

## *Frequency of Syphilis Testing in HIV-Infected Patients*

### More and More Often

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OVER THE PAST DECADE, SYPHILIS has resurged in gay men and other men who have sex with men (MSM) in every major metropolitan area in the United States, Europe, and Australia.<sup>1</sup> Those increases have been predominantly in HIV-infected MSM driven by the disinhibition in safer sex behavior after the introduction of highly active antiretroviral therapy for HIV infection/AIDS. Several studies have demonstrated prevalence rates of HIV infection among syphilis cases between 50% and 75%, 2 or 3-fold higher than the prevalence of HIV infection in the general population of MSM.<sup>2</sup> Focusing on HIV-infected MSM as the core group in the spread of syphilis might be an efficient and effective means to reduce the continued spread of syphilis and control further increases in incidence. Few studies, however, have measured syphilis incidence in HIV-infected cohorts, and little evidence is available to guide policy makers and clinicians regarding the optimal frequency of syphilis testing.

In this issue, Branger et al studied the frequency of syphilis infection from 1994 through 2003 in HIV-infected patients in care in an outpatient clinic in Amsterdam, The Netherlands.<sup>3</sup> The authors used 2 epidemiologic methods to estimate the incidence of syphilis in various periods and the proportion of asymptomatic cases. First, the authors measured syphilis prevalence among patients between March 2003 and June 2003, and looked back in time to determine which cases were new. Based on that retrospective analysis, they found an overall incidence between 2000 and 2003 of 2.7 cases per 100 person-years with about one-third asymptomatic. Among MSM that estimate was 4.6 cases per 100 person-years with the same proportion asymptomatic. Second, the authors did a prospective study based on the prevalence results from March 2003 to June 2003 and retested patients 6 months later. The measured syphilis incidence was 3.5 cases per 100 person-years with a little less than one-quarter asymptomatic. Among MSM,

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that estimate was 6.2 cases per 100 person-years with about the same proportion asymptomatic. The authors concluded that based on the elevated incidence rates and the high proportion of asymptomatic cases at least annual routine screening for syphilis is warranted.

Although this study provided evidence to support routine screening, little can be gleaned from the report about the frequency of screening. The optimal frequency of screening would best be ascertained from modeling exercises where, holding other factors constant, the frequency of screening could be varied and one could observe the impact on the modeled incidence of syphilis infection.

Fortunately, Wilson et al at the National Center in HIV Epidemiology and Clinical Research recently reported such an exercise at the Australasian Sexual Health Conference in September 2008.<sup>4</sup> Using well-described and published parameters of the biology of syphilis transmission, they developed a mathematical model of syphilis transmission in MSM, incorporating sexual mixing networks between those in high or low sexual risk groups. Based on current observations, those groups could be considered as HIV-infected versus HIV-uninfected MSM, respectively. They found a complex relationship among testing coverage, frequency and what they called “synchronicity” of testing (closeness in time of testing within a population) and syphilis incidence. The greater the synchronicity, the larger reduction there was in syphilis incidence. With more than 70% annual coverage in syphilis testing among MSM, syphilis could be eradicated within 10 years. Notably, such a reduction could be equally achieved by screening only 25% of high risk men 2 or 3 times a year. This important study provided additional evidence of the potential population-level benefit of routine and frequent screening in a core group, in this scenario HIV-infected MSM. Currently in San Francisco, I recommend that clinicians obtain a syphilis screening test in HIV-infected patients with every CD4 T cell count or plasma HIV viral load. In clinical practice, those measures are often done every 3 or 4

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months. Syphilis screening tests are inexpensive, highly accurate and an easy and efficient way to identify treatable cases early and prevent the continued transmission of syphilis.

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