

Effect of Mixed-Tocotrienols in Hypercholesterolemic Subjects

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Abstract

Background: Studies on the cholesterol lowering activity of tocotrienols have yielded mixed results, with some showing cholesterol lowering effect while some showing no activity.

Aim: A randomized, double-blind, parallel group study was conducted to investigate the cholesterol lowering activity of tocotrienols.

Methods: Thirty-two hypercholesterolemic subjects were randomly assigned to orally receive either 300 mg of mixed tocotrienols capsules daily or placebo capsules containing 300 mg of soya bean oil for a period of 6 months. The subjects were monitored before supplementation and monthly thereafter for their serum cholesterol as well as tocotrienol and tocopherol concentrations.

Results: The serum total cholesterol and low density lipoprotein (LDL) cholesterol of the subjects in the tocotrienol supplementation group were decreased significantly by $-8.9 \pm 0.9\%$ and $-12.8 \pm 2.6\%$ respectively after 4 months of supplementation and the reduction persisted till the end of the 6-month study, with a reduction of $-10.8 \pm 1.0\%$ and $-17.3 \pm 1.8\%$, respectively

from baseline. Moreover, there was a 22-fold increase in the total tocotrienol concentrations from baseline during supplementation compared to the placebo group, while the concentration of α -tocopherol recorded only a modest increase. On the other hand, the serum cholesterol, total tocotrienol and α -tocopherol concentrations of subjects in the placebo group remained essentially unchanged.

Conclusions: Supplementation with mixed tocotrienols at dose of 300 mg per day resulted in the lowering of the serum total and LDL cholesterol levels after 5 months of supplementation.

Keywords: tocotrienols, cholesterol-lowering, total cholesterol, LDL cholesterol, tocopherols