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Improvements in facial lipoatrophy at 48 weeks following substitution of a thymidine analogue with tenofovir (TDF) or abacavir (ABC): a randomized, open-label study in people with lipoatrophy and virological suppression on HAART

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OBJECTIVES: To compare abacavir to tenofovir DF when used as substitutes for a thymidine analogue with regards to limb fat recovery and changes in facial contour.

METHODS: We completed a sub-study of 47 lipoatrophic HIV-infected subjects as part of the RAVE study. Patients were on HAART (11 with zidovudine and 36 stavudine), naive to abacavir and tenofovir DF and had a current viral load <50 c/ml for >24 weeks. Limb fat was measured by dual-energy X-ray absorptiometry (DEXA) and 3D facial laser imaging was performed at baseline and 48 weeks to detect changes in facial volume overlying the forehead and both cheeks. Associations between the face imaging parameters and other measures of body composition at 48 weeks was examined using Spearman's rank correlation.

RESULTS: Twenty-four patients received abacavir and 23 tenofovir DF. At baseline 39/47 (84.8%) reported facial lipoatrophy with 32/47 (68.1%) reporting no change or an improvement in the severity of facial lipoatrophy at week 48; with no difference by treatment group (P=0.83, χ^2 test). At week 48 the mean volume difference overlying the forehead area was –138 mm^3 (SD 347) and both cheek areas was 2539 mm^3 (SD 5346), with no difference by treatment group (P=0.41 and P=0.88 respectively). The mean volume increase overlying the cheek area is similar to that observed following collagen injections. Mean limb fat at baseline was similar at randomisation for the abacavir and TDF groups (mean [SD]: 2.9 [0.9] kg and 3.4 [2.1] kg respectively). At week 48 there

were similar increases in limb fat in both treatment groups (mean 0.36kg). There was a significant correlation between the total cheek volume change and limb fat change (*P*=0.004). This remains significant after adjusting for weight gain (*P*=0.02).

CONCLUSIONS: In lipoatrophic HIV-infected adults, switching from a thymidine analogue to abacavir or tenofovir DF for 48 weeks leads to similar significant improvements in both limb fat and facial lipoatrophy. Changes in total facial cheek volume significantly correlate with increases in limb fat shown by DEXA imaging.


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