Effects of coenzyme Q10 supplementation on inflammatory markers (high-sensitivity C-reactive protein, interleukin-6, and homocysteine) in patients with coronary artery disease.

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Abstract

OBJECTIVE: The purpose of this study was to investigate the effects of coenzyme Q10 supplementation on inflammatory markers (high-sensitivity C-reactive protein [hs-CRP], interleukin-6 [IL-6], and homocysteine) in patients with coronary artery disease (CAD).

METHODS: Patients with CAD (n = 51) were randomly assigned to a placebo group (n = 14) or one of two coenzyme Q10-supplemented groups (60 mg/d, Q10-60 group, n = 19; 150 mg/d, Q10-150 group, n = 18). The intervention was administered for 12 wk. Plasma coenzyme Q10 concentration, inflammatory markers (hs-CRP, IL-6, and homocysteine), malondialdehyde, and superoxide dismutase activities were measured.

RESULTS: Forty subjects with CAD completed the intervention study. The plasma coenzyme Q10 concentration increased significantly in the Q10-60 and Q10-150 groups (P < 0.01). After 12 wk of intervention, the inflammatory marker IL-6 (P = 0.03) was decreased significantly in the Q10-150 group. Subjects in the Q10-150 group had significantly lower malondialdehyde levels and those in the Q10-60 (P = 0.05) and Q10-150 (P = 0.06) groups had greater superoxide dismutase activities. Plasma coenzyme Q10 was inversely correlated with hs-CRP (r = -0.20, P = 0.07) and IL-6 (r = -0.25, P = 0.03) at baseline. After supplementation, plasma coenzyme Q10 was significantly correlated with malondialdehyde (r = -0.35, P < 0.01) and superoxide dismutase activities (r = 0.52, P < 0.01). However, there was no correlation between coenzyme Q10 and homocysteine.

CONCLUSION: Coenzyme Q10 supplementation at a dosage of 150 mg appears to decrease the inflammatory marker IL-6 in patients with CAD.
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