

عنوان مقاله:

The Effect of Aqueous Extract of Gum Arabic on Hepato-renal Function During Ethanol Withdrawal Induced Stress in Wistar Rats

محل انتشار:

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خلاصه مقاله:

Background: Alcohol withdrawal syndrome (AWS) is a life-threatening condition affecting alcoholics who ceased or decreased their alcohol consumption. The synthetic drugs used to manage these consequences are not without undesirable effects; hence, the need for a natural and affordable approach is raised. Objectives: This study aimed at investigating the effect of aqueous extract of gum arabic (GA) on hepato-renal functions during ethanol withdrawal syndrome in Wistar rats. Methods: In phase I, dose-response for GA and alcohol for the study were determined. In phase II, the effect of GA on biomarkers during AWS was studied. A total of 60 male Wistar rats were used for the study. Blood and tissue samples were obtained at the end of stipulated periods of oral administration for biochemical and histological analysis, and biochemical parameters were analyzed by spectrophotometry. Results: In the dose-response study, there were no significant differences ( $P \geq 0.05$ ) in serum alanine aminotransferase (ALT) and aspartate aminotransferase (AST) activities as well as in total bilirubin (TBIL), malondialdehyde (MDA), sodium ion (Na<sup>+</sup>), potassium ion (K<sup>+</sup>), and creatinine concentrations in groups treated with 200 mg/kg body weight (bw) and 400 mg/kg bw GA aqueous extract compared to the control group. However, significant alterations were observed in groups treated with 600 and 800 mg/kg bw GA extract. Furthermore, rats that received 5.5 mL/kg bw alcohol showed marked changes in biochemical parameters compared to the group that received 4.5 mL/kg bw and the control group. The results obtained in Phase II exhibited the hepato-renal protective effect of GA during ethanol withdrawal. Statistical analysis of the obtained results indicated a better response from the study groups that were pre-treated or co-administered with GA compared to the group that was post-treated. Conclusion: The result of this study suggests that GA aqueous extract offered better protection prophylactically than curatively.

کلمات کلیدی:

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