BODY FAT AND LIPID PROFILE CHANGES IN HIV-INFECTED YOUTHS SWITCHED TO DOLUTEGRAVIR 0827

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BACKGROUND

- HIV-lipodystrophy syndrome consists in abnormal distribution of adipose tissue and alteration of glucose and lipids blood concentration [1].
- Many studies established a key role of older NRTIs and PIs in lipodystrophy development, but few data are available for newer drugs, such as dolutegravir, a second-generation INSTI assumed to be responsible for weight gain in adults [2-5].
- The aim of this study was to evaluate the effects of dolutegravir on body composition and glico-lipidic metabolism in HIV-infected youths.

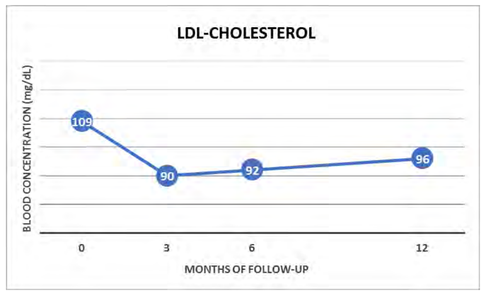
METHODS

- We enrolled 14 patients (mean age 16.1 years, 12 girls) previously treated with PI or NNRTI-based regimen and switched to ABC/3TC/DTG.
- Blood concentration of glucose, total and fractionated cholesterol and triglycerides were measured at baseline and after 3, 6 and 12 months. Body composition was evaluated by dual-energy x-ray absorptiometry (DXA) and body mass index (BMI) was calculated at baseline and after 12 months.
- Statistical comparisons were performed by ANOVA for repeated measures.

Dolutegravir-based therapy seems to be associated to *central fat accumulation* in HIV-infected adolescents and youths, but also induces an *improvement in lipid profile*.

RESULTS

- Mean blood concentration of glucose and HDL cholesterol did not change significantly during the follow-up. Conversely, mean total cholesterol concentration was 190, 159, 161 and 168 mg/dL at baseline, 3, 6 and 12 months, respectively (p = 0.0057). Mean LDL cholesterol values were 109, 90, 92 and 96 mg/dL at baseline, 3, 6 and 12 months (p = 0.025). Mean triglycerides concentration decreased significantly after 3 months of therapy (114 and 64 mg/dL, p = 0.007).



Fat percent (%)	*Baseline*	*12 months*	*p-value*
TBLH	28.0	27.2	0.16
Trunk	24.9	25.1	0.0413
Legs	31.6	29.9	0.65
Arms	29.2	27.0	0.97
Fat ratio	***Baseline***	***12 months***	***p-value***
Trunk/TBLH	0.45	0.46	0.0485
Legs/TBLH	0.44	0.43	0.089
Limbs/trunk	1.29	1.23	0.0495

- BMI was 20.4 at baseline and 20.9 kg/m^2 after 12 months (p = 0.09). Body fat percent did not change significantly during the study (p = 0.16), but we observed a remarkable increase in trunk body fat percent (p = 0.0413). In particular, trunk/total body less head (TBLH) fat ratio increased significantly (p = 0.0485), while limbs/trunk fat ratio decreased significantly (p = 0.0495).

CONCLUSIONS

- Our study shows that a dolutegravir-based regimen induces a significant improvement in lipids blood concentration, but no interference on glucose metabolism.
- On the other hand, we observed a relevant increase in trunk fat without alterations of BMI and body fat percent.
- Future studies are needed to evaluate if this increase in trunk fat could impact on body metabolism.

ADDITIONAL KEY INFORMATION

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