EFFECTS OF HYDROPHILIC EXTRACT OF NASTURTIUM OFFICINALE ON PREVENTION OF ETHYLENE GLYCOL INDUCED RENAL STONE IN MALE WISTAR RATS

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INTRODUCTION

Nasturtium officinale is a traditional herb that used for diuresis and treatment of renal stones, but no scientific study approves this effect yet. The aim of this study was to determine the effects of hydrophilic extract of nasturtium officinale on ethylene glycol-induced renal stone in male Wistar rats.

Material and Methods:

In this study 32 male Wistar rats were randomly divided in six groups and studied during 30 days. Two groups of negative and healthy control received usual water and 1% ethylene glycol in water respectively. Low dose and high dose preventive groups, in addition to 1% ethylene glycol, daily gavaged with 750 mg/kg and 1.5g/kg of extract respectively. All rats were hold in metabolic cages individually in days 0, 15 and 30 and24-hour urine samples were collected and checked for volume, oxalate, citrate, calcium, phosphor and uric acid. In 30th day, rats were anesthetized with ether, and after taking serum sample from them, they were sacrificed and their kidneys were sent for pathological evaluation which was examined for presence and volume of calcium oxalate crystals.

Results:

Percentage of calcium oxalate crystals in negative control groups (75%), preventive groups with low dose (28.6%) and high dose (57.1%) in comparison to healthy control group (12.5%) increased and this difference between high dose preventive group and negative control groups with healthy control group was significant ($p < .05$).In 30th day urinary oxalate concentration in preventive and negative control groups were more than healthy control group that was statistically significant ($p<0.05$).

Conclusion:

This research showed that the nasturtium officinale extract has no significant effects in urinary and chemical parameters efficient in calcium oxalate stone crystals in rat but its extract in low dose has some preventive effect on renal stone formation and need more studies.

Key words- nasturtium officinale, calcium oxalate, ethylene glycol, Nephrolithiasis**,** rat