

Response to statin therapy in obstructive sleep apnea syndrome: a multicenter randomized controlled trial

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RATIONALE:

Accumulated evidence implicates sympathetic activation as inducing oxidative stress and systemic inflammation, which in turn lead to hypertension, endothelial dysfunction, and atherosclerosis in obstructive sleep apnea (OSA). Statins through their pleiotropic properties may modify inflammation, lipid profile, and cardiovascular outcomes in OSA.

METHODS:

This multicenter, randomized, double-blind study compared the effects of atorvastatin 40 mg/day versus placebo over 12 weeks on endothelial function (the primary endpoint) measured by peripheral arterial tone (PAT). Secondary endpoints included office blood pressure (BP), early carotid atherosclerosis, arterial stiffness measured by pulse wave velocity (PWV), and metabolic parameters.

RESULTS:

51 severe OSA patients were randomized. Key demographics for the study population were age 54 +/- 11 years, 21.6% female, and BMI 28.5 +/- 4.5 kg/m(2). In intention to treat analysis, mean PAT difference between atorvastatin and placebo groups was 0.008 (-0.29; 0.28), P = 0.979. Total and LDL cholesterol significantly improved with atorvastatin. Systolic BP significantly decreased with atorvastatin (mean difference: -6.34 mmHg (-12.68; -0.01), P = 0.050) whereas carotid atherosclerosis and PWV were unchanged compared to the placebo group.

CONCLUSION:

In OSA patients, 3 months of atorvastatin neither improved endothelial function nor reduced early signs of atherosclerosis although it lowered blood pressure and improved lipid profile. This trial is registered with NCT00669695.

R sum  en
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