ABSTRACT

The study aimed to determine the antiurolithiathic potential of different concentrations *E. indica* root extract on ethylene glycol induced nephrolithiasis in *Rattus norvergicus* species of albino rats. It specifically targeted the effects of the plant extract on serum parameters (creatinine, BUN and uric acid) nitrituria, proteinuria, calcium oxalate excretion, and the histopathology of kidney tubules and glomeruli of albino rats. In the study, root of *E. indica* was collected, dried and extracted using distilled water of 80°C -100°C. The study involved 5 test groups; negative control group(T-), positive control group or lithogenic group (T+), two prophylactic groups (T_1 and T_2) receiving different concentrations of *E. indica* root extract(T_1- 500mg/kg and T_2- 800mg/kg), and one curative group receiving 800mg/kg of *E. indica* root extract. All the test groups received 0.75% ethylene glycol in water for 4 week ad libitum with the exception of the negative control. At the end of the study, there were elevated levels of serum creatinine, BUN and uric acid among the lithogenic group which was normalized in all the three treatment groups. There was no significant difference between the serum parameters of the *E. indica* treatment groups and that of negative control ($P< 0.05$). There was the presence of nitrituria, proteinuria, high pH and high levels of calcium oxalate excretion in the lithogenic group. But all these parameters were normalized in the three *E. indica* treatment groups. *E. indica* also maintained the normal structure of kidney glomeruli and tubules among T1 and T2 (prophylactic groups) and repaired kidney defects in T3 (curative group). *E. indica* root extract thus possess antiurolithiathic potentials and can be used to prevent and cure nephrolithiasis in albino rats.

Key Terms: Nephrolithiasis, nitrituria, proteinuria, creatinine, ethylene glycol.