

The effect of hydroalcoholic extract of *Foeniculum vulgare* on serum alkaline phosphatase in male rats on a high fat diet

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Abstracts

Background: High dietary cholesterol causes hypercholesterolemia. This phenomenon is generally characterized by an increase in the cholesterol. Alkaline phosphatase (ALP) is a marker for many disorders. It originates from bone and liver. High serum activities of ALP have seen in hypercholesterolemia. Medicinal plants have a long history in treating blood disorders, which are one of the most common problems in today's advanced world. Fennel (*Foeniculum vulgare*) is a medicinal plant with a high content of polyphenols and methanol has antilipidemia properties. Fennel has protective effects on the liver by decreasing ALP levels.

Objectives: The present study demonstrates the effect of *Foeniculum vulgare* in the treatment of hyper cholesterolemia and decreasing serum ALP.

Materials and methods: In this experimental study, 28 male rats (150-170g) were divided to four different groups having 7 rats in each group as: group A (control), group B (control + extract), group C (high fat diet), group D (high fat + extract). C and D were fed by high fat pellet (1% cholesterol and 2% triglyceride) for 8 weeks. A and B were fed normal rats pellet. The extract of seeds was administered through intraperitoneal route at a dose of 150 mg/kg body weight. The extract was administrated once daily and continued up to 3 weeks to B and D groups. Body weight was monitored every week. The blood samples were collected by Sino-orbital puncture. In this blood samples; ALP was determined in a spectrophotometer. The data was analyzed using ANOVA.

Results: ALP level was significantly increased in C group as compared to A group rats and ALP levels in D group significantly decreased compared with C group.

Conclusion: The results from the present investigation indicate that treatment with *Foeniculum vulgare* protects the liver and bone from damage of high cholesterol in rats.

Keywords

Keywords: Alkaline phosphatase, Extract of Foeniculum, Hypercholesterolemia, Rat