Risk of Liver-Related Deaths Twice as High With Chronic Hep B Versus Hep C

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In a cohort of men who have sex with men, most of whom were living with HIV, those who were coinfected with chronic hepatitis B virus (HBV) were twice as likely to die of liver disease compared with those chronically infected with hepatitis C virus (HCV), according to a new report published online ahead of print by Clinical Infectious Diseases.

“This study emphasizes the need for a more aggressive approach to the prevention, diagnosis and treatment of [chronic HBV infection], including increasing vaccination rates among all [hep B] susceptible individuals,” writes Oluwaseun Falade-Nwulia, MD, of Johns Hopkins University and her Multicenter AIDS Cohort Study (MACS) colleagues. “This is especially true in Asian and African countries where there is a high prevalence of [chronic HBV], HIV infection and HIV/HBV coinfection.”

Up until now, it hasn’t been known whether chronic HBV infection or chronic HCV infection carries a greater risk of death from liver disease. Though fewer people in the United States are living with chronic HBV (up to 1.4 million), compared with chronic HCV (about 3.2 million), both can cause life-threatening liver damage and cancer.

To compare the mortality risks associated with both infections, the MACS researchers turned to its cohort consisting mostly of HIV-positive men who have sex with men—a study population well established to be at an increased risk for chronic HBV and/or HCV disease.

The researchers evaluated 680 MACS participants, 337 of whom had chronic HBV infection and 343 of whom had chronic HCV upon entering the study. Roughly 70 percent of the men—472 of them—were also coinfected with HIV.

Some of the participants entered the study between April 1984 and March 1985. Others entered between two additional enrollment period, from 1987 to 1991 and 2001 to 2003. Because study participants were followed for varying lengths of time—which is not uncommon in epidemiological studies—the researchers reported their results as person-years: the combined total number of years the selected 680 participants were followed in the study.

During 6,728 person-years of follow-up—roughly 8.5 years per person with chronic HBV and 6.9 years per person with chronic HCV—there were 293 deaths from any cause, of which 51 were liver related. Death rates from any cause were similar among those with either form of chronic viral hepatitis; the rate was, however, unsurprisingly higher among HIV-positive study volunteers, compared with HIV-negative ones.

When the researchers looked specifically at liver-related deaths, the rate was nearly doubled among people with chronic HBV infection: 9.6 per 1,000 person-years, compared with 5.0 per 1,000 person-years among those with chronic HCV infection. The relative risk was therefore 1.9—a twofold increase in the risk of death among those with chronic HBV infection.

Since 46 of the 51 liver-related deaths (90 percent) occurred in the HIV-positive individuals, the major analyses of the data were restricted to this group. Here, the relative risk of death attributable to chronic HBV was more than doubled.

“Notably,” Falade-Nwulia and her colleagues explain, “more severe immunodeficiency, as represented by lower CD4 cell counts, was independently associated with an increased risk of liver-related mortality. Compared with those with CD4 cell counts over 350, the relative risk was sevenfold higher among those with CD4 counts between 200 and 350 and sixteenfold higher among those with CD4 counts below 200.

Old age, the researchers add, was also independently associated with increased liver-related mortality. For every 10 years, the relative risk of death increased by 60 percent.

With patients enrolled in the MACS both before and after combination antiretroviral therapy became standard treatment for HIV, the researchers were able to look for the effect of modern-day HIV treatment on mortality rates. Among those who entered the MACS with chronic HCV infection, death rates remained relatively unchanged. And while there was an observed drop in mortality rates among those with chronic hepatitis B—from 13 per 1,000 person-years to 8 per 1,000 person-years in the combination antiretroviral therapy years, notably with the arrival of Viread (tenofovir), with its activity against both HIV and HBV—this decrease was not statistically significant, meaning it could have been due to chance.

“This study clearly demonstrates that [chronic HBV] carries a greater risk of death from liver disease than does [chronic HCV],” the authors conclude. “More emphasis needs to be placed on more effective global HBV screening and increased efforts for vaccination and treatment of HBV infection worldwide,” they write, adding that there is “a potential beneficial effect of the use of HBV-active agents”—notably Viread, Emtriva (emtricitabine), Truvada (tenofovir plus emtricitabine) or Epivir (lamivudine)—“as part of [combination antiretroviral therapy] in HBV-infected individuals.”

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