

## The efficacy of Trikantak Churna (Gokshura Beej) with Madhu and Aja Dugdha in Mutrashmari (Renal Calculi)

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### Abstract

There is need to find out an alternative cost effective, affordable and easily available management. Ayurveda can contribute to this problematic situation where majority of the cases can be managed by medicines. Ayurveda explain detail etiological factors, classification, symptomatology, Pathology, Management with the medicines and surgical procedure and also complications many therapies described by Ayurveda are effective on Ashmari. There are many medicines described by Ayurved Granthas which are great effective on mutrashmari. Trikantak beej Churna with Madhu and Aja dugdha has been mentioned by Yogratnaka. In modern Science there are many treatment modalities for urinary calculus like—extra corporeal shock wave lithotripsy (ESWL), Percutaneous Nephro Lithotomy (PCNL), URS & Laser etc., having their own merits and demerits. All these procedures reduce the rate of open surgery in urolithiasis. But these procedures are very costly and limited to urban areas only.

**Aim:** - To see the effect of Trikantak Churnawith Madhu and Ajadugdha in Mutrashmari.

**Objectives:** - To review Mutrashmari as per ayurvedic and modern point of view.

To review Trikantak Churna, Madhu, Aja dugdha and its mode of action on Mutrashmari. To see the mode of action of Ajadugdha on Mutrashmari.

**Materials and methods:** - A sample size of 30 patients was selected in which Trikantak churna (Gokshura beej) 3 gms. With Madhu and Aja dugdha was given in BD i.e. in morning and evening dose for over a period of 7 days.

**Results:** - statistically highly significant results have been seen in all the symptoms of mutrashmari with P value ( $P < 0.05$ ) at 5% level of significance.

**Keywords:** Trikantak Churna, Mutrashmari, Madhu, Aja dugdha

### Introduction

Ayurveda is an ancient science of life which is a boon to mankind. According to Ayurveda body is composed of *Dosha, Dhātu and Mala*. These *Malas* are produced as result of a digestion and metabolism of food and these should be eliminated from the body through their respective channels. Among these *Mutra* is one of the drava mala. For the production and excretion of *mutra* specialized system is present in our body that is called as *mutravaha srotas*.

From the ancient study of text *Sushruta Samhita*, it becomes evident that the urological problems form an important part of the medical study. *Ashmari* is one of the most common disorders of the *mutravaha srotas*. In modern contemporary science the disease can be correlated with nearest clinical entity 'Urinary calculus or Urolithiasis. This disease is dreadful and hence considered one of the 'Mahagadas' by *Sushruta*<sup>[1]</sup> owing to its potentiality to disturb the anatomy and physiology of urinary system.

Urolithiasis is a major problem. The formation of stone is due to the factors like concentrated urine, deficiency of stone inhibitor substance like mucopolysaccharides, citrate.

However hereditary and dietary factors like imbalance of electrolyte such as calcium, phosphates, oxalate, magnesium,

abnormal metabolism, and deficiency of vitamin-A etc. have their key role to play in formation of calculus.

In *Ayurveda* there are four types of calculus stated by *Sushruta*<sup>[2]</sup>. According to *Sushruta, Asamshodhansheel and Apathyakari* persons are likely to get this disease<sup>3</sup>.

In modern Science there are many treatment modalities for urinary calculus like—extra corporeal shock wave lithotripsy (ESWL), Percutaneous Nephro Lithotomy (PCNL), URS & Laser etc., having their own merits and demerits. All these procedures reduce the rate of open surgery in urolithiasis. But these procedures are very costly and limited to urban areas only.

There is need to find out an alternative cost effective, affordable and easily available management. Ayurveda can contribute to this problematic situation where majority of the cases can be managed by medicines. Ayurveda explain detail etiological factors, classification, symptomatology, Pathology, Management with the medicines and surgical procedure and also complications many therapies described by Ayurveda are effective on *Ashmari*. There are many medicines described by Ayurved Granthas which are great effective on *mutrashmari*. *Trikantak beej Churna* with *Madhu* and *Aja dugdha* has been mentioned by *Yogratnakar*. This drug can be given on O.P.D

basis and is administered without requiring hospitalization. This is a noninvasive and safe drug therapy, so considering the importance of this disease and result of Ayurvedic treatments and out of my own interest, hence selected this topic for dissertation “The efficacy of *Trikantak Churna (Gokshura beej)* with *Madhu* and *Aja dugdha* in *mutrashmari* (Renal calculi)”.

The present study was undertaken with following

### AIM

- To see the effect of *Trikantak Churna* with *Madhu* and *Ajadugdha* in *Mutrashmari*.

### Objectives

- To review *Mutrashmari* as per ayurvedic and modern point of view.

- To review *Trikantak Churna, Madhu, Aja dugdha* and its mode of action on *Mutrashmari*.
- To see the mode of action of *Ajadugdha* on *Mutrashmari*.

### Hypothesis

*Trikantak Churna* with *Madhu* and *Ajadugdha* as *anupan* acts as *Ashmarinashak* and *mutral* in *Mutrashmari*.

### Materials and Methods

#### Materials

In the present experimental study, *Trikantak Churna* is used as material of study and is indicated by *Yogaratanakar* in the management of *Mutrashmari*

The analytical study of *Trikantak beej churna* was carried out at B.V. bhide foundation Laboratory and the drug was critically analysed and Authenticated in the Dept. of Botany, University of Pune. The certified copy is annexed.

**Table 1:** Rasa, Guna, Karma

Drug	Rasa, Guna	Karma
Gokshur Beej	Madhur,sheeta	<i>Bhedan, Mutravirechan, Bastishodhana, Bruhan, Vrushya, Tridoshshamak, Agnivardhak. Gokshur</i> helps for relieving <i>Mutrakriccha, Vrikkashoth</i> also has a major role on <i>Vatadosha</i> . Also acts as <i>Bruhaniya</i> and <i>Mehnashak</i>
Madhu	<i>Rasa- Madhur Anurasa- Kashay Guna- Ruksha Virya-Sheet</i>	<i>Agni Pradeepak, Lekhan, Balakarak, Grahi.</i>
Aja Dugdha	<i>Rasa- Kashay-Madhur Virya- Sheet Guna- Laghu</i>	<i>Sarvavyadhihar.</i>

The said trial drug, *Trikantak churna* was administered in the dosage of 3gms Morning & Evening with *Madhu* as *anupana* alongwith *Ajadugdha*

### Methodology

#### Selection of patient

Patient complains of abdominal pain, burning micturition and frequency of micturition etc. are primarily selected.

#### Place of Work

Clinical study was carried out at Kayachikitsa Department of the Bharati Ayurved Hospital pune 43.

#### Method of examination followed

Method of examination was followed as explained in Ayurved classics. *Rogi pariksha* was done as per the *trividha & shadvidha pariksha* and *roga pariksha* was followed as per the *nidana panchak*, however, special examination was carried out in respect of radiological examination such as X-ray of KUB (kidney ureter bladder) & USG of abdomen & also renal function tests(RFT).

#### Clinical Trial – Detailed Research Plan

This study was carried on two levels

##### Level I

- Authentication of drugs.
- Standardization of drug.

##### Level II - CLINICAL TRIAL

- Open clinical trial.
- Special proforma of case paper designed.

- Patients selected and diagnosed as per roga and rogi pariksha.
- 30 patients selected at random for the clinical trials.

#### Procedure

Permission for conduction of clinical trial and no objection certificate from Istitutional Ethical Committee was taken.

#### Selection of Patients

Patients visiting to hospital either in OPD or IPD were selected for study.

#### Inclusion Criteria

- Patient presenting with the symptoms of pain, burning micturition, frequency of micturition and *mutrashmari*.
- Age group between 18 to 60 years.
- Patient will be included irrespective of sex and economical class.
- Calculi size upto 10 mm without any residual complications.
- Patient who are willing to undergo treatment.
- Presence of stone in any location of urinary tract.
- For both male and female 10 mm calculi

#### Exclusion Criteria

- Calculi size is of above 10 mm.
- Patient having *mutrashmari* associated with –
  - Diabetes Mellitus
  - Acute renal failure
  - Chronic renal failure

- d) Obstructive uropathy
- e) Multiple calculi
- f) Prostatomegaly

**Parameters Criteria**

**Subjective**

- Pain - Visual Analog Scale 0-10
- Dribbling micturition -YES/NO

**Objective**

- Colour of urine -YES/NO
- Haematuria -YES/NO
- Size and location of Ashmari before and after treatment
- Urine – Routine & microscopy

**Diagnostic Criteria**

Patients diagnosed on the basis of Symptoms of mutashmari as explained in Ayurved classics

- a) Pain
- b) Burning micturition
- c) Frequency of urination

**Radiological findings**

- X-ray KUB
- USG A+P

**Laboratory investigations**

- Renal function test
- Complete Haemogram with ESR
- Routine urine examination

**Renal function test**

- Radiological findings
- USG- A+P, X-RAY KUB, Intravenous Pyelography (s.o.s)
- Laboratory investigations: Haemogram with ESR
- Urine examination – Routine and Microscopy
- Patient not obeying and not taking proper medication
- Patient not completing all the follow-up properly
- Patient having any major illness / occurrence of serious adverse events while undertaking treatment. Even though subjects may be withdrawn prematurely from the study, data of these subjects will be kept.
- Further continuation of the study is likely to be detrimental to health of patient
- The patient is not willing to continue the trial to follow the assessment schedule.

**Clinical Study**

1. According to selection criteria 30 patients were selected randomly.
2. Written informed consents was obtained from every patient.
3. Proper case history was taken and special case record from was prepared.
4. Clinical findings were recorded as per case proforma.

Study group include a group of patients of Mutrashmari, dignosed on the basis of sign &symptoms described in ancient & modern literature. 30 patients were selected and treated as study group with Trikantak Churna, Madhu and Aja dugdha for 7 days.

**Table 2:** Drug and dose schedule

Treatment	Trikantak churna
No.of patients	30
Dosage	3 gms. Morning & evening
Kaal	Apana kaal
Anupana	Madhu 6 gm and Ajadugdha 40 ml
Route of Administration	Oral
Treatment period & follow up	8 days
Assessment	First day of treatment. and last day of completion of treatment
Follow up	Day 5 and Day 8

**Table 3:** Follow-up chart

S. No.	Lakshana	Day 0	Day 5	Day 8
1	Pain( shoola)			
2	Burning mitcurition (Sadaha mutrapravrutti)			
3	Frequency of Urination (Mutravega)			
4	Dribbling micturition			

**Table 4:** Efficacy score system

Pain( shoola)	No pain.	0
	Mild	1,2,3
	Moderate	4,5,6
	Severe	7.8.9
	Unbearable pain	10
Burning mitcurition (Sadaha mutrapravrutti)	No burning micturition	0
	Present but easily controlled	1
	Present but easily controlled with difficulty	2
	Extremely difficult to control	3

**Observations**

Observations were represented with the help of various tables and Figures. Statistical analysis was done by SPSS software version 10 (t, and Wilcoxon sign rank test) and statistical significance was set at P < 0.05.

**Result are based on**

Wilcoxon Sign Rank test (Arrange grade data)

**Table 5:** Age wise distribution of 30 patients of mutrashmari

Age Group	Frequency	Percentage
<20 Years	1	3.3
20-30 Years	9	30
30-40 Years	5	16.7
40-50 Years	9	30
50-60 Years	6	20
Total	30	100

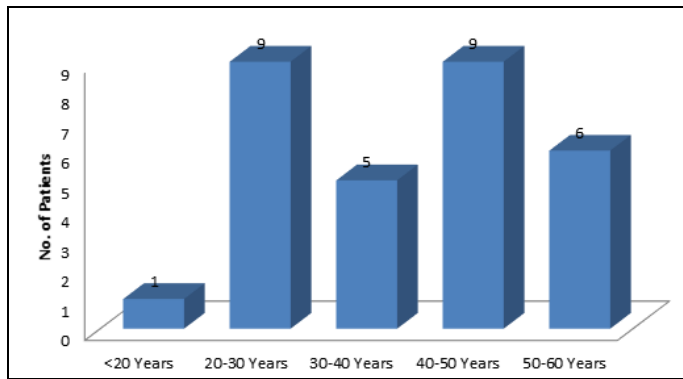


Fig 1: Age Distribution

Out of 30 Patients, 1(3.3%) belongs to age group below 20 years, 9(30%) belongs to age group 20-30 years, 5(16.7%) belongs to age group 30-40, 9(30%) belongs to age group 40-50 years and 6(20%) belongs to age group 50-60 years.

Table 6: According to sex distribution of 30 patients of *mutrashmari*

Age Group	Frequency	Percentage
<20 Years	1	3.3
20-30 Years	9	30
30-40 Years	5	16.7
40-50 Years	9	30
50-60 Years	6	20
Total	30	100

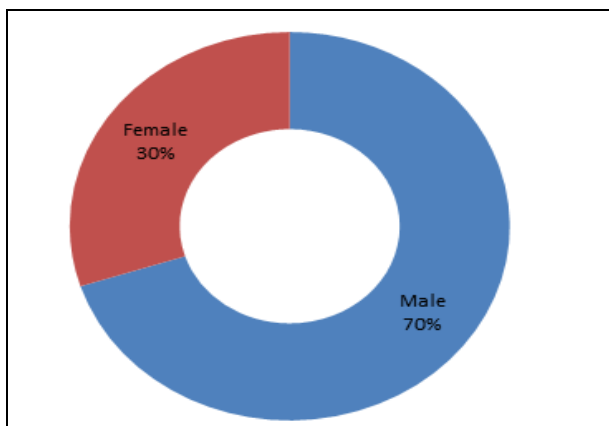


Fig 2: Sex

Out of 30 Patients, 21(70%) were male and 9(30%) were female.

Table 7: DIET wise distribution of 30 patients of *mutrashmari*

Diet	Frequency	Percentage
Veg	18	60
Non-Veg	12	40
Total	30	100

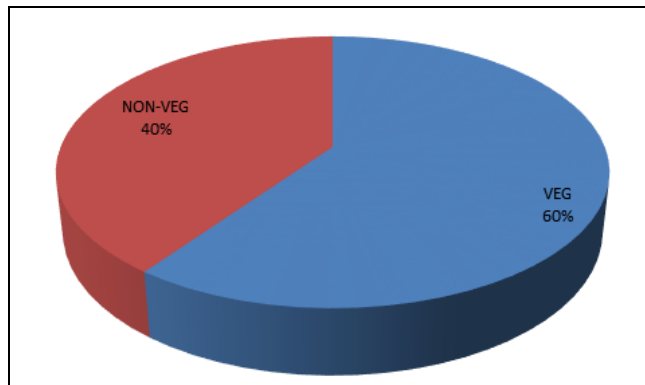


Fig 3: Diet

Out of 30 Patients, 21(70%) were male and 9(30%) were female.

Table 8: Occupation

Occupation	Frequency	Percentage
House Wife	3	10
Retired	5	16.7
Service	19	63.3
Student	3	10
Total	30	100

Out of 30 patients, 3 (10%) were housewives, 5 (16.7%) were retired, 19 (63.35) were doing service 3 (10%) were students.

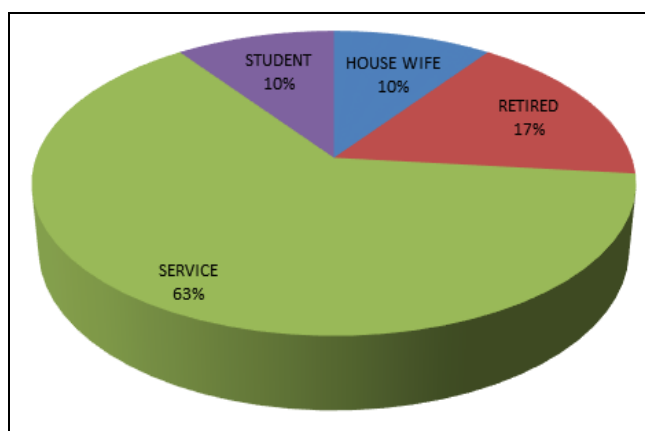


Fig 4: Occupation

Table 9: *Shareerika prakriti* wise distribution of 30 patients of *mutrashmari*

Age Group	Frequency	Percentage
<20 Years	1	3.3
20-30 Years	9	30
30-40 Years	5	16.7
40-50 Years	9	30
50-60 Years	6	20
Total	30	100

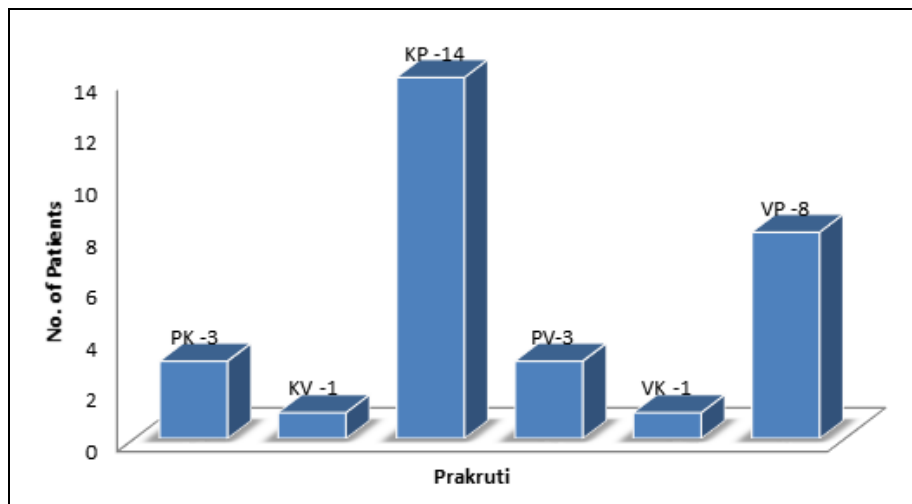


Fig 5: Prakruti

Out of 30 Patients

14(46.7%) are of *Kapha Pradhan Pitta Prakruti*, 1(3.3%) are of *Kapha Pradhan Vata Prakruti*, 3(10%) are of *Pitta Pradhan Kapha Prakruti*, 3(10%) are of *Pitta Pradhan Vata Prakruti*, 1(3.3%) are of *Vata Pradhan Kapha Prakruti* and 8(26.7%) are of *Vata Pradhan Pitta Prakruti*.

Table 10: Pain wise distribution of 30 patients of *mutrashmari* pain-

Pain	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	BT	AT				
	4	2.5	-4.836 <sup>a</sup>	0.000	48.1	Significant

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churn* on Pain was significant (P<0.05) at 5% level of significance.

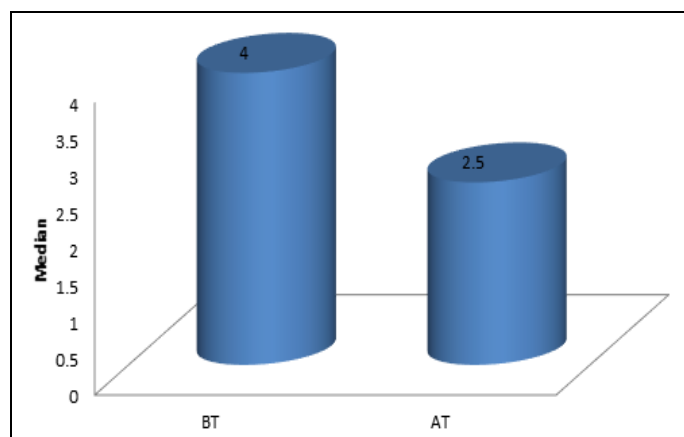


Fig 6: Pain

Table 11: Frequency of urination wise distribution of 30 patients of *mutrashmari* Frequency of Urination

Gradation	Before treatment	After treatment
0-Normal	0	16
1-During daytime	8	14
2-During daytime and occasional night disturbance	20	0

3-During day and night disturbance	2	0				
Total	30	30				
Frequency of Urination	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	B T	A T				
	2	1	-5.203 <sup>a</sup>	0.000	67.3	Significant

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churn* on Frequency of Urination was significant (P<0.05) at 5% level of significance.

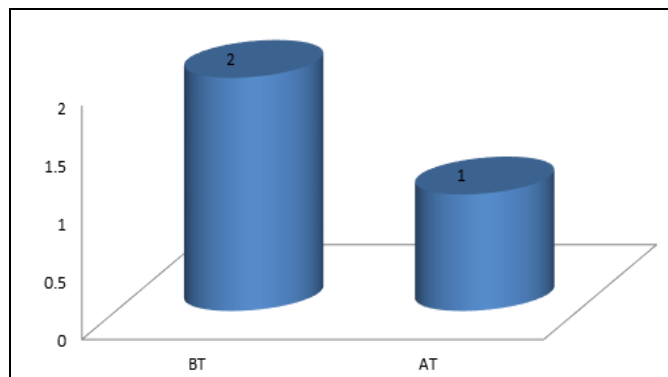


Fig 7: Graph Frequency of Urination

Median value for frequency of urination is significantly reduced from 2 to 1 after treatment.

**Burning Micturition**

Table 12: Burning Micturition

Gradation	Before treatment	After treatment
0-No burning	0	8
1-Present but easily controlled	2	21
2-Present but controlled with difficulty	22	1
3-Extremely difficult to control	6	0
Total	30	30

Burning Micturition	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	B T	A T				
	2	1	-4.977 <sup>a</sup>	0.000	63.6	Significant

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churna* on Burning Micturition was significant (P<0.05) at 5% level of significance.

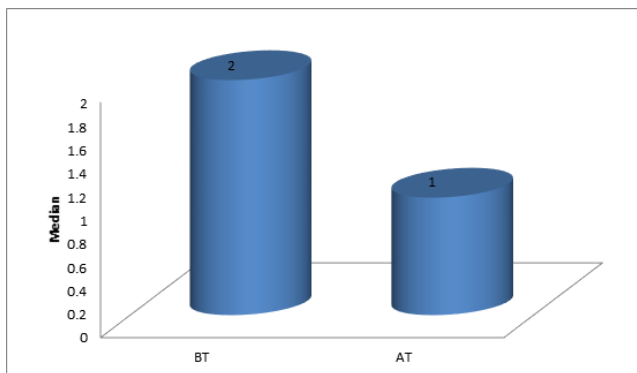


Fig 8: Burning Micturition

Median level of Burning Micturition is significantly reduced from 2 to 1 after treatment.

**Dribbling Micturition**

Table 13: Dribbling Micturition

Gradation	Before treatment	After treatment
0-Absent	0	25
1-Present	30	5
Total	30	30

Dribbling Micturition	Median		Wilcoxon Signed Rank W	P-Value	% Effect	Result
	B T	A T				
	1	0	-4.899 <sup>a</sup>	0.000	80.6	Significant

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churna* on Dribbling Micturition was significant (P<0.05) at 5% level of significance.

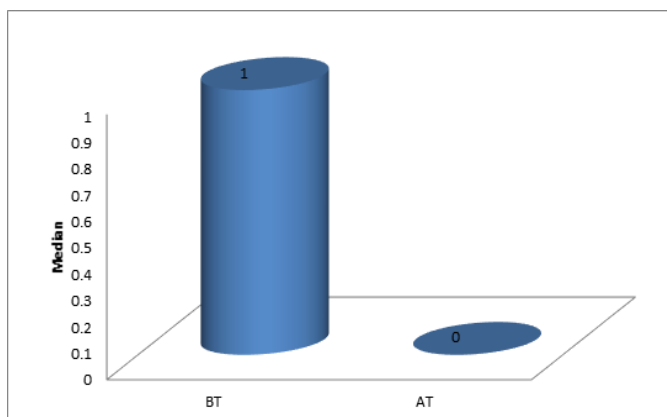


Fig 9: Dribbling Micturition

Median level of Dribbling Micturition is significantly reduced from 1 to 0 after treatment.

Table 14: Stone size wise distribution of 30 patients of *mutrashmari*

size	Mean		t-Value	P-Value	% Effect	Result
	BT	AT				
	4.4	1.3	19.478	0.000	71.0	Significant

Using Paired t-Test, it is concluded that, the effect of *Trikantak Churna* on Size of Stone was significant (P<0.05) at 5% level of significance.

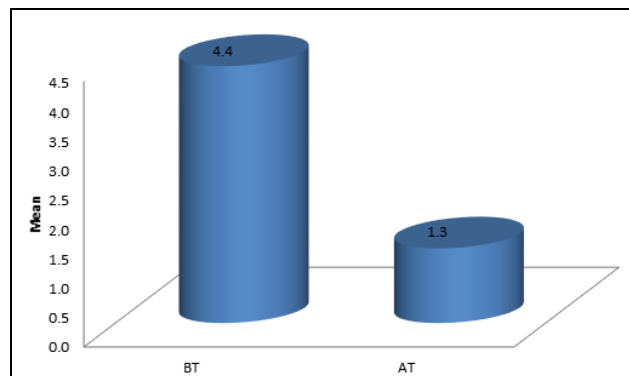


Fig 10: Size

Mean Stone size is significantly reduced from 4.4 mm to 1.3 mm after treatment.

Table 15: Location

Location	B.T.	A.T.
Lower	1	3
Upper	21	6
Ureteric	8	6
Nil	0	15
Total	30	30

Location of *mutrashmari* is significantly changed after treatment.

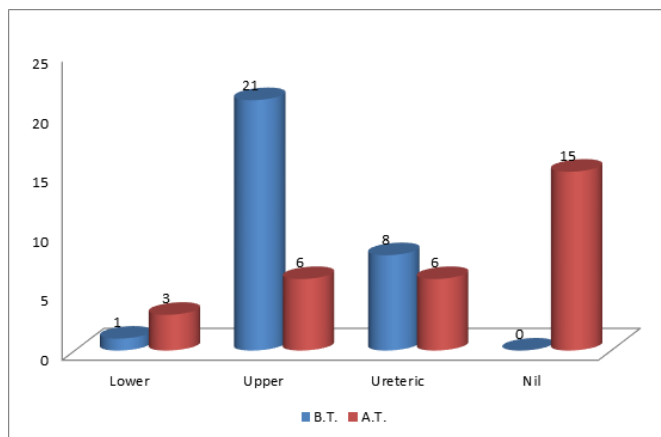


Fig 11: Location

**Discussion**

**AGE**

Out of 30 Patients, 1(3.3%) belong to age group below 20 years,

9(30%) belongs to age group 20-30 years,  
5(16.7%) belongs to age group 30-40,  
9(30%) belongs to age group 40-50 years and  
6(20%) belongs to age group 50-60 years.

The probable cause for this age group might be irregularity of diet or Asatmya ahara-vihar and less water intake due to their professional responsibilities

### SEX

Out of 30 Patients,  
21(70%) were male  
9(30%) were female.

The male female ratio suggests that male were more susceptible to the disease. This may be due to the habits of tea, coffee, tobacco chewing, more in male. There is another theory that testosterone hormone also plays an important part in the formation of *Mutrashmari*. Findayson and Richardson postulated that female are having less testosterone level, so they are less prone to disease

### Prakruti

Out of 30 Patients  
14(46.7%) are of *Kapha Pradhan Pitta Prakruti*,  
1(3.3%) are of *Kapha Pradhan Vata Prakruti*,  
3(10%) are of *Pitta Pradhan Kapha Prakruti*,  
3(10%) are of *Pitta Pradhan Vata Prakruti*,  
1(3.3%) are of *Vata Pradhan Kapha Prakruti* and  
8(26.7%) are of *Vata Pradhan Pitta Prakruti*.

Maximum number of patients were possessing Kapha-Pittaja Prakriti 14(46.7%). Kapha Dosha can easily be provoked in Kaphaja Prakriti persons, so they are more prone to Kaphaja diseases, among which *Mutrashmari* is also one. As burning micturition is the one of the main sign of *Mutrashmari* and Pittaja Dosha is responsible for that, as prakriti definitely plays an important role in the disease manifestation. So, Kapha is the dominant dosha. In Ayurvedic classics it has been mentioned that no stone or *Mutrashmari* can form without the presence of Kapha dosha, as Kapha forms nidus for *Ashmari* formation and development

### Occupation

Out of 30 patients, 3 (10%) were housewives, 5 (16.7%) were retired, 19 (63.35) were doing service and 3 (10%) were students.

Distribution of patients according to occupation shows that due to changing lifestyle and daily habits, they are proving as a causative factor for the formation of *mutrashmari*. also, it may be observed that as nowadays people are living in an environment where there is a constant demand for work and performance, people have tend to ignore to their health, personal needs, and overall well-being hence, erratic lifestyle mostly proves to be as a formative bud in the further progression of the disease

### DIET

Out of 30 Patients,  
18 (60%) were vegetarian  
12(40%) were Non-Vegetarian.

Distribution of the patients according to diet, showed little higher incidence of *Mutrashmari* in vegetarians i.e. 60% followed by non-vegetarians i.e. 40%. Due to a very limited sample size we cannot reach upto a certain conclusion on the

basis of diet wherein a definitive conclusion can be made that whether diet and what sort of diet, the quantity of diet and the time at which it is consumed is one of the causative factors in the production and progression of *mutrashmari*

### Pain

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churna (Gokshur beej)* on Pain was significant ( $P < 0.05$ ) at 5% level of significance.

Maximum number of patients 20 came with complaint of moderate pain, followed by 8 patients with mild pain and 2 patients having severe pain. After treatment it was observed that maximum patients 23 had mild pain, 4 had moderate pain and 3 had no pain. It can be concluded that maximum relief with which patient was benefitted with was mild pain.

Pain was subsided due to *vataghna* property of *Trikantak Churna (Gokshur beej)*. Pain is reduces in this trial because the compound property of this *Trikantak Churna (Gokshura beej)*, *Madhu and Ajadugdha is madhur kashaya rasa, sheeta veerya, bastishodhan, shoolahara* and *mutravirechaniya* which helps to do *vata shamana*. *Gokshur* helps for relieving *Mutrakricchra, Vrikkashoth* and also has a major effect on *Vatadosha*.

### Burning Micturition

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churna* on Burning Micturition was significant ( $P < 0.05$ ) at 5% level of significance.

Maximum patients 22 came with the severity of grade 2 burning micturition, 6 had grade 3 severity and 2 had grade 1 severity of burning micturition. After treatment it was observed that maximum patients 21 had grade 1 severity of burning micturition, 8 had grade 0 severity and 1 patient had grade 2 severity. Hence maximum patients 21, were benefitted and got relief with the trial drug with grade 1 severity of burning micturition.

It was decreased due to *sheeta virya* of *Gokshur beej, Madhu and Ajadugdha* which were combined and administered thereby having a profound effect on relieving burning micturition.

Also it can be said that the trial drug alkalizes the urine. Also study shows that decrease in the size of *mutrashmari* reduces irritation.

### Frequency of Urination

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churna (Gokshura beej)* on Frequency of Urination was significant ( $P < 0.05$ ) at 5% level of significance.

20 patients came with severity of grade 1 for increased frequency of micturition, 8 had grade 1 severity, 2 had grade 3 severity. After treatment 16 patients had total relief with grade 0 severity and 14 patients had grade 1 severity.

It was decreased because of *vataghna* property of *Gokshur beej*. Patient was dissatisfied with the passage of urine because of the obstruction provided by the calculus. Hence, dissatisfaction led to increase in the urge to micturate and thus patient complained of increased frequency of micturition this was reduced due to the reduction in the size of the calculus and its further passage in to the urinary tract. *Madhu* has a crucial role in providing a soothing effect on the muscles of the bladder wall.

### Dribbling Micturition

Using Wilcoxon Signed Rank Test, it is concluded that, the effect of *Trikantak Churna (Gokshura beej)* on Dribbling Micturition was significant ( $P < 0.05$ ) at 5% level of significance.

All the patients had complaint of dribbling micturition. After treatment it was observed that maximum patients got complete relief from the complaint and only 5 patients still persisted with the complaint.

It was decreased attributing the reason to *vataghna* property of *Gokshura beej*. Obstruction caused by the stone did not help in the free flow of urine during micturition. As the size of the calculi was reduced by the trial drug there was a significant reduction in the symptom of dribbling micturition.

### Size of stone

Using Paired t-Test, it is concluded that, the effect of *Trikantak Churna (Gokshura beej)* on Size of Stone was significant ( $P < 0.05$ ) at 5% level of significance.

Size of the *mutrashmari* was found to be reduced significantly which may be due to the *ashmarihara*, *bhedan of gokshura beej*, also due to the *lekhaniya*, *ruksha guna*, *kashay anurasa of madhu*, *laghu*, *ruksha guna* and *kashay anurasa of ajadugdha*.

Hence, it may be concluded that the marked reduction observed in the size of the *ashmari* over a period of seven days was due to the combined overall effect of *Trikantak Churna*, *Madhu*, *Aja dugdha* which were administered.

### Location of Stone

Location of *mutrashmari* is significantly changed after treatment.

The significant change observed in the location of *mutrashmari* the reason being the *anulomana*, *mutravirechan*, *bastishodhan guna* of *gokshura beej*, *lekhan* and *ruksha guna of madhu*, *laghu* and *ruksha guna of aja dugdha* thereby aiding and providing a suitable environment in the fruitful expulsion of the *ashmari*.

### Probable mode of action of drugs

The property of drug is *vataghna*, *Bastishoolahara*, *Mutravirechaniya*, *bhedan*, *ashmarihara*, i.e. Due to recover pain burning micturition and frequency of urination gives relief *Rasa- madhur*, *madhur*, *kashaya*

*Vipaka- madhur*

*Virya- ushna, sheeta*

1. This drug is *vatashamak*, *bastishoolhara* & *mutravirechaniya*. Pain relief is mainly due to *vatashamana*. This drug have *madhur*, *kashaya rasa*, *madhur vipak* and *sheeta virya* which help to *vatashamana*.
2. This drug have *sheet viryatmaka* property that is why burning is reduced.
3. Frequency of urination is controlled by *vata dosha*. This drug have *vataghna* property that is why frequency is found to be decreased in this study

*Madhu* and *Aja dugdha* are having *madhur*, *kashay* and *sheeta veerya* and hence help in reducing the size and allied *lakshanas* of *mutrashmari*

### Result

The clinical trial on *Trikantak Churna (Gokshur beej)* with *Madhu* and *Aja dugdha* given in BD dose over a period of seven days was found to be effective in reducing *mutrashmari*.

The symptoms of pain, burning micturition, frequency of micturition, dribbling micturition were reduced significantly

Also the reduction in size of the calculus and change in location of stone was found to be significant.

In all symptoms P value is less than 0.05

### Scope of further study

- It is proposed that the medicine should be administered with different *kwatha*, *anupana* which are acting on *mutrashmari*.
- This drug can be studied with comparison to any other drug to see better efficacy of *Trikantak Churna*
- Study can be done on patients having multiple calculi, calculi associated with complication

### Conclusion

#### Primary Objective

1. *Trikantak churna (Gokshura Beej)* with *madhu* and *aja dugdha* in *mutrashmari* (renal calculi) proved to be effective in *Mutrashmari*.
2. This medicine disintegrates the renal calculus & shows *mootral* (diuretic) activity.

#### Secondary Objective

1. It was observed that fast food, controlling natural urges, drinking heavy water i.e. Boring water etc. are etiological factors
2. No serious adverse effects were found in any groups.
3. In detail, *mutrashmari vyadhi* has been studied from different *samhitas* and modern book & detail study of *trikantak beej churna* and its effects was carried out.

Hence, it can be concluded that the synergistic effect of all the three *dravyas (Trikantak Churna, Madhu and Aja dugdha)* combined together has shown significant results on *mutrashmari*. Hence these three *dravyas* should be used as a primary aid in patients of *mutrashmari* thereby providing them with relief. The combined action of all the three *dravyas* has had a major role in the patients of *mutrashmari* and hence the use of the three drugs over a period of seven days as a regimen is advocated

### References

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