Urology journal

Volume 4, Issue 2, March 2007, Pages 86-90

Ethanolic extract of nigella sativa L seeds on ethylene glycol-induced kidney calculi in rats.

Hadjzadeh, M.A., Khoei, A., Hadjzadeh, Z., Parizady, M.

Department of Physiology, Ghaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran.

Abstract

INTRODUCTION: The aim of this study was to investigate the effects of the ethanolic extract of Nigella sativa L (NS) seeds on kidney calculi in rats. MATERIALS AND METHODS: Thirty-two Wistar rats were randomly divided into 4 groups: group A received tap drinking water for 30 days (intact control). Groups B, C, and D received 1% ethylen glycol for induction of calcium oxalate calculus formation. As the preventive, and treatment subjects, rats in groups C and D received ethanolic extract of NS, 250 mg/kg, in drinking water since day 0 and day 14, respectively. Urine was collected on days 0, 7, 14, and 30 of the study period. After 30 days, the kidneys were removed and prepared for histologic evaluation of calcium oxalate deposits. Urine calcium oxalate concentrations were determined by atomic absorption. RESULTS: The number of CaOx deposits was significantly greater in group B (P = .001). Calcium oxalate concentrations in the urine on days 14 and 30 increased significantly in group B and were higher than those in group C (P = .006 and P = .002, respectively). Urine oxalate concentration in group D decreased on day 30 and was lower than that in group B (P = .04). CONCLUSION: Treatment of rats with ethanolic extract of NS reduced the number of calcium oxalate deposits in a group of rats that received ethanolic extract of NS. The NS could also lower the urine concentration of calcium oxalate. We suggest further studies on the therapeutic and preventive effects of the NS on kidney calculus formation in human.

Reaxys Database Information

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Indexed Keywords

EMTREE drug terms: alcohol; ethylene glycol; plant extract

EMTREE medical terms: animal; article; black cumin; chemically induced disorder; male; nephrolithiasis; phytotherapy; plant seed; rat; Wistar rat

MeSH: Animals; Ethanol; Ethylene Glycol; Kidney Calculi; Male; Nigella sativa; Phytotherapy; Plant Extracts; Rats; Rats, Wistar; Seeds
Medline is the source for the MeSH terms of this document.

Chemicals and CAS Registry Numbers: alcohol, 64-17-5; ethylene glycol, 107-21-1;Ethanol, 64-17-5; Ethylene Glycol, 107-21-1; Plant Extracts

ISSN: 17351308 Source Type: Journal Original language: English
PubMed ID: 17701927 Document Type: Article

Hadjzadeh, M.A.; Department of Physiology, Ghaem Hospital, Mashhad University of Medical Sciences, Mashhad, Iran., ; email:Ms-hajzadeh@mums.ac.ir