluntarilly in coordination with community volunteers and the Center's staff. All were tested each three months getting a sanitary card; a questionnaire was administered and — among the infected prostitutes a personal interview and counseling was implemented.
RESULTS: Of 961 female prostitutes tested 21 were HIV infected (seroprevalence 2.2%), age -- ranged from 16 to 54, most of them had medium and low socioeconomic level. 775 prostitutes had not a stable sexual partner and only 20% were married or had nor married couple.Most of the prostitutes were mothers(66.5%).The most frecuently sexual practice was vaginal coitus.The HIV infected group was compared with a non infected group.
CONCLUSIONS:
1.The access to prostitutes is difficult because sex work is penalized and stigmatized in most societies.Contact with prostitutes and their organizations must be attempted.
2.Our country registers an HIV seroprevalence of 2.2%,lower than other countries.The main - mechanism of transmission among them was sexual intercourse.
3.1% of the prostitutes were drug users.
4.The infected women were younger,less experienced and of lower socioeconomic level.
5.Behavioral changes were motivated for the protection of their children.

Th.D.778 DETERMINANTS OF EFFECTIVE AIDS EDUCATION AND COUNSELLING AMONG FILIPINO WOMEN AT HIGH RISK OF HIV INFECTION

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OBJECTIVE: To identify determinants for effective education and counselling on AIDS of women sex workers in the Philippines.
METHOD: Using a detailed interview, information on health and AIDS-related knowledge, attitudes and practices was obtained from 640 randomly selected female sex workers working in Metro Manila. Data were analyzed using relevant standard statistical tests.
RESULTS: Preliminary results indicate that prior experience with STD and its management affected their knowledge and attitude towards adopting appropriate behaviors for preventing HIV transmission. In particular, self-medication, careful inspection of customers, personal hygiene (especially douching) were believed to be effective measures against STD and AIDS. Intent to use condoms was expressed by less than 40% although this was influenced by client's cooperation.
CONCLUSION: Accurate information on STDs and existing medical practices are essential to determining and developing effective intervention programs vital to AIDS prevention.

Th.D.779 Leigh, Carol

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Objective: This study presents an array of issues determined by national and international prostitutes' rights organizations and HIV prevention/education organizations which target prostitutes. The main research question is: How can we develop humane HIV prevention/education programs within the context of legal systems which deny prostitutes the same rights as other citizens.

The goal of this research is to educate conference attendees, service providers, and those who design research studies involving prostitute populations.

Method: Reports from international prostitutes' groups are compiled regarding the effectiveness and social impact of HIV studies and outreach programs. Subjects for the study are prostitutes and prostitute support networks who have 1)participated in HIV prevention/education and 2)Are familiar with moral and legal issues in relation to prostitutes.

Results: Different methods of education/prevention are compared with a specific emphasis on the benefits to prostitutes in regard to health, privacy, and social benefit, as well as legal and moral issues of concern to the scientific and sociological community

Th.D.780 LAW ENFORCEMENT AND THE RISK OF HIV TRANSMISSION AMONG STREET-INVOLVED WOMEN

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Objective: To examine how Seattle's drug paraphernalia and probation laws shape the behavior of women at risk for HIV through IV drug use and street-based sex work. Moreover, to illustrate how sex workers and people using IV drugs have emerged as foci where the conflicting strategies of public health and law enforcement collide.

Methods: Twenty-five women (ages 18-44) participated in 1.5 to 2.5 hour tape-recorded ethnographic interviews. Questions focused on the structure and organization of everyday life, significant relationships (sexual, platonic, familial), problems with police, and how HIV prevention was integrated (or not) into the social context of sexual and IV drug using behaviors.

Results: Carrying the tools of AIDS prevention (condoms, bleach, and clean syringes) flags illegal behaviors and escalates women's risk for police harassment and arrest. Police confiscate syringes (including those from the Health Department needle exchange). Some women report confiscation of condoms and bleach. Because all the women interviewed were recently or currently on probation, they were/are legally restricted from areas where AIDS outreach efforts are concentrated.

Conclusion: In suppressing illicit behaviors among certain women, probation laws and enforcement tactics exacerbate the risk of HIV transmission. Enforcement strategies also work at cross purposes with community health outreach efforts. There is a need for less restrictive laws. Health departments should promote AIDS education within local police departments, as well as the judicial and penal systems. Police should be encouraged to distribute, rather than confiscate, condoms and bleach.

Th.D.781 Educational Video Promotes Knowledge and Behaviour Change among Women in Kigali, Rwanda

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Objective: To determine the acceptability and usefulness of educational video in promoting knowledge and behaviour change among urban Rwandan women.

Methods: An educational video about AIDS and safer sex, using the local language and local actors, was developed for 1469 urban Rwandan women enrolled in a cohort study of HIV infection and behaviour change. The video focused on AIDS information, attitudes toward negotiating behaviour change, and communication skills with partners. Women completed a baseline questionnaire, saw the video in small groups followed by discussion, had confidential HIV testing and counseling, and were offered free condoms (recommended) and/or spermicides. Repeat questionnaires were given to a consecutive sample of 103 women immediately following the video, and to the entire cohort at 6 months.

Results: Immediately following the video, mean knowledge score of AIDS and routes of transmission significantly improved from baseline (13.3/20 to 14.2/20, $p<.01$). The belief that AIDS was curable decreased (9/103 to 0/103, $p<.01$) and 58% of women also said they intended to change behaviour. Of the 443/1298 women (34%) who at 6 months reported that they were having safer sex (using condoms, spermicides or having fewer sex partners), 81% listed the video as the first or second most important aspect of the intervention convincing them to change behaviour. pDue to its popularity, 100 copies of the video were distributed throughout Rwanda.

Conclusion: This culturally specific educational video is an effective method for improving knowledge and promoting behaviour change in Rwanda. Video could be an important tool for AIDS educational programs elsewhere in Africa.

Th.D.782 AIDS, STD's AND CONDOMS ACCEPTABILITY IN HIGH RISK GROUPS IN MATADI, ZAIRE.

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Objective: To assess the knowledge, attitude and practices of condom use in order to make them an important means of protection, more acceptable, available and usable.
Methods: A series of three questionnaires were designed, adapting to three different samples of high risk groups; inhabitants of ages 15-55, transients and prostitutes from the port city of Matadi, Zaire. The samples were drawn at random. The results were computer analysed with IQ and SPSS programs.
Results: Results are based on 418 cases, such as: 185 permanent inhabitants of Matadi, 95 transients and 68 prostitutes. Most of our respondents: 93, 90.5, and 94 per cent, respectively have heard about condoms.

Purpose for which condoms are used

To avoid:	Residents N°=185 %	Transients N°=95 %	Prostitutes N°=68 %
AIDS	9.7	13.7	1.5
STD's	49.7	17.9	83.8
AIDS + STD's	2.7	5.3	2.9
Pregnancy	15.1	10.5	1.5
Pregnancy, AIDS, STD's	15.1	43.2	5.9
No answer	7.7	9.4	4.4

Use of condoms

	Total	Ever used	Regular use
Residents	185	37.3	9.7
Transients	95	52.6	12.6
Prostitutes	68	85.3	N.A.*

* Not applicable, many clients do not accept condoms.

Conclusion: Prostitutes seem to be more aware of the importance of condom, although more for STD's than AIDS, than most of inhabitants of Matadi who need more information and better access to condoms. This also explains the low usage of condoms among residents.

Th.D.783 CONDOM USAGE AND DEMAND AMONG ZAIRE RIVER BOAT TRAVELLERS

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Objective: As travelling on the Zaïre river boat is a popular and reasonably priced way of travelling from Kinshasa to Kisangani and back, the study intends to assess the need and the possibility for the social marketing of condoms on the boat and along the river towns during a typical fourteen day journey upstream.
Methods: Three researchers administered questionnaires at random to 1/5 of the nearly 3000 passengers who were willing to respond, taking into account socio-demographic variables, knowledge, attitudes, beliefs and practices of passengers regarding AIDS, STDs and condoms. The results were analysed with Epi-Info and Lotus.
Results: Among 525 passengers in the sample, 103 or 19.6 per cent were women. The largest socio-demographic group of passengers 41.7 per cent, on the state run boat line are frequent travellers going the length of the journey as merchants to the villagers along the river and the inhabitants of the port towns. The second largest group was students returning to the University in Kisangani. 93 per cent of travellers were aware of AIDS and 60 per cent mentioned STD's and AIDS prevention as the primary function of condoms. 51.6 per cent have already used condoms for their own protection, while 28 per cent claimed ignorance of family planning (nevertheless over 85 per cent were found to have used some form of contraception). 75 per cent of those who had used condoms are regular users (4 times or more per month), 5 per cent to avoid pregnancy, 54 per cent to avoid AIDS and STDs, and 41 per cent to avoid all: pregnancy, STDs, and AIDS. 75 per cent of respondents approved sale of condoms in hotels and on the river boat; 56 per cent agree to sale in bars. Condoms are currently sold on the boat in market stands.
Conclusion: In Zairian culture discussions on sex and condoms, once regarded as taboo, are now spoken of publicly, and with researchers subjects were open and informative. River boat travellers are well aware of the existence of AIDS and STDs. They are willing to buy condoms even in public places as on the river boat and in hotels. Appropriate marketing action in that line can be taken.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.784 UNPROTECTED VAGINAL AND ANAL SEX AMONG YOUNG SEXUALLY ACTIVE WOMEN

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OBJECTIVE: To determine the ethnic and risk-perception associates of unprotected sex among young sexually active women.
METHOD: 210 White (87), Black(85), Latina(21) and Asian(17) young adult female family planning patients attending San Francisco Bay Area Planned Parenthood Clinics were interviewed to determine the relationship between unprotected vaginal and anal sex with perceived risk for contracting HIV.
RESULTS: No significant differences were found between the ethnic groups with regard to perceived AIDS risk or unprotected vaginal or anal sex. 88.3% reported unprotected vaginal sex with their primary partners, 76.8% reported unprotected vaginal sex with their secondary or casual sex partners. 5.3 % of these women reported anal sex with their primary sexual partners, 9.6% with a casual sexual partner. Only 1 of the women who reported engaging in anal sex had ever used a condom for anal sex. No significant relationship was found between believing that one is at risk for AIDS and the practice of safe sex in this population.
CONCLUSION: This data suggests that HIV risk reduction education which includes information about risks associated with anal sex for heterosexual women needs to be provided for this population.

Th.D.785 SEXUAL RISK TAKING AMONG WOMEN AT RISK FOR HIV

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OBJECTIVE: To describe the scope of sexual risk taking among women in a community endemic for HIV.
METHODS: A convenience sample of 350 sexually active minority women were interviewed during clinic visits. Questions covered demographics, sexual behavior, contraceptive use, drug use, and attitudes about HIV and sexually-transmitted diseases. All were offered HIV pretest counseling. As measures of sexual risk taking, subjects were cultured for chlamydia trachomatis (CT) and trichomonas vaginalis (TV). Data analyses were done by 1-way ANOVA and Chi-square tests, with a probability criterion of .05 set to evaluate statistical significance.
RESULTS: Overall, 36% of the women tested positive for CT, TV or both. The presence of an STD was associated with younger age, lower income, less education, unemployment, unmarried status, less religiosity, more lifetime sexual partners, a history of drug use, not living with a sexual partner, and less favorable attitude towards HIV testing. Not significantly associated with presence of an STD were frequency of sexual intercourse, multiple sexual partners ove last year, STD history, and consistent condom use (reported by less than 5% of the subjects). Approximately 35% of the women voluntarily attended HIV pre-test counseling. Presence of an STD was not associated with counseling attendance, but was a significant predictor of actual HIV test taking.
CONCLUSIONS: The high prevalence of STDs in this community reflects continued high risk for HIV. Safe sex practices (condom use) are utilized by few women, and responsiveness to HIV testing is low.

Th.D.786 SEXUAL AND PHYSICAL ABUSE AS FACTORS IN CONTINUED RISK BEHAVIOR OF WOMEN IV DRUG USERS IN A SOUTH BRONX METHADONE CLINIC.

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OBJECTIVE: To explore the relationship between sexual and physical abuse, and drug related HIV risk-taking behavior of women IV drug users.
METHODS: Participant observation and individual ethnographic interviews of 30 women were employed to collect descriptive data on their lives and individual patterns of drug and sexual behavior.
RESULTS: The sample is representative of the women in the methadone program; mean age 35; 50% Latina; 30% African-American and 10% White. Many participants have histories of abuse: 30% (10) were physically abused by a parent; 23% (8) were sexually abused by a family member and 10% (3) were victims of incest. As adults, 63% (19) were physically abused and 13% (4) were sexually abused. Additionally, 20% (6) had physically abused mothers.
Efforts to ameliorate the influences of sexual and physical abuse are evidenced by the absence of men in injection initiation. Of 26 women who inject, 45% (12) were introduced to injecting by female friends or relatives and 7% (2) initiated alone. These women establish a sense of control by using drugs with other women or alone. The reasons given include the desire to avoid sexual and physical abuse in encounters with men.
CONCLUSIONS: Prior sexual and physical abuse is extremely common among IVDU women. The resultant damage to self esteem must be addressed in AIDS risk-reduction programs for this population. Damaged self esteem, linked to histories of abuse, leaves many women believing they cannot control their lives or bodies - especially in transactions with men involving drugs and sex.

Th.D.787 WOMEN'S SEXUAL RISK BEHAVIOR AMONG PARENTERAL DRUG USERS.

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Objective. To compare among Parenteral Drug Users (PDU), HIV+ women with HIV- women as to number of sex partners and high risk sexual practices.
Methods. Thirty-nine HIV+ and 36 HIV- women of comparable age (mean 37 years), ethnic background (2/3 black), and socioeconomic status (mostly low) were recruited from an infectious disease clinic and a methadone clinic of 2 inner-city hospitals. All women underwent a detailed semi-structured sexual behavior interview.
Results. Over the prior 6 months, the number of male partners ranged from 0 to 362; 1/5 had no male sexual partners, an additional 1/2 had only 1 partner. HIV+ and HIV- women did not differ significantly in partner numbers or intercourse frequency. In the total sample of heterosexually active women, an average of 21% of all penile vaginal occasions reported were protected by condom use. HIV+ women reported more penile vaginal occasions protected by condoms ($p < .06$). However, more than 50% of heterosexual active women of the total group reported no condom use by their partners at all. Ten percent of the sexually active sample reported penile anal intercourse which was always unprotected by condoms.
Conclusions. PDU women vary greatly in number of partners. Condom use by male partners of PDU women is relatively low with an increase in women who are HIV+. It is important to note that it is erroneous to hold women responsible for partner condom use since their control over their male partners' behavior is limited.

Th.D.788 CONDOM USE AMONG INTRAVENOUS DRUG USERS

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Objective: To identify predictors of condom use among intravenous drug users (IVDUs) and their sexual partners in San Francisco.
Methods: Structured interviews were conducted with 752 IVDUs. Contingency table analysis was employed, where statistical significance was assessed with a chi-square statistic. Condom use was scored "ever" vs. "never" in the past 6 months.
Results: 43% of sexually active respondents had used condoms during the previous six months. IVDUs with multiple sexual partners were significantly more likely to report condom use than those with only one partner (56% vs 29%, chi-square = 45.99, $p<.00001$). Condom use was not associated with gender, race or educational level. Among IVDUs with one partner, condom use was negatively related to having had sex with IVDUs (i.e. "monogamous" IVDUs tended to protect non-IVDU partners). Among those reporting multiple partners there was no association between having had sex with other IVDUs and condom use. Among respondents with multiple partners, 39% had exchanged sex for money or drugs. Those who had exchanged sex for money were significantly more likely to have used condoms than other non-monogamous IVDUs; having exchanged sex for drugs was not associated with condom use.
Conclusions: Compliance with this safe sex practice is clearly problematic among IVDUs, as it is for the population at large. However, effective outreach can increase the rate of compliance: having received information from a street-based outreach project was a near-significant predicator of condom use, with 45% of those who had received information from the project reporting condom use, versus 36% of those who had not (chi-square = 3.13, $p<.077$).

Th.D.789 *REPRESENTATION AND ANALYSIS OF THE STRUCTURE OF SEXUAL BEHAVIOUR IN THE CONTEXT OF HIV TRANSMISSION*

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Objective: To meet the need for comparable and compatible "reporting structures" for studies of sexual (and primarily homosexual) behaviour by national and international studies : a logical structure has been developed describing sexual behaviour primarily in terms of modality (inserter/insertee etc.) sexual act (behaviour) and outcome (ejaculation).

Methods: The formal schema has been developed and implemented in the form of the Sexual Behaviour Inventory (used by WHO/GPA Homosexual Response Studies) and as self-reporting Sexual Diaries. The methodology represents each sexual act as a record in a relational data base and methods have been developed for their analysis.

Results: The schema will be presented together with its implementation, both in question formats of varying complexity (as Inventories) and as the method of sexual diaries. Information is also given on reliability, cross-validity and timing. Appropriate statistical procedures and software are also discussed.

Conclusion: The schema provides a coherent basis for comparative analysis of sexual behaviour, allowing a sufficiently detailed analysis for studying sexual transmission of HIV.

Th.D.790 CONDOM USE IN HOMOSEXUAL MEN:COHORT & CROSS-SECTIONAL STUDIES

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Objective: To examine self-reported reasons for homosexual men not using condoms in 2 San Francisco HIV studies:cohort and cross-sectional.
Methods: Homosexual men from 2 studies who reported unprotected anal (UPA) sex in the previous 4 months were compared, including 156 men from an ongoing cohort study of HIV infection and 133 men from an STD clinic cross-sectional study. In 1988, all participants were asked to give the single most important reason for not using a condom during their last UPA contact. Response differences were compared with chi-square and t-tests.
Results: More cohort participants were white (90%) than in the cross-sectional study (54% white, 20% black, 25% Latino) ($p<0.001$), but ages were similar in both studies. Cohort men were more likely to have had their last UPA contact with a steady partner (76%) than the cross-sectional men (57%).
The distribution of responses differed between the 2 studies (X^2, $p<0.004$):

Reason condom not used (last UPA contact)	Cross-Sect.(n=133)	Cohort(n=156)
Usage Problems/Interrupts Sex	22.3%	15.7%
Not Available/Sex Unplanned	26.5%	20.9%
Partner's Responsibility/Effect on Relationship	14.1%	20.3%
Partner with same HIV Status	5.8%	20.9%
Alcohol/Drug Use	6.6%	2.6%

Conclusions: Cohort men were more likely not to use condoms because they had the same HIV status as their partners, while cross-sectional participants had more problems getting or using condoms. Policymakers should be cautious when comparing cohorts with other populations.

Th.D.791 AIDS KNOWLEDGE AND HIGH RISK BEHAVIOR AMONG GAY BLACK MALES

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The objectives of this study were to (1)measure AIDS knowledge, attitudes, and behaviors among gay Black males in the U.S., (2) assess the effectiveness of AIDS education efforts for this group, and (3)provide information for improving prevention and treatment policy and planning for Black males.
The methodology was a survey (funded by the Center for Disease Control) targeted at Black males who have sexual experiences with other males. Conducted during the winter of 1989, 950 Black males were interviewed from 24 medium and large sized cities from all regions of the U.S. Respondents were selected by membership in a gay organization (40 percent of the sample) or at locations where men meet or have sexual encounters with other men. The location interviews were conducted face-to-face by interviewers indigenous to the local community.
The primary finding is that awareness and generally accurate AIDS information is reaching this community. Furthermore, Blacks are receptive to outreach efforts. Yet, a large subgroup continues to practice unsafe sex, or is prone to do so under certain conditions. Correlates of high risk behavior include beliefs about discrimination, and an approach to AIDS as "Russian roulette." The main conclusion is that general education strategies are insufficient. Reinforcement tactics that rely on peers and "word of mouth" are especially important within the gay Black community.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.792 IMPEDIMENTS TO ACCESSING SERVICES FOR BLACK GAY AND BISEXUAL MEN WHO CHOOSE NOT TO BE "GAY IDENTIFIED"

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Objective. To examine how internalized homophobia in black gay and bisexual males impedes acceptance of "gay identified" services.
Method. Data collected came from two sources: Review of 25 patient charts of black males who are self identified as having had same sex experiences, and interviews with clinic social workers. These patients are followed in a New York City based out-patient designated AIDS treatment center.
Results. Forty percent of the black population were self-identified as having had a "same sex" sexual experience. When terms such as "gay" or "bisexual" were used, patients became resistant and denied behavior. However, when asked about "having had sex with a man" patients were more willing to disclose their experiences. These patients were reticent to utilize gay identified support services. Hence by choice these patients were self-isolating and did not access services.
Conclusion. With supportive counseling, discussing "male to male" sexual experiences as opposed to gay experiences, 20% of these patients have begun to participate in support groups and access services from organizations that are "gay identified", i.e. GMHC. All colleagues interviewed emphasized the importance of avoiding labels such as "gay behavior" and "homosexual activities". Emphasis is placed on "man to man sex" maintaining the idea the experience is sexual and not an emotional relationship.

Th.D.793 BEHAVIOR CHANGES IN BISEXUAL MALES IN BELO HORIZONTE,BRAZIL (1986-1989)

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OBJECTIVE: To evaluate behavior changes in bisexual males attending a reference outpatient clinic for HIV in Belo Horizonte, Brazil.
METHODS: It was defined as bisexual , males who have had at least one male partner in the last 5 years and at least one female partner in the last 2 years ; they comprised one third of the male population attending the clinic. A standardized psychosocial questionnaire was applied to 336 individuals and, after proper consent, anti-HIV status was evaluated (Elisa ard Western Blot).
RESULTS: (in years 86-87-88-89): average age was 29 years, average salary : 5 minimum wages; 32% were illiterate, 50% had first or second grade education and 18% had university education. HIV was positive in 35%, negative in 63% and indeterminate in 2%. The following parameters did not change through the years: anonymous sex with male or female; anal intercourse with men and/or women; gay sauna attendance, sex with persons with AIDS; existence of fixed partner in the last two years(median=3-4-3-3). The number of male partners decreased: 1986: median=7(0-500 partners); 1987: 6(0-1,000); 1988:6(0-1,000) and 1989: 4(1-200). There was an increase in persons reporting the use of condoms (31%-32%-51%-46%) but not in those that always or almost always used.
CONCLUSION: There was no changes in the majority of risk behaviors for HIV infection, despite the increase of people having used condoms. This suggests that campaigns , educational programs and the like are still lacking efficacy.

Th.D.794 DEVELOPING AIDS EDUCATION INTERVENTIONS FOR NON-GAY IDENTIFIED MEN HAVING SEX WITH OTHER MEN

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Objective: To describe a method to gather information for developing appropriate AIDS education interventions for non-gay identified men having sex with other men (NGIMWM).

Methods: We implemented a formal 4-phase community identification process to identify methods of accessing & intervening with NGIMWM, a difficult-to-reach group at potentially high risk for HIV infection. Using a questionnaire designed to elicit information on types of NGIMWM, demographics, access points, & risk factors for transmission of HIV, we interviewed: a) in-house staff of the AIDS Prevention Project & the Northwest AIDS Foundation, b) staff of outside agencies in contact with NGIMWM, c) informal interactors with NGIMWM (e.g. bathhouse staff), & d) key NGIMWM opinionmakers. Information was confirmed via observations of key access points & in-depth interviews with NGIMWM.

Results: Forty in-house staff interviews resulted in identification of 47 types of NGIMWM, which were consolidated into 5 broad categories. Over 100 access points were identified. Additional interviews (67), including interviews with minority agencies, police, health clinics, bathhouse managers, peepshow staff, clergy & therapists, were also completed. These interviews yielded 60 types of NGIMWM, 13 of which had not been identified by in-house staff. Thirty-eight new access points were also reported. Interviews with NGIMWM generated similar information on types & access points.

Conclusions: Careful interviewing of those in contact with NGIMWM is an effective way to gather information needed to plan appropriate educational programs.

Th.D.795 SEXUAL BEHAVIOR IN BRAZIL: A COMPREHENSIVE COMPILATION OF EXISTING DATA

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The sexually permissive image of Brazil, together with the fast and steady increase of AIDS cases in the country, has brought about great interest concerning the existing sexual practices. Nevertheless, inadequate dissemination of results and the lack of a proper database on the subject, among other problems, have made it difficult for professionals to have access to this information. Thus, many misconceptions continue to interfere with proper health promotion measures in AIDS.
Objective: The purpose of this paper is to review and integrate published and non-published data available on sexual behavior in Brazil.
Methods: Academic and non-academic literature on the subject published in Portuguese, as well as, preliminary data of ongoing research on sexual behavior were complemented with personal interviews with sex researchers, therapists and educators.
Results: Most of the quantitative research has focused on reproductive behavior of women and adolescents and not on sexual behavior as such. Qualitative research has focused mostly on male homosexuality. There is little data on prostitution and on sexual behavior of I.V. drug users. Interesting contradictions arise from qualitative and quantitative data and the opinion of professionals bring a complementary insight.
Conclusion: Greater exchange and integration of data is needed.

Th.D.796 CONDOM USE WITH CLIENTS AND PRIVATE PARTNERS AMONG TRANSVESTITES IN ITALY

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Objective: Male prostitution, though potentially important for HIV transmission, has received yet little attention, as compared to female prostitution. The aim of the present study was to investigate the sexual habits of transvestites, in particular the frequency of condom use.
Methods: The present data set concerns the pilot phase of a larger study, conducted in several Italian cities. Two professional female prostitutes collaborating with the research team (C.C. and P.C.) interviewed a group of street prostitute transvestites. Information was elicited on demographic factors (number of partners, type of sexual activity, condom use).
Results: 27 transvestites were interviewed: their median age was 29 years (range 17-42). Only 3 of them reported age history of intravenous drug use. The median number of clients per month was 260 (range 10-1000), most of them bisexuals. Twenty-five out of the 27 subjects declared to use always condoms with their clients but only 14 with their private partners. The highest frequency of condom use was associated with the practice of anal recetive sex with clients; the lowest with the practice of anal insertive sex with private partners.
Conclusion: Due to the high number of bisexual clients and to the low frequency of condom use with their private partners, these preliminary results confirm that the role of transvestite prostitutes in the transmission of HIV is of concern and it deserves further attention.

Th.D.797 RELIABILITY AND VALIDITY OF SELF-REPORTED BEHAVIORS: IMPLICATIONS FOR NATIONAL AND INTERNATIONAL STUDIES

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Objective: To assess the reliability and validity of self reports of sex practices, sexually transmitted diseases, and intravenous drug use.
Methods: We reviewed confidential interview data from 1410 prostitutes for internal consistency (reliability) and compared responses to standardized questions with laboratory findings and clinical observations (validity). Yule's Q was used to measure associations, chi-square for significance tests.
Results: All 1410 were interviewed in English. None of 177 who reported having a tubal ligation said she was pregnant at interview. Women who reported having had a positive test for HIV were more likely to have a positive HIV antibody test (63.2% of 19) than those who said they also had been tested and were negative (9.7% of 207) ($Q=0.883$; $p<0.001$); prostitutes who reported having been treated for syphilis in the past 5 years were more likely to have a reactive serologic test for syphilis (62.8% of 288) than those who said they had not received treatment for syphilis in the past 5 years (15.7% of 1018) ($Q=0.801$; $p<0.001$). Self reports of intravenous drug use were highly associated with observed needle marks ($Q=0.992$; $p<0.001$); only 8 (1.3%) of 616 respondents who failed to report intravenous drug use were reported by a phlebotomist or clinician to have possible needle marks.
Conclusion: Reliable data were collected during confidential interviews with 1410 self-identified prostitutes who consented to be interviewed, tested, and examined in 8 areas of the U.S. Self reports were confirmed with laboratory and clinical findings, suggesting that valid comparative AIDS-related data can be collected in large-scale studies.

Perinatal, Pediatric, and Family Issues

Th.D.798 THE EVOLUTION OF DIGNITY: ROLE OF COOK COUNTY HOSPITAL (CCH) SUPPORT GROUP FOR HIV INFECTED WOMEN

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Cook County Hospital, Chicago, Illinois, USA

Objective: To develop a culturally relevant group meeting at CCH, where HIV infected women regularly discuss topics of their choice and become empowered through the dynamics of both the collective and individual experience.
Methods: The group meets the same weekday as clinic session. Childcare and refreshments are provided. Project Health Educators facilitate 10-15 participants. After the topic is chosen, one person shares personal experiences of the past and present; participants listen, relate their similar or different experiences, each speaking after the previous speaker has finished. Sometimes by consensus, guests and selected group members formally lead discussions.
Results: Through organized interaction and group dynamics, each person exhibited growth of self-esteem, and collectively the discipline of attendance and frankness of discussion produced many attitudinal changes. These include 1) increased compliance with treatment regimen, 2) drug avoidance, 3) assertiveness in family relations, 4) persistence in acquiring entitlements, and 5) self-confidence with institutional negotiations. Candidates for HIV/AIDS peer education training were identified and five trained peer educators now work within their communities to educate people about HIV/AIDS.
Conclusion: Prior to their involvement in the support group, most participants had no one to talk with openly about their illness. Through the group experience, the collective main goal is to "be there for each other." Most women had prior feelings of low self-esteem. Group experiences and subsequent peer education training resulted in women becoming public speakers who never considered such activity before.

Th.D.799 *HIV POSITIVE WOMEN INFECTED THROUGH INTRAVENOUS DRUG USE IN IRELAND AND THEIR FUTURE PLANS FOR THEMSELVES AND THEIR CHILDREN*

Foreman Maeve; Flynn, D.**, Pomeroy, L.***, Foran, D.**** Ross, D.***** Mulcahy, F.M.******

Department of Genito Urinary Medicine, St. James's Hospital, Dublin 8, Ireland

OBJECTIVE: Of the women with HIV infection attending the GUM Clinic in St. James's Hospital in Dublin over 90% were infected through intravenous drug use. The study set out to determine their future plans for themselves should they develop a HIV related illness and where applicable their plans for their children.
METHOD: Women currently attending the clinic who were HIV positive were administered a detailed questionaire by either social worker, counsellor or doctor. The information gathered included plans for their own and their children's future needs should they get a HIV related illness. They were also asked if the children were aware of the plans. The women's drug using history and whether they were currently using, on methadone maintenance or drug free was noted.
RESULTS: The study reported a marked difference between those with children and those without. The majority of women with children had already made provision for their future care whereas women without children had not begun to address issues facing them should they become ill. Current drug usage wasnot an influential factor.
CONCLUSIONS: Despite huge handicaps - drug use, single parenthood, poverty and stigmatising illness women with children who are HIV positive are planning ahead in making provision for their children should they become ill and die. Women without children are less likely to anticipate issues relating to their needs should they develop a HIV related illness.

This study emphasises the importance of the counsellor recognising and addressing the specific needs of both groups.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.800

CONSIDERATION ON MATERNAL FACTORS ACTING ON HIV VIRUS IN VERTICAL TRANSMISSION

[illegible], Ramona Marie Raiva; Cernelli, D.L.G., Secretaria, N.F.

Objective: Since 1985 Sorocaba's Conjunto Hospitalar Specialized Clinic on Infectious Diseases take care of HIV patients. Today women account for 104 (16,6%) of these subjects, from which [illegible] (1 - 5) became pregnant during the last years; 8 (26,7%) of them had previous contact with [illegible], where warning about the way AIDS virus is transmitted, their sexual conduct as well as a [illegible] on pregnancy prevention were given them.

We [illegible] herewith some aspects we observed which are causes of pediatric AIDS spreading in our region.

Methods: Conditions rated:

- Most children contracted the HIV virus vertically as a consequence of maternal factor of risk: I.V. drugs, high risk sexual activity 27 (90%).
- Average age is 22,9 years (18 - 33).
- Most are unmarried 18 (64%).
- Most belong to a low level socioeconomic class 22 (15,6%).
- Average number of children 1,5 (1 - 5).
- Of these children infected by vertical transmission 9 (32,1%) live with other people not their parents, and mother rejection associated with low level socioeconomic factor is responsible for 8 (26,6%).

Conclusion: In our region the number of vertical transmission is on the increase.

We proposed the establishment of a Prevention Programme through a secure and effective method to be discussed with these women, stressing the correct use of preventive sheath as the most reliable way we have in the control of AIDS virus transmission.

Th.D.801

A STATEWIDE PROGRAM OF IDENTIFICATION AND EARLY INTERVENTION OF HIV POSITIVE WOMEN AND CHILDREN

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Objective: New Jersey has developed approaches to differentially and more aggressively target public health policies to ensure that majority of a-symptomatic HIV positive women/children are identified and access system of early intervention for their infection and to prevent further transmission.
Methods: Data from the 1989 State's AIDS surveillance system, statewide 1989 HIV seroprevalence studies of newborns, etc., to estimate the number of HIV positive women/children. Utilization of medical services by HIV positive women and children was estimated by analysis of all adult and pediatric case management programs.
Results: Fewer than 50% of estimated HIV positive children and 30% of the expected number of HIV positive pregnant women have been identified for HIV care. Office-based practitioners are not routinely counseling concerning HIV infection.
Conclusion: Individual programs are inadequate to identify and bring enough HIV positive asymptomatic women and children into early intervention or prevention. New Jersey has established uniform policies of routine counseling and testing; a program of HIV reporting; formalized education and referral relationships among private physicians, pre-natal, family planning, drug treatment clinics; and a specialized set of 5 regionalized adult/pediatric treatment assessment programs to ensure access.

Th.D.802

A COMMUNITY BASED FAMILY HEALTH SERVICE AGENCY AS A STRATEGIC SITE FOR PERINATAL AIDS PREVENTION

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**Little Sisters of the Assumption FHS, NY,USA.

Objective: This paper describes a perinatal risk assessment and intervention model at a community-based family health service providing case-management to an extremely high-risk population of hard-to-reach, young, single, inner-city minority mothers characterized by a high prevalence of illiteracy, drug use, poverty and homelessness. It provides a unique site for the development and validation of effective AIDS prevention strategies.
Methods: In collaboration with a multidisciplinary team, bi-weekly case study consultations and data analyses led to the development and evaluation of a high-risk perinatal instrument. A database was developed for capturing all actions, interventions and outcomes in over 100 cases, each of which contained multiple visits, assessments and interactions.
Results: Based on concurrent analysis of all aspects of the caregiving system, and taking into account system barriers, a series of risk profiles and intervention plans were developed and refined. The validity of the risk assessments and the efficacy of the interventions were documented and monitored closely. The collaboration provides caregivers with better methods of judging and triaging risk and developing intervention strategies at critical decision points.
Conclusion: AIDS prevention for the highest-risk population must be delivered at a site which provides a critical density of hard-to-reach patients who can be followed by provider and clinical researcher. The family health service described above provides such a model.

Th.D.803

PREGNANT WOMEN'S ATTITUDES ABOUT HIV TESTING

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Objective: To document the relationships among pregnant women's perceived risk of HIV infection, their reasons for choosing or not choosing to be tested during pregnancy, their beliefs about the consequences of testing and their public policy preferences regarding HIV screening for pregnant women.
Methods: First as a pilot for and then as part of a larger study of the relationship between risk of HIV infection and fertility-related behaviors, women of unknown HIV antibody status were interviewed at the Johns Hopkins Hospital Obstetrics Clinic, which has a policy of offering HIV testing to all pregnant women. 200 women will have been interviewed by May 1990.
Results: Women in this sample believe they are at very low or no risk of being infected with HIV or of transmitting HIV to their baby. Of women who had already been offered testing, 60% chose to take the test; 79% of women who had not yet been offered the test said they intended to be tested when offered. The most frequently cited advantages of being tested are improved medical care for oneself and the baby if positive and peace of mind if negative. When asked what are the disadvantages of testing, most women cited none. The majority of the sample preferred to have as public policy for pregnant women completely voluntary screening programs. However, those with less education tended to prefer a mandatory policy and those with more education tended to prefer a voluntary policy. Many women believe that testing now occurs routinely without consent in medical settings.
Conclusion: Pregnant women see advantages of prenatal testing, do not cite adverse social consequences of testing and believe results are confidential. Implications of those with less education preferring mandatory policies and those with more education preferring voluntary ones must be considered.

Th.D.804 AIDS CONCERNS AND WOMEN'S REPRODUCTIVE INTENTIONS: HIV TESTING AND PREGNANCY CHOICES.

Balanon, Angelita, Fordyce, E.J., Stoneburner, R.
New York City Department of Health

Objective: To determine predictors of pregnancy intentions of women with perceived and/or real risks for AIDS if tested HIV+.
Methods: 1850 women in New York City households, aged 15-44 years were interviewed about their reproductive histories and intentions. Women who were pregnant or planning pregnancy (N=609) and with perceived and/or real risks for AIDS were asked whether they would terminate or carry pregnancy to term if tested HIV+. Risk was identified using a multiple item risk assessment scale.
Results: Among women pregnant and planning pregnancy, 341 (56%) had self-perceived risks, 158 (26%) were at risk and 115 (19%) had perceived and real risks for AIDS. Among those with perceived risks, 83% said they would terminate pregnancy if tested HIV+. Women with negative attitudes towards PWA's (67% vs. 33%, p.05), unmarried (57% vs 43% p .05) and non-Hispanic (53% vs. 47%, p.05) would be more likely to terminate pregnancy. Of women at risk, 35% expected to terminate pregnancy. The strongest predictor for those who would carry pregnancy to term if tested HIV+ was religious commitment (OR= 1.91, 95% C.I.= 1.21-2.79, p.05). Among those with perceived and real risks for AIDS, 60% said they would terminate pregnancy. Non-Hispanic (67% vs. 33%, p.05) and less religiously committed women (60% vs. 40%, p.05) would terminate pregnancy.
Conclusion: The data suggest that behavioral and sociocultural factors influence decisions to terminate pregnancy if tested HIV+ among women with varying risks for AIDS. Counseling and HIV testing for all women planning pregnancies should be available.

Th.D.805 CLIENT COMPLIANCE WITH PERINATAL AIDS RESEARCH: THE BAY AREA PERINATAL AIDS CENTER (BAPAC) EXPERIENCE

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Objective: Recruit HIV+ pregnant women and controls into BAPAC to study maternal HIV progression, fetal outcome, maternal-fetal transmission, and HIV diagnosis and progression in infants. Ensure ongoing client compliance with research and clinical protocols.
Methods: 1)recruitment from hospital and community prenatal clinics, self and provider referral; 2)HIV counseling and testing, results, enrollment; 3)research-related visits integrated into regular prenatal care; 4)postpartum research visits in conjunction with well-baby visits; 5)HIV-related adult and pediatric care provided by BAPAC in collaboration with AIDS specialists.
Results: Thirteen mother-infant pairs now followed. Obstacles to compliance mainly due to psycho/social/economic problems predating and co-existing with HIV infection: 1)receipt of public assistance (92%); 2)domestic violence (85%); 3)intravenous drug use (77%); 4)care of children other than index pregnancy (46%); 5)homelessness (38%). Client compliance is maximized by seven features unique to BAPAC; 1)emphasis on integrity of the mother-infant unit (paired visits, multi-disciplinary team); 2)availability of consistent care providers; 3)small cash reimbursement; 4)multi-ethnic, bilingual staff; 5)on-site non-medical services (childcare, food, counseling, transportation); 6)assistance with concurrent problems (drug use, domestic violence, housing, children, finances); 7)interagency case coordination.
Conclusion: HIV+ pregnant women have complex psycho/socio/economic problems contributing to lack of compliance with protocols and care plans. Provision of services outside the scope of traditional research protocols will maximize client compliance.

Th.D.806 MATERNAL PERINATAL HISTORY: INADEQUATE PREDICTOR OF HIV EXPOSURE

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*University of California, San Francisco, San Francisco General Hospital, San Francisco, **University of California, Berkeley, Berkeley, Calif.

Objective: To determine whether the maternal perinatal history is an adequate predictor of perinatal HIV exposure to the infant.
Methods: All delivered parturients (n= 3328) were interviewed using standardized questionnaires during routine obstetric and nursery care. Mothers who admitted medical or social risks for HIV or child abuse/neglect (substance abuse, transfusion, venereal disease, prior child neglect/abuse, mental health problems, homelessness or social risks) were approached for informed consent for cord blood HIV serologic testing. Of the 327 delivered mothers with risks, informed consent was obtained in 238, either from the mother or, if refused, by court order if the infant entered foster care. Of these 238, mothers with HIV seropositivity (4%), intravenous drug use (27%), sex with high-risk person (36%), or unscreened transfusion (3%) were considered high-risk for perinatal exposure of their infant. Mothers without these risks were considered low-risk (non-intravenous drug use, venereal disease, prior child abuse/neglect, mental health problems, homelessness, or other social risks).
Results: Informed consent and cord blood were obtained for 195 infants; 78 infants had high-risk maternal histories; 117 had low-risk histories. Cord blood serologic tests were negative in 182 (93%). Of 13 infants with positive cord blood HIV serologic tests, 10 were born to high-risk mothers; 3 were born to low-risk mothers. The sensitivity of maternal medical and social historical risks in predicting perinatal HIV exposure is 76.9%.
Conclusions: Cord blood HIV serologic testing on only medically and socially high-risk cases fails to identify 23% of potentially infected infants. Serologic testing of low- and high-risk perinatal patients may be indicated.

Th.D.807 NEWBORNS AS RESEARCH SUBJECTS IN AIDS DRUG TRIALS UNDER AMBIGUOUS FEDERAL REGULATIONS

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Objective: Federal regulations governing children as research subjects focus on research involving children who are ill. Healthy children are not explicitly considered. This study analyzes difficulties in applying the regulations to research that offers no personal benefit and some risk to some children, but holds promise of leading to effective treatment.
Methods: Trials of zidovudine in newborns are used in a case study to compare the regulations with ethical principles. The trials may include healthy newborns as well as HIV-infected infants, since investigators may not be able to distinguish maternal antibody from actual infection. Questions include: Should research be postponed until there is a reliable means to distinguish the two groups, such as the polymerase chain reaction test? Should children of HIV-infected mothers be considered healthy children or children at risk of HIV infection? What constitutes minimal risk for such children?
Results: The regulations permit much research involving significant risk in children who are already ill, yet all but preclude research involving children at risk of AIDS but not yet known to be infected.
Conclusions: The regulations should be amended in specific ways to clarify the circumstances in which research with children at risk of HIV infection is ethically permissible. The ethics advisory board should be reestablished to provide a national forum for evaluating studies that may not easily fit the regulatory criteria.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.808 FOLLOW-UP STUDY OF A SUPPORT GROUP FOR PARENTS AND CARETAKERS OF CHILDREN WITH HIV INFECTION.

J. Aiges, S. Hopkins, M. Co, E. Kaplan, and S. Pahwa. Department of Social Work and Pediatrics, North Shore University Hospital-Cornell University Medical College, Manhasset, New York.

OBJECTIVE: To perform a follow-up study of the first support group in Long Island, New York for parents and caretakers of children with HIV infection.
METHOD: A support group, consisting of parents and caretakers of HIV-infected children, was evaluated over a three year period.
RESULTS: Major positive connections and coping skills were solidified among members of the group. This amplification of mutual support transcended the diverse socioeconomic, ethnic and family structural backgrounds of the members, which included biologic parents (both HIV-infected and uninfected), grandparents and foster parents. The self-supportive aspect of the group intensified as members empowered themselves by reaching out to new members and by engaging in political and social action on a local, regional and national level. Furthermore, greater trust and intimacy developed among members, as they personally shared ways of coping with such issues as disclosure of the diagnosis to family and the community, uncertainty regarding medically-related decisions, and fears of their children's imminent deterioration. Parents enriched and widened their support system by participating in a social function and reaching out to parents of severely ill hospitalized children as well as to bereaved parents.
CONCLUSION: Despite the multiple social complexities inherent in dealing with a disease such as HIV infection, members of a support group comprised of diverse individuals devised constructive means of amplifying positive connections within the group. Further study is needed to determine the ability of the group to sustain itself, faced with the potential of multiple deaths of adults and children within families.

Th.D.809 CAREGIVERS HANDBOOK FOR CHILDREN WITH HIV INFECTION

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Objective: To develop a handbook to serve as a practical guide for caregivers/family members of children with HIV infection.
Method: Nurses representing ten HIV treatment centers and related programs in Los Angeles County collaborated with other health care providers in the writing of the handbook. Topics covered include: institution-specific hospital information; HIV/AIDS-infection-treatment; hospitalization of the child; medical procedures; infection control; home care issues; emotional aspects; and community resources. The nursing group met monthly to develop the handbook to provide consistent information on caring for the HIV infected child. Content was also reviewed by parents of HIV infected children.
Results: The handbook is a consistent source of information that a caregiver/family member can use to manage the day-to-day care of an HIV infected child. The handbook can be adapted for a variety of geographic settings and diverse cultural populations.
Conclusion: Caregivers/family members of children with HIV infection are given complex information about their child's illness during a time when they are least able to understand it. They need access to information for ongoing reference during the course of their child's illness. The handbook consolidates information essential for caregivers/family members of children with HIV infection and presents it in a useful and understandable format.

Th.D.810 ISSUES IN PROVIDING SERVICES TO DEVELOPMENTALLY DISABLED HIV INFECTED CHILDREN.

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Birch services provides residential, educational, clinical and family support and advocacy services to over 400 developmentally disabled children, adults and their families. Birch became involved with children with AIDS when research and experience indicated that in addition to their medical problems, 95% of the children born with HIV infection have or develop neurological impairments and/or developmental disabilities. This year, we will serve at least 50 infected children and their families in projects including: 1) the Children's Center, a 10 bed home in Brooklyn, NY for HIV infected children (usually "boarder babies"), which addresses the children's developmental as well as medical needs; 2) Early intervention programs in the Bronx, Brooklyn and Queens (NYC), integrating HIV infected and noninfected developmentally delayed children; 3) A residential summer camp for infected children and their families operated with the Albert Einstein College of Medicine. The issues which persist in working with HIV infected families and which will be addressed are: the appropriateness of congregate vs. foster care for homeless infected children, the need for alternative methods to meet infected children's educational and developmental needs, and the extensive family support services and interagency coordination needed to address children's and family needs.

Th.D.811 CAREGIVERS' PERCEPTIONS OF THEIR SCHOOL AGE CHILDREN WITH PERINATALLY ACQUIRED HIV INFECTION

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OBJECTIVE: To determine caregivers' perceptions of how children with perinatally acquired HIV, age 4 years and older, are 1) coping with their medical condition; and 2) reacting to HIV related illness and loss in their family.
METHOD: Caregivers of children, age 4 and above, were invited to participate in an interview studying parents' perceptions of their children's capacity to cope physically and psychosocially with their HIV related illness.
RESULTS: 20 caregivers (7 parents, 8 grandparents, 3 aunts, and 2 foster/adoptive parents) of 22 children, 4 to 12, participated in the interview. 16 children, 73%, lost at least one parent to AIDS, 14 lost their mothers. Of this 16, 9 talk about the deceased parent. 27% ask questions about their illness; children generally ask about their pain and why they are different. 13 children, 59%, attend school; 12 of the 13 have peer relationships. 75% do not believe their child knows he/she has a serious illness. 65% of the caregivers do not believe children should be told their diagnosis at any age. Even if the child's diagnosis differed (i.e. leukemia), 77% of this group still would not reveal the diagnosis. Reasons for not revealing are 1) fear of stigmatization, and 2) belief knowledge would contribute to child's psychological and medical deterioration. Preliminary findings indicate that despite their illness and losses, only 4 of the 22 children exhibit serious psychological symptoms.
CONCLUSION: The majority of caregivers of children age 4 to 12 with perinatally acquired HIV believe their child is coping well. However, future research needs to incorporate direct child observation.

Th.D.812 PERCEIVED DISCRIMINATION IN HEALTH CARE AND EMPLOYMENT AMONG HOMOSEXUAL MEN

Kass, Nancy.
Kennedy Institute of Ethics, Georgetown University, Washington, D.C., U.S.A.

Objective: To compare perceived discrimination in health care delivery and in employment among homosexual men who are seronegative, seropositive or have AIDS.
Methods: Self-administered questionnaires were distributed to Baltimore and Los Angeles MACS participants between October 1987 and December 1988 and to inpatients and outpatients with an actual diagnosis of AIDS at the Johns Hopkins Hospital.

Results:

	HIV- (N=852)	HIV+ (N=585)	AIDS (N=96)
Refused treatment from doctor because gay	2%	4%	3%
Refused treatment from dentist because gay	1%	3%	4%
Refused treatment from doctor because of HIV	1%	3%	5%
Refused treatment from dentist because of HIV	1%	4%	16%
Refused treatment from doctor or dentist because of HIV	1%	5%	18%
Fired for health reasons	2%	3%	10%
Fired for being gay	16%	16%	15%

Conclusion: Persons with AIDS report more treatment refusals, especially from dentists, than seropositive people, who report more refusals than seronegative people. Persons with AIDS are more likely to have been fired for health reasons than either seropositive or seronegative persons.

Th.D.813 THE PSYCHOSOCIAL NEEDS OF HIV INFECTED MOTHERS.

Mok, Jacqueline Y.Q.; Cosgrove, J; Hague, R.A.
City Hospital, Edinburgh, Scotland, UK.

Objective: To assess the psychosocial needs of HIV infected mothers, with the aim of providing optimum services.

Methods: A standard questionnaire was administered to ascertain current sources of support for HIV infected mothers and children; and to determine if there was a need for a more structured system.

Results: From 1.9.89 to 31.12.89, 16 HIV infected mothers of 18 children were interviewed. Sources of support included health professionals (75%), partner (68.8%), parent or sibling (68.8%) and friends (43.8%) Thirteen women (81.3%) knew parents of other children in the cohort, although only 7/13 (53.9%) discussed HIV related problems with other parents. Of those who did, 5/7 (71.4%) found it useful. Only 7 mothers (41.2%) expressed a definite wish to meet other parents, mainly in a group setting on neutral ground.

Conclusion: HIV related issues remain a closely guarded secret, with health professionals being used as the main source of support. Just over half of the HIV infected mothers preferred not to meet as a group at present.

Th.D.814 SOCIAL CHARACTERISTICS, FAMILY BEHAVIOUR AND CHILDREN PSYCHO MOTOR DEVELOPMENT ON HIV FAMILIES.

Canosa C.A., Picazo A., Jaime E., Herrero M.A., Loño F, and CANOSA CHIQUINQUIRA.
DEPARTMENT OF PEDIATRICS. LA FE CHILDRENS HOSPITAL, VALENCIA, SPAIN.

OBJECTIVE: To determine long term effect of HIV infection on social characteristics, family behaviour and children psychomotor development. METHOD: From 1986-1989 120 HIV+ newborns (NB) were identified at LA FE Dpt. of Pediatrics. A prospective study utilizing and "ad hoc" instrument by a team of pediatricians, psychologists, psychiatrists, and social workers is in progress to study the social impact and behavioural changes of HIV infection in families and children. RESULTS. Mothers age was 22.5 ± 5.7 years, 49% were married,19 were single and 33% cohabiting (6 months), 48% had only primary education, 92% were intravenous drug users (IVDU), 56% since 15 years of age. Needle sharing occurred in 88% and unwanted pregnancy in 58% of cases. Once pregnancy was recognized, 65% of mothers willingly accepted it. 76% of mothers knew their HIV infection at the delivery time, 10% during and 14% before pregnancy. NB birth weight was 2.733 ± 472 g. Prematurity occurred in 32% of NB's and low birth weight in 29.8%. Child custody with parents occurred in 45% of cases, 10% was mothers responsibility, 23% with grand parents 6% adoption and 16% were abandoned and placed in legal custody. Language, conceptualization and memory were different from a control group. 62% of the families believe that HIV infection will not allow the child to survive. Social discrimination was reported in 77% of families. CONCLUSIONS. Long term psychosocial impact of HIV infection in children is unknown. Family characteristics, peculiar socio-cultural environment, negative attitudes of society and the impact of the HIV infection are responsible for behaviour alteration and impairment of mental development in HIV infected children.

Th.D.815 NEW YORK STATE'S RESPONSE TO ELEVATED RATES OF HIV INFECTION AMONG WOMEN GIVING BIRTH

Whalen, Dennis*; Holman, Susan, RN, MS*; Burke, Gary R., M.D.*; Feldman, Ira*
*AIDS Institute, New York State Department of Health

Objective: To develop an HIV preventive and health services intervention targeted to high risk women giving birth, especially those who receive no prenatal care.
Method: The Department has identified the HIV prevalence rate of women giving birth by hospital. Employing a phase-in approach and utilizing special grants and enhanced reimbursement rates, an intensive HIV counseling, testing and health care program has been developed. Among the elements of this initiative are individualized counseling and testing; community follow-up of non-returnees; and integrated maternal/pediatric care for HIV-infected women, including residential drug treatment. Start-up contracts allow for front-end funding as well as the establishment of cross-hospital operational requirements.
Results: A collaborative (government/hospital/community program) approach to accessing the high risk population of women who receive no pre-natal care and providing them and their newborns with preventive and health care services has been developed.
Conclusion: This voluntary approach to reacing high risk women and offering them comprehensive services is an important complement to an overall prevention and health care strategy.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.816 INTERACTIVE TRAINING SERIES FOR CAREGIVERS OF HIV INFECTED CHILDREN

Objective: To identify the educational and emotional needs of caregivers and families (including birth, foster, adoptive, and extended) of children with HIV. To develop training materials for these families and other caregivers including home health aides, community volunteers, and child care providers.

Methods: Families and caregivers helped shape the materials by participating in the qualitative research design. In-depth interviews were conducted for a cross-section of families; focus groups were conducted with foster families and sample subjects of the targeted audience listed above. Triangulation of the findings identified the barriers and motivators to caring for children with HIV and the areas of concern are addressed in the content material.

Results: Based on the findings, the areas targeted for educational development are: Information about HIV, transmission, universal precautions, the needs of the children and families, and issues of death and dying. The focus group results show that among the barriers to caring for HIV children are the perceptions about the families, fear of transmission, and the emotional issues of caring for a dying child. In-depth interview findings demonstrate that because of the stigma of HIV-AIDS, families are fearful of disclosing the diagnosis and have limited support systems.

Conclusion: The needs and suggestions of the target groups of caregivers and the families of children with HIV provided the framework for the educational materials, to be suitable for small group interactive trainings. Collaborators for this project are The Children's National Medical Center, with a subcontract to the Academy for Educational Development for the educational materials, and the Child Welfare League of America for the production of (optional) complementary video training tapes and discussion guides.

Th.D.817 DISTRESS PROFILE OF HIV-INFECTED SINGLE PARENTS: COMPARISONS TO TARGET COUNSELING INTERVENTIONS.

Earl, W.; Martindale, C.; Cohn, D. Denver Disease Control Service, Denver, CO, USA.

Objective: To quantify the psychosocial distress levels experienced by heterosexual parents infected with HIV and to compare with gay and bisexual men (GM) in order to provide more useful counseling.
Methods: Three groups of single parents were compared to a random sample drawn from a longitudinal cohort study (LCS) of GM. The Brief Symptom Inventory (BSI) and MMPI were used to identify levels of anxiety (ANX), hostility (HOS), antisocial adjustments of paranoia (PAR), depression (DEP), and styles of disclosure (DIS).
Results:

	ANX	HOS	PAR	DEP	DIS
Black Mothers (n=6)	2.6	1.8	3.3	1.3	0.1
White Mothers (n=8)	1.5	2.0	0.2	2.0	0.4
National Average - Women	0.3	0.2	0.2	0.2	unk
White Fathers (n=5)	1.7	0.5	2.4	0.7	0.0
Gay/Bisexual Men (n=16)	2.7	1.4	3.8	3.7	0.6
National Average - Men	0.2	0.2	0.0	0.1	unk

Conclusion: White mothers were more likely to experience depression and hostility at levels seen in GM where as black mothers and white fathers were more likely to experience paranoia and antisocial ideation. None of the single parents disclosed their HIV status with the ease seen in GM. Counseling for heterosexual parents with HIV infection should use different approaches than in GM with HIV infection.

Th.D.818 THE ESSENTIAL ROLE OF THE CHURCH IN AIDS CARE, PREVENTION AND CONTROL IN AFRICA

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Objective: To describe the role of the Christian Church as an integrative influence in AIDS care and prevention, especially in Africa.
Method: The concept of integration is defined, and the following areas are discussed: 1) why responses to AIDS by secular organizations will be significantly less effective without the participation of the Church; 2) why the Church is less effective than it should be; 3) a strategy for ADIS control based on participation of the Church.
Results: 1) Spiritual acknowledgement is key to community consciousness in Africa and in turn to balanced decision making about lifestyle in the context of AIDS control. 2) The Church, as with many non-medical networks, underestimates the numerical significance of the epidemic. 3) The Church can make a unique contribution in pastoral care in the context of an integrated management approach. The Church has resources: people and physical facilities. 4) Models for response are proposed: a) medically based with reference to the Churches' Medical Association of Zambia, and b) inter-sectoral collaboration at district level.
Conclusion: The Church in Africa represents a strongly organized, vast, yet unutilized network. Mutual dependence between Church and secular bodies needs to be acknowledged, and is required, to encourage the development of programs which will be sustained, and which are likely to promote realistic control strategies.

Th.D.819 FAMILY CAREGIVERS OF PWAS: EXPERIENCES WITH HEALTH CARE PROVIDERS

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Objective: The study's purpose was to examine caring from health care professionals (HCP) as experienced by family caregivers (FCG) of PWAs. Caring is defined as "a nurturing way of relating to a valued other toward whom one feels a personal sense of commitment and responsibility" (Swanson-Kauffman, 1989). Methods: Phenomenology (Omery, 1983) was used to determine sample size, and procedures for data collection and analysis. This volunteer sample of 12 FCGs consisted of: 4 women, 8 men; 2 friends of the PWA; 5 gay and 3 heterosexual partners; and 2 parents. In-depth interviews were conducted. Results focus on responses to the questions: 1) How have you been treated by HCPs, and 2) Can you describe an interaction that made you feel cared for by a HCP? Data were compared within and between participants, and to the Swanson-Kauffman caring categories. Validity and reliability were addressed. Results: "Knowing" (defined as striving to understand an event as it has meaning in the life of another) was the most frequently reported caring category. Knowing referred to the desire to be understood as a caring family member, not as an outsider in the PWA's care. FCGs want to be included in discussions and decisions, and acknowledged for the expertise they have acquired by living with the PWA. FCGs felt that Knowing was blocked by homophobia and health care systems that formally do not recognize friends and lovers as family members. Conclusions: Findings have implications for all HCPs as they are challenged to provide family-oriented care to PWAs. It is essential to strive to understand the experiences of FCGs, negotiate with FCGs, and create partnerships with PWAs and their families.

Th.D.820 THE SOCIO - CULTURAL DIMENSION OF AIDS IN ZIMBABWE

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Objective: To identify the psycho-social problems that people with Aids encounter from the time they are diagnosed as HIV+ to the time they die.
Methods: we identified twenty cases which were HIV+; these cases were at different stages of the development of the syndrome which facilitated the mimicking of a full case. "Participant" observations, open-ended questionnaires and hospital records were used to collect preliminary data for a 2 and a half year indepth longitudinal study.
Results: People diagnosed as HIV+ or suffering from AIDS encounter serious problems differentiated by socio-economic status. Some doctors, knowing the gravity of the syndrome, find it difficult to communicate the diagnosis, of the HIV patient which has serious implications on the patient's subsequent "behaviours". Family members of the PWA's normally protect their family member from outside ridicule but not at the expense of themselves being stigmatized. Most community members place a moral judgement on PWA's and their families thereby creating a social barrier between the respective families and the community.
Conclusion: These data indicate the need for a comprehensive educational package to assist medical practitioners, traditional healers, family members and the community.

Th.D.821 HEMOPHILIA AND HIV: AN ASSESSMENT OF THE PSYCHOSOCIAL NEEDS OF COUPLES

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Objective: To determine the needs and disposition towards psychosocial services of men with hemophilia and HIV and their partners.
Method: Twenty couples, in which the man has hemophilia and HIV infection, were surveyed through the use of an anonymous self-administered questionnaire. The range of available psychosocial services was described. One question distinguished the hemophiliacs from their partners in order to draw comparisons between the two groups.
Results: Women expressed a greater need and interest than men in all forms of psychosocial support services. Couple counseling was preferred over individual or family counseling. Groups for couples were more than three times as popular than separate groups for men and women. One question listed 14 potential topics for group discussion. "Safer Sex" was selected as a topic of interest by 13 of 20 women (65%) compared to only 3 of 20 HIV infected men (15%).
Conclusion: This preliminary study indicates that HIV positive hemophiliac men and their partners share certain concerns but also differ in their expressed need for psychosocial services. Despite the men's stated disinterest, it is important to provide safer-sex education to these couples. At the very least the service should be offered to the women. Since HIV has become such an important focus in the care of men with hemophilia, clinics must shift their focus to include their partners in the comprehensive treatment plan.

Th.D.822 THE ROLE OF KIN IN CARE GIVING FOR PERSONS WITH AIDS IN NEW JERSEY

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Objective: To examine the role of kin in care giving for persons with AIDS (PWAs) in New Jersey.
Methods: A random sample of 275 individuals with diagnosed AIDS who live in New Jersey was drawn. Interviewing began 12/88 and 50 interviews have been completed to date. The distribution of transmission categories in the completed interviews was: IVDU 54%; Homosexual/bisexual 28%; Homosexual/bisexual/IVDU 6%; Heterosexual 8%; Transfusions/blood products 4%. The respondents were 72% male and 28% female. The demographic profile of the respondents resembles that of those individuals on the New Jersey Registry of AIDS cases who are not known to have died. An analysis was made of the respondent's living arrangements, sources of assistance in activities of daily living (ADL), and in the instrumental activities of daily living (IADL).
Findings: Most PWAs lived with someone (72%) and in all but one of these cases, they lived with family. Sixty percent lived with their family of origin, 44% with family of consent and 6% with a joint family. Mothers were the most frequent co-residential relative (41%) and the family member most frequently mentioned as giving assistance in ADL and IADL. Females provided significantly more concrete assistance than males. Assistance in daily household chores was often not identified by respondents as "help" until asked about in very specific terms. PWAs of all transmission and racial and ethnic categories received most of their unpaid care from women.
Conclusion: Informal care provision for PWAs in New Jersey resembles patterns of community care reported for the elderly and for other chronic diseases with family members, especially women, providing the bulk of the daily care. As with these other populations, family care, and especially care from co-residential female kin, proves to be essential in the ability of the ill or disabled to live in the community.

HIV Testing: Social and Policy Issues

Th.D.823 A COMPARISON OF ALTERNATE TEST SITE ATTENDANCE IN TWO CITIES UNDER DIFFERENT HIV REPORTING POLICIES

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Objective: To compare changes in attendance at two alternate HIV test sites (ATS) in Charleston, South Carolina (SC) and Augusta, Georgia (GA) after implementation of a statewide policy in SC beginning Jan 1, 1986 which requires mandatory reporting of seropositive results to the state health department. HIV testing is performed anonymously in neighboring Georgia.
Methods: Demographics were gathered on 629 clients at the SC ATS and 348 clients at the GA ATS from May 1985 to Dec 1986. Chi-square analysis was used to compare changes in total number of clients tested and total number of positive tests between the two sites after the policy change in SC.
Results: Changes in attendance were statistically different between the two sites both for total number of clients and for number of positive cases. Rates reported reflect 8 months of testing in 1985 (before mandatory reporting in SC) and 12 months of testing in 1986 (after).

	All Clients			Positive Tests		
	Before	After	Change	Before	After	Change
GA	116	280	+60.9%	16	32	+33.3%
SC	315	314	-33.5%,p=0.000	70	59	-43.8%,p=0.013

HIV seroprevalence was higher among Charleston clients (20.5%) than among Augusta clients (13.8%).
Conclusion: Under mandatory reporting, the Charleson ATS experienced a significant decline in attendance, while attendance increased at the Augusta ATS. Two-thirds of clients seeking testing at the Georgia ATS are from SC. Without strong anti-discrimination laws, many people are unwilling to give their names to the state health department.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.824

HIV REPORTABILITY IN A SYSTEM WITH ANONYMOUS TESTING

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OBJECTIVE: To develop a new system of HIV reporting by name, case follow-up, and partner notification that allows HIV positive persons tested at anonymous sites to remain anonymous to public health officials even after seeking medical follow-up.
DESCRIPTION: All 100 local health departments in North Carolina offer both anonymous and confidential HIV antibody testing. In June 1988, a statewide partner notification system was implemented to assist HIV positive persons in meeting a new legal obligation to notify sex and needle partners. In Feb. 1990, HIV infection became a reportable condition. Persons tested confidentially are reported by name; those tested anonymously are reported without personal identifiers. In other states with both reporting by name and anonymous testing, reporting requirements often compromise the anonymous testing system. This occurs when a person who has tested positive at an anonymous site seeks medical follow-up, is re-tested, and the physician reports the person by name as required by law. This compromise of anonymity can undermine trust in the HIV testing system. It can also result in erroneous case counts. If the case was previously reported without personal identifiers, there is no way to identify the named report as a duplicate and the case is counted twice. Using a system of letters from anonymous testing staff to private physicians, North Carolina has developed a method to reduce duplicate reports and allow persons testing positive at anonymous sites to seek medical care yet remain anonymous to public health officials.
CONCLUSION: HIV reporting by name, case follow-up, and partner notification can be implemented without compromising the integrity of anonymous testing.

Th.D.825

ENSURING PATIENT CONSENT FOR HIV TESTING: AN EVALUATION OF THE IMPACT OF POLICY ON PRACTICE

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OBJECTIVES: Our study was designed to evaluate the impact of a stringent hospital policy regarding informed consent on physician ordering of HIV antibody tests. Recognizing the well known practice of ordering HIV antibody tests without consent or counseling, we predicted that physicians who were ordering the tests on patients at low or no risk would be deterred from following the rigorous procedure involved, resulting in a decrease in the number of tests ordered at our institution. METHODS: We reviewed all inpatient HIV antibody serology records (n=2319) over a twelve month period. Physician data was recorded on 906 patients screened for HIV pre and post implementation of the policy. These data included: physician ordering test, service, date of test, and results. The information was tabulated and analysed using an unpaired t test.
RESULTS: Results show that there was a significant decrease in the number of tests performed monthly, from a mean +/- SD score of 186 +/- 34.5 in the pre policy period to 138 +/- 24.1 in the post policy period ($P<.05$). Analysis of testing patterns by service show that, of the hospital departments, only surgery demonstrated an increase in HIV test ordering. This increase was not, however, statistically significant ($P>.05$).
CONCLUSION: Implementation of an institutional policy for HIV antibody testing coupled with requirements for laboratory processing can insure that patients who are tested are informed and counseled. While the original intent of the institutional policy was not to reduce HIV testing, it appears that the decrease in tests performed may be a result of the policy requirements.
The trend towards increased testing by one service at our institution underscores the importance of tracking other factors that influence HIV testing. These factors include a more positive attitude towards early detection (in both medical and at-risk populations) along with a growing resentment on the part of health providers about patients' rights superceding their own protection. The danger of relying solely on a quality assurance approach to evaluate the effectiveness of policy on practice is that these important factors will be missed.

Th.D.826

ROUTINE HIV TESTING IN AN ACUTE CARE HOSPITAL INPATIENT SETTING

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OBJECTIVE: Routine and mandatory HIV testing was established by Rhode Island law in August, 1989. One provision included acute care hospitals whereby HIV testing was to be routinely offered to inpatients age 18-40 beginning January 1990. To assess the staff requirements, patient acceptance, and cost-effectiveness of this service, a six-month pilot project was designed at the Miriam Hospital, a 250 bed Brown university-affiliated general hospital in Providence, RI.
METHODS: Inpatients between 18 and 40 years of age were routinely offered an HIV test by a hospital social worker who was notified of all new admissions. After 48 hours, if not exempted from the program, the social worker would contact the patient to provide HIV counseling and offer HIV testing.
RESULTS: Of the 527 admissions, between July-December, 1989 there were an equal number of males (266) and females (259). Forty-two (8%) were age 21 or below. 295 (56%) were discharged prior to being contacted by the project coordinator, 26 (5%) deemed inappropriate for medical reasons, and 20 (4%) were HIV+ upon admission. An HIV test was ordered by the physician prior to contact by the project coordinator for 15 (3%), 11 (2%) did not speak English, 11 (2%) were re-admissions during this time period. Of the remaining 146 patients pre-test counseled and offered an HIV test, 126 (24%) refused and 20 (4%) accepted. Blood work was lost for 7 of these individuals with the remaining 13 blood specimens testing negative.

Problems included patient/medical record availability. Multiple attempts were required to reach 33% (173) of the patients. Staff time cost per admission was $8.48, vs $30.64 per patient receiving pre-test counseling vs $224 per patient agreeing to be tested.
CONCLUSION: The high level of patient refusal (86%) raises questions concerning the basic feasibility of routine HIV testing as a casefinding procedure in hospitals. Given that not one HIV positive inpatient was identified, routine testing of hospital inpatients did not appear to be cost effective and HIV testing resources could be better served if offered to patients in more high risk settings.

Th.D.827

COMPARISON OF AN HIV ANTIBODY TESTING TEAM VS HOUSESTAFF IMPLEMENTED TESTING AT A MAJOR INNER CITY PUBLIC HOSPITAL

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OBJECTIVE: To compare the documentation of HIV antibody testing done by a Testing Team verses HIV antibody testing done by the resident housestaff.
METHODS: All persons HIV antibody tested were inpatients at a major inner city public hospital from 1/1/87 to 12/31/89. Prior to 1/1/89 persons were tested by the housestaff, after 1/1/89 persons were tested by the Testing Team. Data was obtained from the HIV Testing Team or from specific inpatient medical records. The comparison was determined by : 1) documented evidence of pre-test HIV counselling, 2) documented evidence of a signed informed consent, 3) HIV antibody test results returned to the medical record, 4) documented evidence of post-test HIV counselling.

RESULTS:	PreT	IC	RR	PostT	#Tested
Prior to 1989	23(34%)	13(19%)	19(28%)	3(>5%)	68
During 1989	155(100%)	155(100%)	155(100%)	90(58%)	155
Total	178	168	174	93	223

PreT = Documented evidence of Pre-Test HIV counselling in medical record
IC = Documented evidence of a signed informed consent in the medical record
RR = HIV antibody test results returned to the medical record
PostT = Documented evidence of Post-Test HIV counselling in medical record
CONCLUSION: The initiation of an HIV Testing Team at this high HIV prevalent institution resulted in markedly improved documentation of the HIV testing process. In the setting of increased legal and medical consequences of HIV testing, the use of such a Team will improve patient knowledge of HIV and perhaps decrease subsequent transmission of HIV.

Th.D.828 THE CONTINOUS FOLLOW-UP OF HIV TESTING BY GENERAL PRACTITIONERS

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Objective: To evaluate the request for HIV antibody testing by general practitioners (GP) and/or their patients and to study its evolution over time.
Methods: A survey was developed by the French Communicable Diseases Network in March 1987 which links a 1% representative sample of French GPs to a central computer by electronic mail. GPs report anonymously all prescriptions made for HIV antibody testing and provide the following information for each case: person requesting test (patient or GP), reason for request, age and sex of patient, result of the test.
Results: During the 34 month survey 4,410 HIV tests were analysed. The mean number of HIV tests/GP/week was 0.20 in 1987 (extrapolating to 515,000 tests for whole country, sd=31,000), 0.16 in 1988 (400,000, sd=19,000), and 0.23 in 1989 (600,000, sd=30,000). Comparison of 1987 to 1989 shows a significant decrease in the number of patients reporting that they belong to an high risk group (31% versus 11%, p<0.001). Among patients there is a decrease in request for test (53% versus 42%, p<0.001), in clinical signs of HIV infection (9% versus 5%, p<0.01), and in history of STD (33% versus 20%, p<0.001). The percentage of HIV positive patients decreases from 5% in 1987 to 2.5% in 1989 (p<0.01). HIV+ patients were less often asking for HIV test than HIV- persons (16% versus 42%, p<0,01). Thirty four percent of HIV+ patients were IV drug users, 23% were homosexual men, and 12% were heterosexual partners of an HIV positive person. Two percent of HIV positive tests were detected in prenuptial screening, and 2% in prenatal screening.
Conclusion: Among those tested, the overall incidence of HIV is decreasing, but there is a significant number of HIV positive persons who report not belonging to any high risk group. This indicates the continued spread of HIV in general population.

Th.D.829 POLICY IMPLICATIONS OF THE ALTERNATIVE TEST SITE PROGRAM EVALUATION.

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Objective: Alternative Test Site (ATS) operations, counselor and client information was examined to assess program adequacy and effectiveness in serving all clients and reducing HIV infection risk.
Methods: A comprehensive, on-site evaluation reviewed the administrative structure, practices and composition of ATS programs in 28 California health jurisdictions. Self-report surveys of ATS counselors and clients included a broad array of questions eliciting counselor and client behavior and opinion. Approximately 370 counselors were offered the questionnaire and 214 (58%) were returned. Of the 1374 client surveys distributed, 857 (62%) were returned.
Results: Administrative reviews indicated excellent program development and implementation. Counselor responses demonstrated a high level of competence and experience. Counselors reported a need to enhance their counseling skills (55%) useful with less cooperative or emotional client and to better maintain their AIDS knowledge (47%). Minority clients were clearly underserved. Hispanic clients averaged half their population representation (11.6% vs 23.2%). Repeat testing among clients was substantial (39%). Although most clients where at risk (88%), only 39% reported using a condom during their last sexual intercourse. While 65% of repeat clients perceived their current risk as much reduced, only homosexual clients reported higher condom use when compared with first time testers reporting the same risk behavior (66% vs 48%).
Conclusion: Counselor continuing education is being expanded to include psycho-social and psycho-therapeutic skills training. A quarterly newsletter has been developed and a program learning text is under development to focus on maintaining counselor AIDS expertise. Expansion of the amount of educational material targeted to minorities has been undertaken. Affirmative action hiring in ATSs is being emphasized and the location of ATS sites is being reviewed with the specific goal of increasing minority participation. The high percentage of repeat testing and substantial risk among repeat clients has lead to the decision to develop a separate counseling protocol for this group focusing on risk denial and resistance to risk reducing behavior. Emphasis on interdisciplinary cooperation is essential to provide necessary risk reducing, behavior change referral resources for chronically at-risk clients.

Th.D.830 CENTRES FOR FREE AND ANONYMOUS SCREENING : A PROSPECTIVE ENQUIRY

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Objective : Centres for free and anonymous screening aim to promote prevention among a target-population attraced by these traits of no-cost and anonymity. The request for a screening-test -a high point in the development of individual awareness- provokes a contact with medical staff which can be adapted to each case and during which the individual may be encouraged by appropriate information to abandon his/her risky behaviour. The novelty of these Centres and the extreme vulnerability of our region to the AIDS epidemic led us to conduct a prospective enquiry among the public using one of the Centres.
Methods : 620 subjects who came to consult this Centre in the last 6 months of 1989 were given an anonymous questionnaire : all data were analysed by descriptive and explanatory methods.
Results : The first results underline : the usefulness of the Centre (the supposed incidence of seropositivity is 51 %) ; the freedom of charge was the main motivation among those using the Centre ; the need for information adapted to the target-group of drug-addicts, among whom the use of condoms is less wide-spread than among other risk-groups ; the reality of the social problem of unemployement : the existence of a high percentage of this population having already had several screening-tests in the preceding months leads us to suppose that they have maintained their risky behaviour.
Conclusion : This enquiry confirms that these Centres, beyond their mission of information, prevention and screening, play an important role in the epidemiological evaluation of the illness and in the definition of social and economic services to be provided.

Th.D.831 ANONYMOUS TESTING CONSIDERED ESSENTIAL, GOOD FOLLOW UP-RESULTS.

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Objectives: To determine whether 1. clients consider anonymity to be a necessary pre-condition when presenting for HIV Antibody testing; 2. seropositive clients tested anonymously will return for results; 3. an anonymous testing system can facilitate medical follow up and social support; 4. seropositive clients will cooperate in informing contacts.
Methods: All clients presenting for pre-test counselling over a nine-month period were asked whether they came to the clinic specifically for anonymous testing, and whether they would have been tested under a non-anonymous system. Program statistics were reviewed to determine changes in demand for testing over time, seropositive rates, return rates for post-test counselling, and enrollment in the clinic's HIV+ education/support program. Returning seropositive clients were questionned re medical follow up and informing contacts, from January to May 1990.
Results: In the client survey to date, 95% stated they came to the clinic specifically for anonymous testing, and 30% said they would not have been tested if anonymous testing was not available. Numbers of clients presenting for testing has increased each year, from 228 in 1986 to 1658 in 1989. Seropositive rate has remained fairly constant at 13-15%. Return rate for post-test counselling has remained constant at 85%. Approximately 50% of seropositives enrolled in the HIV+ support program in 1989. Data on medical follow up and informing contacts will be presented at the conference.
Conclusions: Anonymous testing appears to be an essential factor in attracting individuals for HIV counselling. High percentages of seropositives return for post-test counselling and follow up services. It is anticipated that data will show that seropositives cooperate in informing contacts.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.832 NAPLES GROUP "C": CENTER FOR ANONYMOUS HIV SCREENING

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Objective: Anonymous screening of populations at-risk for HIV infection (drug abusers, homo-bisexuals, prostitutes, at-risk heterosexuals etc.), who, for fear of being recognized, avoid public health centers.
Method: The anonymous screening for HIV infection that is being conducted in Verona and Naples is structured in three steps. A hot-line on which callers can speak to a physician. After a brief interview, if the physician feels it necessary, the caller is invited to attend the center for a physical examination and blood test (second step: laboratory analyses). The results of the examination will be given to the subject with the support of a psychologist who will check the psycho-emotive physician-patient and patient-physician transfer (third step: medical-psychological counselling). Moreover, pre- and post-counselling in health education and prevention is provided, supported by questionnaires and video-tapes.
Results: To-date, 151 HIV-serum positive subjects have been identified. These are periodically followed at our center from the clinical, therapeutic and psychological points of view.
Conclusions: Anonymous screening of populations at-risk for HIV infection is useful to identify reticent subjects and to control the epidemiologic chain. Moreover, we found that at-risk subjects undergoing counselling at our center tended to change their life-styles.

Th.D.833 MANDATORY HIV ANTIBODY TESTING OF IMMIGRANTS THE THE UNITED STATES

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Objective: To assess how immigration groups and AIDS organizations in New York City are responding to the federal law requiring HIV antibody testing among all immigrants applying for permanent residency and to determine what problems they have encountered and solutions they have explored.
Methods: Our research was based on semi-structured interviews with 6 AIDS organizations, 10 immigrations groups and 15 HIV+ immigrants to investigate these issues.
Results: Immigration groups and immigrants themselves reported a wide range of problems with HIV testing including breaches of confidentiality, lack of medical services, discrimination, and poor pre/post HIV test counseling, especially on the part of civil surgeons. Immigrants described disrupted familial and community ties, while advocates characterize the policy as unfair and unjust. Immigration and AIDS groups offered some advocacy, legal services and counseling.
Conclusion: The current law poses the following problems: 1) lack of services for HIV+ immigrants 2) lack of training for civil surgeons 3) agencies services to immigrants are currently unprepared to offer comprehensive HIV counseling 4) immigrants are further isolated and discriminated against as a result of this testing.

Th.D.834 SOCIAL ISSUES SURROUNDING HIV TESTING: PROVISIONAL DATA FROM THE 1990 NATIONAL HEALTH INTERVIEW SURVEY

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Since August 1987, the U.S. National Center for Health Statistics has included questions on AIDS knowledge and attitudes in the National Health Interview Survey. In 1990, the questionnaire was revised to focus more heavily on issues of HIV testing. This session will present provisional data from the first quarter of 1990 on 2 important social issues surrounding HIV testing: (1) mandatory testing required for employment and/or insurance, and (2) blood donation for purposes of HIV testing. The prevalence of these practices will be estimated for the nation as a whole, compared within population subgroups, and compared for AIDS epicenters and other areas of the United States. Characteristics of blood donors who report donating blood at least in part to be tested for HIV will be contrasted with those of other donors. The session will include the most recent estimates of the percent of the population ever tested and the number of tests overall and in the last 12 months. Satisfaction with confidentiality and reporting of test results will be evaluated with respect to test site and whether the test was voluntary or required.

Th.D.835 DECISIONMAKING ABOUT HIV ANTIBODY TESTING AMONG GAY AND BISEXUAL MEN AND THE GENERAL POPULATION IN LOS ANGELES

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OBJECTIVE: To ascertain attitudes and decisionmaking about HIV antibody testing among gay and bisexual men and the general population.
METHODS: Bivariate analysis to obtain results of a telephone survey of 1299 randomly selected adults (520 males, 779 females) and 299 gay and bisexual male adults residing in Los Angeles County during October-December, 1989.
RESULTS: Among gay/bisexual men, 200 (66%) had taken an HIV antibody test, as compared to 292 (22.5%) of the general population. In the GP, 5 (1.7%) were HIV+; among gay and bisexual men, 33 (16.5%) positive. Of GB men, 31% (193) indicated they would be tested within the next 6 months, as compared to 14.7% (191) of the GP. Among GB men who had NOT taken the antibody test, barriers to testing included: belief that they could not handle knowledge of a positive test (32%), belief that there was no effective treatment (29%), belief that there was no care (29%), fear that others would find out test results (17%), not knowing where to be tested (10%), and distant location of testing center (9%). Of GB men, 85% felt that other GB men should be encouraged to take the test; 86% of the GP believed this. 64% of the GP and 77% of the GB men believed AIDS to be an issue of major concern.
CONCLUSIONS: Survey results indicate high levels of concern about the HIV epidemic. Although strong support for voluntary testing exists, a third of GB men have not yet been tested. Reasons for so doing indicate continuing concern about personal consequences of testing.

Th.D.836 The Effect of HIV Antibody Counseling and Testing on Risk Behaviors: Are the Studies Consistent?

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Objective: To review the effects of HIV antibody counseling and testing (C&T) on risk behaviors in homosexual men, intravenous drug users (IVDUs), and high-risk heterosexuals.
Methods: We reviewed published and unpublished data from 45 studies that compared risk behavior prior to and following notification of serostatus.
Results: Studies varied according to study design, measures used, risk group and type of risk behavior. Of 26 studies involving homosexual men, the majority reported a decrease in a variety of measures of risk behaviors (e.g., decrease in sex partners, decrease in frequency of anal intercourse, increase in condom use) for both seropositive and seronegative men, with a greater percentage reduction by seropositive men. All nine studies of IVDUs showed a decrease in risky injection practices; however, only three studies showed a decline in risky sexual behavior. The ten studies of high-risk heterosexuals showed mixed results.
Conclusion: HIV antibody C&T has had an effect usually to decrease subsequent risk behaviors, though this effect is not uniform. In part, the inconsistency results from different study designs. The effect is greater among homosexual men than other persons at risk. Among IVDUs, C&T appears to be more effective in reducing drug-related risks than sex-related risks. Further study is required to determine the effect of C&T on high-risk heterosexuals. Prevention programs which utilize HIV antibody C&T should be aware of the differential effects, and in some cases the limits of this prevention method when used as the sole intervention.

Th.D.837 PSYCHOSOCIAL FACTORS INFLUENCING HIV TESTING

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OBJECTIVE: To identify social-psychological factors influencing HIV test taking behavior and to develop policies for increasing test taking in at-risk populations.
METHODS: Approximately 300 sexually active, lower SES women were interviewed in clinics in a high risk area of New York City and given the chance to take an HIV test.
RESULTS: When asked whether they intended taking the HIV test, 45% said yes; though only 10% actually took the test. Despite this, behavioral intent was an important predictor of test taking, since saying yes was a necessary but not sufficient condition for actually taking the test. About 50% of those who initially said yes declined to take the test when it was offered. Time scheduling difficulties and anxiety about taking the test were major factors associated with behavioral intent/behavior correspondence. The more serious and dangerous a woman perceived AIDS to be, the less likely it was that she would have a positive testing orientation. Negative aspects of HIV test taking, e.g., having to inform sexual partners and parents, general anxiety, and fear of death, were correlated with test taking intent. Positive aspects of testing, e.g., assuring sexual partners, avoiding spread of disease, and early detection were unrelated to test taking intent.
CONCLUSIONS: Educational campaigns that stress the dangers of AIDS may have the undesirable effect of reducing willingness to test for HIV. Clinics need to adopt policies which help people carry out their positive testing intentions and which address the negative concerns about testing. Methods for reducing testing anxiety need to be instituted.

Th.D.838 HIV TESTING IN THE UNIVERSITY OF KINSHASA SOCIAL AND POLICY ISSUES

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Tulane University USA,**Ecole de Santé Publique Zaire,
Center for Disease Control USA;

Objective : The purpose of the study was to determine the appropriateness of installing a HIV Testing Center at the University of Kinshasa as a preventive method.
Methods : 1189 students chosen randomly responded a self-administered questionnaire. Descriptive statistics were used to analyse the Data.
Results : Eighty four percent of the students had already had sex. The average age of the first sexual contact is 16 years of age. The main reason for not engaging in sex was Religion. 52 % of student population would like to be tested for AIDS. Of those who would like to be tested 79 % would like to know the results if the results were positive. 25 % will try to avoid to contaminate other, while 13 % will drop out of the University. If the results were negative, 27 % will protect themselves in order to stay negative, and 48 % will just be happy.among those who would not like to know the results of the test 9 % said that they will be afraid to commit suicide. However, out of the total population, 90 % would like to see a testing center at the University. Among them, 77 % will use the service : 65 % for serological test, 96 % for the counselling(about the sexual life and the means of prevention, and 43 % to have condom. Fifty five percent of students will be willing to pay for the condom and the test. 32 % of students who will use the serological center for test visit prostitutewhile 68 % who will not use the serological center do not visit prostitutes.
Conclusion : It is recommended to install on Campus a serological testing center where students can be tested and receive advice about their sexual life. However this recommendation raises a number of social and policy issue for the university and the zairean governement.

Th.D.839 SUPPORT SYSTEM AVAILABILITY OF CLIENTS UTILIZING ANONYMOUS HIV ANTIBODY TEST SITES IN CALIFORNIA

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Objective: To investigate psychosocial support systems (PSS) of at-risk and no-risk clients utilizing Anonymous HIV Antibody Test Sites (ATS).
Methods: A survey addressing individual PSS was presented to ATS clients during a two-week period in July, 1989. Only those clients completing HIV testing were used in subsequent analyses (N = 1349). Analyses compared PSS availability of no-risk (monogamous heterosexuals) and at-risk (based on CDC guidelines) clients using a 5-point scale ranging from 1 "not very sure of support" to 5 "very sure of support".
Results: When asked about PSS availability should they test HIV positive, both groups were "very sure" that their lover/spouse and family would be a source of support, and "moderately sure" their friends would be a source of support. However, at-risk clients tended to perceive greater support from their friends than no-risk clients ($p < .01$).
When asked about PSS availability should they test HIV positive and go on to develop AIDS, both groups were "not very sure" that their co-workers and employer would be a source of support, "moderately sure" their lover/spouse, friends, and doctor would be a source of support, and "very sure" their family would be a source of support. However, at-risk clients tended to perceive greater support from their employer and friends than no-risk clients ($p < .01$).
Conclusions: At-risk ATS clients tend to perceive greater PSS than no-risk clients. HIV/AIDS client counseling efforts should realize these different perceptions and assimilate them into active practice.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.840 A COMPARISON OF COPING RESPONSES BETWEEN GAY MEN WHO KNOW AND DO NOT KNOW THEIR HIV STATUS

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Objective: To compare psychological adjustment and coping with the risk of developing AIDS among 3 groups of gay men--those who have chosen not to know their HIV status (n=169), those who know they are HIV seropositive (n=238), and those who know they are HIV seronegative (n=312).
Methods: The sample consisted of gay and bisexual men participating in the UCLA Multicenter AIDS Cohort Study (MACS). Willing participants filled out a psychosocial questionnaire packet. MACS subjects are provided with their HIV status if they choose to be informed. Between group comparisons were performed controlling for age and partner status.
Results: Subjects who had chosen not to know their antibody status reported less engagement in various active coping processes (e.g., personal growth and helping others, health promotion behaviors) than men who know they are HIV+, reporting levels equivalent to men who know they are HIV-. Among the "chosen not to know" group, those who believe themselves to be HIV+ reported similar levels of worry about developing AIDS as did the men who know they are HIV+; however, those who believe they are HIV+ cope significantly less actively with the risk of developing AIDS than those who know they are HIV+.
Conclusion: Choosing to know ones HIV status and finding that it is HIV seropositive may promote the use of active coping efforts.

Th.D.842 PSYCHOSOCIAL ADJUSTMENT OF HIV+ AND HIV- HIGH RISK MEN: IMPLICATIONS FOR TARGETED INTERVENTIONS

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Objectives: To evaluate aspects of psychological distress and psychosocial adjustment among high-risk men and to compare seropositive to seronegative men.
Methods: A cross-sectional study of men attending HIV testing and follow-up clinics in 2 hospitals in Israel, 1988-89. Men with AIDS, HIV diagnosis of < 2 months, or non-high risk were excluded. Self-report questionnaires were completed: a) sources of social supports, b) psychosocial adjustment (α=0.89), c) psychological distress (BSI, α=0.95). HIV+ men (N=46) and HIV- men (N=40) were similar in sociodemographics and risk exposure.
Results: Support from friends (52%) was more common than family support (30%). Psychosocial adjustment problems were encountered frequently ($\bar{x}$=2.1). Psychological distress scores were in the range of psychopathological level (T-score over 70). HIV+ men had less support from friends than HIV- men (44% vs. 82% p<0.05) and more psychosocial adjustment problems (2.15 vs. 1.56 p<0.01) but were similar in psychological distress levels.
Conclusions: High-risk men who choose to be tested are distressed irrespective of their HIV status, and HIV diagnosis profoundly effects adjustment and social contacts. Psychological interventions are equally needed for HIV+ and HIV- high-risk men, and education efforts in a small and low prevalence country should target prevention of social problems for HIV+ men.

Th.D.841 SOCIAL NETWORK AND STIGMATIZATION AMONG HIV-POSITIVE HAEMOPHILIACS AS COMPARED TO HIV-NEGATIVE CONTROLS

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Objective. To study whether HIV-positive are more socially stigmatized and have reduced social network compared to HIV-negative haemophiliacs.
Methods. An anonymous self-administered questionnaire to all Danish haemophiliacs with factor level 5% or less registered at the 2 Danish haemophilia centers (N=212). Response rate was 70% among HIV-positive and 60% among HIV-negative. Analysis was restricted to persons over 9 years (n=112). Statistics used were Chi-square and Cochran's test.
Results. The groups did not differ in age distribution, education, work, place of living, conjugal state, treatment, number of bleedings or beddays.
1) Amount of contact: The HIV-positive had same frequency of contacts with family and friends as the HIV-negative, were equally engaged in groups and had more contact with treatment centers.
2) Content of contact: The groups did not differ in opportunities for practical help or number of confidants.
3) Subjective evaluation: No difference was found in feelings of loneliness. The HIV-positive had a more positive rating of their social relations but were less sure whether they were accepted by their friends and whether their doctors were open with them.
4) Stigmatization: There was no difference in experience of stigmatization due to haemophilia. 40% of the HIV-positive had experienced stigmatization due to HIV one or more times.
Conclusion: Even with intact social network, HIV-positive haemophiliacs perceive their social relations differently than HIV-negative, thus reflecting a greater social vulnerability.

Human Rights and Discrimination

Th.D.843 MAY A HUMAN SUBJECT WAIVE THE RIGHT TO BE TREATED AS A HUMAN SUBJECT?

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Objective: Unorthodox clinical trials, in the HIV setting, have been implemented beyond federal regulations, omitting many elements of research with human subjects. Subjects have been asked to waive their rights to be treated as human subjects. Is that ethically acceptable?
Methods: 1) to analyze the components of clinical trials utilizing human subjects and to identify those components that express our respect for persons and our duties of non-maleficence; 2) to analyze autonomy and the limits to its expression.
Results: Components that express our respect for persons include peer review for scientific soundness (adequate laboratory data on safety and efficacy, appropriate investigator credentials, appropriate inclusion and exclusion criteria, appropriate commitment to follow up, data collection and evaluation),appropriate informed consent negotiations, and institutional review board (IRB) evaluation and oversight. For efficacy trials, earlier data deriving from sound human safety trials would also be expected. Personal autonomy becomes limited in the framework of an organized clinical trial by the duty of the investigator to do no harm.
Conclusion: Escape from the protections we believe are due human subjects cannot be based on their willingness to waive their rights. The investigators are bound by the principles of respect for persons and non-maleficence to protect human beings from the abuse and exploitation of subjection to poorly designed or disrespectful experiments. Waiver of rights is inappropriate. Properly structured clinical trials serve subjects, investigators, and society.

Th.D.844 SURVEY RESULTS ON HOW TOLERANT, CARING AND COMPASSIONATE CANADIANS ARE TOWARDS THOSE MOST AFFECTED BY AIDS

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Objective: To determine the degree of care, compassion and tolerance Canadians have towards people most directly affected by AIDS.
Methods: Qualitative and quantitative techniques were used with a small (N=200), selective sample of: the general population, PLWA, HIV+, gay and bisexual men, IV drug users, street youth, sex trade workers and caregivers. Many of the interviews were conducted by trained AIDS volunteers. Respondents were asked about their knowledge, attitudes and beliefs regarding AIDS, their fears and misconceptions, their social proximity to people affected by the disease, their reaction to scenarios designed to assess degrees of care, tolerance and compassion, and where appropriate, their experience of discrimination. Data was analyzed with a mixture of content analysis, descriptive statistics and selective multivariate techniques.
Results: Care, tolerance and compassion varied by region, sex and social proximity, with women and those who know people affected by AIDS being the most tolerant, notwithstanding the general prevalence of homophobia. Knowledge levels were high yet there was widespread mistrust of the information. Overt acts of discrimination were rare; there was evidence that people chose not to expose themselves to people and situations where discrimination might occur. Few people felt it was safe to be open about being gay or having AIDS at work.
Conclusions: Those who are most affected by AIDS are indirectly but powerfully affected by intolerance and hostility which has an adverse impact on their lives. Women may be the cornerstone in the development of a more caring, tolerant and compassionate country.

Th.D.845 HOMOPHOBIA, KNOWLEDGE OF PERSONS WITH AIDS, AND AIDS ATTITUDES

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Objectives and methods: Data from the General Social Survey of 1988, a national household survey (N = 1480) of the population of the United States, was analyzed to examine the relationship between homophobia, personal acquaintance of persons with AIDS and attitudes toward AIDS policies.

Findings and conclusion: About three quarters of the population of the U.S. agree with the statement that homosexuality is always immoral, an indicator of homophobia, a figure that has been stable for 13 years. In the 1988 survey 9 per cent of those interviewed said that they knew of someone in their personal networks who had AIDS. Attitudes toward 8 AIDs policies (prohibiting students with AIDS from school attendance, government provision of safer sex knowledge, allowing insurers to test for AIDS virus, government payment for all AIDS care, premarital AIDS testing, safer sex teaching in schools, requiring AIDS infected to wear ID tags, public AIDS disability payments) were strongly affected by education, religiosity, homophobia, and knowledge of persons with AIDS. The AIDS policy items did not scale. Most importantly there is evidence from multivariate analysis that knowing persons with AIDS moderates the negative effects of homophobia, low education and high religiosity on AIDS attitudes. Additional data analysis of data from the NHIS AIDS supplement suggests similar impacts on AIDS knowledge as a consequence of knowing someone with AIDS.

Th.D.846 PHYSICIAN BREACH OF PATIENT CONFIDENTIALITY AMONG INDIVIDUALS WITH HUMAN IMMUNODEFICIENCY VIRUS (HIV) INFECTION: PATTERNS OF DECISION

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Objective: To determine whether the sex, race, or sexual preference of a patient infected with the human immunodeficiency virus (HIV) influences a physician's decision to breach patient confidentiality.
Methods: Tennessee primary care physicians were mailed a questionnaire containing a case study in which an HIV-infected patient presented a risk to a third party. Eight different descriptions of the sex, race, and sexual preference of the hypothetical patient were distributed randomly among the physicians, one description to each physician. The physicians were asked to decide whether to maintain confidentiality, notify the health department, or inform the patient's partner. Responses of 199 White male physicians were analyzed using an unconditional saturated logistic regression model.
Results: The odds ratios for these physicians saying they would send the patient's antibody status to the health department extend from 18.4 (95 percent confidence interval [CI]: 1.3, 260.1) for Black homosexual males to .5 (95 percent CI: 0, 11.5) for White homosexual females. The odds ratios for White male physicians saying they would inform the partner range from 7.5 (95 percent CI: .8, 69.2) for Black heterosexual males to 1.0 (reference category) for Black homosexual females.
Conclusion: The results suggest that when physicians decide to protect a third party by breaching an HIV-infected patient's confidentiality, their decision may be influenced in some cases by the race, sex, and sexual preference of the patient. Presented with vignettes about hypothetical patients, these physicians said they would report Black homosexual and heterosexual men to the health department and Black heterosexual men to their partners more often than they would report hypothetical patients in the other categories.

Th.D.847 AN ANALYTIC APPROACH TO DETERMINING THE COSTS TO SOCIETY OF HIV-RELATED DISCRIMINATION

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Objective: To develop an analytic approach to quantify the costs to society of HIV-related discrimination and then to apply the approach to estimate, where possible, costs of HIV-related discrimination in the United States and the distribution of those costs.
Methods: An analytic framework was developed for estimating the costs of HIV-related disease in seven different areas: housing, employment, education, health care, violence and crime, public accommodations, and health insurance. This framework was applied to data on total reported cases from areas where an active discrimination unit exists and, where possible, national estimates were made.
Results: The project defined discrimination broadly in order to capture the full range of possible effects. Because of the number of assumptions necessary to estimate quantifiable costs, we developed a range of cost estimates by itemizing specific types of discrimination, the parties involved, and the consequences of the acts. We then estimated the costs of an act of discrimination, estimated its frequency of occurrence, and then applied the frequency to the costs to yield total estimates.
Conclusion: While the ranges in the cost estimates were wide, we did observe that HIV-related discrimination often results in the transfer of costs from the private sector to the public sector, such as when loss of work leads to the need for public housing or health care.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.848 DEVELOPMENT AND PRESENTATION OF UNIVERSITY LEVEL COURSES ON HIV/AIDS POLICY AND LAW

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Objective: The objective of this project was to prepare a course outline and teaching materials to encourage an increase in the number of full-scale university courses on HIV/AIDS policy and law. Research indicates that university students (including law and medical students) are not adequately informed about HIV/AIDS, its modes of transmission, or risk reduction. Further, students regularly indicate a lack of compassion for PLWA's.
Method: We assembled a group of 10 individuals, each having experience in law and one or more other fields, such as medicine, social work, education, political science, and others. A coursebook of about 1,000 pages was prepared in 15 chapters, to correspond to the standard 14-15 week semester and to treat such topics as a brief history of infectious diseases, medical principles about HIV/AIDS, the politics of the epidemic, and public policy and legal issues.
Results: The first HIV/AIDS coursebook AIDS: Cases and Materials was published in August of 1989. More than 20 law schools have agreed to adopt the book for classroom use, bringing the total number of law school courses on HIV/AIDS to approximately 35 to 40. In addition, there are a small number of university and medical school courses on HIV/AIDS. Many of these courses would not have been offered unless a coursebook were available.
Conclusion: The presence of a coursebook has already had a substantial impact on the development of full-scale university level courses on HIV/AIDS policy and law. However, we need far more attention given to the creation of such courses. With about 175 accredited law schools and more than 3,000 colleges and universities in the U.S. we have only begun this effort.

Th.D.850 HIV EDUCATION PROGRAM INVOLVING PRESENTORS WITH AIDS DEMONSTRATES SIGNIFICANT IMPACT ON ADOLESCENTS

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Objective: To determine the effectiveness of an adolescent HIV education program in promoting changes in sexual activity (abstinence) and condom use.
Method: Two cross sectional surveys were administered to 565 adolescents in San Francisco participating in the Wedge Program. This 4 hour comprehensive HIV education program addresses facts, attitudes, feelings and includes a presentation by a person with HIV. Information on sexual activity and use of condoms was obtained. Data were analyzed using the Statistical Package for the Social Sciences Program. Significance was determined by the chi-square test.
Results: Posttest respondents were slightly less likely to be sexually active (45%/pretest vs. 39%/posttest), although the difference was not significant. However, among teenagers who did intend to engage in sex in the next month, posttest respondents were significantly more likely to report they'd probably or definitely use a condom (79%/pretest vs. 90%/posttest, $p<.001$). In open-ended questions at posttest, 58% of adolescents claimed they planned to make changes as a result of the program, particularly after meeting the person with HIV.
Conclusions: Based on this study, teenagers participating in the Wedge Program were not less likely to engage in sexual activity but were significantly more likely to use condoms if they planned to be sexually active. The session with the person with HIV had the most impact on them.

AIDS in the Workplace, Schools, and Institutions

Th.D.849 SCHOOL AGED HIV-INFECTED CHILDREN AND ACCESS TO EDUCATION

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Objective: Define the impact of school aged HIV-infected children on school systems in N.J. and the role of care providers in facilitating school entry.
Methods: In 1986, the N.J. Dept. of Education promulgated regulations supporting school enrollment of children with HIV infection. Children's Hospital AIDS Program (CHAP) provides care to most such children and has a defined procedure to facilitate entry. 40 children aged 6-18 years were classified as to stage of illness, neurodevelopmental status, child study team evaluation, school placement, ease of school enrollment and attendance.
Results: 4 asymptomatic, 14 symptomatic & 22 AIDS (n=40) from 20 school districts met the age criteria. All were able to participate in school during their illness. 16/40 had progressive encephalopathy, 9/40 had static encephalopathy , 12/40 were normal and 3 were not evaluated. 36/40 are currently enrolled (1/40 left school at 18, 3 were too ill). 25/40 did not receive child study team (CST) evaluation. 7/40 were CST classified prior to diagnosis & 8/40 CST classified after diagnosis. 21/40 were in regular classrooms, 7/40 in special ed, 7/40 in special school & 5/40 on home tutoring. For 19/40 the school was informed, 19/40 school was unaware & 6/40 school had "found out" the diagnosis.
Conclusion Children with HIV are surviving and can attend school in regular classrooms. They will require assistance of providers to facilitate entry and some will require child study team evaluation and special education programs to address their needs.

Th.D.851 DON'T POINT YOUR LIFE IN THE WRONG DIRECTION

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North York Public Health Department, North York, Ontario, Canada.

Objective: To use a popular medium (rap video) to communicate a direct powerful HIV/AIDS prevention message to youths and young adults in an entertaining and unthreatening manner that avoids "the preaching syndrome".
Methods: Collaborative initiatives were undertaken with youth from various minority cultural groups, local community resource centre staff and the North York Board of Education to facilitate the production of a four minute rap video (written and performed by resident youth) of commercial broadcast quality for use in secondary schools, post secondary institutions, public bars, taverns and national television. Dynamic effective marketing strategies accompanied the release of the video to the media and the community at large.
Results: The Rap video, complemented by coasters and T-shirts with a safer sex message has received wide acceptance, including the electronic media in responding to the challenge of communicating the HIV/AIDS prevention message to a culturally diverse population.
Conclusion: The medium of rap and/or rock video is an effective means of raising public awareness and could be explored for future HIV drug-related and safer sex messages.

Th.D.852 HIV-RELATED BELIEFS, KNOWLEDGE AND BEHAVIOUR AMONG SECONDARY SCHOOL STUDENTS IN OUAGADOUGOU

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Objective: In order to plan school HIV education programs and to obtain baseline data on HIV-related beliefs, knowledge and behaviour, 466 secondary school students were interviewed.
Methods: The study population was chosen by random cluster sampling. An anonymous self-administered questionnaire was used.
Results: The mean age of the sample was 18.2 years (range 13-21 years). The age of first sexual intercourse was 14.8 years. The majority of the students had already heard of AIDS and most knew that sexual intercourse is the most common way of transmission. Radio and television were the most often quoted sources of information on AIDS. More female than male students were afraid of AIDS. The students did not see themselves at risk but only marginal social groups. Use of condoms was poor. Male students quoted significantly more often the use of condoms than female students, who quoted most often a stable and monogamous relationship as a way of preventing infection.
Conclusions: HIV education programs will have to stress the fact that not only marginal groups are at risk. Programs should also try to reduce the discrepancy between the knowledge that condoms protect against infection and the poor actual use.

Th.D.853 KNOWLEDGE OF AIDS IN A GROUP OF SECONDARY SCHOOL STUDENTS

Li P.C.K., Yeoh EK, Leung FY, Ho YF, Lee YH, Chow NY et al.

Method : A self-administered questionnaire was distributed to 695 students in 9 secondary schools in Hong Kong. The answers concerning their knowledge and attitude towards AIDS were analysed.
Result :

1. Knowledge of mode of transmission

Homosexual contact	91%
Heterosexual contact	90%
Sharing needles	91%
Pregnancy	74%
Transfusion	76%

2. Not route of transmission

Blood donation	41%
Shaking hands	88%
Sharing meals	70%
Sharing toilet	55%
Attending school	85%
Mosquito	39%

3. Method of prevention

Decrease sexual partner	77%
Use of condom	39%
Avoid sharing needle	19%
Avoid homosexual contact	14%

4. Reaction to friend with AIDS

Avoid him	33%
Help him	27%
No change	35%
Isolate him	49%

5. Source of information on AIDS

Television	92%	Friend	41%
Radio	59%	Teacher	31%
Newspaper	75%	Parent	6%

Conclusion : The secondary school students of Hong Kong are well informed about the general knowledge of AIDS. Certain misconceptions about the risk of casual contact still exist and may explain discriminatory reactions to persons with AIDS. The relatively minor role of schools and parents in AIDS education is a cause for concern as they should provide the most accurate information.

Th.D.854 THE OAKLAND SCHOOLS AIDS PROJECT: A MODEL OF PUBLIC AGENCY-COMMUNITY PARTNERSHIP IN JUNIOR HIGH HIV PREVENTION PROGRAMS

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Objective:To describe the interactions among public agencies in developing and implementing an HIV prevention program within an urban, multi-ethnic school district.
Methods: Administrators from the Oakland Unified School District approached investigators at the Center for AIDS Prevention Studies of the University of California to explore development and implementation of an HIV prevention program for junior high students; Red Cross and County health department representatives also participated. While each of these public agencies is independently engaged in HIV prevention activities, this represented their first collaborative HIV prevention project. The Red Cross provided films, brochures, and posters; the County provided health educators for teacher training, the School District provided the target student population and offered office space, science teachers to implement the curriculum, and access to parent groups; and the University developed the curriculum and evaluation materials, coordinated teacher training sessions and provided program oversight. Community parent groups reviewed educational materials to ensure cultural and age appropriateness.
Results: Collaboration and close communication between public agencies and the community was critical to overcoming barriers to program planning, implementation, and evaluation. The pilot HIV prevention program was expanded and is now planned for integration into standard courses for all junior high schools in the district.
Conclusion: Multi-agency and community cooperation is feasible, and indeed essential, for successful development and implementation of effective school-based HIV prevention programs.

Th.D.855 STRATEGIES FOR EFFECTIVE AIDS EDUCATION IN SCHOOLS

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Objective:The need for effective AIDS education programs in U.S. schools continually intensifies as the number of HIV-infected adolescents leaps. Many students do not receive the information they need to preserve their health and to deal compassionately with those around them who have AIDS. Strategies for a meaningful AIDS education are discussed.
Major Elements of an Effective Program:1)emphasis on protection; 2)explicit safer sex instruction;3)realistic drug education;4) direct refutation of myths and misinformation about AIDS;5) emphasis on risk behaviors, not groups;6)education which is sex-positive;7)open discussion of all forms of sexual activity;8) lessons that empower students to make their own informed decisions;9)extensive peer counseling/education.
Conclusion:The current AIDS curriculum in New York City public schools addresses only elements 4 and 5, neither of them directly. AIDS cases among 15 year olds in New York City increased by 40% between 1987 and 1989. By contrast, among gay white male New Yorkers, who largely have been well educated, HIV infection rates have remained relatively stable for several years. Thus, the elements outlined above are essential to slowing the spread of HIV among adolescents.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.856 CHANGING THE AIDS EDUCATION OF NEW YORK CITY YOUTH

THE AIDS COALITION TO UNLEASH POWER (ACT UP)/ NEW YORK
Ricks, Philip M. et. al. ACT UP/NY Youth Brigade Caucus

OBJECTIVE: ACT UP/NY created its Youth Brigade Caucus in late 1989, in response to the alarming growth of AIDS cases among New York City (NYC) teenagers and the inadequate AIDS education within the schools. Our objective is to ensure that children in NYC obtain explicit, accurate and unbiased information regarding AIDS, Safer-Sex, Needle Use, and AIDS-related bias. Our poster demonstration will present our methods of improving AIDS education within the NYC school system.
METHODS: 1) Direct distribution of AIDS education fact sheets and condoms to high school students on the sidewalks outside of school grounds; 2) Approached the NYC Board of Ed. with concerns about the K-12th grade AIDS Curriculum and were invited to participate on the AIDS Curriculum Advisory Panel; 3) Direct discussion with schools and parents about AIDS education; 4) Protests and demonstrations to raise consciousness about the lack of AIDS education in NYC schools and the alarming trend of AIDS among teenagers.
RESULTS: 1) High school students reacted with either indifference or great interest to the materials given to them, indicating the need for greater educational efforts. Educators and parents reacted strongly, either pro or con, indicating the need for further involvement of these groups; 2) As members of the AIDS Advisory Panel, we have provided a consistent voice for drastic change to the AIDS Curriculum; 3) We are in the preliminary stages of engaging in direct discussion with schools and parents; 4) Protests and demonstrations have provided significant media coverage and lead to a planned meeting the the Board of Ed.'s Chancellor's Office.
CONCLUSION: 1) Teenagers desperately need AIDS information, are receptive to it, and are capable of handling explicit information; 2) There is strong resistance from the NYC Board of Ed. to providing explicit and unbiased information; 3) Educators privately agree that enough is not being done, but they are constrained by conservative forces; 4) We must impress upon parents the need for greater, more explicit, and more thoughtful AIDS education, so that they will demand that the schools provide such.

Th.D.857 PLAN OF FORMAL EDUCATION ABOUT AIDS DIRECTED TO YOUNG PEOPLE IN COSTA RICA

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Objetive: To develop and implement a plan of information and formal education of students (15-20 years) in Costa Rica.

Methods: Capacitation and information in different levels of the formal education of profesionals in the Ministry of Education as counselors, teachers and also parents and members of the community, through seminars, conferences and distribution of printed materiales about AIDS.

Incorporation of the information in the daily work with students.

Results: The impact of the plan is measured by interviews and questionaires directed to the students.

Conclusion: The formal education is an important instrument to give the knowledge and awares the students against AIDS.

Th.D.858 "A GENERATION FREE OF AIDS": DEVELOPING AIDS EDUCATION MATERIALS FOR PUBLIC AND PRIVATE SCHOOLS OF MALAWI

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OBJECTIVE: Focus group research with teachers and pupils indicates that sexual experimentation often begins prior to adolescence. Because HIV is sexually transmitted, Malawi's National AIDS Committee set AIDS education to youth as its top priority activity.

METHODS: Focus groups have been conducted among school-age boys and girls, parents and teachers, to define more clearly the target audiences. Multi-sectoral collaboration to develop curriculum and additional visual materials for the schools has involved Ministries of Health/Education/Culture/Community Services, UNICEF, WHO/GPA, Private Schools of Malawi, and AIDSCOM/USAID. Research and materials development has been done by teachers, health educators, school administrators, health personnel, religious leaders, artists and writers. After formative focus group research and materials development, mock presentations of a curriculum unit were made (and videotaped in some cases) to each of the focus groups, following which feedback/suggestions were incorporated into revisions.

RESULTS: A Teacher's Guide and Student Handbook have been drafted for each level of Malawi's public and private schools. These materials are being pre-tested and revised. A corps of teachers will be trained by September 1990 to implement the activity by October 1990.

CONCLUSIONS: Multi-sectoral efforts involving collaboration among public and private sectors can be successful in developing appropriate and acceptable materials for educating young people about AIDS prevention. Hopefully, families and friends of the students, teachers and parents will also benefit from this open discussion of the issues, although this remains to be studied. Also remaining to be studied is whether this program helps in reduction of HIV transmission.

Th.D.859 EDUCATIVE INTERVENTION PACKAGE FOR AIDS PREVENTION FOR YOUNG LATINAMERICANS

Mora,J.L., Santiago ,Francisco., Valdespino,J.L.,Sepulveda,J.
General Directorate of Epidemiology. Ministry of Health. Mexico

OBJECTIVE: To discuss the basis for the design of an AIDS educative package directed to Mexican urban high school adolescents.
METHODS: Material prepared by the Health Ministry up to 1988 and its acceptance among adolescents was analyzed. The most accepted images and contents were identified according to the sociocultural characteristics of the Latinamerican youth and his/her level of sexual education. Results obtained from student KAB surveys were used.
RESULTS: The package consists of 3 educational instruments which involve progressive advances, from a simple beginning and building up to a more complex and indepth meanings of the messages. It begins with a poster which shows pictures of adolescents-"comic" type drawings - and 4 key messages stressing the adoption of basic preventive measures and the search for more information; the second instrument is a pamphlet that reconsiders the graphic image of the poster and adds more extensive information (etiology, present conditions, transmission, myths and preventive measures). Finally, the third instrument is an audiovisual that will always be used as an educational support in interpersonal sessions or meetings led by a trained specialist. The sequence of the package is the following: setting the poster in strategic places inside the school, distributing the pamphlets to each of the students, and scheduling sessions or meetings with a maximun of 30 students interested in learning more on the subject. In addition to the educative instruments, the package includes pre and post evaluation instruments which are applied before the setting of the poster and at the end of the of the interpersonal sessions or meetings.
CONCLUSIONS: The characteristics of the package favour that target group is attention is attracted, since it meets the following requirements identified through KAB surveys and other studies of social market.
Images are not associated to negative concepts such as death but to pleasant images appealing to young subjects. Contents presented are short key messages physically related to an image. Pictures represent the "average" adolescents and design is based in fasionable articles, colors, clothing, etc.

Th.D.860 SHORT-TERM IMPACTS OF STUDENT-DESIGNED AIDS PREVENTION PROMOTIONAL ACTIVITIES IN A SCHOOL SETTING.

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OBJECTIVE: This study was designed to evaluate short-term impacts of diverse AIDS prevention promotional activities. Designed by students and aimed at their peers, these interventions were held in the school setting, on "WORLD AIDS DAY" (December 1, 1989).

METHODS: A week after the activities were held, we asked a random sample of 481 boys and 666 girls (mean age: 15.5), attending 15 secondary schools on Montreal's south shore, to complete a questionnaire measuring: 1) degree of exposure to the messages; 2) attitude towards the activities; 3) comprehension of the messages; 4) perception of having gained awareness and knowledge; 5) motivation to use condoms.

RESULTS: 89.9% of responders mention being aware of the activities that were held. Participation rate in at least one school activity was 49.4%; 2.7% of the students personally contributed in the development and presentation of the activities. 47.7% of the exposed responders mention reacting favorably to the activites. However, 45% of them cannot clearly report the nature of the main message. 27.7% understood that they were asked to increase self-protection and 8.9% that they should use condoms. Following these interventions, 74% of the students report being more aware of the importance of the problem; 72.7% report having gained significant knowledge, mostly on modes of transmission and ways to protect themselves and 84% report increased intention to use condoms.

CONCLUSION: We believe that interventions based on students' personal implication are an efficient way to increase their awareness about AIDS prevention. Further analysis will enable us to link certain caracteristics of the activities to their perceived effects among the target population.

Th.D.861 AIDS Prevention programms among students : interest of a global approach.

J.L. ESTOURNEL (1), D. LEVEQUE (2), Dr J.B. DELMAS (3), M. SEGUELA (4), A. FAYARD (5), Dr J.M LIVROZET (6).
(1) Vice Président MNEF/SG Adj.FSEF, (2) Pdt MNEF, (3) Directeur Medical MNEF, (4) MNEF Montpellier, (5) MNEF Dijon, (6) MNEF Lyon.

Objective : To identify modalities of an effective prevention programm on AIDS among student population : test the interest of surveys to produce knowledge about youth mental representation in order to elaborate pertinent action.

Method : Student population constitutes a specific social group, but motley, which products its own rules and get structured through a multitude of institutionnal an cultural belongings. In front of AIDS, MNEF has conducted many information actions : brochures, campaigns about HIV infection (with AIDES in 1986), condoms use (in 87/88), free, anonymous and volonteer HIV-testing. All these initiatives were relayed, locally, by students, and connected to global surveys on sexual attitudes and mental representations among young people.

Results : Surveys have permitted better identification of the difficulties to prevent students, caused by psychological resistances, no-concern feeling, weight of socio-cultural schemes, ... and so allowed us to adapt our message and modes of information. They pointed out the need of a global handling.

Conclusion : To elaborate health education programms on AIDS, among young people requires a real evaluation of youth way of life and value system. Prevention has to be linked to a sensibilization of the group from its own values, offering participatives modalities, inserted into a continuum from information to cares through councelling. So, justifying a global approach.

Th.D.862 AIDS EDUCATION FOR PEOPLE WITH INTELLECTUAL DISABILITIES.

GOURLAY, Peter ; HORSLEY, P.
Family Planning Association, Victoria, Australia.

Objective:

To describe and demonstrate use of STD/AIDS educational resources for people with intellectual disabilities produced by the Family Planning Association Victoria (Australia).

Method:

Discussion of the need for accessible information for people with intellectual disabilities.
Demonstration of various educational "models"/programs within which STD/AIDS education might be incorporated.

Results:

Demonstration of education resources produced by The Family Planning Association of Victoria.

Conclusion:

Results of the trial use of educational resources with individuals and groups with intellectual disabilities and their care-givers .

Th.D.863 SEXUAL BEHAVIORS AND BEHAVIORAL CHANGES AMONG HIGH RISK COLLEGE STUDENTS.

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*University of Maryland School of Medicine, Baltimore; **University of Maryland, College Park; ***NIAID, Bethesda, Maryland, U.S.A.

OBJECTIVE: To describe the variables associated with AIDS risk behaviors among a cohort of high risk college students.
METHODS: In 1988 we conducted a voluntary serosurvey of 3394 undergraduate students attending the University of Maryland at College Park. Subjects donated a blood specimen for HIV-1 antibody testing and completed a risk assessment questionnaire. Characteristics of the 297 students belonging to high risk groups (8.8% of the total) are described.
RESULTS: The mean age was 22.6 $\pm$3.6 yrs; 65% were men, 83% caucasian, 7% black, and 9% Hispanic. Two students were HIV-infected (0.7%). Risk categories included male homosexuality/ bisexuality (26%), IV drug use (15%) and high risk sexual partners (IV drug users, homosexual/bisexual men, female prostitutes, or HIV-infected persons) (89%). A history of a STD (syphilis, gonorrhea, venereal warts, herpes, or chlamydia) was reported by 25%, and was associated with the number of lifetime sexual partners in men ($p<.001$) and anal intercourse and intercourse with an IV drug user in women ($p\leq.02$). Thirty percent had never used condoms, including 23% of those reporting previous STD, 26% of those with >5 lifetime sexual partners, and 29% of those reporting high risk sexual partners. Only 55% of the group reported that they had increased their condom use as a result of their knowledge about AIDS.
CONCLUSION: These findings suggest that high risk college students should be targeted for programs which promote condom use and other interventions aimed at reducing transmission of HIV-1 and other STD.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.864 INCREASING AIDS AWARENESS AMONG COLLEGE STUDENTS USING VISUAL ARTS AND STUDENT AIDS ACTIVISTS

Goldstein, Mark A.*, Van Ness, J.*, ARMIT*, Friis-Hansen, D.*, Platt, R.*, Seamans, W.*, *Massachusetts Institute of Technology, Cambridge, Massachusetts, USA.

Objective: to increase awareness of AIDS issues and promote behavioral change in a student population using a variety of visual art forms with assistance of student AIDS activists (ARMIT).
Methods: our prior research has shown that traditional methods of raising awareness to AIDS issues have had limited success. Humanizing AIDS awareness activities may impact on behavioral change. We developed unique visual arts programs around AIDS themes. These included a student art contest and exhibition, a quilting project, displays of AIDS quilts and photographs of individuals in the terminal phases of AIDS.
Results: the art contest stimulated considerable interest. Viewers of the AIDS quilts felt the experience was poignant and very personal. Responses to the photographs were so dramatic that a permanent show was organized.
Conclusion: we sought to increase awareness and emotional response to AIDS issues using visual arts as media and student AIDS activists as promoters of the programs. Visual art appears to be an effective, non threatening and novel means of increasing awareness to AIDS issues in college students. It is our contention that the emotional responses created by these programs will result in positive behavioral changes.

Th.D.865 ROLE OF THE COMMUNITY COLLEGE: POLICY, EDUCATION AND SERVICE.

Redick, Mary, Ph.D.
San Francisco Community College District, California, U.S.A.

Objective: To describe the AIDS transmission prevention activities of a community college of 60,000 students during the last six years.
Methods: The community college appointed an AIDS Advisory Committee in 1984 to develop policy, administrative guidelines and procedures to guide working groups in both the instructional and student services components of the institution. In 1987, as a result of the planning of employees and students a fully staffed AIDS Program Office was opened.
Results: 1) Policy: nondiscrimination and confidentiality used as statewide model for 108 community colleges. 2) Education: ongoing programs for both employees and students; materials production and distribution; integration of prevention education in existing curriculum; specialization in bilingual, bicultural education. 3) Service: integration of HIV infected employees or students in worksites or classrooms; outreach and liaison with 63 local AIDS serving community-based organizations; AIDS awareness activities at city, regional, state and national levels.
Conclusion: A community college has many technical, educational, service and leadership resources to share in developing a response to the epidemic.

Th.D.866 A MODEL INTERDISCIPLINARY UNIVERSITY-WIDE COURSE ON AIDS

Strauss,Ronald; Corless,I.; Luckey,B.; van der Horst,C.; Dennis, B.; University of North Carolina at Chapel Hill.

Objective: To develop and evaluate a large interdisciplinary university credit bearing course on AIDS for health professional and arts/sciences students.
Methods: Faculty from each of five health sciences schools at a large state university developed and taught a course on AIDS to a broad audience of 429 students, examining immunology, epidemiology and impact of AIDS on society.
Results: Students in this 15 week course were from health (37%) and other (6%) professions, and arts/sciences (56%). A third were graduate students and over 50 faculty audited the course. It was offered for 1 to 3 credits, depending upon time commitment and seminar enrollment. The course met one evening per week for a 1 1/2 hour lecture, followed by a seminar. An anonymous survey (N=393) found that 88% of the students were female and 83% were younger than 30 years of age. At the start of the course 23% of the students indicated that they had been tested for HIV and another 10% expected to have an HIV test over the following year. When presented with a list of risk factors, 6.7% identified themselves as a member of a high risk group. In a post-course anonymous student evaluation, 95% felt the course should be offered again, with most finding it overall to be good (61%) or excellent (22%) and some finding it fair or poor (15%). Panel discussions with patients or on sexuality and lectures on prevention, behaviors and treatment received especially positive responses.
Conclusion: This paper presents a demonstration of how a large university can offer an accredited AIDS course for a diverse and sizable audience of students. Findings suggest this is an efficient mechanism for educating large numbers of potential community leaders and professionals about AIDS.

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Th.D.867 **AN ASSESSMENT OF AIDS KNOWLEDGE,RISK PERCEPTION AND BEHAVIOR AMONG PUBLIC HEALTH STUDENTS IN SOUTH SULAWESI, INDONESIA**

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*Hasanuddin University, Ujungpandang, South Sulawesi, Indonesia, **University of South Carolina, SC, USA.

Objective: To determine knowledge, risk perception and risk prevention behavior concerning AIDS among public health students in South Sulawesi, Indonesia.
Methods: Questionnaire was administered in summer of 1989 to 154 public health students at Hasanuddin University. Data collected included demographic information, AIDS knowledge, risk perception, and knowledge of risk prevention behavior. Frequency and chi-square test were used in the data analysis.
Results: 121 students completed the questionnaire with a response rate of 78.6%. 99.2% students knew the main modes of HIV transmission. 37.2% did not know the lethality of AIDS. 68.6% thought that it can be cured. Moreover, 52% perceived that HIV could be transmitted through causal contact such as kissing, donating blood, and by swimming pool. 64.4% believed that condom is effective in preventing HIV transmission. 87% used condom to prevent pregnancy.
Conclusion: Although Indonesia has a very low incidence of HIV infection, general knowledge about the main modes of HIV transmission is high. However, a significant number thought it could be acquired through causal contact. More education efforts should be aimed at correcting these misconceptions.

Th.D.868 EDUCATING THE EDUCATORS: METHODS TO PROMOTE HIV CONTENT IN UNIVERSITY HEALTH CARE PROGRAMS

Katz, Susan; Freudenberg, N.; Lee, J.; Hunter College Center for Community Action to Prevent AIDS.

Objective: To assess the quantity and quality of HIV/AIDS material in professional health programs in a public urban university; to develop interventions to better prepare these students to meet the needs of people with HIV/AIDS.
Methods: The School of Health Science, Nursing and Social Work of Hunter College of CUNY were targeted. Over 100 faculty were surveyed regarding current HIV/AIDS curriculum content and teaching resources. An inventory of HIV related field practicums was compiled and indepth interviews with faculty conducted. Several interventions were developed.
Results: Little systemic inclusion of HIV content existed in the curricula of these schools. Faculty responded that a lack of time and resources prevented them from integrating HIV content; they indicated enthusiasm for faculty development programs and HIV teaching modules. These were provided and HIV teaching resources were set up through the library and media center. Students in an AIDS interdisciplinary undergraduate course were evaluated for changes in knowledge and attitudes.
Conclusion: Students in a high HIV density area need to learn about HIV/AIDS. Faculty in our study identified obstacles to meeting this need. We identified several strategies for overcoming these obstacles.

Th.D.869 MODEL OF PROFESSIONAL SUPPORT FOR AIDS EDUCATORS

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Objective: To describe the key elements of an educational model underlying the "AIDS Educational Strategies Group" which has contributed to the competence and confidence of AIDS educators since 1984 in Melbourne, Australia.

Method: Analysis of records of meetings, structured personal interview with planners of model, members of group, convenors of group and employer agencies of members: review by focus groups; trend analysis of attendance, of issues discussed and of educational activities of members concurrent with government campaigns.

Results: Key elements included: "neutrality" of convenor/host organization; multidisciplinary participation; extensive experience of educating by the convening members; relatively closed membership, ie by invitation only; fully minuted and distributed records of meetings; confidentiality and trust; commitment to regular participation. The group continues to undertake sponsorship of public updates of information about AIDS and reviews of government reports on educational policy and staffing.

Conclusion: The model provides highly valued peer support, reliable access to information, and opportunity to challenge the theoretical and practice basis of education about HIV infection; opportunity to reduce fear and prejudice, discuss sexual and ethical issues and respect different values stances; and enable professional "safety" to challenge government and institutional educational/prevention policies.

Th.D.870 COMPLACENCY, RISK PERCEPTION AND THE PROBLEM OF HIV EDUCATION

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Objective: AIDS has received less political and media attention in the UK in the last 18 months, which might have led to complacency and low risk perception of HIV infection. A survey of 1002 people in Wales was conducted to discover the degree of discriminatory and complacent attitudes and risk perception surrounding HIV infection.
Methods: Interlocking quota controls for age and social class within each of the 60 interviewing points were used to reflect the demographic profiles of Welsh adults.
Results: The results indicated that up to 65% of the sample expressed discriminatory attitudes towards people with HIV. Complacency had not changed significantly over previous surveys (X^2 test with Yates correction). Interestingly people correctly estimated the degree of risk to them of being infected with HIV when compared to 4 other 'life events'. Younger people (aged 15-34) considered themselves more at risk of infection (Lineor X^2 test) but overall perceived risk of infection was low.
Conclusion: A sustained low key education programme based on the recognition of the power of perceived norms and social support for attitude change (by personalising information) and based on a variety of settings is needed in Wales to combat prejudice and complacency.

Th.D.871 EDUCATION AND TECHNOLOGY ABOUT THE CONDOM AND ITS USE. PROJECT RQTS.

Torres,José*;García Huete,E**;Anabitarte,H*;Jaumot,A; Usieto,R*;Mariscal,J.
*Foundation F.A.S.E.,Madrid,Spain;**Universidad Complutense Madrid,Spain.

Introduction and objective.The efficiency in the prevention against HIV by sexual way recommending the use of the condom is low;since it is a purely informative action which is not able to modify conducts or to break taboos. We know the effect of the passion as a motive of renunciation to the preventive measures. As well as the necessity of promoting the training of condom-use and of new technologies for a high reliability in the use of the condom as an efficient barrier.
We presented in Montreal(V Int.Conf.) the project RQTS with contribution of a new technology for selection of condoms without faults(M.H.P.21 abstr.).
The second part of the project RQTS is the development of a comic showing the condom-use integrating it in the games and relation,specially of the young couple. To learn to share the caresses,the tenderness and the condom,including the laughter it provokes.
Methods.We have realized group dynamics(young people,homosexuals,sanitary people,prostitutes,patients)for to know the degree of knowledge of condom-use and the vocabulary-direct texts.
The artist J.Mariscal(creator of the Olympic Games mascot in Barcelona'92) contributes with the creation of a comic starting from the results and so, creating the characters and the story.
Results.We present dynamic results and the comic.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.872 EVALUATION OF AN HIV EDUCATION MODULE INTEGRATED INTO COMPREHENSIVE SCHOOL-BASED HEALTH EDUCATION

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**University of California, San Francisco, California, USA

OBJECTIVE: To evaluate an HIV education module integrated into a comprehensive, school-based health education curriculum.
METHOD: Approximately 1800 high school students completed an anonymous self-report AIDS survey. Students who reported receiving HIV education were compared with students not exposed to HIV education on 33 knowledge, attitudes, and behavioral indices. Univariate Pearson Chi-square analyses were conducted; significant differences were noted when alpha was <.0005 and between HIV education group differences exceeded 10.5 percent.
RESULTS: Students who received HIV education demonstrate markedly greater accuracy in HIV knowledge, improved attitudes towards talking about HIV with family and friends, increased tolerance towards HIV-infected students, and greater likelihood of HIV prevention behaviors. Students who received HIV education reported increased empowerment (ability to say no if pressured to have intercourse) and self-efficacy (ability to insist on condom use if about to have sexual intercourse).
CONCLUSION: HIV education integrated into comprehensive school-based health education is very effective in increasing HIV knowledge in students, in making positive attitude changes, and in significantly improving student empowerment and self-efficacy related to HIV risk-reduction behaviors.

Th.D.873 WHY AIDS CLINIC PATIENTS DO NOT RETURN TO WORK.

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University of California, San Francisco, USA.

Objective: To evaluate the association between disability benefits, Medi-Cal coverage (California's Medicaid system), and social support in the work place, on the decision to return to work by patients attending a University based AIDS clinic.
Methods: A longitudinal study that employed trimonthly structured telephone surveys.
Results: Of the one hundred ninety-seven participants, 54 (27%) were receiving disability benefits at the time of the original interview. One hundred two (52%) were receiving disability benefits at the time of the most recent interview. Seventy-one percent of the participants reported that the primary cause attributing to disability was HIV-related illness. Eighty participants (41%) were receiving Medi-Cal coverage at the time of the last interview. At the most recent interview, 56% were disabled and on Medi-Cal. These participants were asked why they were unable to return to work: 54% stated they were too ill, 43% stated fear of losing Medi-Cal benefits, 4% did not want to return to work, 12% felt that during their previous employment they needed to conceal either their illness or their risk group from their employer. Thirty-three participants (17%) who were currently working also felt that they needed to conceal either their illness or risk group from their employer.
Conclusion: Although many respondents saw the need to conceal their illness in the workplace this did not appear to contribute to their decision not to return to work. Almost half stated that their illness did not directly prevent them from returning to work in some capacity. Concerns about loss of benefits frequently precluded the attempt to return to work. Pre-existing condition clauses made workplace based private insurance inaccessible, thus increasing reliance of AIDS patients on state-funded coverage. Mandatory employer paid health insurance would help to alleviate this problem.

Th.D.874 THE ROLE OF RELIGIOUS/FAITH COMMUNITIES IN HIV PREVENTION AND AIDS SERVICES

Jimenez, Richard *
National AIDS Information And Education Program, Centers For Disease Control, Atlanta, Georgia.

This presentation will consist of an overview of a new religious initiative currently being undertaken by the Centers For Disease Control's National Partnerships Program. The main objective of the initiative, creating partnerships with religious denominations, groups and congregations, will be explained. Strategies which have been developed by the CDC to encourage, assist and support religious communities in the fight against HIV infections and in providing AIDS services to those in need will be discussed. In addition, current national, regional and local interfaith models of partnerships and collaborations between government, churches and community organizations in the United States will be highlighted.

Th.D.875 COPING WITH RELIGIOUS OBJECTIONS TO AIDS EDUCATION

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*University of California, Berkeley, California, USA,
**Occidental College, Los Angeles, California, USA.

Objective: Public agencies implementing AIDS curricula may encounter sharp resistance from conservative religious groups. We sought ways to most effectively deal with such challenges.
Methodology: Interviews with school administrators who had dealt with the problem, public health officials, and spokespersons for conservative religious groups, together with a study of curricular materials developed by religious bodies and by private and public agencies.
Results: Great differences exist between and within particular religious communities. There is however, widespread and deep rejection of homosexuality. Positions by some who oppose public AIDS prevention education are deeply held and unlikely to be changed. Among service providers the fear of attack far exceeds its actual incidence. There is only limited trust that community advisory committees will be effective. Curricula are modified to avoid confrontation even when no confrontation is threatened. AIDS educators feel these threats acutely and may further modify an already conservative curriculu.
Conclusion: Service providers fail to seek the support of moderate church groups who support public instruction on AIDS prevention, thus leaving conservative voices as the only one's impacting on curricular development. Marshaling support from moderates would allow more effective programs of instrutction. Sources of such support will be identified in the poster session. These include guidelines for advisory committees, means of contact with central church agencies, and illustrative curricula.

Th.D.876 A STUDY OF KNOWLEDGE AND ATTITUDES OF COLLEGE STUDENTS

Dr.A.B.Hiramani, Dy.Director (Research), Central Health Education Bureau (Dte.G.H.S.), Ministry of Health & Family Welfare.

OBJECTIVES:(1) To examine the extent of knowledge of the college students about AIDS. (2) To understand students' attitudes towards preventive measures launched by the Government.
METHODS:All 128 students of graduate class of Physical Education at Aurangabad in Maharashtra State, India were covered. The attitudes of the students were assessed through their knowledge and views on government programmes on AIDS. A questionnaire was administered to them in the class-room.
RESULTS:A majority of students were unmarried; hostellers and had rural background migrated to this city for study purpose. Nine out of ten had the habit of reading newspapers but only 43% read it daily. 82% used to watch television, 14% watched it daily. Both radio listeners and TV viewers were more interested in entertainment rather than health programmes. Of the 128,89 (69.5%) reported to have heard of AIDS; and 67.4% through newspapers. Barring 7.4%, others did not know the full expanded form of AIDS. Causes of AIDS were known only to 10, 38% narrated a variety of causes from sexual intercourse, homosexuality, blood transfusion to kissing etc. Symptoms of AIDS were known only to 6 out of 89 students. Those who knew some mode of transmission, 34% reported body contact, 24% infected blood, and 75% sexual contact. Most of them (85.4%) were not able to identify the educational programmes and preventive measures launched by the government. About 45% viewed AIDS as the most serious disease in the country. Their views on the question relating to a mandatory blood test for HIV of visiting foreigners indicated that 92.7% were in favour, believing that AIDS is originated in foreign countries.
CONCLUSION:The results demonstrate that the students of even graduate level need the well-organised specifically targeted health education programmes through popular media like TV, Radio.

Th.D.877 AIDS INTERVENTIONS, PUBLIC HEALTH AND SOCIAL FACTORS IN THE SUGAR PLANTATIONS OF THE DOMINICAN REPUBLIC

Kreniske, John.
HIV Center for Clinical & Behavioral Studies, New York State Psychiatric Institute; State University College at Old Westbury, Old Westbury, New York, U.S.A.

Objective: To analyse short-term and long-term policies and strategies needed to prevent transmission of HIV infection in the sugar plantation communities of the Dominican Republic.
Methods: Analysis is based on literature research, visits, on-site interviews with community workers and families, and with social scientists and epidemiologists.
Results:
Possibilities for intervention are limited by: 1. Poverty, that reduces the specter of AIDS into just one more burden to cope with, and a distant one at that; 2. A migratory labor system, that mixes groups with high seroprevalence rates and those with low ones, and separates the sexes for long periods;
3. The burden of other untreated chronic diseases, some of which may act as cofactors for AIDS, others which will certainly be adversely affected by HIV infection, and all of which compete for the sparse funds available for prevention and care. 4 Isolation and invisibility from mainstream government and epidemiologic view.
Conclusion: Limited educational and health policies cannot pay off, in the context of these larger problems. Interventions must confront issues of family support, daily subsistence, sanitation, infectious disease control.

Th.D.878 SURVEY OF AIDS-RELATED EDUCATIONAL PROGRAMS IN THE WORKPLACE

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*Gay Men's Health Crisis, Inc., New York, New York, **The New York Business Group on Health, Inc., New York, New York.

Objective: Although New York City has 20% of all AIDS cases in the United States, it has lacked a coordinated strategy to deal with HIV/AIDS education in the workplace. This study was designed to obtain data regarding New York City HIV/AIDS workplace policies, programming, and executive attitudes in order to develop effective educational interventions.
Methods: Gay Men's Health Crisis and The New York Business Group on Health surveyed human resources administrators in 2,637 New York metropolitan firms and nonprofit agencies. A Dun & Bradstreet listing of businesses having more than 100 employees was supplemented with mailing lists of two business associations and representative social service and entertainment industry agencies. The survey was designed to assess: 1) what types of HIV/AIDS educational programs have been implemented; 2) what programs company executives felt employees need; and 3) what factors enhanced or impeded the implementation of workplace HIV/AIDS programming. Additionally, focus groups of human resources administrators were conducted to yield amplifying information.
Results: Although survey data have not been analyzed as yet, pilot and focus group data suggest that New York City employers have done little in the way of proactive HIV/AIDS education and have supplied information to employees only in response to crises. Data collected to date also point to continued fear of HIV transmission in the workplace.
Conclusion: It is expected that fully analyzed survey data will confirm preliminary findings that rank-and-file employees in all types of workplaces require further basic HIV/AIDS medical information, while middle managers need 1) skills-building in handling HIV-related crisis situations and 2) values clarification around sexual issues and substance use.

Th.D.879 GROUSE SHOW!: AN EVALUATION OF A TOUR OF AN AIDS CABARET IN TERTIARY INSTITUTIONS.

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*AIDS/STD Unit, Health Department Victoria, Melbourne, Australia

Objective: To assess the educational efficacy of a six week tour of the Outtheatre safe sex and safe use cabaret; "All Thrills, No Spills."
Methods: The company toured 25 tertiary institutions, and 4 correctional institutions with an overall audience of approximately 5000. A log book of comments was kept for all performances and this was content analysed. A short questionnaire was administered to 38 participants before and 40 after performances, to test perceived threat, transmission knowledge, safe sex negotiation and information seeking. 108 respondents were asked prior to a performance what the level of discussion was within their peer group on AIDS related issues. A follow up of the 104 respondents was conducted 1 week later.
Results: Respondents were found to be supportive of the explicitness, accessibility, practicality and humour of the show. Some increase was noted in knowledge level, particularly regarding needle cleaning. There was some increase in perceived personal threat after the show and a positive shift in felt negotiation skills. Discussion levels among peer groups became less polarised.
Conclusion: It would appear that this format is particularly useful for increasing interest levels, enhancing personal relevance and making information accessible. It is indicated, however that development and follow-up within the institutions is necessary to sustain and direct the interest and to respond to the needs of the students.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Criminal Justice and the Corrections System

Th.D.880 USEFULNESS OF AN AIDS EDUCATIONAL PROGRAM FOR LAW ENFORCEMENT PROFESSIONALS.

King, Terry*, Blake, S.,Khardori, N.*, Rabinovich, S.*, VonBehren,L.A.*. *Southern Illinois University School of Medicine (SIU), Springfield, IL

Objectives: Law enforcement personnel (LEP) are often the first responders to many accident/crime scenes. Since most of these incidents involve handling of blood/body secretions these personnel are at risk of being exposed to HIV. Furthermore, the misconceptions and fears involved in handling such items may interfere with the optimal handling of the situation. We undertook a training program for local LEP on the basic issues of communicability of HIV and administered a pre/post test in order to ascertain the adequacy of this inservice program.
Methods: We used an audio-visual program consisting of a 2 hour didactic session every day for 25 days and a videotape entitled "AIDS Avoidance for Law Enforcement Consultants". A true/false form was used for the 20 question testing to analyze the impact of the program. Each correct answer was given one point. The scores were compared using the t-test for independent samples, based on the number of correct responses. The inservice concluded with a question/answer session and a questionnaire focusing on personal attitudes.
Results:

	No. of Respondents	M/F	Mean Score	±S.D.	Mean Diff.	P. Value
Total Pretest	256	224/32	16.4	±2.3		
					1.94	0.0001
Total Post test	256	224/32	18.3	±2.1		

Conclusions: The results of this study support the efficacy of such educational programs for LEP, enhancing their capability to handle potential infectious material and altering their behavior towards HIV infected subjects.

Th.D.881 A CONSORTIUM OF UK VOLUNTARY ORGANISATIONS MAKING LINKS BETWEEN PRISONS AND COMMUNITY SUPPORT/EDUCATION GROUPS

Kelmanson, Andrea*; Jay, M*; Gallwey, J**; Williams, B***
*National AIDS Trust (NAT), London, England; **NAT and Home Office AIDS Working Party, UK; ***National Association for the Care and Resettlement of Offenders (NACRO), Birmingham, England

Objective: to maximise the involvement of external voluntary groups in educational and support activities related to HIV in the prison system in England and Wales. To engage voluntary organisations not primarily concerned with AIDS, in AIDS projects which need their specialist skills.
Methods: a series of legal contracts have been made between NAT and a consortium of other agencies, including prisoners welfare (NACRO); AIDS specialist (Terrence Higgins Trust/THT); and drugs agencies (Turning Point/TP, Parole Release Scheme/PRS), under which NACRO has a policy development function, THT provides resources/support, and other agencies employ regional "brokers" whose task is to promote working relationships between local prisons and volunteers and staff from a wide range of other outside agencies. This coordinated team can provide education and support to prisoners at high behavioural risk of HIV infection (in or out of prison) or living with HIV in prisons.
Results: the scheme has had a positive response from the voluntary sector and from an increasing number of individual prisons and the central government.
Conclusions: the response of the UK prison service to AIDS and HIV has negative elements, including a segregation policy in England and Wales (but not in Scotland) and positive elements including a commitment to education and to involvement of outside agencies in AIDS work. NAT, THT, NACRO, TP and PRS are well placed to maximise those positive elements and build a climate of informed opinion within and outside the prisons to overturn the negative ones

Th.D.882 EDUCATIONAL WORK PERFORMED IN THE SOROCABA CITY : PUBLIC PRISON

RAMOS FB., Tyrso; Anjos, R.M.P.
São Paulo - Brazil

Objective: Chiefly AIDS Prevention Inside the Jail
Methods: Lectures on AIDS, teaching basic elements and stressing the disease means of contagion and of prevention, followed by a question-and answer session and making of educative material by prisoners, to be divulged inside the prison itself. This prison has an average population of 220 people and the number of prisoners allowed to each session was limited to 15.
Conclusion: The concern and attention manifested to the lectures by a small number of confined people, stirs up a confident feeling of participation, giving them a greater freedom to make clarifying questions which are completed with the educative material.
We perceived that the sensation of taking part and of doing something make people feel themselves more important and more attentive and that it is possible, even within the bars of a prison, provided that the correct methodology is applied, to form "multipliers" for AIDS prevention.

Th.D.883 INFORMATION CAMPAIGN FOR THE PREVENTION OF HIV-1 INFECTION IN PRISONERS IN THE PROVINCE OF ROME.

Turbessi,Giuseppe ; D'Offizi,GP.; Mezzaroma,I.; Luzi,G.; Boccella,P.(*); Aiuti,F.
National Association for AIDS (ANLAIDS), Rome, Italy.
(*) Province of Rome.

Objective: The information campaign carried out by ANLAIDS in closed communities such as schools or prisons was shown to be very profitable. There are today about 36,000 prisoners in Italian jails including 6,000-8,000 drug users. In 1989 a series of seminars on HIV-1 infection in the 9 prisons belonging to the province of Rome were organized by the ANLAIDS.
Methods: These meetings were illustrated by slides showing the various aspects of the infection (transmission, therapy, behaviour guidlines) and questions were put to the speakers (a physician and a psychologist) by the prisoners.
Results: 87% of the questions regarded virus transmission and the difference between subjects with HIV-1 infection and those with AIDS. A percentage of questions (45%) regarded the origin of the infection and precautions to be taken. Most of prisoners (81%) said they would prefer to know the number of seropositive subjects in the cells while about 10% of the questions were put by the prison warders about the risks they might runin possible clashes with seropositive prisoners.
Conclusions: Jails have a strong depressive and anxiety provoking atmosphere, thus a correct and well-aimed information campaign can improve the well-being of all prisoners.

Th.D.884 ASSESSMENT OF HIV/AIDS KNOWLEDGE AMONG PRISON OFFICER IN SCOTTISH PRISONS

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*HM Prison, Perth, Scotland. **University of Stirling, Stirling, Scotland.

OBJECTIVES: To assess Prison Officers' knowledge about different aspects of HIV/AIDS.
METHOD: Study of 128 male and 88 female Prison Officers, 108 newly recruited Prison Officers and a control group of 51 male and 77 female university students. Subjects were randomly selected and completed a questionnaire. Questions were divided into 5 sub scales covering different aspects of HIV/AIDS. Comparisons were made between the total and sub scale scores for males and females, officers and students, experienced and inexperienced officers. One way analysis of variance and post hoc scheffes were used for analysis.
RESULTS: Preliminary results show no significant difference between the groups in terms of total scores. There were differences on levels of knowledge for all groups between the sub scales. All groups had less knowledge about prevalence of HIV/AIDS and relative risk of HIV infection compared with other Health Problems, and also less knowledge about lack of risk associated with casual contact. There were also differences between groups for scores on some of the sub scales.
CONCLUSIONS: Deficits were found in knowledge of lack of risk associated with casual contact, nature and prevalence of HIV/AIDS, and relative risk of HIV infection compared with other health problems. This may have implications for management of inmates with HIV/AIDS. Further research is needed to explore the relationship between Knowledge, attitudes and perceived relative risk of HIV infection.

Th.D.885 ARE INCARCERATED INTRAVENOUS DRUG USERS (IVDU) INTERESTED IN TAKING THE HIV ANTIBODY TEST?

Kegebein, Valerie J.*, Zack, B.**. *Santa Clara County Health Department, San Jose, CA; **Marin AIDS Support Network, San Rafael, CA, USA.

Objective: To determine predictors of interest in HIV antibody testing in inmates with histories of IV drug use following educational interventions.
Methods: We measured interest in HIV antibody testing among male inmates with histories of IV drug use in 1 state and 2 county penal institutions in California following exposure to a standardized educational intervention (AIDS education video, group discussion). Predictor variables were perceived risk, needle sharing, knowledge of a person with AIDS, and demographics. The outcome variable, interest in HIV antibody testing, was dichotomous.
Results: Of the 712 inmates exposed to the education intervention, 299 (42%) had histories of intravenous drug use, and of the 299, 221 (74%) had shared needles in the past. In the univariate analysis, variables which predicted interest in HIV antibody testing among IVDU inmates were history of ever sharing needles ($p<.001$), perceived risk of AIDS ($p<.001$), and white or Latino race ($p<.001$). In multivariate analysis, the variable most predictive of interest in HIV antibody testing was sharing needles ($r^2=.026$).
Conclusions: Inmates who report histories of needle sharing were more likely to be interested in HIV antibody testing and counseling than other inmates in these settings. This suggests that health educators may be able to predict which inmates will and will not respond to this intervention and can help them pre-select inmates in need of more intensive interventions.

Th.D.886 TRENDS IN HIV ANTIBODY TESTING AND HOUSING POLICIES FOR INFECTED PRISONERS AMONG U.S. CORRECTIONAL SYSTEMS, 1985-1989

Moini, Saira; Hammett, T., Abt Associates, Cambridge MA, USA.

Objective: Identification and explanation of trends in policies regarding HIV antibody testing and housing of HIV-infected prisoners, two central indicators of the correctional response to the HIV epidemic.
Methods: Based on annual surveys of US federal, state and local correctional systems sponsored by the National Institute of Justice, US Department of Justice.
Results: Between 1986-1987 there was a sharp increase in mandatory HIV screening among correctional systems, followed by a relative leveling off between 1987-1989. There has also been a recent rise in the number of systems offering voluntary or on-request testing. In housing policy, there has been a trend (particularly since 1987) away from presumptive segregation of HIV-infected inmates and toward presumptive general-population placement or case-by-case decisions. The sharp increase in mass screening was prompted by internal factors (e.g. demands by staff and inmates) and external factors (e.g. the intense public and political pressure for testing in 1987). The subsequent leveling of the testing policy trend is attributable to the waning of external pressures and perceived problems of cost, confidentiality, and usefulness of test results. The rise of voluntary/on-request testing has been primarily associated with the growing possibility of early medical intervention. The trend in housing policy is likewise attributable to concerns regarding cost, confidentiality, and utility as well as to the realization that assessment of individual medical and security needs represents a better basis for housing and programming decisions than HIV status alone. Lawsuits have also played a role.
Conclusions: Since 1987, US correctional systems have evolved more rational and measured policy responses to HIV/AIDS.

Th.D.887 SEROPREVALENCE AMONG THE CRIME RELATED POPULATION PRISONERS & PROSTITUTES

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Venkateswaran,K*;Kantharaj,K*,Jayapaul,K*.
*Institute of Sexually Transmitted Diseases;Madras Medical College,Madras
**Stanley Medical College,Madras-INDIA.

Objective:HIV serosurveillance study was attempted to screen the convicts: men homosexuals & jail inmates;women prostitutes confined in Vigilance Homes and children in TamilNadu a southern state of India.
Methods: Between Apr.1986 and Nov.'89, 3168 male convicts, 3133 women prostitutes and 975 juveniles were screened and their blood sampled for HIV antibodies by ELISA and the seropositivity was ascertained by Western Blot.The seropositives were throughly examined clinically and associated STD were taken into account.
Results: 2 men(0.06%)and 48 women(1.53%)(detected 2 in'85,11 in'86,19 in'87,7 in'88 & 9 in'89)were seropositive for HIV while all the children were seronegative. Low incidence of seropositivity among men prisoners may be due to less number of partners indulged over a period of time whereas the higher preponderance in women prostitutes relate to multiple partners;multiple exposures and possible perverted sexual practices;though both(convicted men and women prostitutes)were highly promiscuous.The seropositive women in addition;13 had syphilis,1 had gonorrhoea, and 2 had other forms of associated STDs(like TV).On through general&systemic examination only 2 had tuberculous cervical adinitis and 1 had Hypertrophic tonsils,the rest were clinically symptom free and nothing abnormal detected.
Conclusion: These high risk groups should be screened compulsorily(for HIV),appropriately health educated(condom use)and seropositives must be suitably rehabilitated(social status).

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.888 LEGAL, ETHICAL AND SOCIAL COMPLEXITIES IN CONDUCTING HIV-RELATED RESEARCH INVOLVING ADOLESCENTS

Sondheimer, D.L.*, English, A.**, Hein, K.***, Novello, A.*, * NICHD, Bethesda, MD, **National Center for Youth Law, San Francisco, CA, ***Montefiore Medical Center, Bronx, NY, USA.

Objective. To address the legal, ethical and social concerns that have emerged in HIV-related research involving adolescents.
Methods. A review of the evolving legal standards and societal attitudes with respect to HIV-infection in adolescents in the USA and recommendations for future actions. Current trends in HIV-related state laws regarding adolescents are examined.
Results. Issues unique to adolescents must be addressed: (1) the importance of HIV-related research involving adolescents, including special characteristics of population at risk and limitations in current knowledge; (2) consent issues: (a) basic framework of the federal regulations for Protection of Human Research Subjects; (b) additional protection for children involved as research subjects; (3) special considerations in the application of the federal regulations to adolescents: (a) criteria for waiver of parental permission; (b) adolescents capacity for informed consent; (c) significance of state laws regarding minors consent for medical care; (4) confidentiality and disclosure issues; (5) treatment/service issues including: a) adolescent involvement in clinical trials; b) access to care.
Conclusions. In the context of a proliferation of HIV-related legislation and court decisions during the past five years, there remains critical need for social and legal clarification in addressing HIV-related research issues pertaining to adolescents.

Th.D.889 PREVALENCE OF HIV ANTIBODY AMONG A GROUP OF PARAPHILIC SEX OFFENDERS

DiGiovanni, C.* **; Berlin, F.**; Casterella, Peter***; Redfield, R.****; Hiken, M.**; Falck, A.**
*National Naval Medical Center, Bethesda, Maryland, **Johns Hopkins Hospital, Baltimore, Maryland, ***Naval Hospital, Oakland, California, ****Walter Reed Army Institute of Research, Washington, DC, USA.

Objective: To determine prevalence of HIV antibody among a group of paraphilic sex offenders in treatment at a major sexual disorders clinic.
Methods: Blood specimens are being collected under anonymous conditions from paraphilic sex offenders enrolled in treatment at the Sexual Disorders Clinic of The Johns Hopkins Hospital and analyzed by recombinant ELISA for HIV antibody. Samples are from only persons whose offenses involve sexual contact (homosexual, bisexual, heterosexual pedophiles and rapists); excluded are voyeurs, obscene phone callers, exhibitionists, etc.
Results: Of 49 samples analyzed thus far, all were seronegative for HIV antibody; this is an on-going study, and additional data will be available by June 1990. All 49 subjects tested to date were adult males (mean: 39 yrs); 37 had been incarcerated, and 44 entered treatment after court intervention. Forty-one were pedophiles (23 heterosexual, 11 homosexual, 7 bisexual); 37 pedophiles had consenting adult sexual contact, not necessarily of the same sex as the children with whom they had contact.
Conclusions: Initial data from this seroepidemiologic survey suggest that HIV seropositivity is not prevalent among adult paraphilic pedophiles and rapists in treatment at The Johns Hopkins Sexual Disorders Clinic. In addition to their paraphilia, these offenders engaged in a variety of non-paraphilic sexual behaviors with consenting adults.

Th.D.890 GENDER AND REGIONAL DIFFERENCES IN HIV-1 ANTIBODY AMONG ENTRANTS TO U.S. CORRECTIONAL SYSTEMS

Brewer, Ford*; Vlahov, D.*; Munoz, A.*; Ullrich, J.*; Narkunas, J.**; Castro, K.**
*The Johns Hopkins University School of Hygiene and Public Health, Baltimore Maryland, USA, **Centers for Disease Control, Atlanta, GA, USA

Objective: Assess the prevalence of human immunodeficiency virus (HIV) antibody among geographically diverse prison and jail inmate populations.
Methods: Serum samples and demographic information routinely obtained at incarceration were obtained from 1,000 consecutive samples in each of ten prisons or jail systems; The 10 systems were analyzed as 3 geographic regions. Specimens were assayed using ELISA and Western Blot techniques; data were analyzed using Chi Square tests.
Results:

U.S. Region	No. of Systems	MALE N	MALE %HIV+	FEMALE N	FEMALE %HIV+	p Value
Mid-West/West	3	2756	2.2%	549	4.0%	0.014
Mid-Atlantic	4	3670	5.1%	752	4.8%	0.603
Southeast	3	2654	4.6%	611	7.0%	0.015
p Value:			0.010		0.052	

Higher HIV seroprevalence rates were observed in nonwhites ($p<0.05$) and select offense categories ($p<0.05$). No difference was noted between prisons and jails stratified by state.
Conclusion: The prevalence results underline the importance of prevention programs in correctional populations. These data also document variation in antibody to HIV-1 among entrants into prisons and jails by gender, region, and race/ethnicity, suggesting that prevention projects in the correctional setting should take local conditions into consideration.

Th.D.891 DEVELOPMENT AND EVALUATION OF EMPOWERMENT MODEL OF AIDS EDUCATION FOR FEMALE INMATES

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*Hunter College Center for Community Action to Prevent AIDS, CUNY, NY U.S.A., **Montefiore/Rikers Island Health Services, NY U.S.A.

Objective: To test a curriculum designed to help women inmates at New York City jail to feel more in control of their lives; to test the effectiveness of this curriculum against a didactic presentation on AIDS prevention.
Methods: To assess educational needs of female inmates, researchers conducted focus groups and interviews with 50 female inmates. Five sessions addressing issues such as drug use, violence, sexuality, family issues and health care were developed. Changes in knowledge, attitudes and intended behavior were compared for 50 women who participated in the new curriculum and 50 women who attended a standard lecture.
Results: Our data revealed these obstacles to risk reduction: prison conditions, fear of violence from sex partners, drug addiction and lack of treatment and limited access to health care. Differences between the two groups are described.
Conclusions: Prisons provide an opportunity to reach high risk women. Educators can help to empower these women to reduce their HIV risk.

Th.D.892 *A COMPREHENSIVE PROGRAM OF HEALTH CARE FOR HIV-INFECTED PRISONERS*

Dixon, Peter; DeBuono, B.**; Carpenter, C.*; Laurie, J.**; Zinner, S.*; Scott, H.***

**Brown University AIDS Program (BRUNAP) and **RI Departments of Health and Corrections (RIDH/C), Providence, Rhode Island, USA.*

Objective: To develop a humane, responsive program of institutional health care and long-term follow-up for HIV+ prisoners.
Methods: All prisoners incarcerated in the RI Adult Correctional Institution (ACI), the only prison in the State, are tested for HIV at time of incarceration and, if initially HIV-, shortly before release from prison. An AIDS team, including one full-time nurse coordinator, a BRUNAP physician and a rotating Infectious Disease Fellow (IDF) provide HIV-related health care for all inmates, and arrange for appropriate follow-up by a BRUNAP physician.
Results: In the last half of 1989, 204 newly incarcerated HIV+ inmates (roughly 8% of prison population) have been evaluated. The prevalence of HIV infection is greater in women than in men by a ratio of 3:1. The great majority of HIV+ persons released have obtained follow-up care arranged by the AIDS team. The program has enhanced the training of IDFs through experiences with HIV+ individuals in a non-tertiary care environment.
Conclusions: The collegial efforts of BRUNAP and the RIDH/C have greatly improved the access of HIV+ prisoners to expert medical care. The AIDS team has simplified the work of prison physicians and has significantly decreased the health care costs, as it has greatly reduced need for specialist consultations at outside facilities. It has provided an effective program of follow-up care which has been enthusiastically accepted by the HIV+ individuals. Such a collaborative University-State effort may prove equally valuable in other regions.

Social Science & Policy: Various Topics

Th.D.894 HIV INFECTED PATIENTS' VIEW OF THEIR ROLE IN HEALTH CARE.

Gerbert, B.; Sumser, J.; Sebesta, D.; Barnes, Donna.
UCSF Center for AIDS Prevention Studies, San Francisco, California, USA.

Objective: At least since the proclamation of the Denver principles (1983) of the rights of people with AIDS to participate in decision making regarding their health care, people with HIV disease have challenged traditional roles of physicians and patients. we wished to document how gay men and IVDUs with HIV disease in 1989 view their relationship with physicians.
Methods: We conducted 8 focus group interviews in Los Angeles and Seattle. These two-hour sessions had 8 - 10 volunteers in each group (n = 67). The qualitative data gathered in these interviews were content analyzed.
Results: Three major themes emerged. First, respondents believed that many men with HIV disease knew as much as, and possibly, more about diagnosis and treatment of HIV disease than did most physicians. Second, people with HIV disease were looking for alternative therapies and alternatives to the medical model. Taking charge of one's own search for "better care" was considered empowering and therapeutic in itself. Third, respondents were looking for a caring, personal relationship with their physicians. For example, almost all respondents wanted to be on a first-name basis with their physician.
Conclusion: These findings suggest that people with HIV disease want to play an active role in the physician-patient relationship. Physicians and other healthcare workers need to be aware of the desires of HIV-infected patients and work with them to realize satisfactory patient care outcomes.

Th.D.893 PROVISION OF HIV RELATED SERVICES TO PERSONS ENTERING THE PHILADELPHIA PRISON. M. Louis van de Beek, Dept of Public Hlth

The Philadelphia Prison System admits 35,000 detainees on an annual basis, with 4,000 residents at any given time. Currently, 70% of entrants are charged with drug offenses; 4,000 prostitution arrests are made annually.

The HIV program in the prison includes amongst its objectives: (1)The determination of HIV seroprevalence;(2)The availability of counseling and testing services for all entrants;(3)The provision of comprehensive HIV related medical services;(4)The prevention of HIV transmission.

Blinded studies have estimated HIV seroprevalence amongst entrants, as well as incidence of inifection with Hepatitis B, HTLV-I, and syphilis, utilizing specimens drawn for serologic testing on all entrants from whom venous blood can be obtained.

A model has been developed for voluntary counseling and testing services for all entrants, and resources are being identified. Currently, testing is offered on a limited basis. All persons are provided with a comprehensive AIDS education program, including availability of condoms. Those who request testing receive pre and post-test counseling, and are offered referral to the prison health system for medical care. Appropriate social services are being developed.

A group of local physicians has developed a protocol for the medical management of persons with HIV infection in the prison. Intensive coordination has occurred both within the Health Dept., other city agencies, and with providers at the facility.

Our first study revealed 4.1% seroprevalence amongst entrants. A second study will be reviewed in this presentation. The number of persons accepting testing is rapidly increasing; seropositivity rates are substantially higher amongst persons tested than amongst entrants. Participation in medical services is being assessed, and budget projections for this program are being developed for the next five years.

Th.D.895 CENTERS FOR ORIENTATION AND SEROLOGICAL SUPPORT FOR HIV INFECTION (COAS)

Reichen, Ingrid*; Serafim, D.*; Rodrigues,L.*
* National Division of STD/AIDS - MOH, Brasilia-DF, Brazil

Objective: To offer an alternative manner of attention, the possibility of performing serology on a confidential, nameless and free of charge basis, specially meant for individuals with risk behaviour ,also providing education and advice.
Methods: The COAS is implanted after the approval of a project with well-structured clinics to assist AIDS, thus asuring the care to the existing demand. They are organized in already existing health centers or services, preferably in a STD clinics. The assistance starts with an educational video about general aspects of AIDS presented by a trained professional, followed by blood collection of people still interested in having the tests performed. The samples are coded in a previously identified public laboratory and the results when positive are confirmed by IFA and/or Western Blot . Individual counselling is given when delivering the results and directing those interested to reference services.

The COAS is supervised and evaluated by the analysis of the projects, technical advising to the units for the following-up of the implantation and functioning of the services and analysis of monthly reports.
Results: Since the beginning of the program, 10 units have been implanted in the whole country and other projects are under analysis for 1990.
Conclusion: The development of this proposal has demonstrated its validity as a significant percentage of the population under risk has been spontaneously looking for the service, receiving orientation and counselling , and having the guarantee of the serological testing, thus redirecting the demand previously referred to the blood banks.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.896 HIV PERCEPTIONS AND SEXUAL BEHAVIOR CHANGES OF DENTAL HEALTH PROFESSIONALS

Cottone, James A.; Dove, S.B. The University of Texas Health Science Center at San Antonio, San Antonio, Texas, U.S.A.

OBJECTIVE: To assess changes in sexual behavior, attitudes and perceptions of dental health professionals regarding HIV infection as a result of AIDS education.
METHODS: A two page survey designed to assess the study objectives was distributed to participants at an international dental conference (DC, n =125) and to all 4 classes of dental students (DS, n=296), faculty (F, n=49) and staff (S, n=63) at the dental school in San Antonio. Frequency distributions were calculated for all questions for each respondent group.
RESULTS: The majority of respondents were white non-Hispanics except for S (56% Hispanic), male (51-77%) except for S (87% female) & DC (58% female), and heterosexual (88%). About 12% (5-19%) considered themselves non-monogamous & sexually active (NMSA). The majority of DS III, DS IV and DC felt that 1-5% of patients were at HIV risk vs authors estimate of 11-20%. About 1/3 of DS III & DS IV, 18% of DC & F, and 4% of S felt that no patients were at risk. About 30% of respondents reported no concern about HIV infection (48% F). Conversely, 25% of respondents were very concerned about infection. Of NMSA, almost 2/3 reported always or frequent condom use. DS II & III reported the highest effect of HIV knowledge on sexual behavior (over 60%). Results were obtained when asked if groups were tested for HIV exposure & if test results were received: DS (18% tested, 68% received), S (13%, 38%), F (23%, 65%), DC (33%, 90%). Positive tests were reported by DC (7%) & F (4%).
CONCLUSION: Despite prior educational efforts, less than 10% of those surveyed had a true perception of the patient population at risk of HIV infection. Although 80% reported they had little or no chance of becoming HIV infected through sexual activity, almost 70% reported concern about becoming HIV infected. Condom use was reported by the majority of NMSA; however, 36% used condoms rarely if at all. Continued educational efforts are needed not only to the general population but also to all health care groups.

Th.D.897 AN INVERSE RELATION BETWEEN NUMBER OF SEX PARTNERS AND CONDOM USE FREQUENCY AMONG MIDDLE ADOLESCENTS: CAUSE FOR CONCERN

DiClemente, Ralph*; Durbin, M*; Siegel, D*; Krasnovsky,F.*; Lazarus, N*
*University of California, San Francisco California, USA

Objective: To identify predictors of condom use among high risk adolescents in an HIV epicenter.
Methods: Data was collected from 386 sexually active ethnically diverse junior high school students (from a larger survey of 1,900 students). Predictors of condom use included: 1) demographics (age, gender, race, acculturation); 2) sexual and drug use behaviors (age at first sexual intercourse, frequency of sexual intercourse, number of sex partners, and drug and alcohol use); 3)HIV knowledge (scores based on transmission and general facts about HIV); and 4) psychosocial factors (self-efficacy, perceived susceptibility). Predictors of condom use were assessed in a simultaneous logistic regression model with the outcome measure, frequency of condom use, dichotomized as "always" v. not always.
Results: An increased number of sexual partners was associated with less frequent condom use ($p < .004$). Adolescents reporting 1, 2, 3-5, and ≥ 6 partners reported using condoms during 48.7%, 39%, 27.4%, and 27.2% of their sexual encounters, respectively. Odds ratios (with 1 partner as the referent category) were 0.67, 0.46, and 0.42, respectively. After adjusting for other variables in the model, no other factors beyond the number of sexual partners was independently associated with condom use.
Conclusion: Sexually active teens are at marked risk for HIV exposure for several reasons and these risks may be multiplicative: those with more sexual partners are progressively less likely to use condoms. Still incompletely understood are the antecedent psychosocial factors which predict multiple-partner sex. Given the lack of association between other variables tested and condom use (particularly AIDS knowledge), prevention efforts should target the subset of adolescents at greatest risk by focusing specifically on diminishing unsafe sexual behavior.

Th.D.898 EVALUATION OF FIVE NIDA SPONSORED VIDEO AND TRAINING PROGRAMS ON AIDS AND THE IV DRUG USER

Kassiday, Deborah*, Sowder, B**, Ashery, R. ***
*T. Head & Company, Inc., ** T. Head & Company, Inc., Herndon, Virginia,
***National Institute on Drug Abuse, Rockville, Maryland

Objective -- To evaluate five training strategies in AIDS and IV drug use & prevention sponsored by the National Institute on Drug Abuse (NIDA). These include: (1) the use of NIDA training materials by States, (2) utilization of videos by treatment programs, (3) an experimental study of the Alicia video, (4) the impact of training for Outreach workers, and (5) follow-up of Methadone treatment strategies training.
Methods: Methods have included self-report, mail surveys, telephone interviews and group interviews; response rates were 75% or greater.
Results: Presenter will provide data for each of the studies. Data from States indicate that over 6,000 counselors, 500 administrators and 100 instructors have been trained at the State level using the NIDA curricula. Data also show that other training efforts are achieving goals, programs are using the videos and a majority of clients understand the video messages.
Conclusions: The data demonstrate that training and education efforts by NIDA have been well received and have made an impact on the ability of drug abuse treatment personnel to address the AIDS crisis.

Th.D.901

DETERMINANTS OF THE PUBLIC'S PRIORITIES FOR ALLOCATING FUNDS SPENT ON AIDS

Berry, Sandra H., Kanouse, D.E., Gorman, E.M., Yano, E.
The RAND Corporation, Santa Monica, California, USA

OBJECTIVE: Assess priorities among the general population for public spending on the AIDS epidemic and analyze the determinants of these priorities.
METHODS: Analyze results of a telephone survey of 1292 randomly selected adults (with an over representation of blacks and Hispanics), residing in Los Angeles County. The survey was conducted in October-December, 1989.
RESULTS: Preliminary analysis indicates that, overall, the desired allocation for public funds is 42% for research, 27% for treatment, and 29% for education and prevention, a distribution that differs considerably from actual spending, where treatment dominates by a wide margin. Respondents believed the education and prevention programs aimed at women of childbearing age were most effective (47% rated them as very effective), compared with programs aimed at teenagers (38%) and gay and bisexual men (37%). Programs aimed at prostitutes (28%) and IVDUs (27%) were rated as least likely to be effective for controlling the spread of HIV infection. Multivariate analyses relate these priorities to demographic and other characteristics such as knowledge and concern about AIDS as a health problem and assessment of personal and public risk. For example, it appears that education is negatively related to belief in the effectiveness of prevention programs.
CONCLUSION: Public perceptions about appropriate spending priorities for the AIDS epidemic are not consistent with actual present and likely future spending distributions. However, the stated priorities reflect a belief structure that may affect support for spending programs and is worthy of consideration by public officials and others concerned with program planning and resource allocation.

Th.D.902

A PROGRAMME OF HOME CARE FOR AIDS PATIENTS: TWO YEARS OF EXPERIENCE.

Arrizabalaga, Concepcion, Garde, C.; Ugalde, A.; Cia, A.; Iribarren, J.A.; Arrizabalaga, J.
Hospital Nª Sª de Aránzazu. Servicio Vasco de Salud-Osakidetza. San Sebastian. Spain.

OBJETIVE: To evaluate the first programme in Spain of a home care scheme for Aids patients.

METHODS: The programme of home care for Aids patients was set up in February of 1988. It involves a team of one doctor and a nurse who are part of the Infectious Diseases Unit of the hospital. They provide home care to Aids patients who cannot be attended in hospital due to their terminal state.

RESULTS: During these two years the team has attended 26 patients, the majority being drug addicts, and have carried out 265 visits. The team provides medical care, psychological support and sanitary education.

CONCLUSIONS: The psychological support and education of the patient and his or her family is as important than the medical care provided. 2) this work can be carried out by nursing personnel, as long as there is always medical back-up available. 3) Psychological support for the home care team itself is fundamental, due to the stressful nature of the situations which they have to confront. 4) A fundamental aspect of their work is co-ordination with and education of primary care teams.

Th.D.903

EVALUATION OF AIDS PEER EDUCATION FOR UNIVERSITY UNDERGRADUATE STUDENTS

Varnhagen, Connie K.*; Svenson, Lawrence W.*
*University of Alberta, Edmonton, Alberta, Canada.

Objective: The purpose of this research is to evaluate an AIDS Peer Education program for university students. The program uses undergraduate student educators to lead informal lecture/discussion/demonstration sessions on how AIDS is transmitted, the progression of the disease, and how to prevent it. The evaluation examines changes in knowledge, attitudes, and intended behaviours as a result of participation in the AIDS Peer Education Program.
Methods: The sample consisted of 457 undergraduate students who participated in one of 50 two-hour AIDS Peer Education sessions in small groups of 10 - 12. Students completed pre- and post-session questionnaires that assessed knowledge, attitudes and behaviours related to AIDS and its prevention. A long-term follow-up using a similar questionnaire is currently being conducted.
Results: Although students were relatively well informed about common modes of transmission and prevention of AIDS their awareness was increased by the Peer Education program; knowledge about prevention, diagnosis and treatment increased by 53 - 91%. More importantly, 36% of the students recognized that they were at risk following the program and 68% indicated that they would be more likely to practice "safer sex". Although all students recognized the need to discuss issues relating to AIDS as a result of the program, female students indicated a greater inclination to attempt more open communication with friends (80% versus 65% of the males) and potential sexual partners (88% versus 74%). Comparison with the follow-up questionnaire results will determine the long-term effectiveness of AIDS Peer Education.
Conclusion: Research on the effectiveness of this and other AIDS education programs is essential in order to tailor educational methods and materials to meet the specific needs of young adults in the on-going battle to reduce the spread of AIDS.

TRACK D: SOCIAL SCIENCE & POLICY
POSTER SESSION

Th.D.904

HIV NURSE CLINICIAN TRAINING PROGRAM

Mertz, Sue A.*; Gates, J.*; Mancuso, B.**; Fitzhugh, Z.**
*AIDS Education and Training Center for Southern California, University of Southern California School of Medicine, **Los Angeles County/University of Southern California Medical Center, Los Angeles, California, USA

Objective: To prepare skilled nurse clinicians to care for patients with HIV disease and to serve as HIV consultants to staff in their home agencies; to increase the number of clinicians caring for HIV-infected patients in the community by recruiting nurses who are in positions to effect the most change in improving the quality of patient care.
Method: An intensive HIV clinical training program was developed for registered nurses actively engaged in clinical care. Training is conducted in small groups and in one-on-one preceptorship rotations, with the majority of clinical training taking place at the LAC/USC Medical Center, which serves the largest number of patients with HIV infection in Southern California. The program is presented in two sections: a one week full-time small group laboratory workshop followed by clinical rotations for two days a week for the next six weeks. Training emphasizes skill development in physical assessment, health history taking, risk reduction counseling, case management of HIV positive patients, and consultation and teaching. Clinical preceptorships include ambulatory and inpatient general medicine, obstretics, pediatrics, home health care, and community-based and hospice agencies. The program prepares nurses to assess clients at risk for HIV disease, counsel clients, manage health care needs, and assess and intervene where appropriate to assist individuals in coping with the psychosocial aspects, including the family of the HIV-infected patient and the health care staff.
Results: By June 1990, 58 registered nurses will have been trained. Categories represented include HIV clinic managers, clinical specialists, head nurses, AIDS project managers, and research and AIDS education coordinators.
Conclusion: Preliminary data suggests that nurses who have completed the program have been in positions to train additional professional and support staff and that such training has effected change within agencies in attitudes and in clinical care.

Th.D.905

EVOLVING RURAL, AIDS EDUCATION PORGRAM: AN ASSESSMENT

Ostergren, Walter; Meiger, C. Life Planning/Health Services
Dallas, Texas, USA

Objective: The purpose of this paper is to track a rural minority, AIDS education program through its 3 stage evoluation and assess the efficacy of each stage.
Methods: The program was initiated by a perceptive dermatologist at the onset of the AIDS epidemic. His efforts created Stage 1 through creation of an Ad Hoc Committee of the county medical society are chronicled. Stage 2 was the creation of a CDC funded State Health Department authorized Program Materials Review Panel by a voluntary not-for-profit family planning agency with a health center in the community. Stage 3 are the multiple organizations created through the Program Materials Review Panel. Each stage is evaluated by statistical analysis, in-depth interviews of principles and survey results.
Results: Evaluation of Stage 1 shows a heightened involvement by 30 physicians enabled the program to enter the school systems from 5th grade to junior college and the county jail. Stage 2 creates the evaluation tools to determine present and future evaluation as the education programs are put in place in the more traditional social service agencies. Stage 3 is documented as the refinement of approaches to meet high-risk populations is increased.
Conclusion: Each stage was important and involved different segments of the population. (i.e.-Junior college, hospital, jail, housing authority) Each stage was necessary to be effective. The approach has been replicated in other communities.

Th.D.906

THE DEVELOPMENT OF A DRAMATIC FILM ON AIDS PREVENTION IN UGANDA

Dace Stone*, John Riber*, Faustin Musevni**, Viola Mukasa***, Francis Rwakaagiri***

*The Johns Hopkins University/AIDSCOM, **Uganda Television, ***Experiment in International Living, The Federation of Uganda Employers.

OBJECTIVE: Through collaboration of local and international agencies, to produce a dramatic film on AIDS, set in Uganda, which would be used for training purposes in the "AIDS in the Private Sector" project.

METHODOLOGY: Based on research conducted in other African countries on the use of "Entertainment for Social Change", it was decided that the use of dramatic film to encourage and support behavior change would better capture attention, promote understanding of message, and enhance the probability of message retention rather than other media formats such as documentary film.

RESULTS: Working with the Federation of Uganda Employers, the AIDS Education and Control Project of the Experiment in International Living, Uganda Television and local drama experts and actors, AIDSCOM has assisted in producing a full-length dramatic film on AIDS set in a Ugandan workplace. Authors will describe the production process including concept formation, script development, pre-testing, casting and rehearsal process, film shooting, and pre-testing of the film copy used in production of the film.

CONCLUSION: Our experience indicates that major collaboration between local and international organizations can successfully complete a project of this nature. Informal focus group research indicates that this intervention has a high potential for enhancing behavior change. Once the film is publicly released in June, research needs to be conducted to measure this change.

Th.D.907

HIV-POSITIVE SPEAKERS' BUREAU EDUCATES THE COMMUNITY

Arnold, Wendy *; Bard, M. *
* "Being Alive", Los Angeles, CA. USA

Objective: To share vital HIV/AIDS information with the community-at-large through trained HIV-positive speakers and to empower the speakers with respect, compassion and an understanding of self-worth. Methods: "Being Alive" is an organization in Los Angeles of and for people with AIDS, people with ARC and people who are HIV-positive, and their significant others. We provide peer support, outreach, advocacy, social events, roommate referrals and vital medical information to our members. Of utmost importance is the Speakers' Bureau with which we reach very diverse medical, political, academic and social agencies with imperative messages about how HIV is transmitted and how it is not. Our speakers emphasize the absolute necessity to modify risk-taking behaviors. The speakers, most of whom are diagnosed with AIDS, attend a training on the basics of HIV/AIDS and then learn communication strategies to effectively deliver their personal testimonies. Results: Positive evaluations from organizations requesting PWAs confirm the salience of HIV-infected people personalizing the AIDS epidemic. The speakers feel enriched with the experience of sharing information that will help prevent others from an exposure to HIV and disqualify fallacious myths that often stigmatize a person with AIDS. Conclusions: PWAs bring an essential 'human element' to the AIDS epidemic when they talk directly with community members. Their personal messages elevate the quality of life, compassion and respect of all personas infected with HIV. The methods for setting up and evaluating the success of a PWA Speakers' Bureau will be discussed in this presentation.

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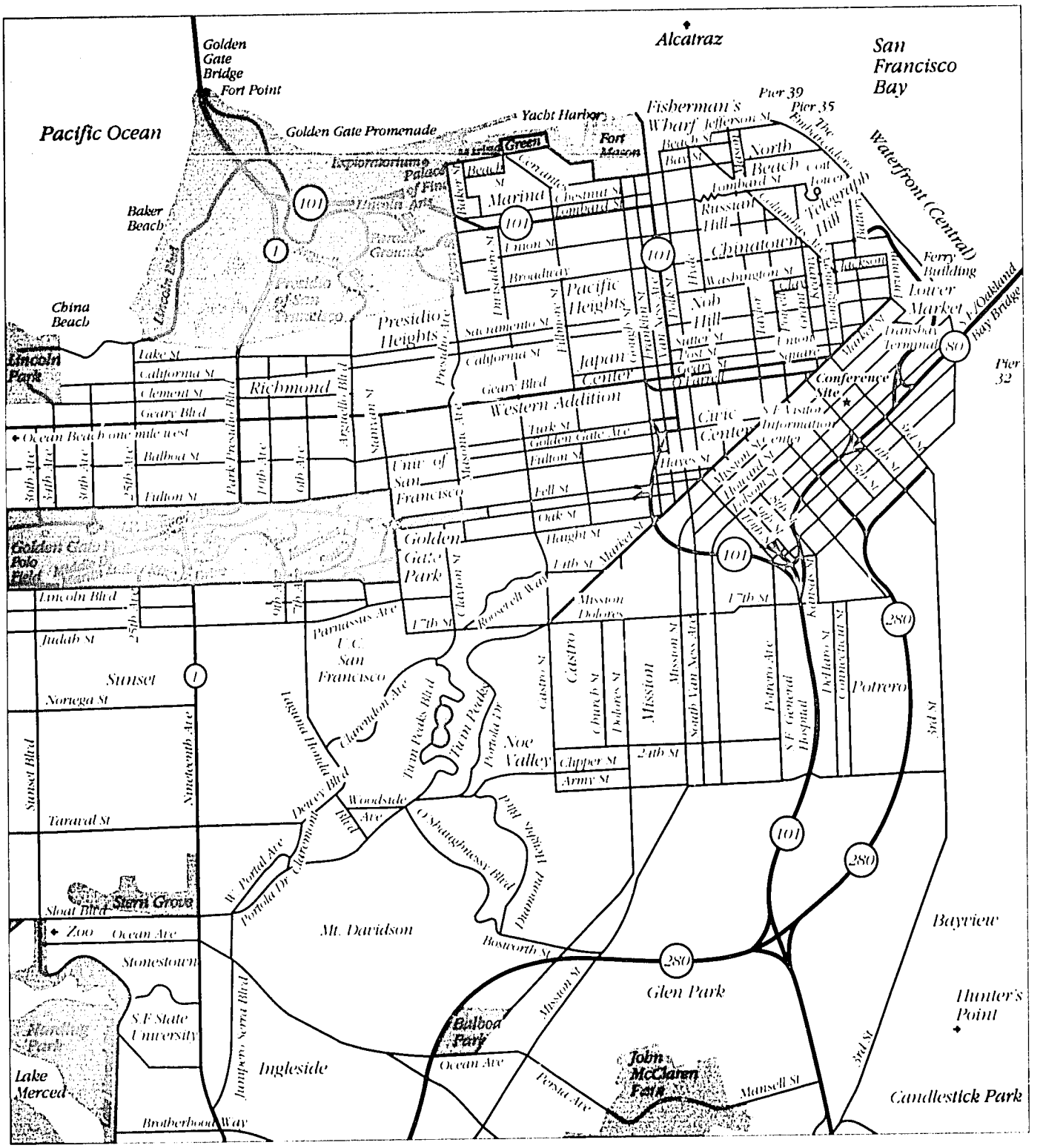
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