Abstract

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Response of hypercholesterolemic subjects to administration of tocotrienols.

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OBJECTIVE: The cholesterol-suppressive actions of Palmvitee and gamma-tocotrienol were assessed in hypercholesterolemic subjects after acclimation to the American Heart Association Step 1 dietary regimen for four and eight weeks, respectively.

RESULTS: The four-week dietary regimen alone elicited a 5% decrease ($P < 0.05$) in the cholesterol level of the 36 subjects. Subjects continuing on the dietary regimen for a second four-week period experienced an additional 2% decrease in their cholesterol levels. Dietary assessments based on unanticipated recalls of 24-h food intake records suggest that significant reductions in energy and fat, predominantly in saturated fat, intakes are responsible. The subjects experienced significant Palmvitee- and gamma-tocotrienol-mediated decreases in cholesterol. The group of subjects acclimated to the dietary regimen for four weeks responded to Palmvitee (a blend of tocols providing 40 mg alpha-tocopherol, 48 mg alpha-tocotrienol, 112 mg gamma-tocotrienol, and 60 mg delta-to-cotrienol/day for four weeks) with a 10% decrease in cholesterol ($P < 0.05$). Dietary assessments showed no further change in energy and fat intakes. alpha-Tocopherol attenuated the cholesterol-suppressive action of the tocotrienols. The second group of subjects, acclimated to the dietary regimen for eight weeks, received 200 mg gamma-tocotrienol/d for four weeks. The cholesterol-suppressive potency of this alpha-tocopherol-free preparation was calculated to be equivalent to that of the mixture of tocotrienols (220 mg) used in the prior study. Cholesterol levels of the 16 subjects in the second group decreased 13% ($P < 0.05$) during the four-week trial.

SUMMARY: Plasma apolipoprotein B and ex vivo generation of thromboxane B2 were similarly responsive to the tocotrienol preparations, whereas neither preparation had an impact on high density lipoprotein cholesterol and apolipoprotein A-1 levels.

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