New research tests Co-enzyme Q10 as potential treatment for Chronic Kidney disease

Chronic Kidney disease (CKD) is highly associated with all-cause mortality, Diabetic Nephropathy (DN), cardiovascular events and hospitalization whether the patient has an existing risk or current cardiovascular disease or not. CKD can increase the chances of cardiovascular disease by two to fifty times and 50% mortality of patients with end stage renal disease (ESRD) on dialysis attributed to CVD and its complications. In this review, Co-enzyme Q10 (CoQ10) was tested as a potential treatment for CKD. The systemic review and meta-analysis of randomized control trials (RCTs) was conducted to evaluate the effects of CoQ10 supplementation on metabolic profiles of patients diagnosed with CKD.

CoQ10 is a potent lipophilic antioxidant that couple’s electron transport to oxidative phosphorylation in mitochondria. It is generally used as an alternative and complementary therapy for diseases with metabolic disorders. The supplementary protein has shown beneficial effects during the treatment of heart failure. It was found that the circulating concentration in patients with CKD had been decreased. This suggested that the CoQ10 antioxidant treatment would be an ideal solution for the disease. The results accumulated during meta-analysis proved that the CoQ10 supplementation significantly reduced total-cholesterol, malondialdehyde, and creatinine levels in patients diagnosed with CKD. It did not affect Triglycerides, HDL-cholesterol, fasting glucose, insulin, homeostasis model assessment of insulin resistance (HOMA-IR), and C-reactive protein (CRP) concentrations.

The current meta-analysis demonstrated that CoQ10
supplementation significantly improved metabolic profile in patients with CKD by reducing total cholesterol, LDL-cholesterol, MDA and creatinine levels, yet it did not affect fasting glucose, insulin, HOMA-IR, and CRP concentrations.

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