World Academy of Science, Engineering and Technology
International Journal of Biomedical and Biological Engineering
Vol:8, No:06, 2014

Beneficial Effect of Chromium Supplementation on Glucose, HbA1C and Lipid Variables in Individuals with Newly Onset Type-2 Diabetes

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Abstract : Chromium is an essential nutrient involved in normal carbohydrate and lipid metabolism. It influences glucose metabolism by potentiating the action as taking part in insulin signal amplification mechanism. A placebo-controlled single blind, prospective study was carried out to investigate the effect of chromium supplementation on blood glucose, HbA1C and lipid profile in newly onset patients with type-2 diabetes. Total 40 newly onset type-2 diabetics were selected and after one month stabilization further randomly divided into two groups viz. study group and placebo group. The study group received 9 gm brewer's yeast (42 µ Cr) daily and the other placebo group received yeast devoid of chromium for 3 months. Subjects were instructed not to change their normal eating and living habits. Fasting blood glucose, HbA1C and lipid profile were analyzed at beginning and completion of the study. Results revealed that fasting blood glucose level significantly reduced in the subjects consuming yeast supplemented with chromium (197.65±6.68 to 103.68±6.64 mg/dl; $p<0.001$). HbA1C values improved significantly from 9.51±0.26% to 6.86±0.28%; $p<0.001$ indicating better glycaemic control. In experimental group total cholesterol, TG and LDL levels were also significantly reduced from 199.66±3.11 to 189.26±3.01 mg/dl; $p<0.02$, 144.94±8.31 to 126.01±8.26; $p<0.05$ and 119.19±1.71 to 99.58±1.10; $p<0.001$ respectively. These data demonstrate beneficial effect of chromium supplementation on glycaemic control and lipid variables in subjects with newly onset type-2 diabetes.

Keywords : type-2 diabetes, chromium, glucose, HbA1C
Conference Title : ICMBPS 2014 : International Conference on Medical, Biological and Pharmaceutical Sciences
Conference Location : New York, United States
Conference Dates : June 05-06, 2014