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ANALYSIS OF CONTRASTING EFFECTS OF ALLOXAN AND MAGNESIUM ON PLASMA FREE FATTY ACIDS (FFA) IN DIABETES INDUCED RATS

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Abstract:

Background: Alloxan is on of the xenobiotic agents which is classified as diabetogenic materials. Magnesium is an important cofactor regulating the activity of carbohydrate enzymes and lipid synthesis. In this study the contrasting effects of Alloxan and magnesium on plasma free fatty acids (FFA) in rats was investigated. Methods: Male mature rats were used as test models for the diabetes induction. 28 rats received Alloxan (120mg/kg) intraperitoneally and plasma glucose level measurement after 72 hours demonstrated diabetes induction. Results: The results were compared to the control groups, and confirmed the presence of diabetes in rats. Analysis of plasma FFA showed a significant increase (751.25 mM), compared to the control group (286.68 mM). In contrast, Measurement of red blood cell (RBC) Magnesium showed a significant decrease from 7.18 mg/dL in control group to 4.89 mg/dL in diabetic rats. Conclusion: The results of this study showed that in diabetic condition, there was an inverse relationship between plasma FFA and RBC Magnesium. Therefore, these data suggest that analysis of the effects of Magnesium upon induction of diabetic condition could provide important information for management of diabetes.

Keywords:

Magnesium , Free Fatty Acids

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