



Effect of *Hypericum perforatum* on the glucose and lipids level of the serum among Streptozotocin-induced diabetic rats

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Abstract

Background and Objective: Diabetes mellitus (DM) is a metabolic disorder with chronic hyperglycemia and defects in carbohydrates, lipids and proteins metabolism. DM can lead to a lot of disorders such as neuropathy, nephropathy and cardiovascular diseases. While the major component of DM treatment is using insulin and hypoglycemic agents, these medications have side effects such as increased fat storage, hypoglycemic shock and also do not have any effect on long term diabetes debilitating complications. So finding new agents with fewer side effects such as herbal derivatives is further highlighted. In this study we consider the effect of *Hypericum perforatum* (HP)-one of these herbal agents, on hyperglycemia and dyslipidemia in diabetic rats.

Materials and Methods: In this experimental investigation at the shahed university, 32 male Wistar rats -weighing 200-250 g- were divided randomly into 4 groups: 1. control, 2. control receiving treatment with HP, 3. diabetic, and 4. diabetic receiving treatment with HP. Rats with serum glucose levels below 130 mg/dl were selected for this study. Diabetes induced by intraperitoneal injection of Streptozotocin (STZ) (60mg/kg). Groups under treatment received food containing 6.25% of HP powder. Serum glucose, triglyceride, total cholesterol, LDL- and HDL-cholesterol levels of serum were determined with spectrophotometer before the study and at 3rd and 6th weeks after the study. Data were analyzed using one-way ANOVA and Tukey's post-test in the SPSS 16 and P value less than 0.05 was considered significant for all analyses.

Findings: There was no significant reduction of serum glucose level at 3rd and 6th weeks in HP-treated diabetic group compared to diabetic one P = 0.09. Regarding LDL and total cholesterol, there were significant reduction in HP-treated diabetic group as compared to diabetic one P = 0.03, P = 0.04. On the other hand, HP significantly increased HDL-cholesterol level in diabetic group P = 0.04. . In addition serum triglyceride had no significant reduction in HP-treated diabetics as compared to diabetic group P = 0.1.

Conclusion: Regarding to this investigation oral administration of HP powder has no effect on hyperglycemia and the level of triglyceride, although the past studies about this plant has shown hypoglycemic effect of HP extract. On the other hand HP powder treats the defects about LDL, HDL and total cholesterol significantly. Generally it can be said that long term medication with HP powder as a nutritional supplement can be useful in treatment of the dyslipidemia caused by diabetes and reduce the problems like atherosclerosis and cardiovascular diseases.

Key Words: *Hypericum perforatum*, glucose, lipids, rat, diabetes mellitus, Streptozotocin

