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ATHEROSCLEROSIS

CORONARY EFFECTS OF INTENSIVE STATINS

In mid November, Stephen Nicholls *et al.* presented the findings of the SATURN study at the 2011 AHA Scientific Sessions, and simultaneously published them in the *New England Journal of Medicine*. Maximal doses of rosuvastatin or atorvastatin resulted in regression of coronary atherosclerosis without causing any major safety concerns.

Despite multiple studies comparing the effects of rosuvastatin and atorvastatin on blood lipid levels, no previous randomized, controlled trial has compared the direct effects of these statins on atherosclerotic progression. Nicholls and colleagues therefore used intravascular ultrasonography to compare the effects of maximal doses of rosuvastatin (40 mg daily) or atorvastatin (80 mg daily) on atherosclerotic plaque size in the coronary arteries of 1,039 patients.

Rosuvastatin and atorvastatin were both associated with small but significant reductions in percent atheroma volume, the primary efficacy end point, over the 104-week follow-up period (median changes of –1.22% for rosuvastatin, and –0.99% for atorvastatin, P <0.001 for both; P=0.17 for between-group comparison). Reduction in percent atheroma volume was noted in 68.5% and 63.2% of the rosuvastatin and atorvastatin groups, respectively (P=0.07). For total atheroma volume—the secondary efficacy end point—modestly greater reductions were found in the rosuvastatin group compared with the atorvastatin group (–6.39 mm^3 vs –4.42 mm^3, P=0.01), and more patients in the rosuvastatin group exhibited disease regression (71.3% vs 64.7%, P=0.02).

At the 104-week follow-up, levels of LDL cholesterol were 7.5 mg/dl lower in the rosuvastatin group than in the atorvastatin group (62.6 ± 1.0 mg/dl vs 70.2 ± 1.0 mg/dl, P <0.001). Accordingly, more patients in the rosuvastatin group had LDL-cholesterol levels below current treatment targets of 100 mg/dl (95.4% vs 92.3%, P=0.04), and 70 mg/dl (72.1% vs 56.1%, P <0.001). Rosuvastatin was also associated with 1.8 mg/dl higher HDL-cholesterol levels than atorvastatin (50.4 ± 0.5 mg/dl vs 48.6 ± 0.5 mg/dl, P=0.01).

The researchers point out that their data "indicate that coronary artery disease can regress if the favorable levels of LDL and HDL cholesterol … attained with statin therapy in this study are achieved," and recommend "further study in clinical trials."

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Original article Nicholls, S. J. *et al.* Effect of two intensive statin regimens on progression of coronary disease. *N. Engl. J. Med.* doi:10.1056/NEJMoa1110874