Section A

101/A

Acute toxicity and diuretic effect of hot water extract of Tragia spp. in Wistar rats

M S Pallie[1]*, P K Perera[1], C L Goonasekera[2], K M N Kumarasinghe[2], and L D A M Arawwawala[3]

[1]*Department of Dravyaguna Vignana, Institute of Indigenous Medicine, University of Colombo, Colombo*
[2]*Faculty of Medicine, General Sir John Kotelawala Defence University, Ratmalana*
[3]*Herbal Technology Section Laboratory, Industrial Technology Institute, Colombo 7*

Tragia spp. (TS) is widely used in Sri Lankan traditional medicine for wound healing, nervous disorders, diabetes mellitus, and as a diuretic. The present study investigated the diuretic activity of the hot water extract (HWE) of TS whole plant at different doses and the acute toxic potential of the HWE at an upper fixed dose of 5000 mg/kg on adult male Wistar rats.

In the diuretic study rats were divided randomly into six groups (n=6 /group). Negative control group was fed with distilled water, and four TS groups were fed with HWE at doses of 550,1100,1650 and 2200 mg/kg, respectively. The standard group was administered with furosemide (13 mg/kg). They were kept in metabolic cages and urine was collected for five hours. Urine volume at each hour, pH, specific gravity, Na+ and K+ concentrations were investigated. For the acute toxicity study, a group of rats (n=6/ group) was administered HWE at a dose of 5000 mg/kg while the control group received distilled water, for 14 consecutive days. Rats were observed daily for general toxic effects such as overt signs of toxicity and moribund status or mortality. At the end of 14 days, effects on hematological parameters, serum enzyme levels, external morphology and histopathology of selected organs were studied.

The results depicted a dose dependent increase in the urine output ($p<0.05$) of TS fed groups, and the furosemide administered group compared with the negative control. In the acute toxicity study, administration of the HWE of TS for 14 days did not result in acute toxic effects in terms of (a) hepatotoxicity (b) renotoxicity (c) haematotoxicity (d) gross morphology and weights of organs, (e) stress and aversive behavior. In conclusion, the study confirmed the presence of diuretic activity in HWE of whole plant of TS in adult male Wistar rats, and the absence of acute toxicity at an upper fixed dose of 5000 mg/kg.

Keywords: Tragia spp., acute toxicity, diuretic activity, Wistar rats

Acknowledgement: Financial assistance by the UGC Research grant UGC/ DRIC/ PG/ 2014MAY/IIM/01.

mumtazsp@gmail.com Tel: +94 718330351