Does Hep C Exposure Raise the Risk of Kidney Disease and Osteoporosis in People With HIV?

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According to a recent study, HIV-positive people who contract hepatitis C virus have an increased risk of kidney disease and osteoporosis, even if they spontaneously clear HCV or are cured of the virus. Researchers analyzed data on HIV-positive members of the Swiss HIV Cohort Study, comparing 2,503 HCV-positive cohort members with the same number of HCV-negative matched controls, covering the period between August 1994 and December 2014. Findings were presented at the 2016 Conference on Retroviruses and Opportunistic Infections (CROI) in Boston.

In a significant proportion of people who contract hep C, their bodies will clear the virus without any medical intervention, typically within six months of infection. This is called spontaneous clearance. Even after such clearance, individuals will still test positive for hep C antibodies, although an RNA test will show that there is no replicating virus. (This scenario can result in a false positive hep C test, before the antibody test result is measured against a subsequent negative RNA test result.) Those who do not spontaneously clear hep C are considered chronically infected.

Among the 2,503 members of the cohort who tested positive for HCV antibodies, 540 spontaneously cleared the virus, 1,294 had chronic infection but had not been treated for hep C, 345 had been cured of chronic infection, and 281 had been treated for chronic infection but not cured. These individuals were matched one-to-one with HIV-positive controls who tested negative for hep C antibodies.

After a mean follow-up period of 8.2 years, there were a respective 107 and 18 liver health "events" in the HCV-positive and HCV-negative individuals, as well as a respective 41 and 14 cases of kidney disease, 230 and 121 cases of osteoporosis or fracture, 114 and 129 cardiovascular disease events, 162 and 126 cases of Centers for Disease Control and Prevention (CDC) B or C clinical categories of HIV disease, 106 and 10 liver-related deaths, and 227 and 218 non-liver-related deaths.

The researchers adjusted the data for HIV transmission category, age, HIV viral load, smoking, alcohol use, active injection drug use, and duration of HIV and HCV infection. Compared with the HIV-monoinfected controls, those who tested positive for HCV antibodies had a 6.29-fold increased risk of liver disease, an 8.24-fold increased risk of liver-related death, a 2.43-fold increased risk of

kidney disease events, and a 1.43-fold increased risk of osteoporosis or fracture.

The researchers found no apparent association between the presence of HCV antibodies and the risk of cardiovascular disease, cases of B or C clinical categories of HIV disease, or non-liver-related death.

Among the individuals with HCV antibodies, those chronically infected with the virus had an increased risk of liver-related events compared with those who had spontaneously cleared the virus. Those with chronic infection who had not been treated for hep C had a 2.84-fold greater likelihood of such a health outcome. Looking at those who were treated for chronic HCV infection, the researchers found that individuals who were not cured were 6.74 times more likely to experience a liver-related event compared with those who were cured.

“HCV exposure,” the researchers concluded, “was associated with an increased risk of kidney disease and osteoporosis. This risk did not seem to be dependent of persistent HCV replication.”

Daniel Fierer, MD, an associate professor of medicine and infectious disease specialist at Mount Sinai Hospital in New York City and an expert in acute (very early) infection of hep C among HIV-positive men who have sex with men (MSM), raises questions about this study’s findings with regard to kidney disease and osteoporosis risk. He says these findings do not “make much sense to me physiologically.

“I am not aware of a biological process in which a transient [hep C infection] of a few months that spontaneously cleared 30 years ago could lead to osteoporosis,” Fierer says. “The magnitude of increased risk in those with spontaneous clearance was also relatively low, further suggesting that findings would be more likely due to lifestyle and/or medical characteristics associated with the people who acquired HCV that were not measured in this study.”

To read the conference abstract, click here.
