

## **Abstract**

### ***BACKGROUND:***

Cervicitis increases the quantity of HIV-1 RNA in cervical secretions when women are not taking antiretroviral therapy (ART), and successful treatment of cervicitis reduces HIV-1 shedding in this setting.

### ***OBJECTIVE:***

To determine the effect of acquisition and treatment of cervical infections on genital HIV-1 shedding in women receiving ART.

### ***DESIGN:***

Prospective cohort study.

### ***METHODS:***

We followed 147 women on ART monthly for incident nonspecific cervicitis, gonorrhea, and chlamydia. Cervical swabs for HIV-1 RNA quantitation were collected at every visit. The lower limit for linear quantitation was 100 copies per swab. We compared the prevalence of HIV-1 RNA detection before (baseline) versus during and after treatment of cervical infections.

### ***RESULTS:***

Thirty women contributed a total of 31 successfully treated episodes of nonspecific cervicitis (N = 13), gonorrhea (N = 17), and chlamydia (N = 1). HIV-1 RNA was detected in cervical secretions before, during, and after cervicitis at one (3.2%), five (16.1%), and three (9.7%) visits, respectively. Compared with baseline, detection of HIV-1 RNA was increased when cervical infections were present (adjusted odds ratio 5.7, 95% confidence interval 1.0-30.3, P = 0.04). However, even in the subset of women with cervical HIV-1 RNA levels above the threshold for quantitation, most had low concentrations during cervical infections (median 115, range 100-820 copies per swab).

### ***CONCLUSION:***

Although these data show a statistically significant increase in cervical HIV-1 RNA detection when cervical infections are present, most cervical HIV-1 RNA concentrations were near the threshold for detection, suggesting that infectivity remains low. Antiretroviral therapy appears to limit increases in genital HIV-1 shedding caused by cervical infection