Original Paper

The Antioxidative effect of alpha-lipoic acid on blood glucose concentration and HbA_1c in type 2 diabetic patients

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Abstract

Background and Objective: There is growing evidence that excess generation of highly reactive free radicals, largely due to hyperglycemia, causes oxidative stress, which followed by further exacerbating the development and progression of diabetes and its complications. The purpose of the present study was to determine the effect of alpha-lipoic acid (ALA) on blood glucose and HbA_1c in type 2 diabetic patients.

Materials and Methods: In this clinical trial study, fifty-seven type 2 diabetic patients (14 male and 43 female) with the mean age of 53.5 years old were involved in this study. Upon arrival, subjects were randomly divided into either experimental (n=29) or control (n=28) groups. Experimental group received 300 mg alpha-lipoic acid daily for eight weeks where control group received placebo for eight weeks. After an overnight fast patients' blood samples, were drawn and analyzed for fasting blood glucose, 2 hours post-prandial glucose and HbA_1C. In addition, antropometric indeces for each subject was measured at the beginning and at the end of the study.

Results: There is no significatn differnces regarding weight and BMI in two groups before and after intervention. Also our findings indicated significant decrease in fasting and post-prandial glucose level, in experimental group, after intervention ($p<0.05$), but no significant change was seen in HbA_1c level. There were no significant changes in parameters measured in control group. There was also a significant decrease in fasting blood glucose in experimental group when compared to control group ($p<0.05$), but there is no significant changes in HbA_1c level.

Conclusion: This study showed that alpha-lipoic acid supplement as an important antioxidant reduce blood glucos concentration in type 2 diabetes.

Keywords: Alpha-Lipoic acid, Antioxidant, Diabetes type 2

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