

Common tools underestimate cardiovascular event risk in people with HIV, finds trial

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The elevated cardiovascular disease risk among people with HIV is even greater than predicted by a standard risk calculator in several groups, including Black people and cisgender women, according to analyses

from a large international clinical trial presented at the [2024 Conference on Retroviruses and Opportunistic Infections \(CROI\)](#) in Denver. The risk of having a first major cardiovascular event was also higher than previously predicted for people from high-income regions and those whose HIV replication was not suppressed below detectable levels.

Researchers examined the incidence of major adverse cardiovascular events in people who did not take pitavastatin or other statins during the Randomized Trial to Prevent Vascular Events in HIV (REPRIEVE) trial, a large clinical trial to test whether pitavastatin—a cholesterol-lowering drug known to prevent cardiovascular disease—could prevent major adverse cardiovascular events, such as heart attacks and strokes, in people with HIV.

The scientists compared the incidence of cardiovascular events in the trial to the incidence predicted by standard estimates, which use the American College of Cardiology and American Heart Association's Pooled Cohort Risk Equations (PCE) score.

They found that the rate of cardiovascular events occurring in many groups of people differed from predicted rates, even considering that people with HIV have a higher overall risk of cardiovascular disease than people without HIV, including double the risk of major adverse cardiovascular events.

Notably, in high-income regions—as defined by the global burden of disease classification system—including North and South America and Europe, cardiovascular event rates were higher overall, with cisgender women experiencing about two and a half times more events than predicted, and Black participants having more than 50% higher event rates than predicted.

A second related analysis defined risk factors contributing to the

occurrence of major adverse cardiovascular events, such as heart attacks and strokes, in people with HIV in the trial. Using an analysis that considers many varying factors at once, the study team assessed risk factors contributing to these events.

They found that the risk of experiencing a first major adverse cardiovascular event was higher for people with HIV from high-income regions; older than 50 years; Black; current or former cigarette smokers; with hypertension or a family history of early cardiovascular disease onset; or with a detectable HIV viral load, the amount of HIV in the blood. Viral load is detectable when viral replication is not fully suppressed by HIV antiretroviral therapy.

The REPRIEVE trial was the largest trial to test a strategy for primary prevention of major adverse cardiovascular events in people with HIV and enrolled 7,769 people with HIV aged 40 to 75 years across five continents. The participant group was diverse with respect to race and gender and was assessed to be at a low-to-moderate risk of cardiovascular disease using PCE scores.

The primary analysis of this trial, [published in 2023](#), showed that people with HIV who took pitavastatin calcium had a 35% lower risk of major adverse cardiovascular events than those taking a placebo. These results led to the February 2024 release of recommendations for the use of statin therapy in people with HIV in the HHS clinical practice guidelines.

As demonstrated by these new analyses, data from the trial continue to address knowledge gaps about cardiovascular health in people with HIV.

The results of these two analyses reveal that while all people with HIV are at an elevated risk of cardiovascular events, the cardiovascular risk for some people may be underestimated by the current standard tools used to measure risk. The authors note that both traditional and HIV-

related [risk factors](#) are associated with increased risk of [cardiovascular disease](#) among people with HIV.

They suggest that updated tools are needed to facilitate precision, high-quality care of the diverse population living with HIV. Importantly, these studies underscore the necessity for representative inclusion in clinical trials.

More information: S Grinspoon et al. Performance of the ACC/AHA Pooled Cohort Equations for Risk Prediction in the Global REPRIEVE Trial. Conference on Retroviruses and Opportunistic Infections in Denver, Colorado. Tuesday, March 5, 2024.

MV Zanni et al. Factors Contributing to Risk of Major Adverse Cardiovascular Events among People with HIV in REPRIEVE. Conference on Retroviruses and Opportunistic Infections in Denver, Colorado. Tuesday, March 5, 2024.

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