

## STD Screening among HIV-Infected Patients in Care, San Francisco

JEFFREY D. KLAUSNER, M.D., M.P.H.,<sup>1,2</sup> HOPKINS STANLEY, R.N.,<sup>1</sup>  
and JOHN STANSELL, M.D.<sup>1</sup>

### ABSTRACT

The Centers for Disease Control and Prevention recommends sexually transmitted disease (STD) screening among human immunodeficiency virus (HIV)-infected persons as a means of HIV prevention. HIV-infected persons in care may be an important target group in which to conduct regular STD screening to prevent enhanced transmission of HIV. We conducted STD screening for syphilis and two causes of urethritis, chlamydia, and gonorrhea, among 447 HIV-infected persons at two busy, urban clinics in San Francisco: a general HIV acquired immune deficiency syndrome (AIDS) care clinic and a methadone maintenance clinic. There were no new cases of syphilis identified and only two prevalent cases of chlamydia. While STD screening was feasible and acceptable in this population, the benefits of screening for asymptomatic gonococcal and chlamydial infection remain to be determined. Because these two pathogens only cause about 20% of urethritis, broader screening tests for urethritis, e.g., leukocyte esterase or urine microscopy, may be more useful. Finally, this study reaffirms the notion that local data should be used to evaluate national screening recommendations.

### INTRODUCTION

SCREENING AND TREATMENT for sexually transmitted diseases (STDs) among selected populations has long been a strategy of effective STD control. Recently, this strategy has been proposed as a means of human immunodeficiency virus (HIV) prevention based on epidemiologic and biologic data demonstrating that STDs increase the transmission of HIV infection.<sup>1,2</sup> Two intervention trials have demonstrated the complexity of implementing STD control to prevent HIV transmission in com-

munity settings and seemingly found opposite results.<sup>3,4</sup>

Persons with HIV infection are a logical group in which to target STD screening because they are: (1) often receiving medical care; (2) easily identifiable within those care systems; (3) a smaller population group than those at risk for becoming infected; and (4) may already represent a core group of STD and HIV transmitters. Since the publication and dissemination of these Centers for Disease Control (CDC) recommendations for STD screening among HIV-infected persons in July 1998, there has been lit-

<sup>1</sup>Department of Medicine, Division of AIDS and Oncology, San Francisco General Hospital, University of California, San Francisco, California.

<sup>2</sup>San Francisco Department of Public Health, STD Prevention and Control Services, San Francisco, California.

the documentation of STD prevalence rates among HIV-infected persons in routine care. During September 1999, we undertook such a study to measure the prevalence of urethral chlamydial and gonococcal infection among persons attending the outpatient acquired immune deficiency syndrome (AIDS) clinic at San Francisco General Hospital.

## MATERIALS AND METHODS

During September 1999, all patients presenting to the AIDS general care clinic (Ward 86) and the methadone maintenance program (Ward 93) were offered syphilis testing and urine-based screening for *Chlamydia trachomatis* and *Neisseria gonorrhoeae* by their clinician or clinic staff. Although absence of urogenital symptoms were not uniformly documented, all patients screened through this program were likely asymptomatic because symptomatic HIV-infected patients seeking STD diagnosis were seen in the urgent care clinic and not included in this primary HIV care screening program. Urine was collected and tested as recommended by the manufacturer (Abbott LCX, Abbott Laboratories, North Chicago, IL). To identify syphilis infection, patient's sera were tested for rapid plasma reagin (RPR) and reactive specimens were confirmed by treponemal specific particle agglutination (TP-PA) following manufacturer's instructions. Confirmed reactive titers were compared with a patient's previous syphilis history to identify new infection.

On a patient's arrival for his or her routine primary care clinic appointment, laboratory slips and patient labels were prepared by the registration staff and placed into patient's charts. At the end of a patient's clinical encounter, the clinician informed the patient that September was STD screening month and encouraged him or her to go to the onsite laboratory, obtain a specimen collection container, and return the container with 15–20 mL of first-stream urine, the laboratory slip, and labels to the laboratory technician. Since this program was implemented into clinical care, the test results were available to the clinician within 4 days. Patients with either gonococcal or chla-

mydial infection were informed by telephone of their tests results and instructed to return to the clinic for treatment. Treatment was offered according to standard recommendations.<sup>5</sup>

Demographic data on the population who underwent screening were available from computerized clinical records. The  $\chi^2$  test was used to compare proportions.

## RESULTS

During September 1999, 402 (55%) of 735 primary care patients at the San Francisco General Hospital HIV/AIDS clinic (Ward 86) and 45 (30%) of 149 patients at the methadone maintenance clinic (Ward 93) underwent urine screening for chlamydial and gonococcal urogenital infection.

Table 1 shows the chlamydia and gonorrhea positivity rates by hospital ward and gender. Among the 408 who also underwent syphilis testing, there were 23 persons (5.6%) with confirmed reactive titers, all less than 1:2 and no new infections. Overall, there were only two prevalent chlamydial infections among the 447 persons tested.

The mean age of Ward 86 clients was 43 years, 85% were male, 52% white, 26% black, 17% Hispanic, 5% Asian or other. Of 362 persons with recent CD4 counts, the mean was 373 ( $\pm 266$ ) cells per microliter and 197 (54%) had prior counts consistent with AIDS ( $< 200$  cells per microliter). The mean age of Ward 93 patients was 40 years, 69% were male, 38% black, 31% white, 24% Hispanic, and 7% were Asian or other. Of the 37 patients with recent CD4 counts, the mean was  $493 \pm 521$  cells per mi-

TABLE 1. PREVALENCE OF UROGENITAL CHLAMYDIAL AND GONOCOCCAL INFECTION BY WARD AND GENDER, SAN FRANCISCO GENERAL HOSPITAL, 1999

	N tested (% positive)		
	Women	Men	Total
Ward 86			
Chlamydia	61 (0%)	341 (.6%)	402 (.5%)
Gonorrhea	61 (0%)	341 (0%)	402 (0%)
Ward 93			
Chlamydia	14 (0%)	31 (0%)	45 (0%)
Gonorrhea	14 (0%)	31 (0%)	45 (0%)

microliter and 8 (22%) had prior counts consistent with AIDS (<200 cells per microliter). The age of patients in the two samples was similar but Ward 86 patients were more likely to be male and white (85% vs. 69%; 52% vs. 31%,  $p < 0.01$  for both, respectively) and the proportion of AIDS among Ward 86 patients based on CD4 count was significantly greater (54% vs. 22%,  $p < 0.001$ ).

## DISCUSSION

We report prevalence rates of urogenital gonococcal or chlamydial and syphilis infection among a convenience sample of asymptomatic HIV-infected persons attending two HIV/AIDS care programs. The rates of asymptomatic infections were low and lower than other population-based data in San Francisco. Among asymptomatic men who have sex with men attending the municipal STD clinic, urethral infection rates in 1998 were 1% for chlamydia and 1.1% for gonorrhea and among women screened at a primary care clinic serving low-income and homeless persons in San Francisco, the urogenital infection rates were 2.5% for chlamydia and 1.7% for gonorrhea, respectively.<sup>6,7</sup>

Both study populations had a mean age of more than 40 years. In San Francisco, among gay men, the highest rates of STDs are among men age 25–34 years with sharp declines after 39 years. Thus, our data may not be inconsistent with low rates of STDs among older men. Similar to screening recommendations for chlamydia among women, age-specific screening criteria may be more useful.<sup>5</sup> There were inadequate number of infections in our study to conduct analyses by age. In addition, participation rates in our study populations were 30% and 55%, thus limiting the generalizability of our findings to the clinic populations as a whole. It is unknown whether nonparticipants were more or less likely to be infected with an STD. Clinicians may have been less likely to offer screening to patients who did not report recent sexual activity or patients with recent sexual activity and increased risk for infection may have been more likely to refuse testing.

While symptomatic urethritis increases seminal burden of HIV, the data on the role of asymptomatic infection have only been recently described.<sup>8,9</sup> In this latter study, a urethral smear for Gram stain was obtained by insertion of a plastic loop 2 cm into the urethra. Men with asymptomatic urethritis were eight times more likely to shed HIV RNA in seminal fluid than those without urethritis. Only 1 of 7 subjects with urethritis had diagnosed infection suggesting that nonchlamydial, nongonococcal etiologies of asymptomatic urethritis were prevalent and may contribute to increased infectiousness.

Thus, the role of STD screening for urethral chlamydial or gonococcal infection may not complete the evaluation for asymptomatic urethritis. In order to reduce the prevalence of urethral inflammation and decrease its impact on HIV transmission, persons may have to be screened for urethritis in addition to STDs. Current screening tests for asymptomatic urethritis include urethral swab and Gram stain, urine leukocyte esterase and urine microscopy. These tests are specific for urethritis but have poor positive-predictive value for chlamydial or gonococcal infection.<sup>10</sup> Additional studies need to be done to evaluate the role that the identification and treatment of nonchlamydial, nongonococcal urethritis may have on HIV in seminal fluid.

It is interesting to speculate that the low rates of urogenital infection may be due to the antivirals and other antimicrobials that many HIV-infected patients take. There have been reports of the anti-salmonella activity of AZT.<sup>11</sup> Regardless of whether the rates are low due to low exposure to the infectious agents or due to concomitant use of antimicrobials, the low rates of asymptomatic infection suggest that continued gonococcal and chlamydial screening among all HIV-infected persons in care as put forth by the CDC is not warranted.<sup>1</sup> Our study reaffirms the notion that local data must be used to evaluate national guidelines.

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Address reprint requests to:

*Jeffrey D. Klausner, M.D., M.P.H.*

*San Francisco Department of Public Health*

*1360 Mission Street, Suite #401*

*San Francisco, CA, 94103*

*E-mail: Jeff\_Klausner@dph.sf.ca.us*