

DOES BEING TREATED WITH HAART AFFECT THE SEXUAL RISK BEHAVIOR OF PEOPLE LIVING WITH HIV/AIDS? INSIGHTS FROM MOMBASA, KENYA

As a result of the success of highly active antiretroviral therapy (HAART) in dramatically decreasing morbidity and mortality from HIV disease, many HIV-infected persons are now living longer, healthier, and more sexually active lives. However, unprotected sex by people living with HIV/AIDS (PLHA) is an area of concern because they risk transmitting HIV to serodiscordant partners and reinfected themselves with new, drug-resistant strains of the virus.

Also of concern is that recent research has found a reduction in protective and preventive behaviors among HIV-positive persons once their physical condition improved in response to antiretroviral therapy (Chen et al. 2002; Katz et al. 2002; Van der Ven et al. 2002). Although these findings come largely from studies conducted on Western gay men, other research has documented the challenges associated with the consistent practice of HIV/STI-related protective and preventive behaviors among HIV-positive persons. A review of studies on sexual risk behavior among PLHA by Crepaz and Marks (2002) shows that a considerable percentage (between 10 and 60 percent, depending on the specific sex act) of seropositive individuals continue to engage in unprotected sexual behaviors that place their partners at risk for infection and place themselves at risk for contracting secondary infections (e.g., syphilis, gonorrhea, herpes). However, a second, more recent meta-analytic review of studies by Crepaz, Hart, and Marks (2004) finds that HIV-positive persons receiving HAART did not exhibit increased sexual risk behavior, even when therapy achieved undetectable viral loads.

To learn more about the impact of HAART on sexual risk behavior in a developing country setting, researchers from the Horizons Program, the International Center for Reproductive Health, and implementation partners at Coast Province General Hospital, Mkomani Bomu Clinic, and Port Reitz District Hospital, embarked on a prospective intervention study in Mombasa, Kenya. One objective of the study was to compare the sexual risk behaviors of HIV-infected persons receiving HAART to those of HIV-infected persons who were not clinically eligible to be candidates for HAART, but were receiving prophylaxis or preventive therapy.

Methods

Using a cross-sectional study design, researchers interviewed 179 HIV-infected persons six months after initiating HAART (d4T, 3TC, NVP/EFV) and 143 HIV-infected persons who were receiving opportunistic infection (OI) prophylaxis or preventive therapy (PT) with isoniazid (INH) and/or cotrimoxazole for at least five months. Patients were recruited as they came in for routine follow-up services at four HIV care clinics in Mombasa: Coast Province



General Hospital, Mkomani BOMU clinic, Magongo clinic, and Port Reitz District Hospital. A semi-structured questionnaire was used and interviews were conducted in English or Kiswahili as per patient preference. Ethical approval for the study was obtained from the Ethical Review Board at Kenyatta National Hospital and the Institutional Review Board at Population Council. All patients provided written informed consent prior to the interview.

Patients in both groups were in regular contact with health workers (nurses, doctors, clinical officers, and counselors) through monthly visits to a health facility at which they received routine medical care. Unlike the PT clients, clients on HAART received intensive counseling for treatment adherence. Although sexual behavior was mentioned during adherence counseling, the topic was not emphasized or discussed in detail.

The key themes of analysis for sexual risk behavior were type of partners, knowledge of partner HIV status, disclosure of own HIV status to partners, condom use at last sex, and consistent condom use. The recall reference period was six months. A regular partner was defined as a spouse or someone with whom the respondent lived or had a stable relationship. A casual partner was defined as a partner whom the respondent had had sex with only once or rarely and was not living with or married to. A sex worker was defined as a partner the respondent paid money to in exchange for sex.

Subjects

More than half the study sample was female (60 percent). Almost half (47 percent) of the sample was currently married or cohabiting, and 42 percent was divorced or widowed. Eighty-three percent of widowed respondents were women. The mean age was 37 years (range: 18–64 years). Forty-three percent of the respondents had attended up to seven years of school; another 40 percent had up to 12 years of schooling. There were no significant differences between the two groups on these measures.

Patients receiving PT were significantly more likely to be employed (32 percent vs. 18 percent; $p = .007$) compared to patients on HAART, and to belong to a higher economic status (ES) (32 percent in highest ES and 7 percent in lowest ES vs. 26 percent in highest ES and 18 percent in lowest ES; $p = .010$).

Key Findings

Less than half of the respondents had been sexually active over the past six months.

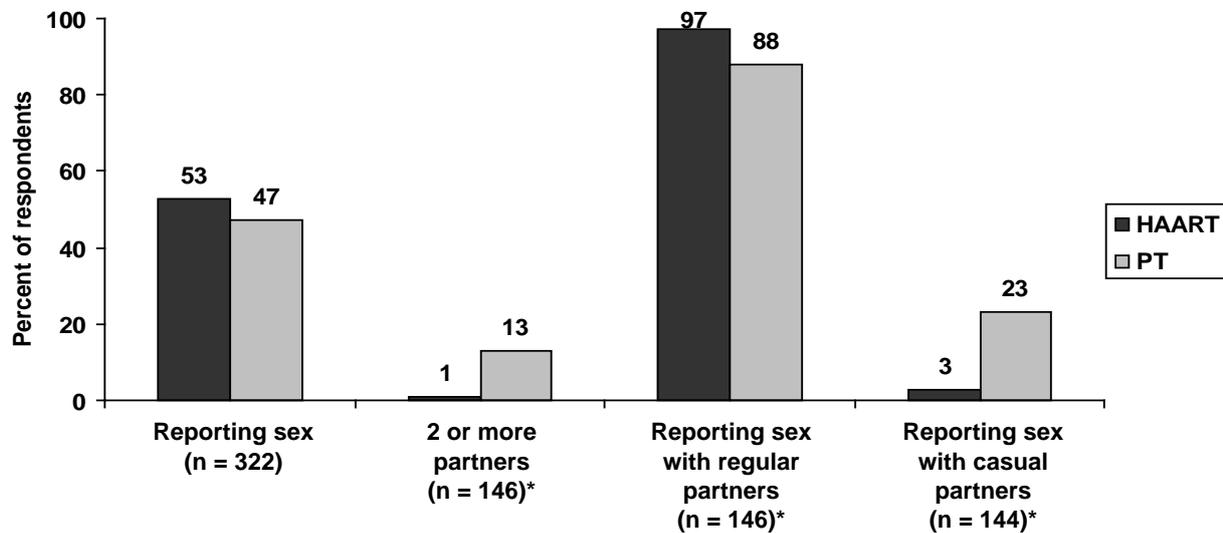
Forty-five percent (146/322) of respondents reported having had sexual intercourse during the reference period; there was no statistically significant difference between patients receiving HAART ($n = 78$; 53 percent) and those receiving PT ($n = 68$; 47 percent). There were also no significant differences between men and women. Married patients were significantly more likely to report sex compared to single (never married) or widowed/separated respondents (69 percent vs. 34 percent vs. 22 percent, respectively; $p < .001$).

Patients on HAART were less likely to report sex with a casual partner and multiple partners compared to those on PT.

Ninety-two percent (135/146) of sexually active respondents reported sex with a regular partner. Patients receiving HAART were significantly more likely to report sex with a regular partner (97 percent vs. 88 percent; $p = .044$) and less likely to report sex with a casual partner (3 percent vs. 23 percent; $p < .001$) compared to PLHA on PT (Figure 1). One respondent in each group (a male and a female) reported sex with a sex worker. No male respondents reported sex with a male partner.

Overall seven percent (10/146) of the sexually active respondents reported sex with two or more partners during the reference period; patients receiving HAART were less likely to report multiple partners compared to those receiving PT (1 percent vs. 13 percent; $p = .006$; Fisher's exact test).

Figure 1 Reported sexual activity and type of partners by PLHA

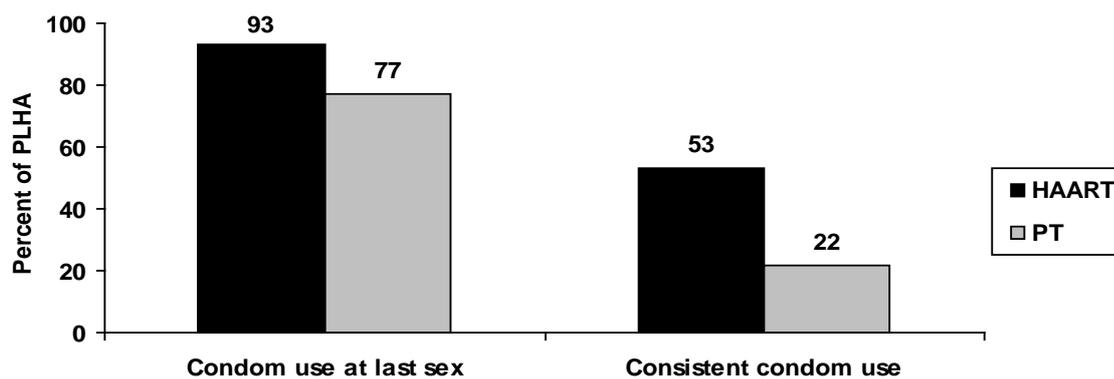


* $p < .01$

Within regular partner relationships, patients on HAART reported greater condom use.

PLHA on HAART ($n = 76$) were significantly more likely to report condom use at last sex (93 percent vs. 77 percent; $p = .008$) and consistent condom use (53 percent vs. 22 percent; $p < .001$) with their regular partner during the reference period compared to PLHA on PT ($n = 59$) (Figure 2).

Figure 2 Self-reported condom use with regular partners



Patients receiving PT were four times more likely to have had unprotected sex with a regular partner compared to patients receiving HAART.

As most reported sexual activity was with a regular partner, the factors influencing condom use with these partners were explored. Unprotected sexual intercourse was defined as no condom use at last sex or inconsistent condom use with regular partners during the reference period.

On univariate analysis (Table 1), males, married respondents, and those on PT were significantly more likely to report unprotected sex with a regular partner during the reference period. Partner's HIV status, disclosure of own HIV status to partner, number of partners, and reporting genital discharge or genital ulcers during the reference period were not found to be associated with unprotected sex.

Table 1 Factors influencing unprotected sex with regular partners (n = 135)

	Unprotected sex (%)	Significance*
Sex		
Female (n = 80)	54	.045
Male (n = 55)	71	
Marital status		
Married or cohabiting (n = 103)	68	.005
Single (n = 12)	50	
Widowed/separated (n = 20)	30	
Education level		
Never attended school (n = 11)	73	.362
Less than 7 years of school (n = 57)	58	
8 to 12 years of school (n = 55)	66	
College, technical, university (n = 12)	42	
Number of sexual partners		
One partner (n = 127)	60	.480
2 or more partners (n = 8)	75	
HIV treatment		
HAART (n = 76)	47	.000
PT (n = 59)	78	
Partner's HIV status		
HIV-positive (n = 55)	60	.978
HIV-negative (n = 24)	63	
Unknown HIV status (n = 56)	60	
Disclosure of own HIV status		
Yes (n = 105)	63	.346
No (n = 30)	53	
STD (discharge/ulcer in past 6 months)		
Yes (n = 34)	65	.584
No (n = 101)	59	

* Pearson Chi Square Test

The variables that were found to be significantly associated with unprotected sex were analyzed by multivariate logistic regression to explore factors influencing condom use and to determine odds ratios. Patients receiving PT were four times more likely to report unprotected sex with a regular partner compared to patients receiving HAART. Married or cohabiting patients were three times more likely to have had unprotected sex compared to single (never married, widowed, or separated) respondents (Table 2).

Table 2 Predictors of unprotected sexual intercourse with regular partners (n = 135)

Variable	OR (95% CI) Univariate*	Significance	OR (95% CI) Multivariate*	Significance
Sex				
Female (n = 80)	1.0 Reference		1.0 Reference	
Male (n = 55)	2.097 (1.012-4.349)	.047	1.934 (.860-4.348)	.111
Marital status				
Married or cohabiting (n = 103)	3.535 (1.547-8.081)	.003	3.067 (1.251-7.518)	1.0
Single/widowed/separated (n = 32)	1.0 Reference		Reference	.014
HIV treatment				
HAART (n = 76)	1.0 Reference		1.0 Reference	
PT (n = 59)	3.932 (1.834-8.430)	.000	4.269 (1.902-9.579)	.000

*Binary Logistic Regression Analysis

Many respondents in both groups failed to disclose their serostatus to sexual partners and did not know their partners' serostatus.

In both the HAART group and the PT group, around 40 percent of PLHA did not know their regular partner's HIV status and about 20 percent did not disclose their own status to their regular partners.

Eleven women and six men reported sex with a casual partner; two patients from the HAART group and 15 from the PT group. The majority (11/17) did not know the HIV status of these partners (2/2 in the HAART group and 9/15 in the PT group) and the majority (12/17) did not disclose their own HIV status to these partners (2/2 in the HAART group and 10/15 in the PT group). Almost a third (5/17) reported not using a condom at last sex with a casual partner (0/2 in the HAART group and 5/15 in the PT group). One male and one female respondent, one from each group, reported sex with a sex worker during the reference period. Both these respondents did not disclose their own status to these partners and did not use a condom.

Conclusion

This study found lower risk behavior (e.g., multiple partners, sex with casual partners, inconsistent condom use) among PLHA receiving HAART compared to PLHA on PT. Thus, the study provides no evidence to suggest that sexual risk behavior may actually increase with initiation of HAART in this context.

Although self-reported risk behavior was lower among PLHA receiving HAART, a considerable risk of HIV transmission still exists among both groups. This may be especially true when considering that the study relies on self-reported sexual behavior, which may have been underestimated in both groups. Lack of knowledge of partner's serostatus and low levels of disclosure of one's own HIV status, coupled with inconsistent condom use, sets the stage for HIV transmission to serodiscordant partners, especially within regular partner relationships. Transmission of resistant viral strains and reinfection with new strains are serious public health risks. Unprotected sex also carries the risk of unwanted pregnancy and the subsequent risk of HIV transmission to the child.

Traditionally, HIV prevention programs have focused on high-risk groups such as sex workers, truckers, and men who have sex with men, placing much less emphasis on HIV-positive persons and their regular partners. This study supports the need to focus on these populations as well.

Most counseling in HIV care services is directed toward treatment adherence. Patients on HAART in this study received at least three preparatory counseling sessions on adherence, followed by ongoing support. Although sexual behavior was not a focus of the counseling, this emphasis on adherence may have contributed to the differences between groups. Additionally, patients receiving HAART have advanced HIV disease and may perceive the seriousness of their illness differently, which may result in less risky sexual behavior.

HIV-care services need to include prevention messages that emphasize serostatus disclosure, partner testing, and consistent condom use with all partners, irrespective of partner status, with a special focus on regular partner relationships.

A cross-sectional study design has its limitations. Horizons and its partners are currently following a cohort of HIV-infected patients receiving HAART to examine changes in their sexual risk behavior over a 12 month period; results of this research will be available in February 2006. 

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