

CLINICAL EVALUATION OF SHVADANSHTRADI KWATH IN THE MANAGEMENT OF MUTRASHMARI

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Published online: March, 2019

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ABSTRACT

Mutrashmari is very common now a day, many patients are coming in OPD for better treatment. The water supply is not proper to the normal people. There is very hard water supply due to water level is going down globally, so high prevalence of *Ashmari*. After surgery the recurrence rate is high as 60-80%. So, many treatment are available for in modern aspect, *Homeopathy, Unani & Ayurvedic* aspect. The treatment is *Ayurvedic* aspect is holistic. To avoid the incidence of recurrence after surgical removal of stone and in search of an effective conservative treatment the present work has been performed. The present study was conducted in 15 clinically diagnosed patients of Urolithiasis were treated with *Shvadanshtradi Kwath* for 60 days. After 2 months, extremely significant improvement in pain, size of calculus, no of calculus by *Shvadanshtradi Kwath*. Dysuria, Burning micturition, increased frequency of micturition also improved significantly by this.

Keywords: Urolithiasis, *Mutrashmari*, *Shvadanshtradi Kwath*

INTRODUCTION

Ayurveda, the science of life and an *Upanga* of *Atharvaveda*, has described many diseases under the captions of *Mutrakrichhra*, *Mutraghata*, *Mutrashmari* etc. *Mutrashmari* is one of the most common and distressing disease among the group of urinary disorder. *Sushruta* the pioneer in the art of surgery, during early civilization has described the problem of *Mutrashmari* widely and comprehensively. The concept of

Mutrashmari, its classification, symptomatology, etiological factors, pathology, complications and management have been dealt with both the lines that is to say medico-surgical line. The *Mutrashmari* is considered as one of the *Mahagada* by *Sushruta* owing to its potentiality to disturb the urinary system.¹ Formation of *Ashma* like (stone) substances within the urinary

system is called *Mutrashmari*. According to various texts, disease *Ashmari* can be defined as

☞ *Tulayatam Ashmanayati Tasmataam Ashmarim Viduhu (Shabdakalpadruma).*

☞ *Ashmari Mutrakrichchhrasyat (Amarkosha)*

☞ *Ashmari Mutrakrichchhrabheda (Ayurvedic Shabdakosha)*

Management of various types of *Ashmari* has been described in *Sushruta Samhita* in *Chikitsa Sthan*². Indication for the surgical management has maintained along with a note of caution regarding its risk and doubtful chances of success³. Among these modalities *Shvadanstradi Kwath* is supposed to be effective looking in the management of *Ashmari*, probably this drug have 'Guna' that may resolve the condition.

OBJECTIVES: To evaluate the efficacy of *Shvadanstradi Kwath* in the management of *Mutrashmari*.

MATERIAL & METHOD

Selection of patients: 30 patients were selected from O.P.D. & I.P.D. of hospital N.I.A., Jaipur, irrespective of sex, caste and religion using randomized method of trial.

Inclusion Criteria

- Age between 16 to 60 years
- Clinically and pathologically diagnosed patient all type of *Mutrashmari*.
- Patients not suffering from any systemic disorder.
- Patients not taking any other medicine for *Mutrashmari*.
- Size of the stone up to 10mm.

- Stone present in Upper Calayx, ureter, urinary bladder.
- Multiple urinary stone

Exclusion criteria

- Age less than 16 years and more than 60 years.
- Patients with obstructive uropathy.
- Patients suffering from any major systemic disease like diabetes mellitus, renal failure, renal tuberculosis etc.
- Benign prostatic hyperplasia.
- Size of stone more than >10mm.

Criteria for withdrawal

- If any serious condition or any serious adverse effects appear during the course of study which requires urgent treatment.
- If the patient discontinue.
- If patient wants to withdraw him/her from the clinical study.

1. Laboratory Investigations

Following investigations were carried out in the patients to rule out any organic or systemic disease. Radioscopic investigation- USG (KUB region), Blood investigation- Serum Uric acid, Serum Creatinine, Urine investigation- Urine analysis (R/M)

2. Trial Group: All 15 patients were treated with *Shvadanstradi Kwath* for a period of 60 days.

Drug regimen:-

Shvadanstradi Kwath⁴- *Shvadanstradi Kwath* is mentioned in *Chakradutta* under *Ashmari Rog Chikitsa*.

Table 1: Ingredients⁵

Sr. No.	Plants	Latin Name	Part used	Quantity
1.	<i>Shvadanstradi</i>	<i>Tribulus Terrestris</i>	Seed	1 part
2.	<i>Eranda</i>	<i>Ricinus communis</i>	Leaves	1 part
3.	<i>Shunthi</i>	<i>Zingiber officinale</i>	Dry rhizome	1 part
4	<i>Varun</i>	<i>Crataeva nurvala</i>	Bark	1 part

Method of preparation: All the ingredients of *Shvadanstradi Kwath* are taken in equal quantity (total 25gm) in *Yavakutta* form. Then decoction was prepared by adding 16 times water (400ml) to the total

weight of drugs. When ¼th (100ml) of the water remained then this decoction was Filtered.

Dose- 100ml. (25gm) twice a day, after meal, Dosage form- *Kwathchurna* (Coarse powder for decoction)

Route of administration- Oral, Duration- 60 days

OBSERVATIONS

- Maximum number of patients (56.66%) in the present study was in the age group of 16-30 years, while 20% patients belonged to age group of 31–40 years. However, age has no direct relation with the *Mutrashmari* formation but it is considered that 3rd and 4th decades of life are more prone to this disease (**Robbins Pathology Basis of Disease, 5th Ed.**).
- Highest number of patients were male i.e. 70% while rests of the patients i.e. 30% were female. The male female ratio suggests that male were more susceptible to the disease. This may be due to more serum testosterone hormone level in male. Findayson and Richardson postulated that female is having less testosterone level, so they are less prone to disease (**Findayson and Richardson in 1974**).
- Maximum i.e. 80% patients were found to be addicted to Tea/coffee. It shows that excessive intake of tea/coffee cause rise in uric acid excretion and increased oxalic acid output, which may help in *Ashmari* formation.
- Maximum number of patients were possessing *Vata-Kapha Prakriti* i.e. 46.66%. So the above data favours the concept given by *Acharya* in the context of *Ashmari* Formation, that *Vayu Dosha* play an important role for *Sthana Samshraya* of *Kapha* for the formation of *Ashmari*.
- Maximum i.e. 73.33% patients were found vegetarian. Fluid intake and urine output may have an effect on urinary stone disease. High sodium intake is associated with increased urinary sodium, calcium and pH and a decreased excretion of citrate; this increases the likelihood of calcium salt crystallization and leads to *Ashmari* formation (A uric acid disorder in patients with calcium stones, **Hodgkinsons; Society of Urological nurses & associates 2005**) Who consuming more Calcium & protein rich food, predisposes to Calcium phosphate & Uric acid calculi. In *Ayurveda*, it has been described that the persons who consume more of *Sita*, *Snigdha* and *Guru Ahara* are more prone to *Ashmari* formation.

RESULTS

Table 2: Effect of therapy on subjective criteria in 15 patients of *Mutrashmari*

Criteria	Mean		Diff.	% of Relief	SD	SE	p value	Result
	BT	AT						
Pain	1.26	0.20	1.06	84.12	0.70	0.18	0.0005	ES.
Dysuria	0.66	0.06	0.60	90.90	0.73	0.19	0.0156	S.
Burning micturition	0.66	0.13	0.53	80.30	0.74	0.19	0.0313	S.
Increased frequency of micturition	1.20	0.73	0.47	39.16	0.63	0.16	0.0313	S.

In 15 patients, Extremely Significant result was found in pain and significant result was found in dysuria, burning micturition and increased frequency of micturition.

Table 3: Effect of therapy on objective criteria in 15 patients of *Mutrashmari*

Criteria	Mean		Diff.	% of Relief	SD	SE	p value	Result
	BT	AT						
Hematuria	0.53	0.20	0.33	62.26	0.61	0.15	0.1250	NS.
WBC count of urine	0.66	0.40	0.26	39.39	0.59	0.15	0.2500	NS.
Size of calculus	1.73	0.66	1.07	61.84	0.70	0.18	0.0005	ES.
No. of calculus	1.80	0.66	1.14	63.33	0.74	0.19	0.0005	ES.

DISCUSSION

Effect of therapy on subjective criteria: *Shvadanshtradi Kwath* provided extremely significant relief in pain (84.12%), and significant relief in increased frequency of micturition (39.60%), burning micturition (80.30%) and dysuria (90.90%) So the relief in **pain** was observed might be due to *Vedana Sthapaka* and *Sothahara* properties of *Erand*, *Shunthi* & *Gokshur*, *Vatanulomana* properties of *Varun* & *Shunthi*, *Ushna Virya* of *Varun*, *Shunthi*, *Eranda*. Relief in **burning micturition** was observed might be due to *Madhura Rasa* of *Varun*, *Gokshura* & *Eranda*, *SheetaVirya* of *Gokshur* and *Madhura Vipaka* of *Shunthi*, *Eranda* & *Gokshur*. Relief in **dysuria** might be due to *Vatanulomana* properties of *Varun* & *Shunthi*, *Mutrala* properties of *Varun* & *Gokshura*, *Mutrakrichchrahara* properties of *Varun*.

Effect of therapy on objective criteria: *Shvadanshtradi Kwath* provided non-significant relief in hematuria (62.26%), WBC count of urine (39.39%) and extremely significant relief in size of calculus (61.84%) & no. of calculus (63.33%).

Probable mode of action of drug-

The action of every drug is determined by the dominant Pharmacodynamic properties. These pharmacodynamic properties are- *Ras*, *Guna*, *Veerya*, *Vipaka* and *Prabhava*. According to *Ayurvedic* pharmacodynamic, some drug do work through *Rasa*, some drug through *Veerya*, some through *Guna*, some through *Vipaka* and some drug through *Prabhava*. The line of treatment in *Ayurveda* is mainly based on *Dosha Chikitsa*. *Ashmari* is caused by *Vata* and *Kapha-Prakopaka Nidana*. It is *Tridoshaja Vyadhi*, but in this disease main vitiated *Dosha* is *Kapha*, followed by *Vata* and *Pitta*, which require being pacified. *The Basti* is seat of *Vata* and act of micturition is under the control of *Apan Vayu*. Thus disease has involvement of vitiation of *Kapha Dosha* along with vitiation of *Vata (Apana Vayu)* and *Pitta*.

Probable mode of action of *Shvadanshtradi Kwath*:

All the ingredients of the drug *Shvadanshtradi Kwath* are having a particular mode of action on *Dohsa*, *Dushya*, *Agni* and *Srotas*. The properties of ingredients like *Kaphahara*, *Lekhana*, *Vedanasthapana*, *Vatanulomana*, *Shoolaprashamana*, *Sheeta Prashamana*, *Bhedana*, *Shothahara*, *Mutrala*, *Deepana*, *Pachana*, *Shodhana* act on the *Dosha (Vata, Pitta and Kapha)*, *Dushya (Mutra)*, *Srotas (Mutravaha Srotas)* and *Agni*. The drug *Shvadanshtradi Kwath* is having a

particular mode of action on *Dosha*, *Dushya*, *Agni* and *Srotas* as follows-

Vata – *Vedana Sthapana*, *Vatanulomana*, *Shoola-prashamana*, *Pitta* – *Jwaraghna*, *Dahaprashamana*, *Pittashamana* due to *Sheeta Veerya*, *Kapha - Bhedana*, *Shothahara*, *Dushya (Mutra)* - *Mutrala*, *Mutra Virechaniya*, *Agnimandhya* - *Deepana*, *Pachana*, *Mutravaha Srotodushti* – *Mutrala*, *Mutra Virechaniya*. The ingredients of *Shvadanshtradi Kwath* pacify *Kapha Dosha* by virtue of their *Laghu&Ruksha Guna*, *Kshaya*, *Katu* & *Tikta Rasa*, *Ushna Veerya* and also show "*Lekhana*" property due to *Ushna Veerya*. The *Vatanulomana*, *Shothahara* and *Mutrala* properties of ingredients help to relieve pain and *Sthanika Shotha*. *Deepana* property of drug helps to increase the *Agni*, which further check the formation of *Ama* at *Jatharagni* level itself. *Pachana* property of ingredients helps in assimilations of drug in the body in case of *Jatharagnimandya*. Due to the *AshmariBhedana* or *Ashmari Hara* property of ingredients present in the drugs, stone might be dissolved. *Shvadanshtra (Gokshura)* act as *Mutrala* (diuretic) by virtue of their *Sheeta Veerya* and *Madhura Rasa*. Ingredients of the drug by their *Bhedana*, *Ashmarihara* and *Kaphahara Karma* along with *Mutrala Karma*, are helpful to reduce the size of the *Ashmari* and expelled it out from the body. Thus in total this formulation has the capacity to disintegrate the pathogenesis of the disease *Mutrashmari* and due to its diuretic action it flushes out the disintegrated *Mutrashmari* by the process of diuresis. (The ingredient *Gokshura* contains ample amount of potassium salts and alkaloids which is responsible for *Mutrala* and *Ashmarinaashana Karma*. *Varun* bark generates fridelin, saponin, tannin, disogenin and betulinic acid which has diuretic action that slows down and hinders the formation of stone inside the organs. Also it has *Ashmaribhedana Prabhav*. *Shunthi* contains oil of ginger, zingiberine, gingerin. It acts as supportive drug in reducing pain and swelling associated with calculus. Therefore, it is added. *Eranda* contains amylase, invertase and other enzymes. Its *Adhobhagaher Prabhav* causes *Mutravishodhana* and *Vednasthapana Karma*. Except *Gokshura* all three ingredients are *Ushna Veerya* due to that it has urolithiatic property. Also due to *Mutrala* and *Shodhana Guna* it has diuretic property. Due to these *Guna* it breaks the *Kaphavataj Sanghat* that is *Samprapti* (etiopathogenesis) of *Mutrashmari* resulting in breakdown and expulsion of calculi. [IAMJ ISSN:2320 5091]

Scientific basis of mode of action of *Shvadanshtradi Kwath*:-

Gokshura- An ethanolic extract of TT fruits was tested in urolithiasis induced by glass bead implantation in albino rats. It exhibited significant dose-dependent protection against deposition of calculogenic material around the glass bead, leukocytosis, and elevation in serum urea levels.

-The other experiments revealed that TT extract not only has a potential to inhibit nucleation and growth of the CaOx crystals but also has a cytoprotective role.

Eranda- The methanolic, ethanolic and aqueous extract of *R. Communis* leaves exhibited the antibacterial activity against four isolates of bacteria.

Shunthi- Administration of EZO to ethylene glycol rats prevented super saturation of calcium oxalate and thus decreased their deposition in renal tubules due to active compound present in the extract. This indicates that administration of EZO reduced and prevented the growth of urinary stones.

Varun - An ethanolic extract of stem bark powder of *Varun* lowering intensity of cellular infiltration in renal tubule and reduction in oxalate levels of urinary and renal tissues along with reduced liver glycolate oxidase activity.

- Lupeol extract reduces oxalate level; promote super saturation in renal tissues by diuretic activity.

- The diuretic action of this drug attributes the metabolic correction of the serum and urinary electrolytes levels in experimentally induced urolithiasis in albino rats.

In short we can say that-

- The *Vatanulomana*, *Shothahara* and *Mutrala* properties of ingredients helps to relieve pain and *Sthanika Sotha*.
- *Deepana* property of drugs helps to increase the *Agni*, which further check the formation of *Ama* at *Jatharagni* level itself.
- *Pachana* property of ingredients helps in assimilation of drugs in the body in case of *Jatharagni-mandya*.
- Stone might be dissolved due to the *Ashmari Bhedana* or *Ashmarihara* property of ingredients present in both the drugs.

CONCLUSION

Overall assessment of result shows that *Shvadanshtradi Kwath* was showed better improvement rate, due to improvement of physiology of *Mutravaha Srotas* by correction of *Agni*, *Ama Pachana* and *Anulomana*. From the study we can concluded that administration of *Shvadanshtradi Kwath* is an effective treatment modality for *Mutrashmari* which overcomes the surgical intervention by easy and painless expulsion of *Ashmari*.

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Source of Support: Nil

Conflict Of Interest: None Declared

How to cite this URL: Ankita et al: Clinical Evaluation Of Shvadanshtradi Kwath In The Management Of Mutrashmari. International Ayurvedic Medical Journal {online} 2019 {cited March, 2019} Available from: http://www.iamj.in/posts/images/upload/1600_1604.pdf