The Effect of Hydroalcoholic Extract of the Aerial Parts of Ruta graveolens on the Level of Alkaline Phosphatase in Serum of Rats on a High-cholesterol Diet

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Abstracts

Background and Objective: Hypercholesterolemia is one of the common problems of modern societies. Most of middle-aged people who have sedentary works have hypercholesterolemia and it’s complications like atherosclerosis, diabetes and fatty liver disease, followed by elevated liver enzymes. Alkaline phosphatase is a liver enzyme that increases in serum after rise of fat in the blood. According to the inevitable side effects of chemical drugs and traditional medicine recommendations regarding the benefits of Ruta graveolens in the treatment of hypercholesterolemia, in the present study the effect of R. graveolens on the serum ALP enzyme level in rats with hypercholesterolemia has been studied. Methods: 28 adult male wistar rats weighting (150-170 g) were divided randomly into 4 groups. The control group (A), The control group treated with R. graveolens (B), rats with hypercholesterolemia (C) and rats with hypercholesterolemia treated with R. graveolens (D). Groups C and D fed a hypercholesterolemic diet (1% cholesterol and 2% triglyceride) for 8 weeks. Group A and B fed normal diet. After that, the diet of group A and B was followed like before and groups B and D received hydroalcoholic extract of aerial parts of R. graveolens (100 mg/kg) for 3 weeks intraperitonealy. At the end, ALP level was measured. Results: Findings showed that rats receiving high-fat diet had a significant increase in ALP enzyme level compared with the control group (P<0.01). Extract administered to groups of high-fat diet led to a significant reduction in alkaline phosphatase enzyme level compared to the group receiving the high-fat diet (P<0.05). Hydroalcoholic extract of R. graveolens administered to the control group treated with R. graveolens did not cause a significant change in ALP level compared to the control group. Conclusion: It appears that R. graveolens extract is able to decrease the
level of serum ALP in the group receiving high-fat diet. So, this extract can be recommended to improve liver function in patients with hypercholesterolemia.

Keywords

*Ruta graveolens, Hypercholesterolemia, Alkaline phosphates (ALP)*