People With HIV Have Worse Outcomes Following Acute Coronary Syndrome

Lower rates of targeted interventions and care strategies for acute heart problems compared with HIV-negative people are a likely factor.

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Among people hospitalized for health outcomes related to acute coronary syndrome (ACS) , including heart attack or unstable angina, individuals with HIV have higher rates of death and readmission to the hospital, compared with their HIV-negative counterparts. These disparities are likely driven at least in part by lower rates of targeted intervention and care strategies for acute heart problems among HIV-positive people, according to a new study.

Monica M. Parks, MD, of the University of California, San Francisco, presented findings from the study at the 2020 Conference on Retroviruses and Opportunistic Infections in Boston this week.

Parks noted that previous research based on Centers for Disease Control and Prevention epidemiology data has demonstrated that HIV-positive men had a higher rate of death related to cardiovascular disease (CVD), compared with HIV-negative men between 1999 and 2013.

There are likely multiple drivers of this disparity, Parks said. Such factors may include the chronic inflammatory state to which even well-treated HIV gives rise and the metabolic effects—including diabetes—of antiretroviral (ARV) treatments. Additionally, evidence has suggested that HIV-positive individuals with CVD receive different care from health care providers than their HIV-negative counterparts.

Seeking to investigate differences in ACS-related care during hospitalization, Parks and her colleagues conducted a retrospective cohort study of data from Symphony Health. This database provided inpatient insurance claims, electronic medical records and outpatient pharmacy claims from individuals in all 50 states covered by all types of insurance.

The study cohort included adults with any hospital admission for ACS, as defined by billing codes for two types of heart attacks known as ST-elevation myocardial infarction (STEMI) and non-ST-elevation myocardial infarction (NSTEMI) as well as unstable angina.

There were data on about 1,125,000 people, including just over 6,600 people with HIV and about 1,118,500 people without the virus.

A number of key differences in demographics and rates of non-ACS health problems between the two groups were statistically significant, meaning they were unlikely to have been the result of chance.

The HIV-positive individuals were younger, with a median age of 57 years old compared with 67 years old among the HIV-negative people. A respective 71% and 60% of each group were men. For most people in the cohort, data on race were unavailable. However, the available data suggested higher proportions of African Americans and Latinos in the HIV-positive group.

People with HIV, compared with those who did not have the virus, also had higher rates of harmful substance use, smoking and non-ACS medical conditions, including coronary artery disease (4.7% and 3.6% of the HIV-positive and HIV-negative people, respectively), diabetes (51% versus 47%), peripheral vascular disease (35% versus 31%), chronic pulmonary disease (55% versus 41%), congestive heart failure (54% versus 48%), heart valve disease (32% versus 29%), liver disease (36% versus 12%), kidney disease (36% versus 26%) and a history of hepatitis C (18% versus 1.3%). The rates of obesity (26% overall) and high blood pressure (87% overall) were similar between the two groups.

In sum, people with HIV admitted to the hospital with ACS are more likely to be younger, male and have a greater burden of other health problems compared with their HIV-negative counterparts.

Overall, 14% of the cohort members had STEMI, 53% had NSTEMI and 33% had unstable angina, with no significant differences in these proportions between the HIV-positive and HIV-negative groups.

While hospitalized, 31.5% of the HIV-positive people received left heart catheterization, a treatment for ACS, compared with 33.2% of the HIV-negative people—a statistically significant difference.

During hospitalization, 5.6% (372) of the HIV-positive individuals and 5.4% (nearly 60,000) of the HIV-negative individuals died. Twelve months after their hospital stay, 10.9% (724) and 10.3% (nearly 115,000) of each respective group had died. The proportion of the cohort members readmitted to the hospital within 30 days of their discharge was 13.1% (869) and 8.9% (just under 100,000) in each respective group. The difference between all these rates was statistically significant.

After adjusting the data to account for differences between the study groups in their age, sex, other health conditions and ACS subtype, the study authors found that having HIV was associated with a 29% greater risk of dying in the hospital, a 32% greater risk of dying within 12 months and an 18% greater risk of hospital readmission within 30 days following hospitalization for ACS.

Next, the investigators restricted their analysis to the 2,335 HIV-positive and 416,000 HIV-negative individuals who received left heart catheterization. A respective 2.7% (63) and 2.9% (just over 12,000) of each group died in the hospital; 6.4% (150) and 5.9% (about 24,650) died within 12 months; and 11. 6% (270) and 8.4% (just over 35,000) were readmitted to the hospital within 30

days.

There was no statistically significant difference based on HIV status in the death rate during hospitalization among those who received left heart catheterization. However, HIV remained significantly associated with dying within 12 months of hospitalization, increasing the risk of that outcome by 25%, and with 30-day readmission to the hospital, increasing that risk by 15%.

Parks noted that the data set did not differentiate between rates of death due to any cause and CVD-related mortality.

She theorized that the differing rates of health interventions for ACS between people with and without HIV might partially explain the difference in the overall mortality rate between the two groups.

Next, the investigators looked at prescriptions filled by the cohort members after they left the hospital. However, this data set did not show the numbers of prescriptions actually written for the cohort members. Thus, it's possible that a substantial proportion of such prescriptions went unfilled and that health care providers were more proactive in prescribing treatments for the study population than it may appear.

Among those with HIV and those without, there were statistically significant differences in the proportion of those prescribed any medications (76% versus 74% received one), hepatitis C treatments (1.8% versus 0.1%), cholesterol-lowering statins (67% versus 74%), antiplatelet drugs (47% versus 52%), anticoagulants (12% versus 16%), beta blockers (68% versus 74%), angiotensin-converting-enzyme inhibitors (43% versus 44%), nitrates (32% versus 36%), angiotensin II receptor blockers (15% versus 19%) and diuretics (31% versus 39%).

About 45% of the prescriptions were for ARVs.

The study authors concluded that people with HIV appear to be less likely to receive appropriate medical therapy for ACS after being discharged from the hospital, compared with HIV-positive people. This finding, they theorized, may partially explain why HIV is associated with worse long-term outcomes among individuals hospitalized for ACS, even if they receive left heart catheterization and other coronary interventions during their hospital stay.

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