

## TO EVALUATE THE EFFICACY OF ELADI KWATHA AND PASHANABHEDADI KWATHA IN THE MANAGEMENT OF MOOTRASHAMARI W.S.R. TO URINARY CALCULI

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### ABSTRACT

Mootrashmari is considered as one among the Asthamahagada told in the samhita, characterized by cardinal symptoms of Basti Vedna Sraktamutrata and mutra kriccha etc. **Objectives:** To evaluate the efficacy of the formulations Eladi kwatha and Pashanabhedadi kwatha, in the management of Mootrashmari W.S.R to Urinary calculi – A clinical comparative study. Eladi kwatha and Pashanabhedadi kwatha are mentioned in Yogaratnakar in the management of Mootrashmari. **Methods:** Case presenting with classical sign and symptom of Mootrashmari were selected. The formulations Eladi kwatha and Pashanabhedadi kwatha had given to group A and B. The symptoms pain, Burning Micturition, Frequency of Micturition and size of

stone had been assessed before and after treatment. The duration of the study was 45 days with 30 days follow up study with assessment of result at the interval of 15 days. **Results:** Both the formulations has shown significant result in reducing subjective parameter, but Eladi kwatha has shown more significant in reducing the size of stone. **Conclusion:**

Treatment modality in Group A (Eladi kwatha) is better than Group B (Pashanabhedadi kwatha) reducing the size of stone.

**KEYWORDS:** Mootrashmari, Urinary Calculi, Eladi kwatha and Pashanabhedadi kwatha.

## INTRODUCTION

Ashmari is not a new disease to the world. Scientist have found evidence of kidney stone in a 7000 years old Egyptain mummy. “Ashmanam Rati Dadati Iti Ashmari” The one which is converted into a hard mass resembling a stone (Ashma) is called Ashmari.<sup>[1]</sup> The term calculus is originated from the roof “calcu” meaning a gravel or lith.<sup>[2]</sup> An abnormal concretion usually composed of mineral salts occurring within the animal body. The improper purificatory procedures result in the residual accumulation of kapha in basti. They also result in vataprakopa and pittaprakopa in mutravaha srotas. Hence all the three doshas collectively results in the formation of ashmari. However kapha is considered to be the predominant dosha for the formation of ashmari as it are the arambhaka doshas as well as the upadana karma of the disease.<sup>[3]</sup> Ashmari can be considered “asadhya” only if it is associated with upadravas like nabi shotha, vrishna shotha, ruddha mutra, presence of sikata and sharkra in mutra, which may result in immediate death.<sup>[4]</sup> The prognosis of ashmari depends on its size and chronicity. Sushruta Samitha mentions that if ashmari is of recent onset, it can be managed by palliative medicines. If ashmari has progressed, surgical intervention is necessary. Pancha karma including snehana and Swedana, is useful only in the pre-manifestation and stages of the disease.<sup>[5]</sup> The Updrava which are produced when the calculi obstructs the passage of urine are also depicted in classics. They are:<sup>[6]</sup> Daurbalya, Sadana, Karshya, Kukshi shola, Aruchi, Panduta, Ushna vata, Trishna, Hritpeedna and Vamana. Chikitsa is classified in three categories viz.; Prakritivighatan, Nidan parivarjan and Apkarshan.<sup>[7]</sup> Treatment of ashmari in Ayurveda various formulations have been advocated by ancient acharyas. Hence in the present study also I have considered two formulations **Eladi kwatha and Pashanabhedadi kwatha** mention in our classics.<sup>[8]</sup> Both formulations are known to be useful in ashmaries because of their cchedan, bhedan and mutral etc. properties.

## MATERIALS AND METHODS

For the present study Eladi kwatha in group A and Pashanbhedadi kwatha in group B is chosen as the formulations for combating Mootrashmari on the basis of textual reference available in Yogaratnakar in the Ashmari Chikithsa Adikara.

**Method of Preparation of Kwatha:** 45 packets of Eladi and Pashanbhedadi kwatha churna, each weighing 25 gms (dosage for single day) was given to each patient in group A and group B respectively.

Patients were instructed to prepare the kwatha their self by adding 400ml (16 parts of water) and reducing it to 50 ml (1/8<sup>th</sup> of it). Further patients were advised to take the prepared kwatha in 2 divided doses per day.

**Clinical Source:** Patients of either sex diagnosed as Mootrashmari on the basis of classical features from OPD and IPD at the Ayurvedic Medical College & P.G. Centre, Hospital Davangere and its associated hospital is selected for the study.

**Sampling Method:** Random sampling has been done from the adult population irrespective of sex, religion and economic status satisfying the inclusion criteria.

#### **Inclusion Criteria**

Patient presenting with the symptoms of pain, burning micturition, Frequency of micturition.

- The age group between 20 to 60 years.
- Urinary calculi size above 6mm without any residual complication.
- Patient who are willing to undergo treatment.

#### **Exclusion Criteria**

- Size less than 6mm.
- Chronic systemic disease like Diabetes Mellitus, HIV, BPH.
- Disease related complication like Hydro- Nephrosis, Uaemia.

**Diagnostic Criteria:** Patients were diagnosed on the basis of symptoms of Mootrashmari explained in ayurvedic classics, Radiological findings and essential laboratory investigations.

**Explained for Urinary calculi. They are given as follows.**

1. Pain
2. Burning micturition
3. Frequency of micturition
4. Ultra sonography KUB region
5. Routine Urine examination

6. Hematological investigations like ESR, TC, DC, RBS, and other investigations if necessary were done to rule out any other disease.

### Study Design

**Grouping:** Total 40 cases were studied and were distributed randomly into Group A and Group B, with 20 cases in each group.

**Table No. 1: Showing Study Design.**

Study Design	Group A	Group B
No. of cases	20	20
Shaman Chikitsa	Eladi Kwatha	Pashanbhedadi Kwatha
Dose	50 ml daily in two equal divided doses before food	
Duration	45 days treatment period and 30 days follow up period	

The follow up of the study had done for 30 days without giving medicine.

Subjective Parameters		
No	Parameters	Grade
1	<b>PAIN</b>	
	No pain	0
	Dull aching pain with no referral	1
	Dull aching pain with referral	2
	Severe aching pain with referral disturbing daily routine	3
2	<b>Burning Micturition</b>	
	No burning Micturition	0
	Present but easily controlled	1
	Present controlled with difficulty	2
	Extremely difficulty to control	3
3	<b>Frequency of Urination</b>	
	Normal	0
	During day only	1
	During day and occasionally at night sleep disturbance	2
	During day and night sleep disturbance	3

### Objective Parameters

Sl. No.	Stone	Before treatment	After treatment
1	Number		
2	Size		

### Statistical Analysis

Here the effect of drug administration has been critically analyzed by the statistical data. Descriptive data that included Mean, Standard Deviation (S.D), Standard Error (S.E), t- value and P- value were calculated for all the variables. Post treatment changes were assessed by paired 't' test.

**Showing Grading of overall Assessment Criteria**

Percentage of cure	Grading	Interpretation
75 -100%	3	Marked Response
50 - 74%	2	Moderate Response
26 - 49%	1	Mild Response
0 -25%	0	No Response.

**OBSERVATIONS AND RESULTS**

The present study shows that the prevalence of Urinary Calculi was highest (37.5%) in the age groups 31-40 years. A prevalence of sex was more in males (72.5%) than females (27%), 77.5% were Hindu, Mootrashmari was high among Agriculturists 22.5%, Maximum number of patients i.e. 87.5% were belonged to a Middle class families. 67.5% patients were having a positive family history. 47.5% were having kaphavataj prakriti. 75% patients which were chiefly in virudha ahar and vihar seven. Max. no. of patients i.e. 65% were having basti vedna as a poorvroopa. 87.5% patients had a complaint of pain, 75% patients had a complain of burning micturition, 62.5% were a complaint of frequency of micturition. 85% of renal calculus.

**Subjective Parameters****Showing Statistical Analysis of Group A and Group B of Pain by using Paired t-test.**

Group	No. of Patients	Mean		Difference of Mean	SD	SE	T-Value	P-Value	Remarks
		BT	AT						
A	20	1.65	0.45	1.20	0.615	0.137	8.75	<0.001	HS
B	20	1.4	0.60	0.80	0.523	0.116	4.50	<0.001	HS

Statistical result of pain in Group A, the t-value is 8.75 which is highly significant at  $P < 0.001$ .

Statistical result of pain in Group B, the t-value is 4.50 which is highly significant at  $P < 0.001$ . Since t-value of Group A is more than the t-value of Group B, the drug of Group A is more effective than drug of Group B (By comparing t-value) in Pain in.

**Showing Statistical Analysis of Group A and Group B of Burning Micturition by using Paired t-test.**

Group	No. of Patients	Mean		Difference of Mean	SD	SE	T-Value	P-Value	Remarks
		BT	AT						
A	20	1.05	0.10	0.95	0.887	0.198	4.79	<0.001	HS
B	20	0.95	0.05	0.90	0.640	0.143	6.29	<0.001	HS

Statistical result of in Burning Micturition Group A, the t-value is 4.79 which is highly significant at  $P < 0.001$ .

Statistical result of in Burning Micturition Group B, the t-value is 6.29 which is highly significant at  $P < 0.001$ .

Since t-value of Group B is more than the t-value of Group A, the drug of Group B is more effective than drug of Group A (By comparing t-value) in Burning Micturition.

**Showing Statistical Analysis of Group A and Group B of Frequency of Micturition by using Paired t-test.**

Group	No. of Patients	Mean		Difference of Mean	SD	SE	T-Value	P-Value	Remarks
		BT	AT						
A	20	0.70	0.25	0.45	0.510	0.114	3.94	<0.001	HS
B	20	0.95	0.15	0.80	0.615	0.137	5.83	<0.001	HS

Statistical result of in Frequency of Micturition Group A, the t-value is 3.94 which is highly significant at  $P < 0.001$ .

Statistical result of in Frequency of Micturition Group B, the t-value is 5.83 which is highly significant at  $P < 0.001$ .

Since t-value of Group B is more than the t-value of Group A, the drug of Group B is more effective than drug of Group A (By comparing t-value) in Frequency of Micturition.

**Showing Statistical Analysis of Group A and Group B of Size of the Stone by using Paired t-test.**

Group	No. of Patients	Mean		Difference of Mean	SD	SE	T-Value	P-Value	Remarks
		BT	AT						
A	20	6.89	5.29	1.605	1.343	0.300	5.35	<0.001	HS
B	20	7.08	6.88	0.20	0.202	0.045	4.44	<0.001	HS

Statistical result of in Size of the Stone Group A, the t-value is 5.35 which is highly significant at  $P < 0.001$ .

Statistical result of in Size of the Stone Group B, the t-value is 4.44 which is highly significant at  $P < 0.001$ .

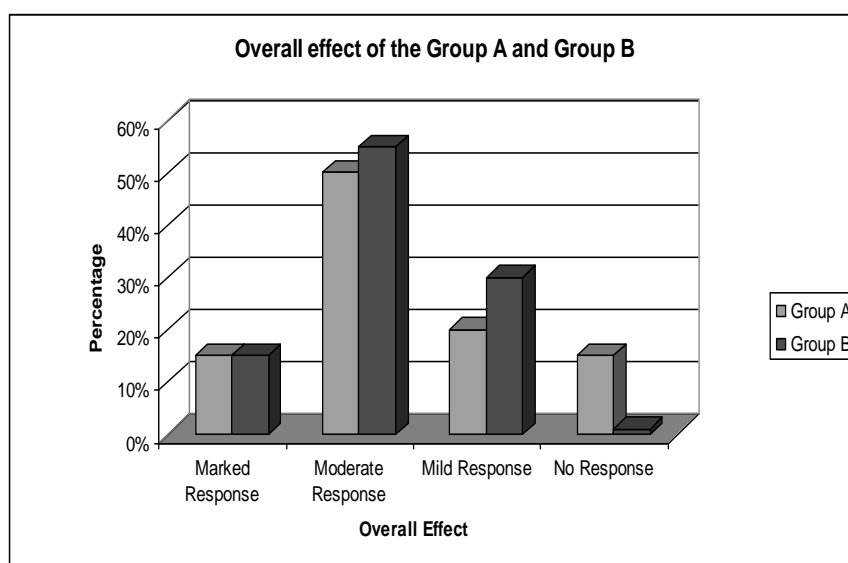
Since t-value of Group A is more than the t-value of Group B the drug of Group A is more effective than drug of Group B (By comparing t-value) in Size of the Stone.

**Showing overall effect of the Group A and Group B.**

Result	Group A		Group B	
	Pt. No.	Percentage of Improvement	Pt. No.	Percentage of Improvement
Marked Response	03	15%	03	15%
Moderate Response	10	50%	11	55%
Mild Response	04	20%	06	30%
No Response	03	15%	00	0%

In Group-A No response showed by 03(15%), Mild response is noticed in 4(20%), moderate 10(50%) and Marked Response observed 03(15%).

In Group-B No response showed by 00(00%), Mild response is noticed in 06(30%), moderate 11(55%) and Marked Response observed 03(15%).

**Showing overall effect of the Group A and Group B.****DISCUSSION**

Urolithiasis is the most common disorder of the urinary tract. The prevalence of urolithiasis in general population is approximately 2 to 3%; the prevalence in men over women approx.3:1 and the recurrence rate in 10 year is about 50%.Susruta, is father of surgery was of the view that dietary factors are much more responsible for calculus formation in urinary tract –Mootrashmari. If this problem is not properly attended leads to complete obstruction to the urinary tract and sometimes creates back pressure on kidney and finally leads to renal failure also. The present study has been selected on understanding the need of effective formulations to manage the Mootrashmari. Kapha is considered to be the predominant doshas since it is the upadana karana or material cause for ashmari. Pitta is responsible for its ghanata or solidification and vata is responsible for shoshana. The mass thus formed is again

encoated by the vitiated doshas and further hardened by vata.<sup>[9]</sup> The ingredients have more disease specific action on Mootrashmari and specific action like Kapha Vatashamak, Ashmaribhedna, Mutral, Mutrakricchhar, shothahar vednasthapan property.

#### Probable Mode of Action of Eladi And Pashanbhedadi Kwatha.<sup>[10,11]</sup>

**Table: Showing Botanical name, Rasa, Guna, Veerya and Vipaka of drugs present in Eladi Kwatha.**

Sl. No.	Name	Botanical Name	Rasa	Guna	Veerya	Vipaka
	Ela	Elittaria cardamomum	Katu, Madhur	Laghu, Ruksha	Shita	Madhur
	Pippali	Piper longum linn	Katu	Laghu Snigdha, Tikshna	Anushna shita	Madhur
	Yashti madhu	Glycyrrhiza glabra	Madhur	Guru, Snigdha	Shita	Madhur
	Pashan bheda	Berginia lingulata	Kashaya, Tikta	Laghu, Snigdha, Tikshna,	Shita	Katu
	Nirgundi	Vitex Negundo	Katu, Tikta	Ruksha, Laghu	Ushna	Katu
	Gokshura	Tribulus terrestris	Madhur	Guru, Snigdha	Shita	Madhur
	Vasa	Adhatoda vasika	Tikta, Kashaya	Laghu, Ruksha	Shita	Katu
	Erand moola	Ricinus communis	Madhur, Anurasa-Katu Kashaya	Snigdha, Tikshna, Sukshma	Ushna	Madhur
	Shilajatu	Black bitumen	Tikta, Katu, Lavana, alpa kashaya	Guru, Snigdha, Mridu	Shita	Katu

**Table: Showing Botanical name, Rasa, Guna, Veerya and Vipaka of drugs present in Pashanbhedadi Kwatha.**

Sl. No.	Name	Botanical name	Rasa	Guna	Veerya	Vipaka
	Varun	Crataeva nurvala	Tikta, Kashaya	Laghu, Ruksha	Ushna	Katu
	Pashan bheda	Berginia lingulata	Kashaya, Tikta	Laghu, Snigdha, Tikshna,	Shita	Katu
	Gokshura	Tribulus terrestris	Madhur	Guru, Snigdha	Shita	Madhur
	Brihti	Solanum indicum	Katu, Tikta	Laghu, Ruksha, Tikshna	Ushna	Katu
	Erand moola	Ricinus communis	Madhur, Anurasa-Katu Kashaya	Snigdha, Tikshna, Sukshma	Ushna	Madhur
	Kokilaksha	Asteracantha longifolia	Madhur	Guru, Snigdha, Picchila	Shita	Madhur

#### Ayurvedic views

The drugs used in the formulation of Eladi kwatha and Pashanbhedadi kwatha discussed. The action of every individual drug on the doshas and their properties has been elaborated.



On the basis of rasa the maximum drug of Eladi kwatha and Pashanbhedadi kwatha have katu, tikta, kashya and Madura rasa. The katu, tikta, kashya rasa by virtue of their kaphanashak and Madura rasa by its vatashamak property collectively responsible for kaphavatashmaka and thus relieves stones.

The maximum dravyas of formulation possesses laghu, snigdha, ruksha, teekshan guna etc. By virtue of these properties these yogas does the lekhan, chhedan, bhedan of mutrashmari, mutrajanan along with and kaphavata shaman karma, moreover shita and ushna veerya of dravyas does dahaprashaman and vedanasthapan.

Thus chhedan, bhedan, lekhan properties of dravyas used in the formulation are responsible for the reduction and expulsion of stones and more over does the pacification of the symptoms.

## **2. Probable mode of action Based on Resent researches**<sup>[12,13,14,15,16,17,18]</sup>

Recent researches revealed more information regarding the drugs of the formulations. Some of them are as follows.

1. Anti-inflammatory and analgesic action of Gokshura, Varuna, Shilajeet, Pippali, Yeshtimadhu and Eranda.
2. Antimicrobial action of Gokshura, Yeshtimadhu and kokilaksha.
3. Diuretic action of Gokshura, Varuna, Vasa, Nirgundi and Pashanbheda.
4. Antibacterial action of Yestimadu, Varuna and pippali.
5. Lithotriptic action of Gokshura, Varuna and Pashanbheda.
6. Sposmodic and Antiemetic action of Brihathi and Pippali.

## **CONCLUSION**

1. The disease review reveals a large number of similarities between Mootrashamri and Urinary Calculi.
2. The clinical trial of Eladi Kwatha and Pashanbhedadi Kwatha showed significant reduction in Lakshanas like pain, Burning micturition and Frequency of micturition after the treatment period. This shows importance of long term use of medicine.
3. The clinical trial and assessment reveals that the formulations reduced the stone size but it is observed that Eladi kwatha has shown more effect on reducing size of the stone compared to pashanbhedadi kwatha.
4. Overall effect reveals that, the formulations are highly significant during treatment period of 45 days.

5. The formulations are insignificant after follow up.
6. The formulations did not show any side effects. So this can be taken as an ideal drug for combating Mootrashmari and its complications.

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