Original Paper

Effect of oral $ZnCl_2$ on glucose, Insulin, lipoproteins and liver enzymes in male Rats

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Abstract

Background and Objective: Zinc is an essential ion for living and inter the body from different sources. Since Zn^{++} interfere on many cellular process such as biological function such as calcium chanalls, this study was designed to investigate the effect of oral $ZnCl_2$ on glucose, Insulin, lipoproteins and liver enzymes in male Rats.

Materials and Methods: This experimental study was performed on 48 of Wistar-Albino male Rats randomly allocated into three exprimental and one control groups. Exprimental groups received 50 mg/l, 100 mg/l and 200 mg/l $ZnCl_2$ in drinking water daily for four weeks but the control group received tap water. After four weeks, animals were anesthetized, sacrificed and blood samples were collected. Glucose, insulin, lipoproteins, aspartat amino transferase (AST) and alanine amino transferase (ALT) were measured. Data were analyzed by SPSS-11, ANOVA and Tukey-tests.

Results: The mean±SD of Cholesterol in group D (85.7±3.2), HDL in groups B, C, D (66.1±2.7, 67±2.18, 68.83±2.69 mg/dl) and LDL in groups B, C, D (2.8±0.9, 14.6±6.3, 13.4±2.8 mg/dl) respectively were significantly decreased compared with Cholesterol (125.5±4.9 mg/dl), HDL (80.5±3 mg/dl) and LDL (30.3±3.2 mg/dl) in group A. Mean±SD of glucose, insulin, triglyceride and liver enzymes did not show any differences among the groups.

Conclusion: This study showed that $ZnCl_2$ added on drinking water reduce serum lipoproteins in male Rats.

Keywords: $ZnCl_2$, Glucose, Insulin, Lipoprotein, AST, ALT, Rat

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