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*Research Paper*

## **The effect of hydroalcoholic extract of Bistort (*Polygonum bistorta* L) root on blood glucose concentration of streptozotocin induced diabetic mice**

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### **Introduction:**

Diabetes is one of the most common diseases of the present century. The many side effects of the chemical drugs used to treat it increase the tendency to be treated by herbs that have fewer side effects. Part of the anti-diabetic effect of herbs is related to the flavonoids in them, which with their antioxidant effect can inhibit oxidative stress and diabetes. There are different flavonoids in herbs and Bistort contains quercetin flavonoids, so in this study, the effect of hydroalcoholic extract of Bistort root on blood glucose in streptozotocin diabetic mice have been assessed in the present study

### **Materials & Methods**

In this experimental study, diabetes was induced by administration of 60 mg/kg of streptozotocin intraperitoneally in 15 mice and they were randomly divided into 3 groups. One group is considered as control. The control and diabetic groups received normal saline and the treatment groups received glibenclamide at a dose 0.5 mg/kg and hydroalcoholic extract of Bistort root at doses of 150 µg/kg for 15 days. At the end of the second, seventh, and fifteenth days of the study, blood samples were taken and blood glucose levels were measured. The data

were analyzed by one way Anova and Turkey's test using SPSS 25. In this study,  $P < 0/05$  was considered.

### **Results & discussion**

In this study, following the induction of diabetes blood glucose levels in all diabetic groups on the third, seventh, and fifteenth days had a significant increase compared to the control group ( $P < 0/05$ ). Blood glucose levels in the group treated with bistort root extract on seventh and fifteenth days had a significant decrease compared to the diabetic group. The results of this study showed that the hydroalcoholic extract of Bistort root can have a beneficial effect on blood glucose concentration in streptozotocin induced diabetic mice, so it is expected to be effective in the treatment of diabetes.

### **Conclusion**

The result of this study indicates that treatment with hydroalcoholic extract of Bistort root can be improving the increase in blood glucose concentration caused by streptozotocin injection. Treatment with Bistor root extract caused a significant reduction in blood glucose concentration, which indicates the effect of chemical compounds in the above extract on blood glucose concentration. However, more biochemical and pharmacological studies are needed to use this plant so that it can be evaluated and used on human specimens.

**Keywords:** *Blood glucose, Diabetes mellitus, Mice, Polygonum bistorta L, Streptozotocin*

Declaration of conflict of interest:

No conflict of interest