# Hep C and Heavy Drinking Tied to Bone Fractures

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Neither CD4 count and viral load, nor type of antiretroviral (ARV) treatment was associated with a higher risk for having a severe bone fracture in people living with HIV, but being coinfected with hepatitis C virus (HCV) and drinking five or more drinks per day were, according to a French study published in the May 15 issue of *AIDS* and reported by aidsmap.

A number of studies have found that HIV-positive people have higher rates of bone mineral loss—called osteopenia when it is mild and osteoporosis when it is more severe—than their HIV-negative peers. What remains unclear, however, is whether people with HIV—either with or without bone mineral deficits—face a higher risk of serious bone fractures. Additionally, researchers remain unsure of the reason for the higher rates of osteopenia and osteoporosis in people living with HIV. As a result, they've cast a wide net of possibilities, including a side effect of ARV therapy, smoking, alcohol consumption and HIV itself.

To determine the specific risk factors associated with serious bone fractures and osteoporosis among people living with HIV, Fidéline Collin, from the Université Victor Segalen Bordeaux, in France, and her colleagues examined the medical records of 1,281 HIV-positive patients enrolled in the ANRS CO8 APROCO-COPILOTE study. The study began in 1997 to determine the effectiveness of combination (ARV) therapy with protease inhibitors.

Between 1997 and 2007, there were 27 bone fractures in 26 patients that were severe enough to require hospitalization or to significantly limit mobility. The rate of new fractures each year was roughly equivalent to what would be expected in the general population of HIV-negative people. Most of the fractures, 81 percent, were caused by trauma such as a fall or accident, and 19 percent occurred while the person had been drinking heavily. Only four people had osteoporosis at the time of the fracture.

After controlling for a number of variables, researchers found that heavy alcohol consumption and infection with HCV were the most significant factors associated with serious bone fracture. People with HCV had a fracture rate that was nearly 3 times as high, and people who drank heavily were 3.6 times more likely to have a serious fracture. There was no difference in the rate of fractures based on age, sex, body mass index, viral load at the start of the study or the type of protease inhibitor used. People who had fractures were, on average, more likely to have a lower CD4 count at the start of the study, but this difference was not significant when the researchers controlled for

other factors. The authors suggest that heavy alcohol consumption can increase risk behaviors leading to trauma and ultimately to osteoporosis, while HCV infection may weaken bones by causing a deficiency in vitamin D.

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