Effect of the hydro-alcoholic extract of Trachyspermum ammi on serum alkaline phosphatase activity in rats with high cholesterol diet

Motahare sadat Ebrahimi [1*], Gholamali Naderi [2], Mehrdad Roghani [3]

1. *Medical Student, Student Research Committee, Faculty of Medicine, Shahed University, Tehran, Iran*
2. *Associate Professor, Department of Biochemistry, School of Medicine, Shahed University, Tehran, Iran*
3. *Professor, Neurophysiology Research Center, Shahed University, Tehran, Iran*

mot_ebrahimi@ymail.com

Abstracts

Introduction and Objective: Hypercholesterolemia is one of the most common problems of modern societies. Alkaline phosphatase is a Liver enzyme that increases in serum, following lipid increase in the blood. According to the inevitable effects of chemical drugs, and the tendency of society to medicinal plants, and advice on the benefits of Trachyspermum ammi (Ajowin) in the treatment of hypercholesterolemia in traditional medicine, we decided to study the effect of Trachyspermum ammi on serum alkaline phosphatase enzyme activity in rats with hypercholesterolemia.
Materials and Methods: 28 adult male rats with an average weight of 150-170 g were divided into 4 groups. The control group, the control group treated with Ajowan, the third group with hypercholesterolemia, the fourth group with hypercholesterolemia treated with Ajowan. The third and fourth groups were given high-fat diet with 1% cholesterol and 2% triglycerides for 8 weeks, and first and second groups were given normal diet. After this period, feeding the first and third groups continued, and the second and fourth, the aerial parts of Ajowan extract at a concentration of 100 mg/kg was injected intraperitoneally for 3 weeks. Finally, blood samples were taken from the rat and alkaline phosphatase activity was measured.
Results: The findings suggest that Ajowin extract administered to the control group created significant changes in serum alkaline phosphatase activity as compared to the control group ($p<0.05$). High-fat diet caused a significant increase in alkaline phosphatase enzyme activity compared with the control group ($p<0.01$) and extract administered to high-fat diet rats caused a significant decrease in alkaline phosphatase enzyme activity compared to the group receiving the high-fat diet ($p<0.05$).
Conclusion: According to the hypolipidemic properties of Ajowin and its effect on reducing liver enzymes, its extract can improve liver function.

Keywords

Trachyspermum ammi, Hypercholesterolemia, alkaline phosphates, rat