# CVD Risk From Kaletra Might Be Lower Than Suspected

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People taking a regimen containing Kaletra (lopinavir plus ritonavir) did have elevations in triglycerides, as has been reported in other studies, but they did not have a related increase in other measures of cardiovascular (CVD) risk. These data, which were published in the May issue of *AIDS Research and Human Retroviruses*, found that the greatest concerns for CVD—aside from triglyceride elevations—were factors not associated with Kaletra use.

CVD is a growing concern for people with HIV. Rates of heart attacks are on the rise, and experts predict they will continue to rise as more and more people with HIV enter their 50s and 60s. As a result, providers are looking for ways to limit their patients' risk of CVD.

One potential risk factor that has received some attention is the role of specific antiretroviral (ARV) drugs in increasing CVD risk. In particular, protease inhibitors (PIs) have been found in some studies to increase the risk of heart attacks and other signs of CVD. This increased risk has been attributed to the fact that many of the older PIs caused significant increases in triglycerides and low-density lipoprotein (LDL) cholesterol, a lipid often called the "bad" cholesterol for its role in CVD risk.

Kaletra is one of the PIs known for some of the largest increases in triglycerides, and researchers and providers have therefore assumed it could also contribute to a higher risk for CVD. This led, in part, to the removal of the drug from the "preferred" category of ARVs to the "alternative" category in the U.S. Department of Health and Human Services (DHHS) HIV treatment guidelines.

To better understand the individual ways that Kaletra might contribute to CVD risk, Enos Bernasconi, MD, from the Hospital of Lugano in Switzerland, and his colleagues studied blood samples from 74 HIV-positive people enrolled in the Swiss HIV Cohort Study. Specifically, Bernasconi's team looked at several measures of CVD risk: triglycerides and two types of low-density lipoprotein (LDL) cholesterol. Elevations in the two types of LDL they looked at—very-low-density lipoprotein (VLDL) and small dense LDL-apolipoprotein B-100 (sdLDL-apoB)—have been associated with a higher risk for CVD, particularly when found in combination with high triglycerides.

As has been found before, Kaletra therapy did result in an increase in triglycerides. In fact, more than one third (38 percent) had triglyceride levels higher than 150 milligrams per deciliter (mg/dl)

in blood—a threshold beyond the point when CVD risk increases—before they ever started taking Kaletra. After beginning therapy, that number increased to 57 percent.

What Bernasconi and his colleagues also found, however, was that the elevations in triglycerides were not significantly associated with an increase in the two types of LDL cholesterol they measured. There was a small trend within the first year on treatment for an increase in sdLDL-apoB, but it was small enough that it could have occurred by chance and it diminished after the first year. According to the authors, this suggests that the impact of the increased triglyceride levels on CVD risk might be lower than has been assumed.

The study is small, and increases in triglycerides alone are a concern; however, the authors comment that other CVD risks are perhaps of equal or greater concern and should be monitored.

“The risk of cardiovascular events in our population remains a concern mainly due to the high percentage of patients with low HDL, frequent smoking and inflammatory factors associated with HIV infection,” they conclude.

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