

Abstract

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Coenzyme Q10 Improves Endothelial Dysfunction in Statin-Treated Type 2 Diabetic Patients.

Hamilton SJ, Chew GT, Watts GF.

School of Medicine and Pharmacology, University of Western Australia, Royal Perth Hospital Unit, Perth, Western Australia, AUSTRALIA.

OBJECTIVE: The vascular benefits of statins might be attenuated by inhibition of Coenzyme Q(10) (CoQ(10)) synthesis. We investigated whether oral CoQ(10) supplementation improves endothelial dysfunction in statin-treated type 2 diabetic patients.

RESEARCH DESIGN AND METHODS: In a crossover study, 23 statin-treated type 2 diabetic patients with LDL-cholesterol <2.5mmol/L and endothelial dysfunction (brachial artery flow-mediated dilatation (FMD) <5.5%) were randomized, double-blind, to oral CoQ(10) 200mg/day or placebo for 12 weeks. We measured brachial artery FMD and nitrate-mediated dilatation (NMD) by ultrasonography. Plasma F(2)-isoprostane and 24-hour urinary 20-hydroxyeicosatetraenoic acid (HETE) levels were measured as systemic oxidative stress markers.

RESULTS: Compared with placebo, CoQ(10) supplementation increased brachial artery FMD by 1.0 +/- 0.5% (p=0.04), but did not alter NMD (p=0.66). CoQ(10) supplementation also did not alter plasma F(2)-isoprostane (p=0.58) or urinary 20-HETE levels (p=0.28).

CONCLUSIONS: CoQ(10) supplementation improved endothelial dysfunction in statin-treated type 2 diabetic patients, possibly by altering local vascular oxidative stress.

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