

Abstract

Clin Biochem. 2008 Dec 25. [Epub ahead of print]

Coenzyme Q10 distribution in blood is altered in patients with Fibromyalgia.

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OBJECTIVE: Coenzyme Q10 (CoQ(10)) is an essential electron carrier in the mitochondrial respiratory chain and a strong antioxidant. Signs and symptoms associated with muscular alteration and mitochondrial dysfunction, including oxidative stress, have been observed in patients with fibromyalgia (FM). The aim was to study CoQ(10) levels in plasma and mononuclear cells, and oxidative stress in FM patients.

METHODS: We studied CoQ(10) level by HPLC in plasma and peripheral mononuclear cells obtained from patients with FM and healthy control subjects. Oxidative stress markers were analyzed in both plasma and mononuclear cells from FM patients.

RESULTS: Higher level of oxidative stress markers in plasma was observed respect to control subjects. CoQ(10) level in plasma samples from FM patients was doubled compared to healthy controls and in blood mononuclear cells isolated from 37 FM patients was found to be about 40% lower. Higher levels of ROS production was observed in mononuclear cells from FM patients compared to control, and a significant decrease was induced by the presence of CoQ(10).

CONCLUSION: The distribution of CoQ(10) in blood components was altered in FM patients. Also, our results confirm the oxidative stress background of this disease probably due to a defect on the distribution and metabolism of CoQ(10) in cells and tissues. The protection caused in mononuclear cells by CoQ(10) would indicate the benefit of its supplementation in FM patients.

PMID: 19133251

