

Effects of policosanol and lovastatin on lipid profile and lipid peroxidation in patients with dyslipidemia associated with type 2 diabetes mellitus.

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In this pilot, randomized, double-blind study, we compared the effects of policosanol and lovastatin on lipid profile and lipid peroxidation in patients with dyslipidemia and type 2 diabetes mellitus. After 4 weeks on a cholesterol-lowering diet, 36 patients were randomized to policosanol (10 mg/day) or lovastatin (20 mg/day) tablets o.i.d. for 8 weeks. Policosanol significantly ($p < 0.001$) lowered serum low-density lipoprotein-cholesterol (LDL-C) (29.9%), total cholesterol (21.1%), triglycerides (13.6%) and the LDL-C/high-density lipoprotein-cholesterol (HDL-C) (36.7%) and total cholesterol/HDL-C (28.9%) ratios and significantly ($p < 0.01$) increased HDL-C (12.5%). Lovastatin significantly ($p < 0.001$) lowered LDL-C (25%), total cholesterol (18%), triglycerides (10.9%) and the LDL-C/HDL-C (30.4%) and total cholesterol/HDL-C ratios (23.9%) and significantly ($p < 0.01$) raised HDL-C (8.3%). Policosanol was more effective ($p < 0.05$) than lovastatin in reducing both ratios and in increasing ($p < 0.05$) HDL-C. Policosanol, but not lovastatin, significantly raised the lag time (20.9%) of Cu⁺²-induced LDL peroxidation and total plasma antioxidant activity (24.2%) ($p < 0.05$). Both policosanol and lovastatin significantly decreased the propagation rate (41.9% and 41.6% respectively, $p < 0.001$), maximal diene production (8.3% and 5.7%) and plasma levels of thiobarbituric acid reactive substances (9.7% and 11.5%, $p < 0.001$). Both treatments were well tolerated. Only one patient in the lovastatin group withdrew from the trial due to adverse events. In conclusion, policosanol and lovastatin administered short term to patients with dyslipidemia secondary to type 2 diabetes were effective in lowering cholesterol and in inhibiting the extent of lipid peroxidation. Policosanol (10 mg/day) was slightly more effective than lovastatin (20 mg/day) in reducing the LDL-C/HDL-C and total cholesterol/HDL-C ratios, in increasing HDL-C levels and in preventing LDL oxidation. Nevertheless, since this was a pilot study, further clinical studies performed in larger sample sizes of diabetic patients are needed for definitive conclusions.

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