Low Bone Density in HIV-Positive Men

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HIV-positive men had a very high rate of decreased bone mineral density (BMD) for their age, according to a study published December 1 in *The Journal of Infectious Diseases*. Protease inhibitors increased the likelihood of low bone density, while high testosterone levels had a protective effect.

Low BMD—called osteopenia when it is mild to moderate, and osteoporosis when it is more severe—can lead to serious bone fracture. The risk for low BMD is usually higher in women than in men and increases as people get older. Previous studies have shown that decreased BMD is more common in people with HIV and occurs at a younger age than is normal.

To determine the rates and associated risk factors of low BMD, Alexandra Calmy, MD, from the St. Vincent's Hospital in Sydney, and her colleagues performed diagnostic tests on 153 HIV-positive adults. Nearly all of the participants were male, and the average age was 48. Most had been infected for at least 13 years and had extensive use of antiretroviral therapy. Diagnostic tests included dual energy X-ray absorptiometry (DEXA) scans of the spine and hip, as well as blood and urine markers of bone and kidney health.

Calmy and her colleagues found that 47 percent of the participants showed a reduced BMD. Of those with a low BMD, nearly 10 percent had osteoporosis. After adjusting for other risk factors, protease inhibitors were significantly associated with low BMD. Viread (tenofovir) was also associated with an increased risk for reduced BMD; however, the difference did not reach statistical significance, meaning that it was small enough to have occurred by chance. One of the most significant protective factors was having high testosterone levels.

The World Health Organization (WHO) has a method for determining a person's fracture risk over a 10-year period, called a FRAX score. Incorporating the BMD results, Calmy's team estimated the 10-year fracture risk for 139 of the participants. They found that 16 percent had a 10-year fracture risk, significantly higher than expected for HIV-negative people of a similar age—particularly men.

The authors conclude by stating that their study confirms estimates of the higher risks associated with low BMD in people with HIV, particularly men. They also suggest that further studies be conducted to verify the accuracy of the WHO FRAX score in people with HIV, as it could prove to be a useful tool in determining people's risk for fracture and in guiding treatment decisions.