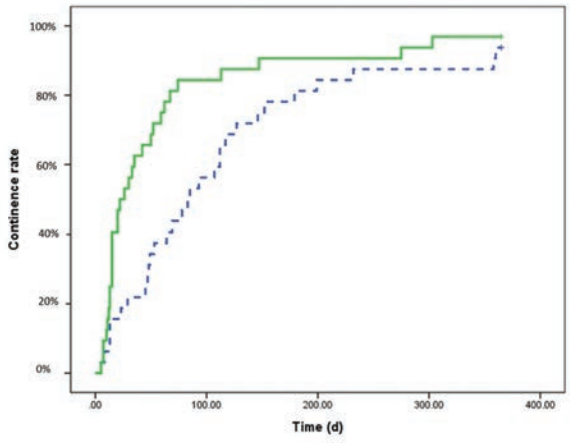
Print ISSN: 1879-5226
Online ISSN: 1879-5234

Urological Science

www.e-urol-sci.com

Volume 30
Issue 3
May-June 2019



	14 days	1 month	3 months	6 months	12 months
▪▪▪▪LRP (%)	15.6	21.9	53.1	81.2	93.7
——RARP (%)	25.0	56.2	84.4	90.6	96.8
P	0.324	0.006	0.001	0.281	0.554

LRP: Laparoscopic radical prostatectomy, RARP: Robot-assisted radical prostatectomy

Urine continence recovery after robotic-assisted vs. laparoscopic radical prostatectomy

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Original Article

Effect of Hydroalcoholic Extract of *Cyperus rotundus* L. Rhizome against Ethylene Glycol and Ammonium Chloride-Induced Urolithiasis in Male Sprague-Dawley Rats

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Abstract

Background: *Cyperus rotundus* L. is used in various dosage forms by Unani physicians in the treatment of urolithiasis. **Aims and Objectives:** The present study aims to evaluate the effect of hydroalcoholic extract of *Cyperus rotundus* in nephrolithiatic male Sprague Dawley rats. **Materials and Methods:** The animals were divided into 6 groups of 6 each. Group I received regular rat food and drinking water *ad libitum*. Group II to VI were treated with Ethylene glycol (0.75%, V/V) and Ammonium chloride (1%, W/V) in drinking water for 7 days to induce urolithiasis. Group II was sacrificed after 7 days administration of lithogenic agents however, from 8th day, group IV was treated with Cystone (750 mg/kg) and group V and VI with hydroalcoholic extract of *Cyperus rotundus* (100 mg/kg and 170 mg/kg, respectively) for further 14 days. Group III left untreated after 7 days administration of lithogenic agent till 14 days and sacrificed on 22nd day. Urine, biochemical parameters, kidney homogenate analysis and histopathology were carried out. Crystalluria analysed by light microscopy. **Results:** The test drug at both the doses showed significant reduction ($P < 0.001$) in number of urinary crystals. Test groups showed significant reduction in urine sodium ($P < 0.05$) and calcium ($P < 0.001$) while increased in urine magnesium. Serum creatinine ($P < 0.01$) and urea ($P < 0.05$) level significantly reduced in test groups. Histopathology of kidney showed almost normal kidney architecture. Kidney homogenate analysis showed significant reduction ($P < 0.05$) of calcium in group VI. **Conclusion:** The results showed that test extract has significant antilithiatic effect in terms of solute balance, reduction in crystal numbers and improvement in renal cell derangement.

Keywords: Antilithiatic activity, *Cyperus rotundus*, Unani medicine, urolithiasis

Introduction

The worldwide increasing incidence of urolithiasis and its prevalence make it a matter of medical concern which usually starts with obstruction and if left untreated results in severe complications such as multiple infections and hemorrhage suggesting need of ideal medical care.[1] Risk

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Received: 22-Nov-2018 **Revised:** 30-Jan-2019 **Accepted:** 11-Feb-2019

Access this article online

Quick Response Code:

Website: www.e-urol-sci.com

DOI: 10.4103/UROS.UROS_136_18

How to cite this article: Jahan N, Bano H, Ahmed Makbul SA, Kumar BN, Mushir A. Effect of hydroalcoholic extract of *Cyperus rotundus* L. Rhizome against ethylene glycol and ammonium chloride-induced urolithiasis in male sprague-dawley rats. Urol Sci 2019;30:99-106.