Effect of Malva Neglecta Wallr on Ethylene Glycol Induced Kidney Stones.

Saremi J[1], Kargar-Jahroomi H[2], Poorahmadi M[3].

Abstract

PURPOSE:

The aim of this study was to investigate the anti-urolithiasis effects of aqueous extracts of Malva neglecta Wallr on ethyleneglycol and ammonium chloride induced kidney stones in a rat model.

MATERIALS AND METHODS:

A total number of 64 male Wistar rats were randomly divided into eight groups equally: group I (normal control), group II (disease control), groups III and IV (sham), groups V and VI (preventive groups), and groups VII and VIII (curative groups). Group I received tap drinking water, groups III and IV were given intra-peritoneal injections of 200 and 800 mg/kg aqueous extracts for 28 days. Groups II, V, VI, VII, and VIII received 1% ethylene glycol plus 0.25% ammonium chloride in drinking water for 28 days. Groups V and VI were given intra- peritoneal injections of 200 and 800 mg/kg aqueous extracts for 28 days and groups VII and VIII received intra-peritoneal injections of 200 and 800 mg/kg aqueous extracts from the 14th day of the experiment. After 28 days the kidneys were removed and observed for calcium oxalate (CaOx) deposits and tubulointerstitial changes.

RESULTS:

The extract significantly decreased CaOx deposits and tubulointerstitial damage in the preventive groups ($P < .001$). In curative groups, a low dosage of extract, reduced kidney oxalate deposits and tubulointerstitial damage ($P < .05$). In addition a significant decrease was observed in crystal deposition and tubulointerstitial damage in high dosed group ($P < .001$). However, high dosed preventive and curative groups seemed to be more effective ($P \leq .001$).

CONCLUSION:

Malva neglecta Wallr has beneficial effects on preventing and treating CaOx deposition and decreasing tubulointerstitial damage on a dosage dependent manner. These effects may be due to the components presented in this plant such as saponins, flavonoids, mucilage, and phenolic compounds.