

The effect of hydroalcoholic extract of *Pimpinella anisum* seed on alanine transaminase of rats with high-fat diet

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Abstracts

Background and purpose: Consumption of fat-rich food is associated with obesity and related alteration such as hyperlipidemia, atherosclerosis and non-alcoholic fatty liver (excess accumulation of fat in hepatocytes) fatty liver causes deregulated liver expression of Aminotransferase (ALT), and the serum level of ALT is often used as markers of hepatocyte damage. *Pimpinella anisum* (*Apiacea*) is an eastern plant known as an antimicrobial and antioxidant herb and it has been used widely among Iranian. The aim of this study is to investigate the effect of hydroalcoholic extract of *Pimpinella anisum* on ALT serum level in rats with high-fat diet. **Materials and Methods:** 28 male Wistar rats weighting 150-170 g were randomly divided into 4 groups: 1. control (normal diet) 2. Normal diet treated with extract 3. High-fat diet (HF) 4. HF treated with extract. The third and fourth groups were fed with cholesterol-rich food (including 1% cholesterol+ 2% triglycerids) for 6-8 weeks. After 6-8 weeks, *Pimpinella anisum* 250 mg/kg extract was administered by intrapritoneal injection for second and fourth groups. The rats' blood was taken from their eyes before and after injection. After serum sample centrifuge, the ALT serum level is measured by spectrophotometer and analyzed by ANOVA. **Results:** Obtained data showed that high-fat diet could significantly increase ALT activity rate in HF rats (65.9) in comparison to control animals (40.09) ($P<0.01$). Also, the extract (250 mg/kg) could significantly decrease ALT serum level in HF rats treated with extract (55.44) in comparison to HF group ($p<0.05$). **Conclusion:** The hydroalcoholic extract of *Pimpinella anisum* seed has hypolipidemic capability and can decrease the ALT serum level and improves the liver function.

Keywords

Alaninetransferase, Hyperlipidemia, Pimpinella Anisum, Rats, High-fat diet