DISCUSSION

Study treatment demonstrated a significant decrease in the F.B.S, HbA1c, Fasting Insulin and Insulin resistance at the end of 12 weeks ($P<0.05$) compared with baseline measurements. In comparing with control group , the reductions in F.B.S , Fasting Insulin and in Insulin resistance was significantly at week 12 of the study ($P<0.05$), While the reduction in HbA1c was not significant.

Lim et al., (2006) revealed profound changes in plasma CoQ10 in individuals with diabetes, suggesting a marked increase in body oxidative burden. Similar changes were already present in the prediabetic phase and may contribute to the increased risk of vascular diseases (16). Clinical monitoring of plasma CoQ10 concentration and its redox status is considered desirable as it may provide valuable pathophysiological or therapeutic information in vivo (17). The accumulating evidence has been suggested that mitochondrial dysfunction induced by oxidative stress plays a pivotal role in the pathogenesis of insulin resistance and vascular disease in subjects with diabetes (18). The BMI (a close surrogate of insulin resistance) and FPG were negatively correlated with the ubiquinol/CoQ10 fraction. This was not surprising, since insulin resistance and elevated blood glucose are associated with increased oxidative burden (19). The change in CoQ10 with increasing FPG concentration suggests an increase in oxidative burden, already evident in the prediabetic IFG individuals. This increase in oxidative stress might contribute to the increased risk of vascular disease (16). The reduction of glycation parameters and improve the insulin resistances in prediabetics patients is coincided with the mentioned studies that illustrated the role of CoQ10.

CONCLUSIONS:

According to the results presented in this study it is easy to conclude that the administration of Coenzyme-Q10 could improve glycemic control with consequent beneficial effects on oxidative stress in prediabetic patients, may be through mechanisms of up regulating peripheral tissue responses to the available insulin at receptor levels in association with potent antioxidant effects.

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