HIV Affects Body Shape and Lipids in Women

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HIV-positive women, especially white women, are more likely than HIV-negative women to have belly fat accumulation and changes in cholesterol and triglycerides that indicate an increased risk for heart disease and strokes, say the authors of a study published in the May 1 issue of the *Journal of Acquired Immune Deficiency Syndromes* (JAIDS). Although some antiretroviral (ARV) drugs can have an impact on lipids (cholesterol and triglycerides), HIV itself appears to exert a strong effect on women's body shapes and triglyceride levels in particular.

Another recent study found unhealthy body shape changes in HIV-positive women. This study, however, which depended on simple waist and hip measurements, could not distinguish between the soft fat that sits just beneath the skin, called subcutaneous adipose tissue (SAT), and the more dense fat that sits deep in the body between the organs, called visceral adipose tissue (VAT). In HIV-negative people, increased VAT in the upper trunk, more so than SAT, has been strongly associated with increased heart disease risk.

Judith Currier, MD, of the Department of Medicine at the University of California Los Angeles, and her colleagues from the Fat Redistribution and Metabolic Changes in HIV Infection (FRAM) study carried out sophisticated assessments of body fat using magnetic resonance imaging (MRI) scans and also measured lipids in both HIV-positive and HIV-negative women. Of the 129 HIV-negative women enrolled, the average age was 42 years, 49 percent were African American and 11 percent were current smokers. In comparison, the 157 HIV-positive women enrolled in the study had an average age of 39, 53 percent were African American and 11 percent were Hispanic. Forty-eight percent of the HIV-positive women were smokers, 73 percent were on ARV therapy, and their average CD4 count was 359.

Among the HIV-positive women, Currier's group found that the African-American women had less VAT than the white women. The opposite was true, however, among the HIV-negative women. The HIV-positive women of both races had higher triglycerides than the HIV-negative women, and this difference held steady when the researchers controlled for a number of factors, including body fat composition. Having more upper trunk VAT, and less SAT in the legs, was associated with having higher triglycerides, as was having a high viral load.

Though ARV drugs had some impact on lipids—for instance, being on a protease inhibitor or efavirenz (found in Sustiva and Atripla) was associated with higher triglycerides; being on ritonavir

(found in Norvir and Kaletra) was associated with higher low density lipoprotein (LDL) cholesterol; and being on Viramune (nevirapine) was associated with higher high density lipoprotein (HDL) cholesterol—Currier's team points to the negative impact of viral load on lipids and hypothesizes that controlling HIV replication may help most to decrease the risk for heart disease and stroke in HIV-positive women. It should also be noted that HIV-positive women were nearly five times as likely as HIV-negative women to be smokers, which has been associated with body fat accumulation and lipid changes in studies of HIV-negative people; however, the authors did not report on the impact of smoking in this study.

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