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Changes in body composition and cardiovascular measures in hypercholesterolaemic HIV-infected men treated with pravastatin: a randomized, placebo-controlled study

PWG Mallon^{1,2}, J Miller², J Kovacic³, J Kent-Hughes², R Norris², K Samaras⁴, M Feneley³, DA Cooper^{1,2} and A Carr²

¹National Centre in HIV Epidemiology and Clinical Research, University of New South Wales; ²HIV, Immunology and Infectious Diseases Clinical Services Unit, St Vincent's Hospital; ³Department of Cardiology, St Vincent's Hospital; ⁴Garvan Institute of Medical Research, Sydney, Australia

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OBJECTIVES: Protease inhibitor (PI) use is associated with hypercholesterolaemia, peripheral lipodystrophy and central fat accumulation. We aimed to determine the effect of the HMG-CoA reductase inhibitor pravastatin in HIV-infected, PI-treated men with hypercholesterolaemia.

METHODS: A randomized, placebo-controlled, 16-week study of pravastatin 40mg daily in 33 HIV-infected men on stable PI therapy (HIV RNA <400 copies/ml) with high fasting cholesterol (>6.5 mmol/l). Subjects commenced a lipid-lowering diet at week 0 and were randomized to pravastatin or placebo at week 4. Primary endpoint was time-weighted change (AUC) in total cholesterol from week 0. Secondary endpoints included AUC cholesterol from week 4 (start of pravastatin), body composition (DEXA and abdominal CT), high density lipoprotein cholesterol, triglycerides, glucose, insulin, endothelial function (flow mediated vasodilatation [FMV]) and markers of cardiovascular risk (homocysteine, hs-CRP, fibrinogen and PAI-1). Non-parametric analyses were used and results presented as median [IQR].

RESULTS: Of 33 men enrolled (pravastatin n=16), 31 completed the study. Groups were matched for baseline cholesterol (7.6 [1.7] pravastatin vs 7.6 [1.4] mmol/l placebo) and body composition, but the pravastatin group was older (52 [12] vs 43 [9] years) with greater endothelial dysfunction (%FMV 3.2 [3] vs 4.7 [3.4]). Although there was no significant difference in AUC cholesterol from week 0 between groups, AUC cholesterol

from week 4 decreased more in the pravastatin group (Table 1). Total fat, predominantly limb fat, increased significantly in the pravastatin group. Apart from homocysteine, which decreased in the pravastatin group, there were no significant differences in other cardiovascular, lipid, glucose or dietary parameters.

Table 1.

Change in parameter	Pravastatin	Placebo	P
Cholesterol AUC wk 0–16 (mmol.l–1/wk)	–0.6 [0.98]	–0.4 [0.98]	0.8
Cholesterol AUC wk 4–16(mmol.l–1/wk)	–0.82 [0.97]	–0.34 [0.91]	0.04
Total fat (kg) (DEXA)	+1.03 [1.94]	–0.09 [1.35]	0.01
Limb fat (kg) (DEXA)	+0.72 [1.55]	+0.19 [0.48]	0.04
% intra-abdominal fat (CT)	–2.9 [10.9]	0.08 [9.4]	0.7
Homocysteine (µmol/l)	–2.2 [3.1]	+0.5 [2.5]	0.046

CONCLUSIONS: Despite limited effects on cholesterol, use of pravastatin 40mg daily for 12 weeks in this population resulted in significant increases in limb fat.



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