



## DIURETIC ACTION GOKSHUR AND VARUNA IN THE MANAGEMENT OF MUTRASHMARI (URETERIC STONE) - A REVIEW

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**ABSTRACT** Mutrashmari – urolithiasis is a complex physiochemical process which involves sequence of events in the formation of any urolithiasis. Sushruta, father of Indian surgery considered this renal calculus, one among the Astamahagada, the eight incurable diseases among the disease. Urinary calculi are the third most common affliction of the urinary tract. Urinary stones have plagued humans since the earliest record of civilization. Urinary Calculi are mostly found in kidney, ureter, bladder and urethra. The modalities of treatment for stone changes as per size and site of stone. The etiology of stones remains speculative. The known therapy for ureteric stone after the trials of conservative therapy was URS and ESWL. This method was mostly likely for stone size greater than 8mm and diuretic and fluid therapy was useful for ureteric stone for stone remove. Ayurvedic drug acting as diuretic like Gokshur, Varuna has potent diuretic action and act as an antiurolithotriptic action which may be beneficial for expulsion of ureteric calculus. In all the Brhat and Laghu Samhitas also mentioned these drugs act as diuretics action. In modern science hydrotherapy therapy and advance surgery needed hospitalization but not needed in this treatment.

**KEYWORDS :** Diuretic, Ureteric stone, Gokshur, Varuna

### INTRODUCTION -

Ancient surgical text *Sushrut Samhita*, is evident that the urological problems form an important part of medical problem. The prevalence rate in India ranges around 13.4% at mean age group of 18-45 years. Clinical features of the disease are described in Vedas. *Sushruta* explained the urinary calculus under the heading of "*Ashmari*" in detail including etiological factor, classification, symptomatology, pathology, complication and its management in the scientific manner. <sup>[1]</sup> *Mootrashmari* is one of the most common and distressing malady among the group of Urinary disorders. It constitutes one of the commonest diseases in our country. Pain due to kidney stones is known as worse than that of Labour pain. In India, approximately 5-7 million patients are suffered from stone disease.

*Sushruta* describes that, *Asanshodhanshilata* and *Mithya Aahar-Vihar* causes *Kaphaprakop* and by *Srotovaigunya* it leads to *Mootrashmari*. Now days various treatment modalities are available like Percutaneous Nephrolithotomy, Extracorporeal Shock Wave Lithotripsy, but the facilities are available only at higher centers and are too expensive for common peoples. Even after surgical intervention the pathogenesis behind recurrent Stone formation cannot be avoided. '*Srawanatsrotansi*' indicates that there is a continuous secretion process functioned by some channel known as *srotas*. *Mootravahasrotas* are also paired and their origin is *Basti* and *Medhra*. But *Acharya Charaka* told *Basti* and *Vankshana* as the origin of *Mootravaha Srotas*.<sup>[2]</sup>

### Objective:

The primary objective of this article is to articulate the knowledge of diuretics action of *Ayurveda* drug on ureteric stone.

### MATERIAL AND METHOD -

*Ayurveda's* with modern Textual materials have been used for this study and related

References have been collected. We are also reviewed the *Brihatrayi* and *Laghutrayi* and *Nighantu* like *Dhanvantari*, *Bhavprakash* and *Adarsha nighantu* etc. and literature search for medicinal plant text and computerized database such as pubmed, Google scholars and science direct were searched to identify all experimental and clinical trials and preview journal, research article and various commentaries on it have been referred. Various research papers on *Ayurvedic* herbs and other websites have been searched, too.

### Varuna:<sup>[3]</sup>

Botanical name: *Crateva nurvala*  
Family: *Capparidaceae* Kula: *Varunakula*  
Gana: *Varunadi*, *Tiktavarga*, *Vatasamshaman*<sup>[4]</sup>

क्वाथो वरुणमुलस्य तत्कल्केन समन्वितः । पित्तो निपातयेत् सद्यः शर्करा अश्मरिमपि ॥<sup>[5]</sup>

वरुणः पित्तलो भेदि श्लेष्मकृच्छ्रश्ममारुतान .....<sup>[6]</sup>

### Active compounds

*Crateva nurvala* contain wide variety of active component which is lupeol, sitosterol, rutin, quercetin, friedelin, diosgenin, sitosterol, butulinic acid and betulinolaldehyde, kaempferol.

### Description

In *Ayurveda* drug acting as *Ashmaribhedana* by its tendency which is called

As *Prabhava*. Experimental studied shows *Crateva nurvala* effectively prevents the deposition of stone materials in the urinary bladder of rats. The herb neutralizes the enzyme called glycolate oxidase and this particularly effect on reducing the body's production of oxalates which combine to form kidney stone. The Lupeol help to lower the intensity of kidney damage. It has beneficial uses in effective diuretics. It have also lithontriptic property.<sup>[7]</sup>

It dissolve the phosphate type of calculi. The bark containing active component triterpenoid lupeol prevents the formaton of bladder stone but also reduce the size of calculi. The varun bark has diuretic and litholytic activity.<sup>[8]</sup> *Crateva nurvala* Buch. Ham. is an importance medicinal plant in India, and its extract and component were used to treat various inflammatory diseases such as urinary tract infection, RA. The extract of *Crateva nurvala* inhibits lipopolysaccharides (LPS) - induced inflammatory responses via negative regulation of extracellular signal regulated kinase (ERK) in murine macrophages, suggesting that ECN (extract of *Crateva nurvala*) for alleviating severe inflammation.<sup>[9]</sup> The *Ayurved* drug made from *Varuna* (*Crateva nurvala*) and banana was assessed and it was promised the result of reduction and expulsion of urinary calculus also with reduction of renal pain due to calculus.<sup>[10]</sup>

### Gokshur:<sup>[11]</sup>

Botanical name: *Tribulus terrestris*  
Family: *Zygophyllaceae* Kula: *Goksurakula*  
Gana: *Charak-Mutravirachaniya*, *Shothhara*, *Krimighna*, *Anuvasanpaga*, *madhurskanda* <sup>[1 2]</sup> *Sushruta-Vidharigandhadi*, *Viratarvadi*, *Laghupanchamul*, *Kanthakapanchamula*, *Vataasmarya bhedana* <sup>[13]</sup>

गोक्षुरः शीतलः स्वादुर्बुलकृहस्तिशोधनः ।  
मधुरो दिपनो वृष्यः पुष्टिदृष्टिश्चाश्मरीहर .....<sup>[12]</sup>

**Chemical Composition:**

*Tribulus terrestris* revealed the presence of saponins, flavonoids, glycosides, alkaloids and tannins. According to literature data, the saponin composition and they reported that furostanol and spirostanol, saponins of tigogenin, neotigogenin, chlorogenin type are frequently found in plant.<sup>[16]</sup>

**Description:**

It has diuretics and anti-urolithic activity. The diuretics properties of plant are due to large quantities of nitrates and essential oil present in fruit and seeds. The diuretics activity can also be attributed to the presence of potassium salt in high concentration.

Flanonoids, Flavonol glycosides, steroidal saponins and alkaloids are the main constituents in these plants. The increased tonicity of the smooth muscle which are produced by TT extract together with its diuretics activity helped in the propulsion of stone along the urinary tract. *Kwatha*-high strength shows diuretics effect comparable to that of reference standard frusemide and also exhibited potassium sparing effect.<sup>[16]</sup>

Two variety of *Gokshura* namely laghu and brihat which are describe by *Nighantu*. *Mutral* and *Rasayana* action are attributed to this drug. The diuretics effect of *Gokshura* is conformed through its inclusion by Charaka in *Mutra-virechana* and *Shothahara*. An ethanolic extract from fruits shows significant dose dependent protection against urolithiasis. Gujrat et al. investigated the diuretics effect of decoction of fruits in rats and found a moderate diuretics activity.<sup>[17]</sup> The *Gokshura* has *madhur ras* and *panchabhautic* composition is *pruthvi* and *jala* had attributed for *snigdha* which help storing water and act as diuretic (*Mutra- virechana*).<sup>[18]</sup>

**DISCUSSION -**

A stone lodged in the ureteropelvic junction or upper ureter may cause hydronephrosis if the obstruction is intermittent. Infection is the common complication due to stasis of urine cause by stone; such infection may lead to pyelonephritis and hydronephrosis in the kidney. Basically the renal stones have primary stone and secondary stones which may lodge in the kidney, ureter, bladder and urethra. This drug has very little toxicity and their presence of high potassium helps to prevents potassium depletions and giving the benefits of potassium sparing diuretic effect. In above state and non- obstructive calculus in the ureter may require medical management like diuretics, plenty of water, fluid therapy .out of these this three drug have potent diuretics action and lithotriptic action which may beneficial in the ureteric stone. The diuretics modulate the volume and composition of body fluids in variety of clinical condition like hypertension, heart failure etc. In ureteric stone up to 8mm needed conservative medical management before going to operate if stone not expelled out, in such situation we used decoction of above *Ayurvedic* drug which act as diuretic which may act as expelled stone by diuretic effect and which does not required hospitalization.

**CONCLUSION -**

In ureteric stone treatment is medical management to expel out stone so in such patients this *Ayurvedic* drug help for removed stone by its diuretic action and action. So it may concluded that this drug useful in ureteric calculus.

This two drug acting as diuretic and lithotriptic action so can use in kwath and tablet forms use in ureteric calculus

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