Teens May See Increased Torso Fat but Better Cholesterol With Tivicay

The small single-site study will need to be replicated in a larger group of adolescents.

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Do teens metabolize integrase inhibitors the same as adults? A small study of Italian adolescents published in The Pediatric Infectious Disease Journal suggests there may be some differences.

We already know that antiretrovirals (ARVs) can lead to weight gain for everyone but especially for women. Weight gain is especially associated with the integrase inhibitor dolutegravir (Tivicay, also in the Triumeq, Dovato and Juluca combination pills). But integrase inhibitors have also been linked to high cholesterol and diabetes in adults.

However, little data are available on dolutegravir use in teens. Vania Giacomet, MD, of the department of biomedical and clinical sciences at the University of Milan, and colleagues observed the outcomes of 13 adolescents living with HIV who received care at the pediatric infectious disease clinic at Luigi Sacco Hospital. The participants were between ages 12 and 19.

All 13 teens switched from another regimen to Triumeq. They had blood draws at the beginning of the analysis period, then at 3, 6 and 12 months. Clinicians took body fat readings from the torso and calculated body mass index at the start of the study and after a year.

At the start of the study period, 11 of the 13 participants had an undetectable viral load. The other two had a viral load of 705 or below at baseline and returned to undetectable after three months and stayed there.

None of the teens saw their body mass index, percentage of body fat or fatty tissue in their arms and legs change. But when researchers measured the teens' body fat in their torso, that area showed "remarkable" increases in body fat, from 24% to 27%.

What this means for the teens' health is unclear, however. After all, the teens saw their total cholesterol decrease by 41%, and they had a 23% drop in their low-density lipoprotein, or so-called bad cholesterol. High-density lipoprotein (so-called good cholesterol) stayed roughly the same. Blood triglycerides decreased 62% initially but then started rising again after three months. Blood glucose didn't change.

Giacomet and colleagues suggested that the drop in cholesterol may be due to the switch from protease inhibitor–based ARV regimens to the dolutegravir-based one. But the increase in fat in the torso was different from that found in adults. It may be that these findings were unique to these 13 teens. It's possible that in a larger study, the body fat distribution difference could disappear.

"Our data showed that adolescents living with HIV switching to [dolutegravir] experience an increase in trunk [torso] fat and an improvement in lipid profile, without modification of glucose metabolism," wrote Giacomet and colleagues. "These changes may effect cardiometabolic risk, but further studies are needed to clarify this issue."

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