Protective Effect of Malva sylvestris L. against Sodium Fluoride-Induced Nephrotoxicity in Rat

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Abstract : Background: Malva sylvestris L. is widely used in the traditional medicine of Iran and other countries to treat gastrointestinal, respiratory, skin and urological Disorders. Moreover, it has antioxidant property. Objective: In this study the protective effect of Malva sylvestris against sodium fluoride-induced nephrotoxicity in rats were evaluated. Methods: The Malva sylvestris flower extract was injected intraperitoneally at the doses of 100, 200, 400 mg/kg/day to groups of rats (10 in each group) for 1 week and subsequently 600 ppm sodium fluoride was added daily to the rats drinking water for 1 additional week. After these steps, the rats' serum levels of urea, creatinine, reduced glutathione, catalase and malondialdehyde were determined. The histopathology of the rats' kidney was also studied. Results: Malva sylvesteries extract with doses of 400 mg/kg/day significantly decreased the urea and creatinine levels (P<0.05). Moreover, the levels of catalase and glutathione were increased by this dose, but only the catalase increase was statistically significant (P<0.05). All three extract doses of Malva decreased the malondialdehyde level, but it was significant only for the dose 400 mg/kg/day (P<0.05). Histopathological findings also showed a protective effect of Malva against renal damage induced by sodium fluoride. Conclusion: The results suggest that Malva sylvestris has a protective effect against sodium fluoride-induced nephrotoxicity through its antioxidant property.

Keywords: Malva sylvestris, mephrotoxicity, sodium fluoride, rat

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