



## Research Article

### CLINICAL EVALUATION OF *SHOBHANJANA (SHIGRU)* ROOT BARK IN THE MANAGEMENT OF *MUTRASHMARI (UROLITHIASIS)*

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#### ABSTRACT

A clinical study was conducted to evaluate the efficacy of *Shobhanjana (Moringa Olifera)* root bark in the management of *Mutrashmari (Urolithiasis)* at OPD/IPD of S.V.Ayurvedic Hospital, Tirupati. Total number of 30 cases enrolled for the study. The drug *Shobhanjana* root bark *Kwatha* (decoction) was given in the dose of 24 ml twice daily before food for one month period. Follow up was carried out at weekly intervals. The effect of treatment was observed highly significant in relieving pain, dysuria, haematuria and also found statistically significant improvement in removing the renal calculus. The study was also planned to find out the effect of the drug on different types of *Ashmari (Vata, Pitta, Kapha and Sukraja)* and results of the study have shown that the drug is more effective in the management of *Kapha & Vataja* types of *Ashmari*. Maximum result was observed in renal calculi in comparison to the calculi present in Ureter and Urinary bladder. On the basis of overall assessment the drug *Shobhanjana* root bark on *Mutrashmari* has shown complete relief in 16 (53.3%) cases, Marked improvement in 12 (40%) cases and No improvement in 2 (6.6%) cases.

**KEYWORDS:** *Mutrashmari, Shobhanjana, Shigru, Ashmari bedhana.*

#### INTRODUCTION

*Mutrashmari (Urolithiasis)* is the most common troublesome obstructive uropathic diseases. *Sushruta* the ancient *Ayurvedic* surgeon included it under *Asta Mahagadas* (eight major diseases). This disease is associated with radiating pain from loin to groin, burning micturition, dysuria, fever and can be treated with surgical and medical management.<sup>1</sup>

*Mutrashmari* can be compared with Renal calculus. It can occur in both the sex at any age. Generally stones are found in kidneys, ureters and urinary bladder. When confined to kidney, it presents the feature of renal calculus. It may pass down into the ureter to become ureteric calculus, reach the bladder to become a vesical calculus or to be held up in the urethra and become a urethral calculus. The Process of urinary stone formation as described in *Sushruta Samhita* is mentioned that urination is normal, when movement of *Vata (Anuloma Gati)* is normal in "*Mutravaha Srotas*" (urinary system), but when the abnormal movement of *Vata (Pratiloma Gati)* is present, stagnation of urine in the system takes place. The persons who are not undergoing *Shodhana* therapies in stipulated time and who are following unwholesome diet, regimen and deeds, the '*Kapha dosha*' along with *Mutra* having *Sthanasamsraya* in *Vasthi* leads to the formation of *Ashmari*. Four varieties of *Ashmari* i.e., *Vata, Pitta, Kapha* and *Sukra* have been described.<sup>2</sup>

The treatment principles in modern medicine is flush therapy, and advanced techniques like PCNL, ESWL, Ureteroscopy, Pyelolithotomy, Nephrolithotomy, Partial Nephrectomy, Nephrostomy etc. are done. But these

procedures have their own limitations, disadvantages, complications and are expensive.

Classical *Ayurvedic* texts viz. *Charaka samhita*<sup>3</sup>, *Bhavaprakasha*<sup>4</sup>, and *Astanga Hrudaya*<sup>5</sup> has indicated the drug *Shobhanjana (Moringa Olifera)* in the management of *Mutrashmari* due to its *Ashmari Bhedana* property. In-vitro studies conducted at KLE College of Pharmacy, Belgaum has also shown that *Moringa oliefera* root bark extractions have anti-urolithiatic property. Considering these, this study was planned to find out the efficacy of *Shigru mula Kwatha* in the management of *Mutrashmari*.

#### MATERIALS & METHODS

*Sighru Mula Kwatha Churnam* was given in the dose of 12 gms and the patient asked to prepare fresh *Kwatha* (Decoction) and take twice daily before food<sup>5</sup>. The patients attending O.P.D & I.P.D of S.V. Ayurvedic hospital were recruited for the clinical study. A Proforma was prepared on the basis of signs and symptoms of *Mutrashmari* and Urolithiasis described in *Ayurvedic* and Modern texts. Diagnosis was made on the basis of clinical and laboratory parameters. 30 study participants were selected irrespective of age, sex, religion and occupation. The treatment period was one month with follow up at every seven days.

#### INVESTIGATIONS

Microscopic Examination of urine, Urine pH, Serum Creatinine, Serum Urea, CBP, was carried out. USG-KUB was used for the confirmation of the diagnosis and to know the site & size of the calculus.

**INCLUSION CRITERIA**

Pain in loin region which radiates towards posterior renal angle and groin region, tenderness in renal angle, increased frequency of micturition, burning micturition, Haematuria, Pyuria, Vomiting, stone size < 10mm were included for the study.

**EXCLUSION CRITERIA**

Patients with impending renal failure, having the calculi size above 10 mm, stag horn calculus, severe haematuria, diabetes mellitus, and patients with immediate surgical requirement were excluded from the study.

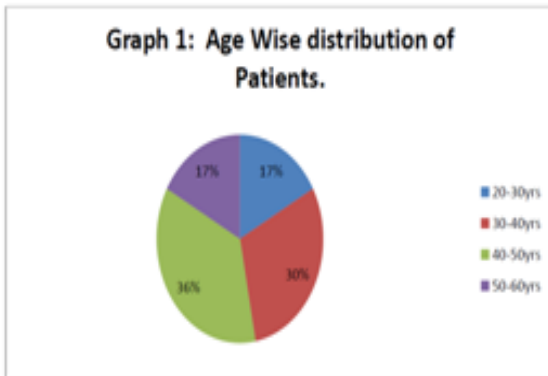
**OBSERVATIONS & RESULTS**

**Distribution of patients according to Age**

The patients between 20 to 30 years age group are 17 %, 30 to 40 are 30 %, 40 – 50 are 36 % and 50 – 60 years Patients are 17%. Though *Ashmari* occurs at any age but as per this study middle age group persons are more prone to the disease *Ashmari*.

**Table 1: Age wise distribution of cases**

S.No.	Age Wise Distribution	No. of Patients	% of Distribution
1	20-30 yrs	6	17%
2	30-40 yrs	9	30%
3	40-50yrs	12	36%
4	50-60 yrs	3	17%



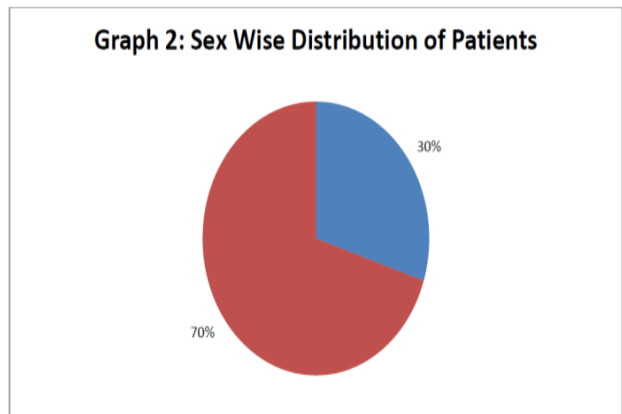
**Distribution of patients according to Sex**

According to sex wise, 70% of the cases are Male and Female cases are only 30%. Hence it can be said that Urolithiasis is more frequently found in male than the female. Findyason and Richardson – 1974, postulated that low serum testosterone level may play some role and females are naturally having less testosterone level and are in less risk group to formation of *Ashmari*.

**Table 2: Sex wise distribution of cases**

S. No.	Sex	No. of Patients	% of distribution
1	Female	09	30 %
2	Male	21	70 %

**Graph 2: Sex Wise Distribution of Patients**

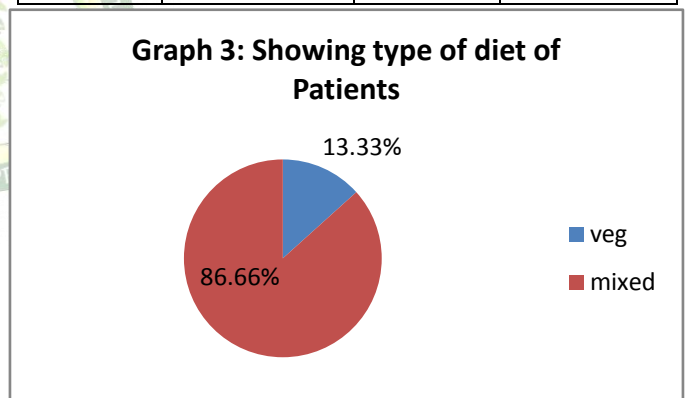


**Distribution of patients according to Diet habits**

Maximum people i.e. 86.66% are under mixed diet and only 13.33% people are belonging to vegetarian diet. The report shows that the consumption of mixed diet and more roughage diet with low water intake leads to lowered excretion of calcium in the urine and pH falls more towards acidic, hyper-calcuria also noted. Hence the indication of urinary stone in mixed diet persons seems to be more.

**Table 3: Diet wise distribution of cases**

S.No.	Type of Diet	No. of Patients	% of distribution
1.	Vegetarian	4	13.33 %
2.	Mixed	26	86.66 %

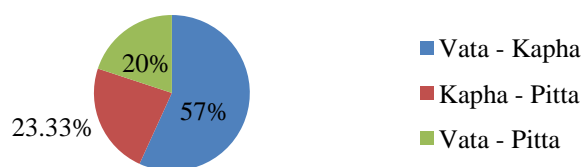


**Distribution of patients according to Prakruti**

According to *Sarira prakruti* wise distribution maximum number of Patients are having *Vata-Kapha Prakruti* i.e., 56.66%, followed by 23.33% Patients are *Kapha-Pittaja Prakruti*, and followed by *Vata-Pitta Prakruti* persons i.e.,20%.The data favours the concept of Ayurveda regarding *Ashmari* formation, that *Vayu dosha* plays an important role for *Sthana Samsraya* of *Kapha* that leads to formation of *Ashmari*.

**Table 4: Prakruti wise distribution of cases**

S. No.	Prakruti	No. of Patients	% of distribution
1.	<i>Vata Kapha</i>	17	56.66 %
2.	<i>Kapha Pitta</i>	7	23.33 %
3.	<i>Vata Pitta</i>	6	20 %

**Graph 4: showing Prakruti wise distribution of Patients.****EVALUATION OF PARAMETERS WITH STATISTICAL ANALYSIS**

**A. Subjective - I (As per Ayurveda):** *Nabhivedana, Bastivedana, Sevanivedana, Mehanvedana, Mutradharasanga, Sarudhiramutrata, Gomedaparakasa, Atiavilamutrata.*

**II. (As per Modern texts):** Pain, Burning micturition, Haematuria, Dysuria, Nausea & Vomiting, Fever, Tenderness in Renal angle.

**B. Objective Parameters -** Size of stone (Assessed with the help of USG-Abd. & X-ray KUB).

**Table 5: Subjective Parameters as per Ayurveda**

Symptoms	Absent	Mild	Moderate	Severe
<i>Nabhivedana</i>	0	1	2	3
<i>Bastivedana</i>	0	1	2	3
<i>Sevanivedana</i>	0	1	2	3
<i>Mehanvedana</i>	0	1	2	3
<i>Mutradharasanga</i>	0	1	2	3
<i>Sarudhiramutrata</i>	0	1	2	3
<i>Gomedaparakasa</i>	0	1	2	3
<i>Atiavilamutrata</i>	0	1	2	3

**Table 6: Subjective Parameters as per Modern**

Symptoms	Absent	Mild	Moderate	Severe
Pain	0	1	2	3
Burning micturition	0	1	2	3
Haematuria	0	1	2	3
Dysuria	0	1	2	3
Nausea & Vomiting	0	1	2	3
Fever	0	1	2	3
Tenderness in Renal angle	0	1	2	3

**Table 7: Efficacy of Shigru Mula Twak on the Clinical Features**

Clinical Features	Mean (B.T.)	Mean (A.T.)	N	%	S.D.	Mean ± S.E.	't' Value	'P' Value
<i>Nabhi Vedana</i>	3.300	0.4333	29	86.87	0.8193	2.867 ± 0.1496	19.164	<0.0001
<i>Basti Vedana</i>	3.367	1.0	30	70.29	0.8503	2.367 ± 0.1552	15.245	<0.0001
<i>Sevani Vedana</i>	1.967	0.667	28	66.09	0.6513	1.300 ± 0.1189	10.933	<0.0001
<i>Mehana Vedana</i>	1.300	0.600	17	53.84	0.7494	0.700 ± 0.1369	5.114	<0.0001
<i>Mutra Dhara Sanga</i>	1.900	0.5667	18	70.15	0.8442	1.333 ± 0.1541	8.651	<0.0001
<i>Sarudhira Mutrata</i>	1.933	0.333	8	82.77	1.163	1.600 ± 0.2123	7.538	<0.0001
<i>Gomedha Prakasha</i>	2.533	0.333	16	86.85	0.8867	2.200 ± 0.1619	13.59	<0.0001
<i>Ati Avila Mutrata</i>	2.400	0.600	12	75.00	0.8469	1.800 ± 0.1546	11.64	<0.0001

**Table 8: Efficacy of Shigru Mula Twak on the type of Calculi**

Variety of Stone	No. of cases	Cured	Markedly Improved	No Improvement
<i>Vataj</i>	15	08	06	01
<i>Kaphaj</i>	11	07	04	00
<i>Pittaj</i>	04	01	02	01
<i>Sukraj</i>	00	00	00	00
<b>Total</b>	<b>30</b>	<b>16</b>	<b>12</b>	<b>02</b>

*Shigru Mula twak Kwatha* is more effective in *Vataja & Kaphaja* type of *Ashmari*, as inherent property of *Shigru mula twak* is the *Vata- Kapha* hara property of the drug.

**Table 9: Effect of therapy on types of Urolithiasis**

Site of Stone	No. of cases	Cured	Markedly Improved	No Improvement
<b>Renal Stone</b>	18	12	05	01
<b>Ureteric Stone</b>	10	03	06	01
<b>Bladder Stone</b>	02	01	01	00
<b>Total</b>	<b>30</b>	<b>16</b>	<b>12</b>	<b>02</b>

**Table 10: Effect of drug on Pain**

Pain	Mean	S.D.	S.E.	't' value	P	Significance
B.T.	2.067	0.6915	0.1262	13.180	<0.0001	YES
A.T.	0.0833	0.2823	0.0576			

**Table 11: Effect of drug on Dysuria**

Dysuria	Mean	S.D.	S.E.	't' Value	P	Significance
B.T.	1.000	0.5252	0.09589	7.712	<0.0001	YES
A.T.	0.267	0.4498	0.08212			

**Table 12: Effect of drug on Heamaturia**

Heamaturia	Mean	S.D.	S.E.	't' Value	P	Significance
B.T.	0.866	0.5713	0.1043	7.389	<0.0001	YES
A.T.	0.100	0.3051	0.0557			

**DISCUSSION**

According to the *Ayurveda* texts, the drug *Shigru Mula Twak Kwatha* have some specific actions like *Vatanulomana*, *Shothahara* and *Mutrala* properties which helps to relieve pain and other symptoms of *Mutrashmari*. Stone might be dissolved due to the *Ashmari Bhedana* or *Ashmarihara* property present in the drug<sup>6</sup>. *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 *Jatharagnimandya*. Pharmacokinetics of Ayurvedic drugs depends on the *Samanya-Visesha Sidhanta*<sup>7</sup>. According to *Acharya Vagbhata*, *Samana Chikitsa* is nothing but *Dosha-Guna Viparita Chikitsa*. *Kapha* having *Manda- Sandra Guna* which mainly leading to the formation of *Ashmari (Sleshmashraya Cha Sarvaasyaath)*. *Shigru* is having *Tikshna* and *Sara Guna* which are antagonistic to those *Gunas* present in *Ashmari* helps in destroying calculi<sup>8</sup>. *Shigru Mula twak Kwatha* is more effective in *Vataja & Kaphaja* type of *Ashmari*, due to inherent *Vata Kapha hara* property of *Shigru mula twak*.<sup>9</sup>

**CONCLUSION**

- Out of 30 Patients of *Mutrashmari* included in the study, treated with *Shigru Mula Kwatha* shown a marked relief in clinical features and expulsion of the *Ashmari* & it shows significant results on all Subjective & Objective Criteria. It shows marked result especially in *Vataja & Kaphaja* type of *Ashmari*.
- The selected *Shigru mula kwatha* has properties which are antagonistic to *Dosha (Vata & Kapha)* and it is *Mutrala, Ashmari Bhedana* properties (*Vyadhi vipareeta*). Hence on the case of *Vata- Kaphaja* type of *Ashmari* this drug can be used as *Hetu Vyadhi Vipareeta Aushadha*.
- The preparation of *Shigru mula kwatha* is simple, palatable, easy for administration, free from side effects. Hence it may be used as a remedy for the treatment of *Mutrashmari*.

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