

IAS 2013: 7th IAS Conference on  
HIV  
Pathogenesis Treatment and  
Prevention  
June 30 - July 3 2013  
Kuala Lumpur, Malaysia

[Back](#) ►

## **HIV Detectable in Semen of MSM Despite Suppression in Blood: First Longitudinal Study**

7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, June 30-July 3, 2013, Kuala Lumpur

Mark Mascolini

In the first study to track HIV shedding in semen over time in men who have sex with men (MSM) with sustained HIV suppression in blood, 7.6% of men with undetectable virus in blood had intermittent shedding in semen that was not linked to an asymptomatic sexually transmitted infection (STI) [1]. HIV levels in peripheral blood mononuclear cells (PBMCs) predicted HIV detection in semen.

Research shows that an undetectable viral load in plasma does not guarantee an undetectable load in semen--and therefore may not eliminate the risk of sexual HIV transmission. But most data on this issue come from cross-sectional studies involving heterosexual men in medically assisted reproductive programs. A French team conducted this study to address these questions in a longitudinal study involving MSM.

The study involved HIV-positive adult MSM on a stable antiretroviral regimen with a plasma viral load below 50 copies for at least 6 months. No men had clinical symptoms of an STI, and all agreed to abstain from sex for 48 hours before giving semen and blood samples. The researchers collected paired semen and blood samples at a baseline visit and 4 weeks later. They also measured PBMC-associated HIV DNA and tested men for syphilis and other STIs. Based on a 3% to 5% rate of genital HIV shedding in heterosexual men, the investigators calculated that they would need 150 men to find at least one blood-semen discordance if prevalence was as low as 3%.

The researchers recruited 153 MSM with a median age of 44 years (range 27 to 67). Median time since HIV diagnosis was 10.4 years, and median nadir and current CD4 counts were 247 and 637. Median PBMC HIV DNA stood at 229 copies per million cells (range 70 to 2099). These men had taken a stable antiretroviral regimen for a median 2.1 years (range 0.3 to 12.4) and had an undetectable viral load for a median 3.3 years (range 0.5 to 13.7). Almost two thirds of men (63%) had a stable partner, though 63% with a stable partner also had casual sex with a median of 10 other

men in the past 3 months (range 1 to 160).

HIV could be detected in 23 of 304 semen samples at a median level of 145 copies/mL (range 50 to 1475) to yield a prevalence of 7.6%. Five men (3.2%) had HIV detectable in semen at the baseline visit but not week 4, while 2 (1.3%) had HIV detectable in semen at both visits, and 14 (9.1%) had HIV detectable at week 4 but not the baseline visit. HIV could not be detected in 74% of semen samples by an ultrasensitive assay.

Thirty-two of 157 men (20.4%) had an asymptomatic STI detected, and 2 men had two STIs. *Ureaplasma urealyticum* was the most frequent STI, affecting 18 men, followed by syphilis in 6, *Gardnerella vaginalis* in 4, *Chlamydia trachomatis* in 3, and *Neisseria gonorrhoeae* in 2.

Multivariate analysis identified two factors associated with detectable HIV in semen: A current CD4 count between 554 and 735, compared with a lower count, cut the odds of HIV in semen 70% (odds ratio 0.3, 95% confidence interval [CI] 0.1 to 0.9,  $P = 0.027$ ). And HIV DNA in PBMCs above versus below 318 copies per million cells tripled the odds (odds ratio 3.1, 95% CI 1.2 to 7.7,  $P = 0.015$ ). HIV detection in semen was not associated with STIs, CDC stage, nadir or current CD4 count, duration of undetectable HIV in plasma, adherence to antiretroviral therapy, or number of sex partners.

The researchers noted that seminal HIV prevalence in this study was significantly higher than in a recent cross-sectional study of heterosexual French men (7.6% versus 3.1%,  $P = 0.016$ ) [2]. Whether these levels of HIV in semen are infectious, they added, remains to be determined.

## References

1. Ghosn J, Delobelle A, Leruez-Ville M, et al. HIV shedding in semen of men who have sex with men on efficient cART is associated with high HIV-DNA levels in PBMC but not with residual HIV-RNA viremia (ANRS EP49). 7th IAS Conference on HIV Pathogenesis, Treatment and Prevention, June 30-July 3, 2013, Kuala Lumpur. Abstract MOPE142.
2. Lambert-Niclot S, Tubiana R, Beaudoux C, et al. Detection of HIV-1 RNA in seminal plasma samples from treated patients with undetectable HIV-1 RNA in blood plasma on a 2002-2011 survey. *AIDS*. 2012;26:971-975.