HIV and HCV Coinfection Raises Heart Attack Risk as People Age

People with both HIV and hepatitis C are at greater risk for myocardial infarction as they age, and traditional risk factors also play a role.

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People living with HIV face a rising likelihood of heart attacks as they age, and this risk is magnified if they also have hepatitis C virus (HCV), according to new research published in the Journal of the American Heart Association. The good news is that managing traditional cardiovascular risk factors, keeping HIV under control and getting treated for hepatitis C can reduce the risk.

As people with HIV live longer thanks to effective treatment, they are more likely to develop age-related conditions such as cardiovascular disease (CVD). A large body of research has shown that HIV-positive people are at greater risk for a variety of cardiovascular problems, including atherosclerosis (buildup of cholesterol and other material in the arteries), coronary artery disease (blockage of the arteries that supply the heart muscle), heart failure and heart attacks (myocardial infarction).

HIV and hepatitis C virus share some common transmission routes, and many people are living with both viruses (known as coinfection). Hepatitis C can now be easily cured with direct-acting antivirals, but a substantial proportion of people with HCV do not know their status and have not gotten treatment.

Hepatitis C is also associated with cardiovascular problems, but the combined impact of HIV and HCV is not well understood. Keri Althoff, PhD, MPH, of Johns Hopkins Bloomberg School of Public Health, and colleagues aimed to identify whether HIV/HCV coinfection increases the risk of type 1 myocardial infarction—the type of heart attack caused by coronary artery disease—and whether the risk differs by age.

“Due in part to the inflammation from the chronic immune activation of two viral infections, we hypothesized that people with HIV and hepatitis C would have a higher risk of heart attack as they aged compared to those with HIV alone,” Althoff said in an American Heart Association news release.

The researchers analyzed data from 2000 to 2017 on 23,361 HIV-positive NA-ACCORD (North

American AIDS Cohort Collaboration on Research and Design) participants who had started antiretroviral treatment for HIV. More than 80% were men, about half were white and they were between 40 to 79 years old (median 45) when they enrolled in NA-ACCORD. One in five study participants (4,677) also had hepatitis C. Data from HIV/HCV coinfected participants were no longer included after they started hepatitis C treatment.

Over a median follow-up period of about four years, the researchers compared heart attack incidence in the HIV-only and HIV/HCV coinfection groups, both overall and by each decade of age.

During follow-up, there were 314 type 1 myocardial infarctions among people living with HIV alone and 89 among those with HIV/HCV coinfection, which works out to 1.7% versus 1.9%, respectively.

Overall, having hepatitis C was not significantly associated with a higher heart attack risk. However, while the risk of type 1 myocardial infarction increased by 30% per decade among people with HIV alone, it rose by 85% for those with both HIV and HCV.

Looking beyond HCV status, the researchers confirmed that traditional cardiovascular risk factors, including smoking, high blood pressure and type 2 diabetes, were associated with a greater likelihood of myocardial infarction. In addition, HIV-related factors, including a low CD4 count, a history of AIDS-defining illness and use of protease inhibitors, were also linked to higher heart attack risk.

“[T]he risk of [type 1 myocardial infarction] with increasing age was greater in those with HCV compared with those without, and HCV status should be considered when assessing CVD risk in aging people with HIV,” the researchers concluded. “Further understanding of the complex interplay of factors impacting cardiovascular risk as people with HIV age will improve their long-term care and well-being.”

“Several mechanisms may be involved in the increased heart attack risk among coinfected patients,” said lead study author Raynell Lang, MD, MSc, of the University of Calgary in Canada. “One contributing factor may be the inflammation associated with having two chronic viral infections. There also may be differences in risk factors for cardiovascular disease and nonmedical factors that influence health among people with HIV and hepatitis C that play a role in the increased risk.”

More than half of people living with HIV in the United States are now ages 50 or older. As people with HIV age, reducing the risk for CVD “is a primary therapeutic goal,” the researchers wrote. People with both HIV and HCV are at greater risk for cardiovascular problems, “highlighting the importance of maintaining antiretroviral therapy, promoting CVD risk-reduction strategies and initiating treatment of their HCV to reduce the chronic inflammation believed to contribute to this risk.”

Effective and well-tolerated HCV treatment was not available during several years of the study period, so the researchers were unable to evaluate the effect of treated hepatitis C on cardiovascular risk among people with HIV. Several studies have found that HCV clearance is

associated with reduced CVD events, but there are little data on people with HIV/HCV coinfection. “This will be an important question to answer in future studies,” Lang said.

In addition to HIV and hepatitis C treatment, people aging with HIV can take other steps to reduce their risk of heart disease, including quitting smoking, eating a well-balanced diet, exercising, maintaining a healthy weight and, if appropriate, using medications such as statins (currently being studied in the REPRIEVE trial). Regular checkups that include monitoring of blood pressure, blood sugar and cholesterol levels can provide warning signs of heart problems at an earlier stage, when they are easier to manage.

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