PHARMACOGNOSY RESEARCH
DOI: | pp. 431-434 | Nov-Dec 2009
Published by Phcog.Net

The Effects of N-butanol Fraction and N-butanol Phase Remnant From 50% Aqueous-Ethanolic Extract of Cyndon Dactylon on Calcium Oxalate Kidney Stones in Rat

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ABSTRACT

Renal stones are common and its prevalence has been rising in both sexes. Treatment of patients with kidney stones in primary stages can reduce the side effects and may also prevent the surgical operations and postoperative complications. Several effects including: anti-microbial, anti-diabetic and cardioprotective effects have been reported for Cynodon dactylon. The aim of this study was to investigate the effects of N-butanol fractionand N-butanol phase remnant of Cynodon dactylon extracton calcium oxalate kidney stones in male rats. Twenty four male Wistar rats were randomly divided into four groups. All groups were studied during 35 days of experiment according to the protocol of study. Normal control group (1) received tap drinking water. Negative control group (2) received 1% ethylene glycol in drinking water. Experimental groups (3 and 4) were treated with 1% ethylene glycol as well as 5mg/kg N-butanol fraction or 5mg/kg N-butanol phase remnant from 50% aqueous-ethanolic extract of Cynodon dactylon from first day of the experiment and continued during all protocol time.At the end of experiment, kidneys were removed for histopathologic study and examined for counting calcium oxalate deposits in 10 microscopic fields. Data were expressed as Mean+/- SEM and were analyzed by Kruskal-Wallis and subsequently by Mann-Whitney; $p<0.05$ was considered significant. The results showed that the number of calcium oxalate deposits in 10 microscopic fields in groups 3 ($p=0.008$) and 4 ($p=0.00$) vs group 2 were significantly decreased. The results of this study revealed that N-butanol fraction and N-butanol phase remnant from 50% aqueous-ethanolic extract of Cynodon dactylon can reduce calcium oxalate stones in the rat kidney by 40 and 55% respectively. Therefore, Cynodon dactylon has beneficial effects on kidney stone removal and might be used in human treatment.

KEYWORDS

Calcium oxalate . Cynodon dactylon . Ethylene glycol . Kidney stones

REFERENCES