

A Drug Review on Varunadi Kashaya w.s.r. to Mutrashmari (Urolithiasis)

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ABSTRACT:

Background: Mutrashmari (Urolithiasis) is Kapha-vata pradhana vyadhi. Modern science consider various factors like sedentary life style for urinary stone formation and typically occurs in middle age 30-45. Varunadi Kashaya is a formulation consists of herbal drugs as mentioned in Chakradutta with the applicability in Mutrashmari (Urolithiasis).

Material and Methods: Ayurvedic texts, as well as the data bases Google scholar, PubMed, and Digital Helpline for Ayurveda Research Articles (DHARA), Research Gate web-based search engines, journal, were used to search for relevant literature and information on Mutrashmari (Urolithiasis). **Result:** Mutrashmari (Urolithiasis) is a 'Kapha-Vata pradhana vyadhi', Varunadi Kashaya referred in Chakradutta was reviewed, analysed in detail and showed the dominance of Ruksha, Snigdha and Laghu Guna with Kapha-vatashamaka property and along with Depana, Pachana, Bhedhana, Anulomana, Mutrala, Kapha-nihsaraka, Shothahara and Ashmarinashana Karmas. Pharmacological activity like diuretic, lithotriptic, anti-calculus, anti-inflammatory, anti-urolithiatic effect were also reported. **Conclusion:** The classical formulation Varunadi Kashaya is a very unique and finds its great utility in management of Mutrashmari (Urolithiasis).

Keywords: Ashmarinashana, Bhedhana, Mutrashmari, Urolithiasis, Varunadi Kashaya

I. INTRODUCTION

One of the most prevalent urinary conditions is Mutrasmar. An extensive and thorough description of Mutrasmar, including its classification, symptomatology, aetiology, pathology, complications, and management, has been provided by Acharya Susruta, the pioneer in the art and science of surgery¹. Formation of urinary calculi were described in Ayurvedika scriptures Mutrasmar.⁴ It is the third most common disease of the urinary tract. Mutrashmari

is very high incidence occurring due to the high mineral content of water and hot climate.

Urolithiasis affects about 30% of patients with urinary problems. In India approximately 5-7 million patients suffer from mutrashmari & at least 1/1000 of Indian population need to hospitalization due to kidney stone disease². The process of urinary stone formation as described by Sushruta is as follows –.in Asamshodhana sheela persons, one who does not follows Shodhana (purification) treatment and who is Apathyakaari (uses unwhole some items), Shleshma Dosha gets aggravated, and saturates the urine in system. This saturated urine (Shleshma Yukta Mootra) is the material (cementing substance) which causes urinary stone formation. Urinary stone development is thought to be caused by a number of factors, including inheritance, age, sex, metabolic problems, a sedentary lifestyle, hydration status, water mineral content, dietary deficiencies, etc., according to modern science. Usually, urolithiasis strikes between the ages of 30 and 45.

In Ayurveda classics, many drugs are described for the Mutrashmari. The drugs Varunadi Kashaya have been used by the virtue of their qualities, which are opposite to that of Ashmari and also drugs have been described for the treatment of Mutrashmari (Urolithiasis) by Acharya Chakradutta³.

Varunadi Kashaya is a formulation consists of herbal drugs as mentioned in Chakradutta. Present review were aimed at gathering the information about the details of the constituents of this formulation along with the applicability of this formulation in Mutrashmari (Urolithiasis).

II. MATERIALS AND METHODS

2.1. Method of review

The pertinent literature was found and presented in a methodical manner using all of the pertinent Ayurvedic texts, as well as the databases Google Scholar, PubMed, Medline, AYUSH

Research Portal, and Digital Helpline for Ayurveda Research Articles (DHARA), dissertations from Ayurvedic colleges, studies accessible on Research Gate web-based search engines, and journals.

2.2. Procurement of Trial Drugs

All the trial drugs i.e. Varunadi Kashaya were identified. The pharmacognostical, pharmaceutical and microbiological studies of all drugs were carried out in the Pharmacognosy Laboratory, Modern Pharmaceutical Chemistry Laboratory and Microbiology Laboratory for authenticity of raw drugs and shelf lives of finished products.

2.3. Preparation of Drugs

All the drugs were prepared as per the method of preparation of Kashaya as mentioned in Sharangadhara Samhita⁴.

2.4. Materials for Vaunadi Kashaya

वरुणत्वकशिलाभेदशुण्ठीगोक्षुरकैः कृतः।

कषायः क्षारसंयुक्तः शर्कराम च भिनत्यपि || (चक्रदत्त अश्मर्यधिकार/२८)

Description of Ingredients of Varunadi Kashaya, English / Latin name, Part used and its quantities are as given in Table 1:

Table 1: Ingredients of 'Varunadi Kashaya'

Sr. No	Name of the Ingredient	Botanical name/ English Name	Part used	Proportion
1.	Varuna	Crataeva religiosa	Bark	1 Part
2.	Pashanbheda	Berginia ligulata	Leaf	1 Part
3.	Shunthi	Zingiber officinale	Rhizome	1 Part
4.	Gokshura	Tribulus terrestris	Root	1 Part
5.	Yava kshara	KOH		0.025 Part

III. RESULT

The pharmacological properties of the formulation can be explained on the basis of the individual drug properties as mentioned below:

1. VARUNA⁵

Latin Name	• Crataeva nurvala.
Family	• Capparidaceae
Synonyms	• Varuna
Vernacular Name	• English Name: Three leaved caper • Hindi Name: Varuna
Classical Categorization:	• Charakasamhita: Tiktakandha • Susrutasamhita: Varunadi • Vagbhatta: Varunadi
Part Used	• Root bark, stem bark, leaves
Rasapanchaka	• Rasa: Kashaya, Madhura, Tikta, Katu • Guna: Laghu, Ruksha • Virya: Ushna • Vipaka: Katu • Prabhava: Ashmaribhedana • Doshaghata: Kapha-Vatashamaka
Karma	• Deepana, Anulomana, Bhedana, Krimighna, Raktashodhaka, Mutrala, Jwaraghna, Ashmarighna.
Indication:	• Ashmari, Mutrakrichchhra, Mutraghata, Bastishula, Mutramarga Sankramana, Mutra- Mutramarga Vikara, Bastiroga, Vrikka Roga, Vrikka Shotha
Therapeutic uses	• It is used in Ashmari, Mutrakrichchhra, Mutraghata, Bastishula, Mutramarga Sankramana, Mutra - Mutramarga Vikara, Bastiroga, Vrikka Roga, Vrikka Shotha etc.

	- Varuna root and stem bark paste as well as decoction are administered orally in Ashmari. - Decoction of Varuna root is taken with honey.
Chemical constituents	Bark contains saponin, tannin, lupeol, sitosterol, stearic acid and a mixture of other fatty acids (C20, C22, C24, C26) were isolated from the root bark.
Pharmacological actions	Diuretic, Lithotriptic, Alterative, Laxative, Demulcent etc.

2. PASHANBHEDA⁶

Latin Name	Bergenia ligulata Wall
Family	Saxifragaceae
Synonyms	Asmaghna, Prastara, Nagaghedaka, Asmabheda, Nagabhid, Asmribhedaka, Nagajit, Shilabheda
Vernacular Name	English Name: Rockfoil Hindi Name: Patharcua, Dakachru, Pakhanabhed
Classical Categorization:	Charakasamhita: Mutravirechaniya Sushrutasamhita: Viratarvadi Vagbhata: Viratarvadi
Part Used	Root
Rasapanchaka	Rasa: Kashaya, Tikta Guna: Laghu, Snigdha, Tikshna Virya: Sheeta Vipaka: Katu Doshakarma: Tridoshaghna
Karma	Mutrala, Asmaribhedana, Stambhana, Kaphanisaraka, Jvaraghna, Visaghana, Raktapittasamka- Hridya, Sothahara, Vranaropana.
Indication	Shula, Gulma, Ashmari, Mutrakrichchra
Therapeutic uses	It is used in Ashmari, Mutrakrichchra, Mutraghata, Yonniyapad, Shula, Gulma etc.
Chemical constituents	Root contains tannic acid (14.2%), galic acid, starch 19%, mineral salt, metarvin, albumin, glucose mucilaginous, matter, wax and aromatic substance.
Pharmacological actions	Diuretic, anti-calculus medicine, anti-diabetic, astringent, cardio tonic, Expectorant, Antipyretic, Antidote to poison, Anti-inflammatory, Wound healer and Anti hemorrhoid.

3. SHUNTHI⁷

Latin Name	Zingiber officinale Roxb.
Family	Myrsinaceae.
Synonyms	Sunthi, Nagar, Srinagavera, Mahousadha
Vernacular Name	English Name: Ginger, Ginger root. Hindi Name: sonth
Classical Categorization:	Charak: Trptighna, Arsoghna, Dipaniya, Shulaprasamana. Shushruta: Pippalyadi, Trikatu. Vagbhata: Pippalyadi.
Part Used	Rhizome.
Rasapanchaka	Rasa: Katu Guna: Laghu, Snigdha Virya: Ushna Vipaka: Madhura Doshakarma: Vatakaphashamaka

Karma	Vedana Sthapaka, Vata-shamaka, Sheetaprashamaka, Ropana, Deepana, Pachana, Triptighna, Vatanulomana, Shulaprashamana, Arshoghna, Bhedana, Grahi and Jwaraghna.
Indication	Vatavyadhi, Avasada, Arcuhi, Hrillasa, Chhardi, Agnimandya, Ajirna, Kosthavata, Adhamana, Grahani, Gulma, Udarashula, Anaha, Vibandha, Arsha, Hriddaurbalya, Hridroga, Sheetapita, Pratishtyaya, Samanya Daurbalya.
Therapeutic uses	The raw ginger is acrid, thermogenic, carminative, digestive and laxative. It is useful in anorexia, coryza, bronchial asthma, diarrhoea, dyspepsia, inflammation and fainting. The dry ginger is emollient, appetizer, laxative, stomachic, stimulant, anodyne, anthelmintic and carminative. It is useful in dyspepsia, piles, hyperacidity, abdominal pain, vomiting, diseases of pharynx, cardiac disorders, inflammations and Rheumatoid arthritis.
Chemical constituents	It contains Heptane, isovaloraldehyde, camphene, β-pinene, Casinine, myrecene, linonene, β-phellandrene, α-curcumene, gingerol, zingerone, shogaol, ginger glycolipids A, B, C gingersols, cineol, gzingeral, gingeodiol, sesquiterpene, zingiberenol, threonine, glycine, cysteine, isoleucine, leucine and arginine.
Pharmacological actions	Anti-Inflammatory, Hypolipidaemic, Antiemetic, Antiulcer, Antipyretic, Antidepressant, Antioxidant, Antibacterial, Antifungal, Cholagogic, Analgesic and Hepatoprotective.

4. GOKSHURA⁸

Latin Name	Tribulus terrestris Linn.
Family	Zyophyllaceae
Synonyms	Ikshugandhika, Vanashringataka, Kantaphala, Svadakantaka
Vernacular Name	English Name: Cow hage Hindi Name: Goksharu
Classical Categorization:	Charakasamhita: Shothahara, Mutravirechaniya, Krumighna Susrutasamhita: Viratarvadi, Laghu Pancharmala Vagbhata: Vidarigandhadi
Part Used	Fruit, root
Rasapanchaka	Rasa: Madhura Guna: Guru, Snigdha Virya: Sheeta Vipaka: Madhura Doshakarma: Vatapittashamaka
Karma	Vedanasthapana, Mutravirechaniya, Ashmarinashana, Mutrala, Shothahara, Vajikarana.
Indication	Mutrakruchhhara, Ashmari, Prameha, Hrdroga, Arsha
Therapeutic uses	- Powder of Gokshura fruit is boiled with milk and consumed in Vajikarana. - Decoction of shunthi and Gokshura will be useful. - Gokshura and the flower of tila are applied externally by making them into paste using honey.
Chemical constituents	The fruit contains – An alkaloid in traces. A fixed oil 3-5% consisting mainly of unsaturated acids. An essential oil in very small quantity. Resins and fair amounts of nitrates (Chopra) From the fruits and leaves, flavonoid compounds like kaempferol, kaempferol-3, glucoside, kaempferol-3, rutinoid and a new acylated steroid, saponinins – 5, neotigogenin and hecogenin have also been reported.
Pharmacological actions	Anti-inflammatory, Anti-urolithiatic, Antioxidant, Hepato-

	protective, Anti-spasmodic, Antimicrobial, Anti-hypertensive
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5. **YAVAKSHARA⁹**

Latin Name	• Potasii carbonas
Family	• Gramineae
Synonyms	• Pakya, Kshara, Yavakshara, Yavshuka, Yavagraja.
Vernacular Name	• English Name: Barley • Hindi Name: Jou
Classical Categorization:	• Dhanvantari Nighantu: Shatapushpadi Varga • Bhavaprakash Nighantu: Haritakyadi Varga • Raja Nighantu: Pippalyadi Varga
Part Used	• Panchanga
Rasapanchaka	• Rasa: Katu • Guna: Laghu, Ruksha • Virya: Ushna • Vipaka: Katu • Doshakarma: Kapha-vatashamaka
Karma	• Mutrala, Kapha-Nihsaraka, Deepana, Mridu-Virechana, Raktashodhaka
Indication	• Pandu, Grahani, Amlapitta, Ashmari, Mutrakrichchhra, Udarashula, Gulma, Arsha.
Therapeutic uses	• It is used in the treatment of difficulty in urination and urinary calculi. • It is also used in treating bloating, abdominal pain, ascites. • This drug is useful in the pathogenesis like Amlapitta, Ashmari, Mutrakrichchhra, Udarashula, Gulma, Arsha.
Pharmacological actions	• Diuretic
Yavakshara Preparation	• This is an alkali substance, prepared from the breads of barley through Kshara Nirmana Vidhi method. Dry Yava Panchanga should be divided into small pieces, Ignited by Dry Yava stalk . When the fire has burnt out, the ash and the slake lime should be collected separately. Then one Droṇa of the ash should be dissolved in six Dronas of water and filtered 21 times and should be treated on fire in a big pan, while it is slowly stirred by a ladle. When it becomes clear, red, sharp and slimy, it should be filtered through a wide piece of cloth and the filtrate should be placed again on fire after removing the separated residue.

Table No. 2: Average of Pharmacodynamics of Varunadi Kashaya

Properties	Observations in Varunadi Kashaya	
	Total no. of Drugs	Percentage%
Rasa		
Madhura	2	40
Katu	3	60
Tikta	2	40
Kashaya	2	40
Guna		
Guru	1	20
Laghu	4	80
Ruksha	2	40
Snigdha	3	60
Tikshna	1	20
Vipaka		

Madhura	2	40
Katu	3	60
Virya		
Ushna	3	60
Sheeta	2	40
Doshaghnata		
Vata	5	100
Pitta	2	40
Kapha	4	80
Karma		
Anulomana	1	20
Deepana	4	80
Paachana	1	20
Vatanulomana	1	20
Mutralla	4	80
Bhedana	2	40
Kapha-Niharsaka	2	40
Ashmarinashana	3	60
Shothahara	2	40
Jwarahara	3	60

IV. DISCUSSION

Mutrashmari (Urolithiasis) is a 'Kapha-vata pradhana vyadhi', and has recommended vataghna and kaphaghna aushadhi by Acharayas. 'Varunadi Kashaya', formulation explained by Chakradatta, possess all the necessitating properties like Kaphahara, Bhedhana and Mutralla. The ingredients of the compound pacify Kapha Dosha by virtue of their Ruksha Guna, Katu Vipaka and Ushna Virya and also show "Bhedhana" property due to Ushna Virya. The Bhedhana Karma is again enhanced by famous Bhedhana Dravya i.e. Yavakshara, which is one ingredient in it¹⁰.

The Vatanulomana, Shothahara and Mutralla properties of ingredients helps to relieve pain and Sthanika Sotha. Jwara is also relieved due to the Jwarahara action of Pashanbheda, Varuna and Shunthi. Deepana property of drug helps to increase the Agni, which further check the formation of Ama at Jatharagni level¹⁰.

Because of their Madhur Rasa, Sheet Virya, Gokshura and Varuna, the remaining medications in the compound have mutralla (diuretic) properties. Once more, this formulation contains the well-known mutralla dravyas Yavakshara and Pashanbheda¹¹.

All the ingredients of Varunadi Kashaya showed the dominance of katu (pradhana rasa) – tikta, madhura, kashaya rasa, katu vipaka, ushna virya with the dominance of laghu, rukshna and snigdha guna followed by guru and tikshna guna with kapha-vatashamaka Property and dominance

of depana, pachana, followed by mutralla, anulomana, vatanulomana, bhedhana, kapha-niharsaka, and ashmarinashana karmas (Table 1 & 2).

Varunadi Kashaya has pharmacological activity like diuretic, lithotriptic, anti-calculus, anti-inflammatory, anti-urolithiatic effect. Hence, this formulation has the capability to disintegrate the pathogenesis of the disease Ashmari and due to its diuretic effect, flushes out the disintegrated Ashmari by the process of Diuresis.

V. CONCLUSION

The predominant Dosha in Ashmari is Kapha-Vata. Hence, Guru, Sheet, Snigdha, Madhura Ahara, and faulty life style may increase Kapha leading to formation of Mutrashmari. The classical formulation Varunadi Kashaya is a very unique and finds its great utility in management of Mutrashmari (Urolithiasis) and therefore to validate the same need scientific evaluation through pharmacological and clinical studies. Multiples of clinical trials and large scale manufacturing can be useful for generation of large amount of clinical trial data for future.

CONSENT

It is not applicable.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTEREST

Authors have declared that no competing interest exist.

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