Examining the Effect of Aqueous Extract of Iranian Edible Asparagus in Prevention of Alcoholic LiverDisease in Adult Male Rats

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Abstract

Introduction: Alcoholic liver disease (ALD) is an important cause of morbidity and mortality worldwide. An advanced liver disease that causes severe liver failure. Edible asparagus has antioxidant properties and liver protective effects. Given the increasing prevalence of alcoholic fatty liver (AFL) disease and the positive effect of several herbal medicines on this disease, the present study aimed to evaluate the effect of aqueous extract of edible asparagus inthe prevention of AFL disease. Methods: In this experimental study, 40 adult male Wistar rats were studied. The five groups consisted of one control group, one sham, and three experimental groups. The first experimental group received 25% ethanol, the second experimental group received 500 mg/kg asparagus extract, and the third experimental group received 25% ethanol and 500 mg/kg asparagus extract (for 70 consecutive days). Serum concentrations of alanine transaminase (ALT), aspartate transaminase (AST), alkaline phosphatase (ALP), tumor necrosis factor-alpha (TNF-alpha), and glutathione peroxidase (GPX) were measured. The collected data were analyzed using ANOVA and Duncan's test at P <= 0.05 significance level. Findings: No significant difference was found between control and sham groups in terms of all measured parameters. Mean serum concentrations of ALT, AST, ALP, and TNF-alpha were significantly higher in the first treatment group compared to control and sham group. However, mean serum concentration of GPX was significantly lower in the first treatment group compared to control and sham group. Mean serum concentrations of ALT, AST, ALP, and TNF-alpha were significantly lower in the second treatment group compared to control and sham group. However, mean serum concentration of GPX was significantly higher inthe second treatment group compared to control and sham group. Mean serum concentrations of ALT, AST, ALP, and TNF-alpha were significantly higher in the third treatment group compared to control and sham group. However, mean serum concentration of GPX was significantly lower in the third treatment group compared to control and sham group. Mean serum concentrations of ALT, AST, ALP, and TNF-alpha were significantly lower in the third treatment group compared to the first experimental group. However, mean serum concentration of GPX was significantly higher in the third treatment group compared to the first experimental group. Conclusion: The results showed that aqueous extract of edible asparagus with antioxidant properties has liver protective effect and prevents AFL disease.

Keywords: Alcoholic liver disease; edible asparagus; rat