

## Syphilis, Chlamydia, and Gonorrhea Screening in HIV-Infected Patients in Primary Care, San Francisco, California, 2003

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### ABSTRACT

The Centers for Disease Control (CDC) recommends sexually transmitted disease (STD) screening among HIV-infected persons in order to reduce HIV transmission. We evaluated the results of routine screening for syphilis and for urogenital, pharyngeal, and rectal gonorrhea (GC) and chlamydia (CT) among asymptomatic HIV-infected patients at an HIV primary care clinic in San Francisco, California. We found 15 new syphilis infections of 814 tested (1.8%) and 60 new cases of CT or GC infection of 586 tested (10.2%), with 88% of GC and CT infections occurring at nonurethral sites. Our study reveals a high rate of asymptomatic STDs among HIV-infected patients in primary care and supports the CDC recommendations to screen HIV-infected patients for STDs at all relevant anatomic sites.

### INTRODUCTION

THE ESTIMATED NUMBER of new HIV infections in the United States has increased annually since 1999, with a notable resurgence in infections among men who have sex with men (MSM).<sup>1</sup> In July 2003, the Centers for Disease Control (CDC), the Health Resources and Services Administration, the National Institutes of Health, and the Infectious Disease Society of America published recommendations to reduce the transmission of HIV, with a new emphasis on the prevention of transmission by HIV-infected persons.<sup>2</sup> These recommendations include regular sexually transmitted disease (STD) screening for syphilis, gonorrhea (GC), and chlamydia (CT), and differ from pre-

vious guidelines by stipulating screening at all relevant anatomic sites, including urogenital, pharyngeal, and rectal testing.

STD screening is a fundamental strategy for decreasing HIV transmission because it allows identification of patients with ongoing high-risk sexual behavior and enables the treatment of STDs, which facilitate the transmission of HIV infection.<sup>3,4</sup> The new CDC guidelines' focus on STD screening is appropriate in light of recent studies documenting increased rates of STDs among HIV-infected persons in the United States. Most notably, outbreaks of syphilis among MSM, many of whom are HIV infected, suggest increases in risky sexual behaviors.<sup>5</sup> Rates of gonorrhea and chlamydial infection have also risen in this population.<sup>4-8</sup>

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In addition, descriptions of increases in unprotected anal intercourse and rectal gonorrhea in San Francisco, California, suggest that anogenital gonorrhea remains an important marker of high-risk sexual behavior among MSM.<sup>9</sup> The synergistic effect of STD infection on HIV infectivity and susceptibility has also been well described.<sup>4,10</sup> In particular, men with both urethritis and symptomatic urethral infections have been shown to have significantly higher rates of HIV viral shedding than those without urethritis.<sup>11,12</sup> A recent study also suggested that plasma HIV viral loads were increased during primary syphilis infection.<sup>13</sup> Rectal gonorrhea has similarly been associated with increased risk of HIV acquisition, but its effect on viral shedding is not known.<sup>4</sup>

Despite the general acceptance of STD screening as a tool for decreasing HIV transmission, the CDC's chlamydia and gonorrhea screening guidelines have been questioned in previous studies due to findings showing a low prevalence of urogenital infection among asymptomatic HIV-infected patients.<sup>14,15</sup> In addition, there is limited published literature about screening patients at pharyngeal and rectal sites to support screening patients at all anatomic sites. In spring 2003, we reviewed the results of routine STD screening among HIV-infected patients at an outpatient HIV care clinic in San Francisco in order to evaluate the prevalence of asymptomatic urethral, pharyngeal, and rectal CT and GC infections and thereby assess the potential impact of the most recent CDC STD screening recommendations.

## MATERIALS AND METHODS

The study population consisted of HIV-infected patients receiving primary care at the UCSF Positive Health Program (PHP). The clinic sees approximately 3300 HIV-infected patients each year, of which 49% are Caucasian, 26% African American, 16% Hispanic, and 8% Asian-Pacific Islander. The clinic population is approximately 76% male and 24% female.

Twice yearly, PHP conducts routine STD screening of all sexually active HIV-infected patients. All asymptomatic patients presenting to the HIV general care clinic during a desig-

nated 2-month period were offered STD screening by their clinician. Providers categorized patients into risk groups based on their number of sex partners. Low-risk patients were defined as practicing abstinence or being in a monogamous sexual relationship for 1 year or more. Moderate risk patients had one to two sexual partners within the past 3 months. High-risk patients had a new sexual partner or three or more sexual partners in the last 3 months. Patients were screened for urethral or cervical infection if they reported insertive anal sex or receptive vaginal sex, respectively; for pharyngeal infection if they reported receptive oral sex, and for rectal infection if they reported receptive anal sex in the previous 6 months.

To identify syphilis infection, we tested patient's sera with rapid plasma reagin (RPR) and reactive specimens were confirmed by treponemal specific particle agglutination (TP-PA). Confirmed reactive titers were compared to a patient's previous syphilis history to identify new infection. For diagnosis of urethral, rectal, and pharyngeal GC and CT infections, we used nucleic acid amplification testing (NAAT; BD ProbeTec, Franklin Lakes, NJ).

Clinicians received results of screening within 4 days. Patients with syphilis, GC, or CT infection were informed by telephone of their test results and instructed to return to the clinic for treatment. Treatment for patients and recent partners was offered according to standard recommendations.<sup>16</sup>

## RESULTS

During the study period from April to June 2003, 814 asymptomatic HIV-infected primary care patients were screened for at least one STD. Among the 814 patients who were tested for syphilis, 15 (1.8%) new infections were identified. Of the 586 patients screened for GC or CT, 10.2% were found to have infection. The chlamydia and gonorrhea positivity rates by anatomic site are shown in Table 1. Of the 60 patients infected with CT or GC, 53 (88%) had pharyngeal or rectal infection compared to 7 (12%) with urethral infection. No patients were positive for the same organism from different

TABLE 1. POSITIVE RESULTS FOR CT AND GC BY ANATOMIC SITE, SAN FRANCISCO HIV CARE CLINIC, 2003

Anatomic site	Total specimens	Number positive (% positive)	
		CT	GC
Urethral (urine)	586	7 (1.2%)	0 (0%)
Pharyngeal	446	7 (1.6%)	17 (3.8%)
Rectal	347	19 (5.5%)	10 (2.9%)

CT, chlamydia; GC, gonorrhea.

anatomic sites. Only one patient was positive for both syphilis and chlamydial infection.

There were no significant differences in the prevalence of GC or CT infection among those patients assigned a risk group, with 10 of 192 (5.2%) infections identified in low risk, 9 of 90 (10.0%) in medium risk, and 8 of 69 (11.6%) in high risk. Two hundred thirty-five patients were not assigned a risk group, with 33 (14.0%) infections identified in this group. Analysis by gender revealed that women had no urinary or rectal infections, but the prevalence of pharyngeal GC infection was 3 (6.5%) of the 46 women tested.

## DISCUSSION

We report prevalence rates of syphilis, chlamydia, and gonorrhea among a convenience sample of HIV-infected persons attending an HIV/AIDS care clinic. There are limited published reports of STD prevalence rates among patients seen in HIV primary care clinics for comparison. Our rate of new syphilis infection is similar to those reported among HIV-infected patients seen in STD clinics.<sup>17</sup> The rate of asymptomatic urethral infection was higher in our evaluation compared to a similar study at the same clinic in 1999, which found a 0.5% rate of urogenital CT.<sup>14</sup> Similarly, a study of MSM seen in a community clinic setting also found a low prevalence of urethral CT at a 0.2% rate.<sup>15</sup> A study at a public STD clinic reported a higher rate of urogenital GC (5%) compared to our study, but these included HIV-infected patients presenting with symptomatic and asymptomatic infection.<sup>17</sup> Our rates of rectal and pharyngeal CT and GC infection were also higher than re-

ported in the community study of MSM, which found no GC infections and a 4% prevalence of rectal CT infection.<sup>15</sup> Several factors may account for the high rates of infection seen in our study. First, the higher sensitivity of NAAT compared to culture likely improved our identification of infection compared to other studies. Second, our higher rates might in part be the result of selection bias, as patients reporting high-risk behavior or recent sexual activity may have been more likely to be screened. Finally, our results may reflect the increasing prevalence of STD infection in the HIV-infected population, underscoring the importance of increased STD screening and treatment efforts.

A notable finding in our data is that most cases of GC and CT infection occurred in nonurethral sites. 79% of CT infections and 100% of GC infections would have been missed in our evaluation without pharyngeal and rectal screening. Of note, prior studies with apparently low rates of CT and GC infections relied heavily on urethral testing, thereby likely missing a significant number of infections. Our results support the CDC recommendations that HIV care providers should assess STD infection at all relevant anatomic sites. Some populations, such as women, who had no rectal infections in our study, may not require routine screening at all sites. Further studies may help to determine which patients should be screened at which anatomic sites.

We found no association between sexual behavior risk categorization based on the clinician assessment of the number of recent sexual partners and rate of STD infection, suggesting that all HIV patients should be screened for STDs regardless of reported number of sexual partners. A limitation of our study is that nearly half of our subjects were not assigned a risk category by their provider, thereby reducing the precision of this analysis. Future studies with different risk classifications, perhaps based on reported sexual practices, may better identify which patients require screening.

Despite its limitations, our study revealed a high rate of asymptomatic STDs among HIV-infected patients in primary care in San Francisco, California. These high infection rates reveal an opportunity to identify and treat STDs and consequently decrease HIV transmission.

Our data support the use of NAAT's in regular screening and validate the recent CDC recommendations to screen HIV-infected patients for STDs at all relevant anatomic sites, including pharyngeal and rectal testing.

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