Lipodystrophy Linked to Older HIV Meds Appears Irreversible

Research indicates that Retrovir, Zerit and Videx are associated with abnormal redistribution of body fat.

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Lipodystrophy, or the abnormal redistribution of body fat, which is tied to the use of the earliest antiretroviral (ARV) medications and associated with multiple risk factors for cardiovascular disease (CVD), is apparently irreversible.

Research has established that the thymidine analogue subclass of nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs)—including Retrovir (zidovudine, or AZT) and Zerit (stavudine, or d4T)—as well as the NRTI Videx (didanosine, or ddI) are associated with lipodystrophy. (These three ARVs are no longer commonly in use in the United States.) In particular, these three ARVs are linked to a decrease in subcutaneous adipose tissue (SAT), or body fat just below the skin, and an increase of visceral adipose tissue (VAT), or fat surrounding the organs. VAT is itself a risk factor for CVD.

Retrovir is included in Combivir (zidovudine/lamivudine) and Trizivir (abacavir/zidovudine/lamivudine).

Publishing their findings in the journal AIDS and presenting them at the 2019 Conference on Retroviruses and Opportunistic Infections (CROI) in Seattle, researchers studied 761 people with HIV who participated in the Copenhagen Comorbidity in HIV Infection study in Denmark. They matched these individuals three to one according to age and sex with 2,283 HIV-negative controls who were members of the Copenhagen General Population Study.

The participants were all older than 40 years old.

The HIV-positive individuals had an average age of 54.2 years old and 85.5 percent of them were male. A total of 1.8 percent of them had a CD4 count below 200; 6.8 percent had a CD4 count between 200 and 349; 75.8 percent had a CD4 count above 500. A total of 45.9 percent of them had a lowest-ever CD4 count below 200. A total of 99.8 percent of them were taking ARVs, and 96.2 percent had a fully suppressed viral load.

An average of 16 years had passed since the people with HIV had been diagnosed with the virus

and an average of 12.1 years had passed since they began ARV treatment.

A total of 60.5 percent of the HIV-positive participants had been exposed to Retrovir, Zerit or Videx, including 1.4 percent who were currently taking any of these medications.

CT scans indicated that the HIV-positive participants had an average of 104.4 cubic centimeters of VAT, compared with 106.5 cubic centimeters among the HIV-negative controls. The two groups had 140.7 cubic centimeters and 184.8 cubic centimeters of SAT, respectively. The VAT-to-SAT ratio was 1.0 among the people with HIV and 0.6 among those without the virus.

After adjusting the data to account for various differences between the study participants, the study authors found that, among people with HIV, exposure to Retrovir, Zerit or Videx was associated with 21.6 cubic centimeters more VAT compared with a lack of exposure to those ARVs. For each additional year of exposure to any of those three medications, the participants had an additional 3.7 cubic centimeters of VAT. The analysis also indicated that each year that passed after discontinuance of such ARVs was associated with a 1.1 cubic centimeter decline in VAT; however, this particular finding was not statistically significant, meaning it could have been driven by chance.

Among people with HIV, prior exposure to Retrovir, Zerit or Videx, compared with a lack of such exposure, was associated with a 1.62-fold increased risk of high blood pressure, a 1.49-fold increased risk of high cholesterol and a 1.4-fold increased risks of low HDL cholesterol.

For more information about lipodystrophy, including to learn about treatments for the condition, click here.

To read the study abstract, click here.

To read the conference abstract, click here.

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