

ALTERNATE SYSTEMS OF MEDICINE FOR RENAL STONE DISEASE

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Abstract : Although medical and surgical management constitutes the cornerstone of management of nephrolithiasis, in India alternative and complimentary systems provide many opportunities and claims for cure for this recurring disease. This review highlights some of the important remedies in alternative system which many patients resort to in order to escape surgery.

INTRODUCTION

Nephrolithiasis is one of the most painful and common disorders of the urinary tract. As such, there is much interest among physicians and patients to identify effective measures to promote stone passage, stone dissolution and stone prevention. Besides surgery most patients find relief and solace in alternate systems of medicines like Ayurveda, Homoeopathy Acupuncture and many others.

AYURVEDIC MEDICINE FOR RENAL CALCULI

Most Ayurvedic medicines are believed to have a complex antimicrobial, diuretic, antispasmodic properties and litholytic and anticalcifying activities. Some of the scientifically proven medicines in use are

Gokshura (*Tribulus terrestris*)

Tribulus terrestris is one of the most commonly utilized herbs in Ayurvedic medicine for renal dysfunction. It is proposed to be effective through diuretic, analgesic and litholytic properties and is also reported to have haemostatic properties. It has been traditionally used to have haemostatic properties. It has been traditionally used as treatment for cystitis and renal calculi and as a diuretic. The mechanism of preventing nephrolithiasis is thought to occur by decreasing urinary oxalate excretion through alteration in hepatic oxalate synthesizing enzymes, glycolate oxidase (GAO) and glycolate dehydrogenase (GAD).

In a study, *T. terrestris* administration to sodium glycolate-fed male rats produced a significant decrease in urinary oxalate excretion and a significant increase in urinary glycolate excretion as compared with controls.

Uva-ursi

This compound acts as a urinary antiseptic through its active ingredient arbutoside, the glycoside arbutin, which is chemically transformed in the gastrointestinal, hepatic and urinary tracts to the antimicrobial hydroquinone. In a study two formulations were utilized a film coated tablets and aqueous solutions, high performance liquid chromatography (HPLC) cool array and capillary electrophoresis were utilized to evaluate the urine samples. The maximum urinary concentrations of hydroquinone equivalents was higher and peaked earlier in the quinone equivalents was higher and peaked earlier in the aqueous solution group versus the film-coated tablet group.

Though *Uva-ursi* is commonly prescribed for the therapy of calculus disease, only few studies supporting the use of *Uva-ursi* in the prevention or management of urolithiasis, are reported

Bahupatra (*Phyllanthus niruri*)

Phyllanthus niruri grows in India, China and tropical locations ranging from the Philippines to Cuba. It has been used for over 2000 years in treating kidney stones. Barros and colleagues evaluated the in vitro effect of *P. Niruri* extract on calcium oxalate (CaOx) crystallization through the addition of the extract to unfiltered rat and human urine samples. The presence of CaOx crystals was evaluated immediately and 24 h later. *P. niruri* extract failed to inhibit CaOx nucleation but was effective at reducing crystal growth and aggregation. Barros and colleagues subsequently demonstrated that *P. niruri* impacts crystal aggregation and stone growth in a rat model, seeded with a CaOx calculus.

Human studies have also shown the efficacy of *P. niruri* in treatment of stone disease. Nishiura and colleagues showed *P. niruri* to significantly reduce urinary calcium excretion in patients with prior hypercalciuria.

Java Tea (*Orthosiphon stamineus and grandiflorus*)

This herb has been used for treatment of kidney and bladder stones and urinary tract infections. The proposed active ingredients are flavonoids in the *Orthosiphon* that are believed to have diuretic, antiseptic, and litholytic properties.

A prospective randomized trial of 48 patients compared the efficacy of *O. grandiflorus* to sodium potassium citrate in the treatment of patients with renal calculi at least 10 mm in size. Patients were either given a 2.5g tea bag of *O. grandiflorus* to be boiled in 250mL of water twice daily or titrated sodium potassium citrate to keep their urinary pH between 6.2 and 6.8. Efficacy was determined by the rate of stone size reduction per year, which was 28.6% ± 16% for the group receiving *O. grandiflorus* and 33.8% ± 23.6% for the group receiving sodium potassium citrate. The difference between these results was not statistically significant; however, the side effect profile was more pronounced for those patients taking sodium potassium citrate.

Horse Gram (*Dolichos biflorus*)

Dolichos biflorus has traditionally been used to dissolve existing renal calculi, provide symptom relief and prevent recurrence. Investigations have studied the litholytic properties of *D. biflorus* and demonstrated the in vitro mechanism of action to be inhibition

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