Title: Coenzyme Q10 supplementation on metabolic status of type 2 diabetic patients

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Abstract: Introduction: Increased oxidative stress and impaired antioxidant defense contribute to pathogenesis and progression of type 2 diabetes. Consistent with this fact, it has been shown that diabetic patients have reduced coenzyme Q10 level. In this study we sought to compare the effect of coenzyme Q10 versus placebo on glycemic control and lipid profile in type 2 diabetic patients.

Methods: In a randomized double-blind placebo-controlled trial, 64 type 2 diabetic patients were randomly assigned to receive either 200 mg Q10 or placebo daily for 12 weeks. Fasting blood samples were obtained and fasting plasma glucose (FPG), HbA1c, total cholesterol (TC), triglycerides (TG), LDL-C and HDL-C were measured.

Results: In this study no significant differences considering age, body mass index (BMI), diabetes duration, FPG, HbA1c, TC, TG, LDL-C and HDL-C were shown between two groups. Serum HbA1c concentration decreased in the Q10 treated group (8±2.28 vs. 8.61±2.47%) with no significant effect in the placebo group. Following intervention no differences have been shown regarding FPG, TG and HDL-C in Q10 treated group. Furthermore, mean differences of TC and LDL-C level were statistically altered between two groups (Pvalue =0.027 and 0.039 respectively).

Conclusion: In this study, Q10 treatment improved glycemic control, total and LDL cholesterol but these differences were associated with no favourable effects on TG and HDL-C.

Glycemic control; Lipid profile; Oxidative stress; Q10; Type 2 diabetes mellitus

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