



T R E A T I N G   A I D S   S E R I O U S L Y

**Cervical Dysplasia in  
Johannesburg in HIV seropositive  
women**

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SOUTH AFRICA  
AND  
THE UNITED STATES



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# Cervical Cancer in South Africa



- **Lifetime risk**
  - **1 in 34 in black women**
  - **1 in 52 in mixed race women**
  - **1 in 93 in white women**
- **Most common cancer in black women (31.2% of all cancers)**

# South African Cervical Cancer Cohort (SACCC)



- **Observational study of 2,000 women over 5 years**
- **Thus far 1,954 women recruited with 850 first time follow-up visits**

## **PRIMARY AIM:**

- **To examine the effect of CD4 count and associated factors on the risk of cervical dysplasia and the influence of these risk factors in progression of disease.**

# Methods

- **Prospective study of 1,954 HIV seropositive women recruited from a government hospital**
- **Followed yearly approximately 850 first time follow up visits**
- **Conventional Pap smears cytology done**
- **Bethesda Cytology 2001 guidelines**
- **HPV testing Roche linear assay**

# Methods- Statistics



Used to determine risk factors for cervical neoplasia

- **Multivariate adjusted prevalence ratios(mPR)**
- **95% confidence intervals (CIs) were estimated with log-binomial regression**

# Demographics Results



- **Median age 34, range 18-65 years**
- **32% women completed high school**
- **50% women employed**
- **4% participants reported ever smoking**
- **21% currently drinking alcohol**
- **43% had more than 5 lifetime sexual partners**
- **Mode of first sexual encounter: ~16 yr old**
- **76% used male condoms**
- **61% reported a history of STDs**
- **12% used oral contraceptives**
- **Average CD4 count 231 cells/mm<sup>3</sup>**
- **10% volunteered a history of Rape**

# Cervical Dysplasia Results



- Overall dysplasia rate was 51.5%  
ASCUS/CIN1- 32.6%  
CIN 2- 7.9%  
CIN 3- 11%  
ICC 3/1954 = 150/100,000

**All grades of dysplasia** were more common with CD4 <200 than CD4 > 500

- CIN 1/CIN2 more common in women <30 years
- CIN 3 more common in women >40 years but **20%** of women are **<30** years old

# **CD4 - a risk factor for cervical dysplasia**

**CD4 count level was inversely associated with an increased risk of abnormal cervical cytology**

**For CD4 >500 versus <200:**

**CIN 1: OR=1.3 (1.1-1.6)**

**CIN 2: OR=1.7 (1.1-2.7)**

**CIN 3: OR=3.2 (1.4-7.2)**



# **Cervical dysplasia not associated with traditional risk factors**

- **Age of first intercourse**
- **Number of lifetime partners**
- **Current use of oral birth control**
- **Smoking/Snuff**
- **Alcohol**

# Protection against HSIL in baseline demographics

- **Women who used condoms had a lower risk of HSIL than non-users (PPR 0.7) 95% CI (0.5-0.9).**
- **A protective effect was not found with ASCUS or LSIL with condom use in this study**
- **ARVS on cross-sectional evaluation of baseline data showed no protection in HSIL**

# Follow-up first visits

- **45 deaths (2.3%) –presumed HIV related (1 known domestic violence) No cervical cancer related deaths known**
- **Average follow up between Pap smears **339** days**
- **850/1909= 45% follow up rate**
  - staffing**
  - transport**
  - moved/transferred clinics/down referral**
  - another queue in clinic**
  - referral for treatment**

## ***Improvements***

- **More counsellors for follow up**
- **Colposcopy/Leep now done in our clinic**
- **Computerized system to find results from other hospitals**
- **Develop systems within clinic to fast track women after Pap smears**

# Rates of progression



## ***Baseline Pap smear - normal***

- **330 women with one follow-up visit, 69 women (20.9%) progressed to LSIL or HSIL.**
  - **In this group, rate of “any progression” (to LSIL or HSIL) was 18.8 (95% CI 14.8-23.7) per 100 woman-years.**

## ***Baseline Pap smear LSIL/ASCUS***

- **244 women with LSIL/ ASCUS at follow-up visit , 33 (13.5%) had an HSIL (CIN2 or CIN3).**
  - **Rate of “any progression” (to HSIL) was 11.7 (95% CI 8.3-16.5) per 100 woman years.**

# Rates of Progression with ARVS



## *Baseline Pap smears-Normal*

- Women on ARVs progressed at 0.83 (95% CI 0.50-1.37) times compared to women not on ARVs.

## *Baseline Pap smears-LSIL*

- Women on ARVs progressed at 0.57 (95% CI 0.28-1.14) times compared to women not on ARVs.

## *Additional information*

Women with CD4<100 at initial visit progressed at 1.16 (95% CI 0.70-1.92) times the rate of others

- Those above the median age (34) progressed at 0.77 (95% CI 0.53-1.14) times than older women.

# Human Papillomavirus



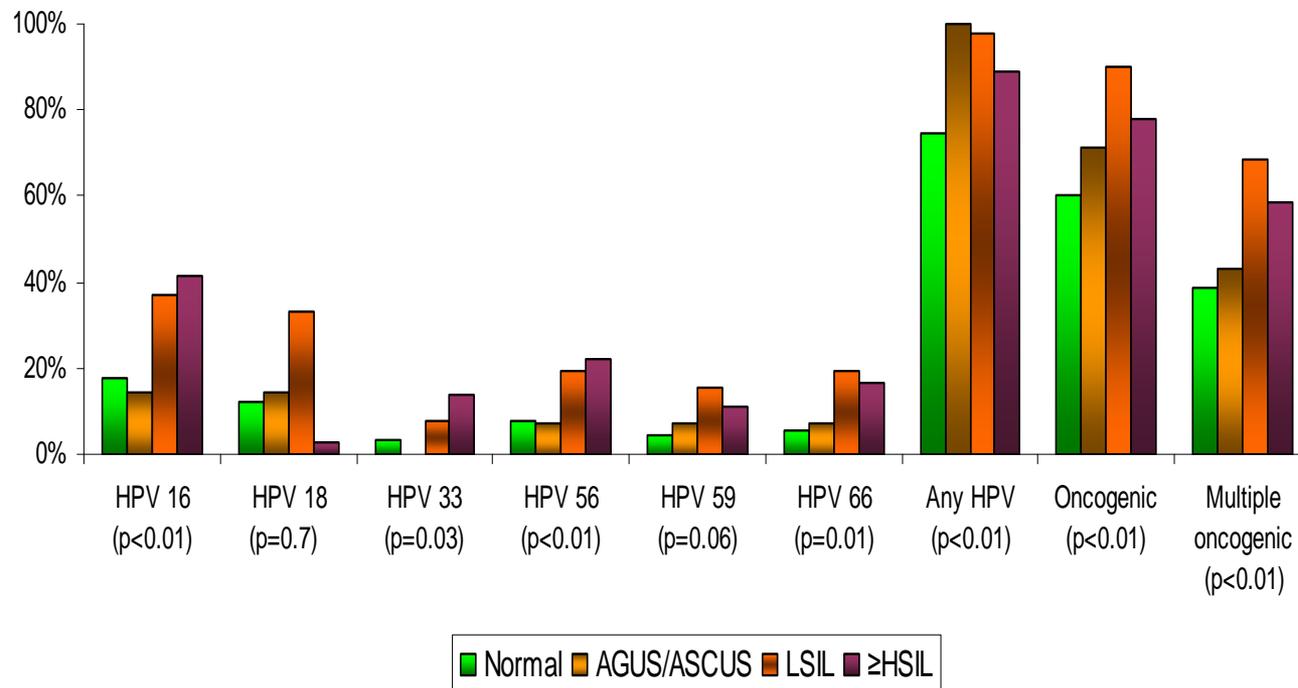
- **Over 130 different genotypes / 40 types infect genital tract**
- **Infects both men and women**
- **Transmitted sexually (in most cases)**
- **Worldwide types 16/18 most common in ICC**
- **80% eliminated by immune system within  $\pm$  18 months in most cases; 20% persist in non-HIV**
- **2 Vaccines GSK 16/18 MERCK 6,11,16,18**

# Number of HPV types by cervical disease status N=191



<b>Cervical Cytology</b>	<b>Normal N=90</b>	<b>LSIL /ASCUS N= 65</b>	<b>CIN 2 N=20</b>	<b>CIN 3 N=16</b>
<b># of HPV types</b>	<b>36</b>	<b>36</b>	<b>31</b>	<b>32</b>
<b>HPV 16 %</b>	<b>5.4</b>	<b>5.0</b>	<b>10.4</b>	<b>11.1</b>
<b>HPV 18 %</b>	<b>3.7</b>	<b>5.3</b>	<b>0</b>	<b>1.2</b>

# Prevalence of HPV types by cervical disease among 191 HIV-HPV infected women

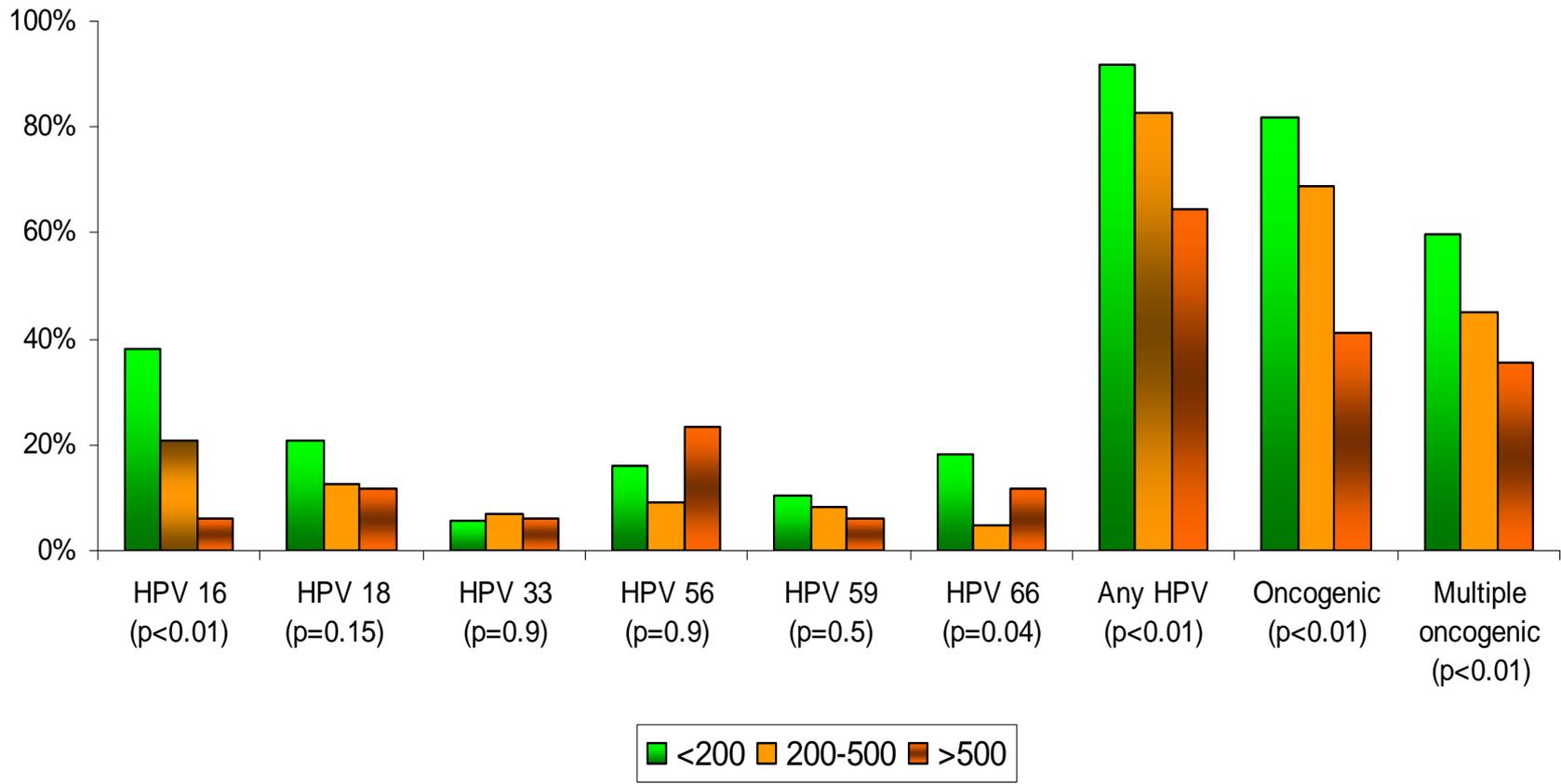


**Normal N=90 , AGUS/ASCUS N=14, LSIL=51 HSIL N=36**

# Number of HPV types by CD4

<b>CD4 value</b>	<b>&lt;200 N=87</b>	<b>200-500 N=87</b>	<b>&gt;500 n=17</b>
<b>Number of HPV types</b>	<b>37</b>	<b>37</b>	<b>26</b>
<b>HPV 16 %</b>	<b>7.6</b>	<b>5.4</b>	<b>1.8</b>
<b>HPV 18%</b>	<b>4.3</b>	<b>3.3</b>	<b>3.5</b>

# Prevalence of HPV types by CD4 count levels



# Let us prevent an epidemic



- **Cervical Cancer screening/treatment imperative!**
- **HIV seropositive women are living longer**
- **Preventable disease**
- **Beginning to see in women under 40 years of age**
- **Every HIV positive woman needs a Pap smear no matter what age**



# THANK YOU



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