High Rate of Precancerous Anal Lesions Among HIV-Positive Women

April 4, 2012 By Tim Horn

Results from a study conducted in the Bronx, New York, serve as an important reminder to HIV care providers: Comprehensive screening for precancerous anal lesions isn't of importance only to HIV-positive men who have sex with men (MSM). According to the Journal of Acquired Immune Deficiency Syndromes report by researchers at Albert Einstein College of Medicine in the Bronx, precancerous lesions are also common among women living with HIV—and testing for them using anal swabs alone may not be sufficient to rule out problems requiring biopsies.

Numerous studies have noted high rates of anal cancer among MSM. According to one study cited by June Hou, MD, and her colleagues at Albert Einstein, the incidence of anal cancer among MSM is 10 to 50 times that of the general population and comparable to cervical cancer incidence rates before the implementation of now-routine screening practices.

Among HIV-positive women, some studies put the incidence of anal cancer at seven to 28 times greater than the general population. Though the incidence of anal cancer has not been nearly as well studied in HIV-positive women compared with HIV-positive MSM, the confirmed higher rates of precancerous lesions—which can occur among women living with HIV, even if they've never engaged in anal sexual intercourse—remain a concern.

Yet there is no consensus between national and local groups on anal cancer screening among people living with HIV, either male or female. "Since 2007," Hou and her colleague explain, "the New York State Department of Health (NYS DOH) has recommended annual anal cytology"—Dacron swabs analyzed by a laboratory—"in HIV-infected subjects with a history of [anal warts] or with abnormal cervical/vulvar histology, along with referral for high resolution anoscopy (HRA) in those with abnormal anal cytology or abnormal findings on anal exam. In contrast, the Department of Health and Human Services guidelines discourage screening and treatment programs for [anal intraepithelial neoplasia, or AIN] due to a lack of complete understanding of the relative harms and benefits of anal cytology screening."

In turn, to better understand the incidence of precancerous anal lesions and the value of routine anal cytology, Hou and her colleagues conducted a study among women in the Bronx, which has one of the highest HIV prevalence rates in the country, representing 3 percent of the total U.S. HIV burden.

The study was conducted at Montefiore Medical Center, the largest provider of medical services for people with HIV in the Bronx and a provider of routine screening for anal cancer with annual anal cytology—laboratory analysis of anal swabs—for all HIV-positive patients. Those with abnormal anal cytology results received follow-up testing, notably HRA and lesion biopsies.

Anal swabs were performed on 715 female Montefiore patients living with HIV from March 2008 until December 2010. Of these, a total of 75 (10.5 percent) patients had an abnormal cytology—characterized as atypical cells of undetermined significance (ASCUS), atypical, low-grade lesions (LSIL) or high-grade lesions (HSIL)—and were referred for HRA.

Of 75 women referred for HRA, 20 (26.7 percent) had evidence of the least worrisome forms of the disease—atypical or ASCUS, indicating mild cellular changes with an unknown cause—and 51 (68 percent) of the 75 women had low-grade lesions, which are generally considered noncancerous. Only four (5.4 percent) of the 75 women had swab evidence of precancerous high-grade lesions.

The rate of high-grade lesions found through cytology screening in this study was lower than that found in other studies of women living with HIV.

The researchers' analysis of biopsy results, however, painted a more serious picture. Twenty-nine (38.7 percent) of the 75 women received a final diagnosis of high-grade lesions—AIN 2 or AIN 3—whereas 21 (28 percent) had normal results.

The rate of high-grade lesions confirmed with biopsies in this study was higher than that found in other studies of women living with HIV.

As for factors associated with an increased likelihood of a biopsy-confirmed AIN diagnosis, the researchers primarily focused on HIV disease status. For example, 11 out of 18 (61 percent) of women with poorly controlled HIV infection had high-grade lesions, but only 1 out of 20 (5 percent) of women with well-controlled HIV had high-grade AIN. This difference was statistically significant, meaning it was too great to have occurred by chance.

In their discussion of the results, Hou and her colleagues focus on the notable disparity in the anal cytology findings and the biopsy results. "Unlike Pap tests for cervical cancer screening," the authors comment, "the correlation between abnormal anal cytology and HRA-directed biopsy in our analysis is extremely poor."

One possible reason for this disparity is the small sample size included in the analysis. And compared with cervical cancer screening—where cytology is consistently much better at predicting biopsy-confirmed high-grade disease—"sampling the anal canal is different," the researchers explain, "and as such, sloughing or performance of collection of abnormal cells might be different." They add that anal cytology performance has also been shown to vary depending on the level of HIV suppression and extent of disease.

"Given the relatively poor performance of identification of high-grade AIN with anal cytology, other

strategies that may improve screening performance should be explored, including innovative sampling devices or use of molecular testing strategies in combination with cytology," Hou and her colleagues suggest. One specific option is combining human papillomavirus (HPV) testing with anal cytology to heighten the sensitivity of screening. "There are a number of trials in the planning stages in the [United States] to assess such alternative strategies in women."

Hou's team concludes that, "until we have validated, optimized screening strategies for [anal cancer] in the setting of HIV, we recommend that all HIV-positive women who have any abnormal anal cytology be referred for HRA, particularly those with poorly controlled HIV who are significantly at even higher risk for harboring a high-grade AIN than women who are well-controlled."

They add: "Given the high rate of high-grade AIN in screened HIV-infected women, as well as an aging population of HIV-infected patients, measures to increase routine AC screening should be strongly considered."
