Study: HIV Doesn’t Increase Bone Fracture Risk in Women

September 22, 2010

HIV-positive women were no more likely to have a bone fracture than HIV-negative women, according to a study published online September 20 in *AIDS*. The new data run counter to a growing concern that HIV might be causing age-related problems, including bone problems, to occur at a younger age in HIV-positive people.

As the population of people with HIV grows older, the research community is increasingly turning its focus toward diseases and conditions that typically strike the elderly, including cardiovascular disease, certain cancers and bone problems.

Numerous studies have found that people with HIV, men and women alike, often have poorer bone health than their HIV-negative counterparts. What isn’t certain, however, is whether the reduced levels of bone density found in HIV-positive people are resulting in an increase in bone fractures. While one large study did find an increase in fractures of the hip, spine and wrist, it could not account for many bone fracture risk factors, such as body mass, smoking status and hepatitis C virus (HCV) infection.

To further define the actual risk for fractures in HIV-positive women, Michael Yin, MD, from Columbia University Medical Center in New York City, and his colleagues analyzed data from the Women’s Interagency HIV Study (WIHS)—a large cohort study that has been following more than 3,000 HIV-positive and HIV-negative women since at least 2001. This analysis included 1,728 HIV-positive women and 663 HIV-negative women.

Most of the women in both groups were black or Latina and tended to be a bit overweight. About half were smokers, and roughly 20 percent in both groups were diabetic. The groups differed on several counts, however. HIV-positive women tended to be older, to have begun menopause and to also be infected with HCV.

The rate of new fractures was similar between the groups, with 148 HIV-positive women (8.6 percent) and 47 HIV-negative women (7.1 percent) experiencing a new fracture during an average follow-up of 5.4 years.

Yin’s team found that when they accounted for known risk factors—such as smoking, HCV status and the women’s ratio of height to body weight (body mass index or BMI)—HIV-positive women

were no more likely to experience a fracture than HIV-negative women. In fact, the only factors associated with bone fracture risk overall were: older age, white race, HCV status and high kidney protein (serum creatinine) levels.

When Yin and his colleagues restricted their analysis only to HIV-positive women, they found that smoking history, opiate-use history and onset of menopause were all associated with a higher fracture risk. Of interest, low CD4 counts were not associated with an increased fracture risk among HIV-positive women, nor was any class of antiretrovirals (ARVs) including tenofovir (found in Viread, Truvada and Atripla), a commonly used HIV medication that has been tied to decreased bone mineral density.

The authors caution that their study results can't be applied to older and post-menopausal women, but they concluded, "Our data provide some reassurance that fracture risk is modest in predominantly premenopausal HIV-infected women."

"However, further research is necessary," they continued, "to assess fracture risk as these women transition through menopause and to clarify whether fracture risk differs among antiretroviral regimens."
