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Original Article

Investigation into the hypoglycemic effect of hydroalcoholic extract of Ziziphus Jujuba Leaves on blood glucose and lipids in Alloxan-Induced diabetes in rats

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Abstract:

Background: Diabetes mellitus is the most prevalent endocrine disease that increases blood glucose and lipids. This disease affects cardiovascular system, kidneys, nervous system and eyes. Studies have indicated some herbal extracts have anti-diabetic effects, and can be used in diabetic patients for reducing blood glucose. Hence, in the present study, we decided to induce diabetes, which was similar to human type1 diabetes, in experimental rats and, after diabetes verification, we evaluated hypoglycemic effect of hydro-alcoholic extract of Ziziphus Jujuba leaves and blood lipoproteins (LDL, HDL, and VLDL), triglyceride and total cholesterol changes.

Methods: In the present study, 30 adult male rats were assigned to 3 groups as follows:

Group 1 was treated by saline (2 ml /kg, i.p.)

Group 2 was treated by alloxan monohydrate (120 mg/kg, i.p) for 3 days alternately. Then, blood glucose was evaluated, and diabetes verified.

Group 3 was treated by alloxan monohydrate for 3 days alternately and, after blood glucose evaluation and diabetes verification, animals received hydro-alcoholic extract of Z. Jujuba (100mg /kg, i.p.) for 5 days alternately.

After 48 hours, the animals were anesthetized and the blood was collected into a tube, then, levels of serum glucose, lipoproteins (HDL, LDL, and VLDL), triglycerides, and total cholesterol were evaluated by enzymatic kits.

Results: The analysis variance results indicated significant reduction ($P = 0.001$) of glucose- triglyceride- cholesterol and VLDL levels in group 3 in comparison with group 2. Z. Jujuba also increased HDL levels significantly ($P=0.001$) in comparison with group 2. Also, the extract reduced diabetic rats LDL level, but it wasn't significant ($P=0.12$) in comparison with group 2.

Conclusion: According to the results obtained, it was concluded that, Z. Jujuba leaves can be used in diabetics for the purpose of glucose and lipid reduction.

Keywords:

[Ziziphus Jujuba](#) , [lipid](#) , [glucose](#) , [diabetes](#)

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