VASCULAR DISEASE

SIMVASTATIN IMPROVES ENDOTHELium-DEPENDENT DILATION, BUT REDUCes ADIPONECTIN LEVELS AND INSULIN SENSITIVITY IN HYPERCHOLESTEROLEMIC PATIENTS

ACC Poster Contributions
Georgia World Congress Center, Hall B5
Monday, March 15, 2010, 9:30 a.m.-10:30 a.m.

Session Title: Vascular Biology/Atherosclerosis/Thrombosis/Endothelium
Abstract Category: Vascular Biology/Atherosclerosis/Thrombosis/Endothelium
Presentation Number: 1164-334

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Background: Clinical trials suggest that some statin treatments may increase the incidence of diabetes despite reductions in LDL cholesterol and improvement in endothelial dysfunction.

We hypothesized that simvastatin may reduce adipocytokines levels and insulin sensitivity in hypercholesterolemic patients.

Methods: A randomized, single-blind, placebo-controlled, parallel study was conducted in 44 patients on placebo, and in each 45 patients given daily simvastatin 20 and 40 mg, respectively during a 2 month treatment period.

Results: Simvastatin 20 and 40 mg significantly reduced total cholesterol (mean % changes; 28 and 37%), LDL cholesterol (41 and 51%) and apolipoprotein B levels (32 and 36%) and improved FMD (40 and 58%) after 2 months therapy when compared with baseline (all P<0.001 by paired t-test) or when compared with placebo (all P<0.001 by ANOVA). Simvastatin 20 and 40 mg significantly increased fasting plasma insulin (57 and 21%), decreased plasma adiponectin levels (9 and 8%) and insulin sensitivity (6 and 6%) when compared with baseline (all P<0.05 by paired t-test) or compared with placebo (P=0.003 for insulin by ANOVA on Ranks and P=0.008 for adiponectin and P=0.017 for QUICKI by ANOVA). Effects of simvastatin 20 and 40 mg on leptin and resistin levels were not significant when compared with placebo. The magnitude of these percent changes (FMD, adiponectin, and QUICKI) were not significantly different between different doses of simvastatin therapy despite dose-dependent changes in reduction of LDL cholesterol and apolipoprotein B levels.

Conclusions: Simvastatin significantly improved endothelium-dependent dilation, but reduced adiponectin levels and insulin sensitivity in hypercholesterolemic patients independent of dosage and extent of LDL cholesterol and apolipoprotein B reduction.