

Combining Ubiquinol With a Statin May Benefit Hypercholesterolaemic Patients With Chronic Heart Failure

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Abstract

Heart failure (HF) is one of the most common causes of death in Western society. Recent results underscore the utility of coenzyme Q₁₀ (CoQ₁₀) addition to standard medications in order to reduce mortality and to improve quality of life and functional capacity in chronic heart failure (CHF). The rationale for CoQ₁₀ supplementation in CHF is two-fold. One is the well-known role of CoQ₁₀ in myocardial bioenergetics, and the second is its antioxidant property. Redox balance is also improved by oral supplementation of CoQ₁₀, and this effect contributes to enhanced endothelium-dependent relaxation. Previous reports have shown that CoQ₁₀ concentration is decreased in myocardial tissue in CHF and by statin therapy, and the greater the CoQ₁₀ deficiency the more severe is the cardiocirculatory impairment. In patients with CHF and hypercholesterolaemia being treated with statins, the combination of CoQ₁₀ with a statin may be useful for two reasons: decreasing skeletal muscle injury and improving myocardial function. Ubiquinol, the active reduced form of CoQ₁₀, presents higher bioavailability than the oxidised form ubiquinone, and should be the preferred form to be added to a statin. The combination ezetimibe/simvastatin may have advantages over single statins. Since ezetimibe reduces absorption of cholesterol and does not affect CoQ₁₀ synthesis in the liver, the impact of this combination on CoQ₁₀ tissue levels will be much less than that of high dose statin monotherapy at any target low density lipoprotein-cholesterol (LDL-C) level to be reached. This consideration makes the ezetimibe/statin combination the ideal LDL-lowering agent to be combined with ubiquinol in CHF patients. However, particular caution is advisable with the use of strategies of extreme lowering of cholesterol that may negatively impact on myocardial function. All in all there is a strong case for considering co-administration of ubiquinol with statin therapy in patients with depressed or borderline myocardial function.

Keywords: Cholesterol; Coenzyme Q(10); Heart failure; Statin.

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