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Nutrition. 2012 Jul;28(7-8):767-72. doi: 10.1016/j.nut.2011.11.008. Epub 2012 Feb 17.

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

Lee BJ[1], Huang YC, Chen SJ, Lin PT.

Author information

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.

PMID: 22342390 [PubMed - indexed for MEDLINE]

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