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Association of cardiac troponin T with coronary atherosclerosis in asymptomatic primary prevention people with HIV

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Background

People with HIV (PWH) have a higher risk of coronary artery disease (CAD), a type of heart disease affecting the blood vessels that supply the heart, than people of similar age and sex without HIV. There are features of CAD, such as “vulnerable plaque,” that make it potentially more likely to cause a blood clot in the coronary artery resulting in a heart attack. These features are seen by heart imaging, including coronary computed tomography (CT) scans. A blood test that measures a protein released from injured heart muscle cells called cardiac troponin T (cTnT) can also be a sign of CAD. This test is used worldwide by healthcare providers to diagnose heart attacks. It may also help healthcare providers diagnose underlying heart disease in people without symptoms of CAD.

Participants in this study were enrolled in the Mechanistic Substudy of REPRIEVE. REPRIEVE is a large clinical research trial that showed that treatment with pitavastatin (a cholesterol-lowering medication) reduces heart disease (including heart attack and stroke) in PWH by 35%. U.S. REPRIEVE participants in the Mechanistic Substudy underwent main REPRIEVE trial procedures, as well as CT scans of the blood vessels surrounding the heart and blood tests measuring blood levels of inflammation markers.

Goals of the Study

We tested whether blood levels of cTnT were related to CAD and features of CAD, including “vulnerable plaque” features. We also examined whether the association between cTnT level and CAD was independent of the presence of known traditional risk factors for CAD, such as high blood pressure and cigarette smoking.

➤ The participants:

- 708 REPRIEVE participants
 - Average age: 51 years
 - Current Smoking: 24%
 - 10-year risk of a fatal/non-fatal heart attack or stroke: 4.4%

➤ The findings:

- Progressively higher levels of cTnT, though well below what is seen when diagnosing a heart attack, were associated with:
 - the presence of CAD and “vulnerable plaque” features, and
 - a high coronary artery calcium score
- These associations remained strong when accounting for traditional risk factors for CAD. For example, participants with the top 20% of cTnT levels had a 2.6-times greater risk of a high coronary artery calcium score (coronary calcium score > 100) compared to participants without detectable cTnT levels.

In Summary: Among PWH participating in the REPRIEVE study, progressively higher cTnT levels, still well below those seen in patients having a heart attack, are associated with the presence of CAD and higher-risk features of CAD.

REPRIEVE Trial Website: reprivetrial.org

The findings shared in this summary are from the REPRIEVE population at a specific point in time. These findings are descriptive and not intended to change clinical care. If you have questions about what you've read, please talk to members of the REPRIEVE study team at your local site or a health care provider