Pathophysiological Effects of Induced Diabetes Mellitus and Hypothyroidism in Male Rabbits.

A Thesis
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ABSTRACT

The aim of this study was to investigate biochemical and pathological effects of experimentally induced diabetes mellitus (DM), hypothyroidism (IH) and both together in rabbits. Twenty four male rabbits were divided equally and randomly into four groups.

- Control group(**C**) was received i.v injection of 0.9% normal saline.
- Diabetic group (**ID**) was given single i.v. injection of alloxan 100mg/Kg body weight, to induce diabetes mellitus.
- Diabetic-hypothyroidism group(**IHD**) was given a single i.v. injection of alloxan and daily oral doses of carbimazol 0.5 mg/ kg body weight, to induce hypothyroidism.
- Hypothyroidism group which received daily drenching of carbimazol 0.5mg/kg.body weight, to induce hypothyroidism alone.

A fasting blood sample was collected from the marginal ear vein of each animal in the groups and serum was obtained to determine the concentration of glucose, cholesterol, and triglyceride, T3, T4 and TSH at two weeks interval during the study. Histopathological examination of liver, pancreas and the thyroid gland was performed to study the pathological changes in animals of different groups.

The results of the study showed:

1) a significant increase in serum concentration of glucose, cholesterol and triglyceride in all groups of study compared with control group.

2) A significant decrease in the serum concentration of glucose, cholesterol, and triglyceride in the group in **IDH** compared with treatment groups of **ID** and **IH**

3) A significant decrease in serum concentration of T3 occurred in all treatment groups of study compared with control.

4) Serum T4 and TSH concentrations showed non-significant changes in all treated groups comparison with control.

5) Histopathological examination revealed significant changes in the liver (hepatocellular vaculation due to glycogen deposition as proved by special stain) and the pancreas (absence of the islets of Langerhans with generalized inflammation) in the diabetic groups **ID, IDH**, whereas the thyroid glands were almost normal in the other groups.