Psychosocial correlates of inconsistent condom use among HIV-infected patients enrolled in a structured ART interruptions trial in Côte d’Ivoire: results from the TRIVACAN trial (ANRS 1269)
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Article in Tropical Medicine & International Health · March 2010
DOI: 10.1111/j.1365-3156.2010.02524.x · Source: PubMed

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Short Communication

Psychosocial correlates of inconsistent condom use among HIV-infected patients enrolled in a structured ART interruptions trial in Côte d’Ivoire: results from the TRIVACAN trial (ANRS 1269)

Camelia Protopopescu1,2,3, Fabienne Marcellin1,2,3, Marie Préau1,3,4, Delphine Gabillard5,6, Raoul Moh5,6, Albert Minga5,6, Amani Anzian5,6, Maria Patrizia Carrieri1,2,3, Christine Danel5,6 and Bruno Spire1,2,3

1 INSERM, U912, Marseille, France
2 Université Aix Marseille, IRD, UMR-S912, Marseille, France
3 ORS PACA, Observatoire Régional de la Santé Provence Alpes Côte d’Azur, Marseille, France
4 Laboratoire de Psychologie, LaBeCD, Université de Nantes, Nantes, France
5 Programme Pacci, Abidjan, Côte d’Ivoire
6 INSERM, U897, Bordeaux, France

Summary

OBJECTIVE To investigate the relationship between unsafe sexual behaviours and poor self-perceived health among people living with HIV and AIDS (PLWHA) in western Africa.

METHODS In March 2006, a survey was conducted among patients continuing their participation in the TRIVACAN trial (ANRS 1269) in Côte d’Ivoire, in which patients had been randomized to either continuous or interrupted antiretroviral therapy (ART) (2-months-off/4-months-on cycles [2/4-ART]) after 6–18 months of continuous ART (C-ART). Socio-demographic and psychosocial information, including data on sexual behaviours during the previous 6 months, was collected using face-to-face interviews. Sexually active patients with either a steady partner (serodiscordant or of unknown HIV status) or casual partners were considered to have unsafe sexual behaviours if they reported inconsistent condom use (ICU).

RESULTS Seventy-seven of the 192 patients reported ICU. In multivariate logistic regression, men were significantly less likely to report ICU than women (OR [95% CI] = 0.45 [0.20–0.98]). After adjustment for educational level and reduced sexual activity since ART initiation, concealment of HIV status (2.08 [1.02–4.25]) and poor self-perceived health (2.32 [0.97–5.52]) were independently associated with ICU.

CONCLUSION HIV prevention strategies in resource-limited settings should take into account self-perceived health and difficulties to disclose HIV status. Counselling interventions need to be developed to help PLWHA to adopt or negotiate safe behaviours respecting their individual cultures.

Keywords unsafe sex, steady partner, casual partner, Africa

Introduction

Unsafe sexual behaviours remain the predominant mode of HIV transmission in sub-Saharan Africa (UNAIDS 2008). Few studies have analysed the determinants of such behaviours in poor-resource settings (Kiene et al. 2006; Bunnell et al. 2008), notably among patients initiating antiretroviral therapy (ART) (Moatti et al. 2003; Diabate et al. 2008). In addition, psychosocial correlates of unsafe sex have only been investigated in high-income countries (Vincent et al. 2004; Bouhnik et al. 2006). Data collected during the TRIVACAN trial (ANRS 1269) of structured ART interruptions enabled us to investigate the relationship between unsafe sexual behaviours and poor self-perceived health among people living with HIV and AIDS (PLWHA) in Côte d’Ivoire.

Patients and methods

Study population

TRIVACAN (ANRS 1269) is a randomized trial of structured ART interruptions conducted in Abidjan, Côte
d’Ivoire between 2002 and 2007 among 840 ART-naive HIV-infected adults (Danel et al. 2006). After 6–18 months of continuous treatment with zidovudine plus lamivudine plus either efavirenz (600 mg once a day) or indinavir (800 mg twice a day) as well as ritonavir (100 mg twice a day) (for HIV-2-infected patients, women refusing contraception, and women with a history of nevirapine prophylaxis), patients with CD4 count >350 cells/mm³ and plasma HIV RNA level <300 copies/ml were randomized into one of the three following strategies: continuous treatment (C-ART) (n = 110), 2-months-off/ 4-months-on treatment (2/4-ART) (n = 325) and CD4-guided treatment (CD4GT) (n = 216). In November 2005, the CD4GT strategy was prematurely stopped because of a higher severe morbidity rate than in the C-ART strategy, and patients randomized to CD4GT were prescribed continuous treatment.

In May–June 2006, a cross-sectional psychosocial survey was conducted among the 379 participants included in the C-ART and 2/4-ART arms (n = 97 and 282, respectively) who were still being followed up in the trial. During face-to-face interviews, these patients were asked a series of questions capturing socio-demographic and psychosocial data, including data about sexual activity.

Definition of unsafe sexual behaviours
Patients who reported not having used a condom at least once during the previous 6 months with either their steady partner (serodiscordant or of unknown HIV status) or casual partners were considered as reporting unsafe sexual behaviours, hereafter described as ‘inconsistent condom use’ (ICU).

Variables
Variables tested for their association with ICU included notably patient-reported symptoms during the previous 6 months (assessed using a list derived from the HIV symptom index (Justice et al. 2001)); self-perceived health status (assessed using a 5-point Likert scale: very poor, poor, average, good, very good) and depressive symptoms (as measured by a global score >16 obtained on the CES-D scale (Furher & Rouillon 1989)).

A perceived health index was calculated as follows: patients who reported having less than 12 symptoms (the mean number of symptoms reported by study patients during the previous 6 months) and who perceived their health status as ‘very good’ were considered as having ‘good’ self-perceived health, while the others were considered as having ‘poor’ self-perceived health.

Statistical analyses
Logistic regression models were used to identify factors associated with ICU. Factors with a P-value <0.25 in univariate models were considered eligible for multivariate analysis. A backward procedure was used to select significant factors for the final multivariate model (significance threshold α = 0.10). Intercooled Stata 9.2 for Windows (StataCorp LP, College Station, TX, USA) software was used for all the analyses.

Results
Study population
Among the 379 participants in the psychosocial survey, 249 patients (65.7%) reported having a steady partner, while 60 (15.8%) reported having casual partners. Eighty-two percent of the latter reported having both steady and casual partners. A total of 237 patients (62.5%) reported sexual activity during the previous 6 months, with either their steady partner (n = 177), a casual partner (n = 7), or both (n = 53). We focused our analyses on the 192 of these patients (49 men and 143 women), hereafter described as the ‘study population’, who reported sexual activity with a serodiscordant steady or casual partner. Twenty-three percent of these patients reported that they concealed their HIV status and 15% could be considered as having a poor perceived health (Table 1).

Factors associated with ICU
Seventy-seven patients (40.1%) reported ICU, the majority being women (44.8% vs. 26.5% of men, χ², P = 0.025). In the univariate analyses, women who did not report having used hormonal contraception during the previous 6 months were found to be at higher risk of ICU than men (Table 2). Low educational level and poor self-perceived health were also significantly associated with a higher risk of ICU.

No significant relationship was detected between ICU and age, matrimonial status, perception of moral support by family, frequency of sexual intercourse and reporting apprehension about having sex (P > 0.25). In the same way, treatment strategy (CT vs. 2/4-ART), treatment status at the time of the survey and HIV viral load at last assessment were not significantly associated with ICU. In the multivariate analysis, female gender, poor self-perceived health and concealment of HIV status were independent predictors of ICU, after adjustment for educational level and reduced sexual activity since ART initiation.
The present study in Côte d’Ivoire clearly shows that ICU is relatively frequent even among ART-treated patients, and that it concerns especially women, individuals concealing their HIV status, and individuals reporting poor self-perceived health.

Interestingly, no significant relationship was found between patients’ report of ICU and the treatment strategy to which they were allocated or to their treatment status at the time of the survey. These results bring additional evidence about the absence of more frequent unsafe sexual behaviours while on ART (Crepaz et al. 2004). They may also be paralleled with the results of a recent Kenyan study underlining that psychosocial support plays a stronger role than treatment itself in creating favourable conditions for safe sexual behaviour (Sarna et al. 2008).

### Table 1 Characteristics of the study population (n = 192; TRI-VACAN trial, ANRS 1269)

<table>
<thead>
<tr>
<th>Variables</th>
<th>% of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Socio-economic characteristics</strong></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>74.5</td>
</tr>
<tr>
<td>Male</td>
<td>25.5</td>
</tr>
<tr>
<td>Age Mean (SD) – years</td>
<td>36.6 (7.4)</td>
</tr>
<tr>
<td>Matrimonial status</td>
<td></td>
</tr>
<tr>
<td>Married or in a free union</td>
<td>58.8</td>
</tr>
<tr>
<td>Single, divorced or widowed</td>
<td>41.2</td>
</tr>
<tr>
<td>Educational level (basic literacy)</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>78.6</td>
</tr>
<tr>
<td>No</td>
<td>21.4</td>
</tr>
<tr>
<td>Area of habitation</td>
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<td>Outside Abidjan</td>
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</tr>
<tr>
<td>In Abidjan</td>
<td>90.1</td>
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<tr>
<td>Head of the household status</td>
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<tr>
<td>No</td>
<td>59.4</td>
</tr>
<tr>
<td>Yes</td>
<td>40.6</td>
</tr>
<tr>
<td><strong>Experience with HIV and ART</strong></td>
<td></td>
</tr>
<tr>
<td>Disclosure of seropositivity</td>
<td></td>
</tr>
<tr>
<td>Disclosure to at least one person</td>
<td>77.1</td>
</tr>
<tr>
<td>Concealment</td>
<td>22.9</td>
</tr>
<tr>
<td>Ability to confide in someone about HIV-related problems</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>37.5</td>
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<tr>
<td>Yes</td>
<td>62.5</td>
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<tr>
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<tr>
<td>Strong</td>
<td>40.6</td>
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<tr>
<td>Weak or non-existent</td>
<td>59.4</td>
</tr>
<tr>
<td>Moral support by friends or other close persons</td>
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</tr>
<tr>
<td>Strong</td>
<td>12.5</td>
</tr>
<tr>
<td>Weak or non-existent</td>
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</tr>
<tr>
<td>Believing that ART eradicates HIV</td>
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<td>No</td>
<td>83.3</td>
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<td>Yes</td>
<td>16.7</td>
</tr>
<tr>
<td>No. of symptoms reported*</td>
<td></td>
</tr>
<tr>
<td>Median [IQR]</td>
<td>8 [3; 17]</td>
</tr>
<tr>
<td>Self-perception of health status</td>
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<tr>
<td>Very poor</td>
<td>0</td>
</tr>
<tr>
<td>Poor</td>
<td>1.0</td>
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<tr>
<td>Average</td>
<td>12.5</td>
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<tr>
<td>Good</td>
<td>39.1</td>
</tr>
<tr>
<td>Very good</td>
<td>47.4</td>
</tr>
<tr>
<td>Perceived health index</td>
<td></td>
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<td>Good</td>
<td>84.9</td>
</tr>
<tr>
<td>Poor</td>
<td>15.1</td>
</tr>
<tr>
<td><strong>Depressive symptoms</strong></td>
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</tr>
<tr>
<td>CES-D* global score &gt;16</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>78.1</td>
</tr>
<tr>
<td>Yes</td>
<td>21.9</td>
</tr>
<tr>
<td><strong>Sexual activity</strong></td>
<td></td>
</tr>
<tr>
<td>Frequency of sexual intercourse*</td>
<td></td>
</tr>
<tr>
<td>Once a month or less</td>
<td>42.2</td>
</tr>
<tr>
<td>At least twice a month</td>
<td>57.8</td>
</tr>
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</table>

### Table 1 (Continued).

<table>
<thead>
<tr>
<th>Variables</th>
<th>% of patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduced sexual activity since ART initiation</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>22.9</td>
</tr>
<tr>
<td>Yes</td>
<td>77.1</td>
</tr>
<tr>
<td>Apprehension about having sexual intercourse</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>39.1</td>
</tr>
<tr>
<td>Yes</td>
<td>60.9</td>
</tr>
<tr>
<td>Use of hormonal contraception*</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>25.5</td>
</tr>
<tr>
<td>Women not using hormonal contraception</td>
<td>28.1</td>
</tr>
<tr>
<td>Women using hormonal contraception</td>
<td>46.4</td>
</tr>
</tbody>
</table>

**Clinical and treatment-related characteristics**

<table>
<thead>
<tr>
<th>Variables</th>
<th>% of patients</th>
</tr>
</thead>
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<tr>
<td>Treatment arm</td>
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</tr>
<tr>
<td>2/4-ART</td>
<td>74.5</td>
</tr>
<tr>
<td>C-ART</td>
<td>25.5</td>
</tr>
<tr>
<td>ART regimen at randomization</td>
<td></td>
</tr>
<tr>
<td>PI-based regimen</td>
<td>11.5</td>
</tr>
<tr>
<td>NNRTI-based regimen</td>
<td>88.5</td>
</tr>
<tr>
<td>Time since randomization Mean (SD) – months</td>
<td>26.4 (4.4)</td>
</tr>
<tr>
<td>On ART at the time of the survey</td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>23.4</td>
</tr>
<tr>
<td>Yes</td>
<td>76.6</td>
</tr>
<tr>
<td>HIV VL at last assessment‡</td>
<td></td>
</tr>
<tr>
<td>Detectable</td>
<td>22.4</td>
</tr>
<tr>
<td>Undetectable</td>
<td>77.6</td>
</tr>
</tbody>
</table>

---

SD, standard deviation; ART, antiretroviral therapy; IQR, interquartile range [25%; 75%]; C-ART, continuous ART; 2/4-ART, 2-months-off/4-months-on ART cycles; PI, protease inhibitor; NNRTI, non-nucleoside reverse transcriptase inhibitor; VL, viral load.

*During the previous 6 months.

†Center for Epidemiological Studies Depression scale (Furher & Rouillon 1989).

‡Detectability threshold: 300 copies/ml.
Table 2  Analysis of factors associated with unsafe sexual behaviours \( (n = 192; \) TRIVACAN trial, ANRS 1269)

<table>
<thead>
<tr>
<th>Variables</th>
<th>Crude OR [95% CI]</th>
<th>P-value</th>
<th>Adjusted OR [95% CI]</th>
<th>P-value</th>
</tr>
</thead>
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<tr>
<td><strong>Socio-economic characteristics</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Gender*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Male</td>
<td>0.44 [0.22; 0.91]</td>
<td>0.027</td>
<td>0.45 [0.20; 0.98]</td>
<td>0.045</td>
</tr>
<tr>
<td>Age – years</td>
<td>0.99 [0.95; 1.03]</td>
<td>0.699</td>
<td></td>
<td></td>
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<tr>
<td>Matrimonial status</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Married or in a free union (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single, divorced or widowed</td>
<td>0.86 [0.48; 1.55]</td>
<td>0.616</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Educational level (basic literacy)*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>No</td>
<td>2.97 [1.46; 6.07]</td>
<td>0.0027</td>
<td>2.48 [1.16; 5.31]</td>
<td>0.020</td>
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<td>Area of habitation</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outside Abidjan (ref.)</td>
<td>1</td>
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<td></td>
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</tr>
<tr>
<td>In Abidjan</td>
<td>2.74 [0.87; 8.61]</td>
<td>0.085</td>
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<td>Head of the household status*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>0.62 [0.34; 1.12]</td>
<td>0.115</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Experience with HIV and ART</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosure of seropositivity*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disclosure to at least one person (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Concealment</td>
<td>1.69 [0.86; 3.34]</td>
<td>0.130</td>
<td>2.08 [1.02; 4.25]</td>
<td>0.045</td>
</tr>
<tr>
<td>Ability to confide in someone about HIV-related problems</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.62 [0.34; 1.13]</td>
<td>0.121</td>
<td></td>
<td></td>
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<tr>
<td>Moral support by family</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Strong (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weak or non-existent</td>
<td>1.35 [0.74; 2.44]</td>
<td>0.327</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moral support by friends or other close persons*</td>
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<td>Strong (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Weak or non-existent</td>
<td>2.20 [0.83; 5.83]</td>
<td>0.114</td>
<td></td>
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<tr>
<td>Believing that ART eradicates HIV*</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>No</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>1.89 [0.88; 4.06]</td>
<td>0.104</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No. of symptoms reported†</td>
<td>1.01 [0.99; 1.03]</td>
<td>0.173</td>
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<tr>
<td>Perceived health index*</td>
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<td></td>
</tr>
<tr>
<td>Good (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Poor</td>
<td>2.43 [1.09; 5.45]</td>
<td>0.031</td>
<td>2.32 [0.97; 5.52]</td>
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<tr>
<td><strong>Depressive symptoms</strong></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td>CES-D† global score &gt;16*</td>
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<td></td>
</tr>
<tr>
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<td>1</td>
<td></td>
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<td>1</td>
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<tr>
<td>Yes</td>
<td>1.68 [0.84; 3.35]</td>
<td>0.142</td>
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<tr>
<td><strong>Sexual activity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Frequency of sexual intercourse†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once a month or less</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At least twice a month</td>
<td>1.37 [0.76; 2.47]</td>
<td>0.301</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reduced sexual activity since ART initiation*</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>0.52 [0.26; 1.04]</td>
<td>0.063</td>
<td>0.55 [0.28; 1.11]</td>
<td>0.097</td>
</tr>
<tr>
<td>Apprehension about having sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Yes</td>
<td>0.75 [0.41; 1.37]</td>
<td>0.355</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of hormonal contraception*,†</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td>1</td>
</tr>
<tr>
<td>Women not using hormonal contraception</td>
<td>2.77 [1.21; 6.36]</td>
<td>0.016</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Patients’ perception of their health status was the only health-related factor found to be significantly associated with ICU. This echoes evidence from studies conducted in France among specific subpopulations of PLWHA with other indicators of perceived health, such as poor mental health-related quality of life among gay men (Bouhnik et al. 2006) and self-reported side effects among injecting drug users (Vincent et al. 2004).

Female gender was also found to be associated with ICU (Glass et al. 2004). It has long been observed that, in heterosexual relationships, women often prefer not to use condoms because of their emotional attachment to their partners (Fullilove et al. 1990; Maticka-Tyndale 1992). In addition, in many African countries, women’s social status is closely related to their ability to have children (Caldwell et al. 1992; WHO 1994), with those without children facing disgrace and rejection (Desgrées du Loü & Ferry 2005; Criton & Fener 2007). The desire to have children to overcome social stigma may thus take precedence over the risk of infecting someone else with HIV (Moore & Oppong 2007). It is also possible that some women do not even consider using condoms in the context of steady partnerships (Moore & Oppong 2007). Finally, social phenomena such as cross-generational relationships with financial motivation must be taken into account. In such relationships, material gain, sexual gratification, emotional factors and recognition from peers often override concerns about the risk of sexually transmitted infections (Longfield et al. 2004).

The present study also shows that educational level has a significant impact on protective behaviours, as already observed in previous studies conducted in several sub-Saharan Africa countries (Lagarde et al. 2001; Zeller 2003; De Walque 2006). This could be explained by a higher efficacy of HIV prevention campaigns among educated populations (De Walque 2007). Individuals with a lower education level may also have more difficulties to negotiate condom use. However, it must be pointed out that the relationship between educational attainment level and HIV prevalence in developing countries is complex and changes from place to place and by stage of epidemic. Indeed, large studies in four areas in Africa showed an increased risk of HIV infection among the more educated (Hargreaves & Glynn 2002). In addition, a recent study in Tanzania (Hargreaves & Howe 2010) shows that HIV prevalence significantly decreased between 2003 and 2007 among people with primary or secondary education, while it remained stable among people with no education, which suggests that prevalent HIV infections in Tanzania are now concentrating among less educated groups.

Concealment of seropositivity was also associated with ICU, as already shown in South Africa among PLWHA in clinical care (Kiene et al. 2006), and in France among serodiscordant homosexual couples (Bouhnik et al. 2007). These findings underline the dilemma that PLWHA face between disclosing their HIV status to potential sexual

### Table 2 (Continued).

<table>
<thead>
<tr>
<th>Variables</th>
<th>Crude OR [95% CI]</th>
<th>P-value</th>
<th>Adjusted OR [95% CI]</th>
<th>P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women using hormonal contraception</td>
<td>1.97 [0.92; 4.23]</td>
<td>0.082</td>
<td></td>
<td></td>
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<tr>
<td>Clinical and treatment-related characteristics</td>
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<td></td>
<td></td>
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<tr>
<td>Treatment arm</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2/4 ART (ref.)</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>CT</td>
<td>0.83 [0.42; 1.62]</td>
<td>0.578</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ART regimen at randomization*</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NNRTI-based regimen (ref.)</td>
<td>2.39 [0.97; 5.93]</td>
<td>0.059</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PI-based regimen</td>
<td>1.46 [0.72; 2.95]</td>
<td>0.292</td>
<td></td>
<td></td>
</tr>
<tr>
<td>On ART at the time of the survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No (ref.)</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1.46 [0.72; 2.95]</td>
<td>0.292</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HIV VL at last assessment§</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undetectable (ref.)</td>
<td>1</td>
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<td></td>
</tr>
<tr>
<td>Detectable</td>
<td>0.85 [0.42; 1.72]</td>
<td>0.661</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

OR, odds ratio; CI, confidence interval; ART, antiretroviral therapy; CT, continuous treatment; 2/4 ART, 2-months-off/4-months-on ART cycles; PI, protease inhibitor; NNRTI, non-nucleoside reverse transcriptase inhibitor; VL, viral load.

*Variables entered in the multivariate model.
†During the previous 6 months.
‡Center for Epidemiological Studies Depression scale (Furher & Rouillon 1989).
§Detectability threshold: 300 copies/ml.
partners and protecting these partners as well as themselves against infection or super infection (Schiltz & Sandfort 2000).

The present study is limited by its cross-sectional design, which prevents the possibility of exploring longitudinal changes in PLWHA’s sexual behaviours. However, to our knowledge, it is the first study to document sexual behaviour in the context of planned ART interruptions in sub-Saharan Africa.

In conclusion, this study highlights the importance of social barriers to the use of condoms in sub-Saharan Africa, as well as the central role of individuals’ experience with HIV disease, in terms of both perceived health and disclosure of HIV status to non-medical persons. Counselling interventions need to be developed with the help of patients’ associations and healthcare or social workers to help PLWHA to adopt or negotiate safe behaviours respecting their individual cultures. Support should especially target women with actions helping them to find the balance between their needs for protection against HIV infection and their desire to have children, be it for personal or societal reasons.

Acknowledgements

Investigators


Biology

Centre de Diagnostic et de Recherches sur le SIDA (CeDReS), CHU de Treichville, Abidjan, Côte d’Ivoire: Dominique Bonard (mycobacteriologist), Arlette Emeime (trial monitor), André Inwole (immunologist), Hervé Menan (parasitologist), Timothée Ouassa (bacteriologist), François Rouet (virologist), Thomas-d’Aquin Toni (virologist), Ramatou Toure (trialmonitor). Service de Virologie, CHU Neckers, Paris, France: Marie-Laure Chaix (virologist), Christine Rouzioux (virologist). Service de Pharmacologie Clinique, CHU Bichat Claude-Bernard, Paris, France: Gilles Peytavin (pharmacologist).

Trial coordination team

Abidjan, Côte d’Ivoire - Programme PACCI: Christine Danel (Coordinator), Romuald Konan (trial pharmacist), Raoul Moh (trial monitor), Delphine Sauvageot (trial monitor), Souleymane Sorho (data manager). Bordeaux, France - INSERM U593: Xavier Anglaret (Coordinator), Delphine Gabillard (trial statistician), Yves-Antoine Flori (economist), Roger Salamon (Principal Investigator).

Steering Committee

François Barré-Sinoussi, François Boué, Geneviève Chèze, François Dabis, Pierre Marie Girard, Catherine Leport, Yves Souteyrand.

Independent Data Safety Monitoring Board


References


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