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Oral coenzyme Q10 supplementation in patients with migraine: Effects on clinical features and inflammatory markers.

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Abstract

BACKGROUNDS AND AIMS:

Migraine and inflammation are correlated. Coenzyme Q10 (CoQ10) as an anti-inflammatory agent has shown useful effects in other diseases. The present study aimed to assess the effect of CoQ10 supplementation on inflammation and clinical features of migraine.

METHODS:

This randomized double-blind placebo-controlled clinical trial was conducted among 45 non-menopausal women aged 18-50 years, diagnosed for episodic migraine according to the International Headache Society. After one month run-in period, subjects received CoQ10 (400 mg/day CoQ10, n = 23) or placebo (wheat starch, n = 22) for three months. All the patients got prophylactic medication too.

Serum CoQ10 concentration, Calcitonin gene-related peptide (CGRP), interleukin (IL)-6, IL-10 and tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) were measured at the beginning and end of the study.

#### RESULTS:

CoQ10 supplementation reduced CGRP and TNF- $\alpha$  significantly ( $p = 0.011$  and  $p = 0.044$ , respectively), but there were no significant differences in serum IL-6 and IL-10 between the two groups. Significant increase in serum CoQ10 levels was evident with CoQ10 therapy ( $P < 0.001$ ). A significant improvement was found in frequency ( $p = 0.018$ ), severity ( $p = 0.001$ ) and duration ( $p = 0.012$ ) of migraine attacks in CoQ10 group compared to placebo.

#### CONCLUSION:

CoQ10 supplementation may decrease CGRP and TNF- $\alpha$  with no favorable effects on IL-6 and IL-10 in patients with migraine.

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