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DIFFERENCES IN POSTPRANDIAL LIPID METABOLISM IN PATIENTS WITH PI-ASSOCIATED AND NRTI-ASSOCIATED LIPODYSTROPHY

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BACKGROUND: Patients treated with dual NRTI therapy without PI may develop changes in body composition that are clinically indistinguishable from that seen in patients on combined NRTI with PI, implicating an independent effect of NRTI in HAART-lipodystrophy. However, the extent to which NRTI-therapy is associated with comparable metabolic sequelae to that exhibited on PI-containing therapy remains unclear.

OBJECTIVES: To use labelled fatty acids to describe the postprandial metabolism of dietary lipid in HIV-positive men on dual nucleoside therapy with self reported lipodystrophy who have never received PI (NRTI-L: $n=7$).

DESIGN: [1-¹³C]Palmitic acid was given within an emulsion as part of a test meal following an overnight fast. Total plasma triacylglycerol (TAG), non-esterified fatty acid (NEFA), ¹³C-TAG and ¹³C-NEFA were measured before and for 7 h after the meal by GC-CIRMS. The results were then compared to that seen in a PI-associated lipodystrophy group of HIV-positive men (PI-L: $n=6$) using the same study design.

RESULTS: NRTI-L patients had lower plasma TAG and NEFA concentrations at baseline with smaller changes in TAG and NEFA throughout the postprandial period than PI-L patients (all $P<0.05$). NRTI-L patients had lower and less prolonged increases in ¹³C-TAG than that seen in PI-L patients (threefold smaller AUC; $P<0.05$) but greater and more prolonged increases in ¹³C-NEFA concentration (1.5- fold greater AUC; $P<0.05$).

CONCLUSIONS: While the PI-treated lipodystrophy group show an increased retention time of dietary lipid within the circulation as lipoprotein TAG, the NRTI-treated lipodystrophy group show an increased retention time of dietary lipid within the circulation as NEFA. These results suggest that there may be different effects of these two drug classes on lipid metabolism *in vivo* which may influence the development of the changes in body composition.

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