In the HIV Population, Bone Loss Is Greater Among Women

Largest-ever analysis of bone loss in the HIV population found that treating hep C, taking vitamin D and exercising might be preventive.

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In the HIV population, women experience twice as steep bone loss compared with men, aidsmap reports. This is according to the largest analysis ever conducted of changes in bone mineral density (BMD) over time.

Publishing their findings in the Journal of Acquired Immune Deficiency Syndromes, Italian researchers studied 839 women and 1,759 men who were on long-term HIV treatment. The investigators measured the participants' BMD every six to 12 months with dual-energy X-ray absorptiometry (DXA) scans.

The study members were all white, 82 percent were younger than 50 and 76 percent had a fully suppressed viral load when entering the study. Thirty percent of the women and 27 percent of the men in the study were coinfected with hepatitis C virus (HCV). Upon enrollment into the study, 7 percent of the men had low testosterone and 15 percent of the women were postmenopausal. During the study's follow-up period, one in four of the women were ultimately considered postmenopausal.

The participants were followed for a maximum of 10 years and a median of five years. During this time, they received a minimum of two and a median of five DXA scans.

The researchers found that the BMD of the femoral neck (the hip) declined more among women than among men, specifically 35.3 milligrams per square centimeter more per year.

Having lower BMD at the femoral neck was associated with exposure to the nucleoside reverse transcriptase inhibitor (NRTI) Viread (tenofovir disoproxil fumarate, or TDF), getting older, being sedentary, having low testosterone, being postmenopausal, having a deficient vitamin D level and coinfection with HCV. Factors associated with higher BMD levels at this site included being treated with an antiretroviral from the integrase inhibitor class and having a higher body mass index (BMI).

Integrase inhibitors are a newer class of ARVs compared with NRTIs.

TDF, which is the shorthand for Viread's generic name, is included in multiple combination drug tablets, including Atripla (efavirenz/tenofovir/emtricitabine), Stribild (elvitegravir/cobicistat/emtricitabine/tenofovir disoproxil fumarate), Complera (rilpivirine/tenofovir disoproxil fumarate/emtricitabine) and Truvada (tenofovir disoproxil fumarate/emtricitabine). Gilead Sciences, which manufactures all of these tablets, recently released updated versions of all of them (except for Atripla), replacing TDF with an updated, less toxic version of the drug known as tenofovir alafenamide (TAF). Multiple studies have found that TAF is less toxic to the bones and kidneys than TDF.

After adjusting their data to control for various factors that may affect bone loss, the study authors found that women had a greater drop than men at the femoral neck (women and men saw respective declines in BMD of 8.97 and 4.22 mg/cm^2/year) and the L-spine (respective declines of 12.7 and 7.63 mg/cm^2/year).

There are several possible ways to reduce the risk of bone loss among people with HIV, the study authors stated. Treatment for hep C, vitamin D supplementation, shifting to a different ARV regimen and physical exercise may mitigate bone loss.

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