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# The effect of *Gokshura Churna* over *Tilanalakshara Yoga* in the management of *Mutrashmari* - A Randomized Comparative Clinical Study

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## ABSTRACT

**Background:** *Mutrashmari* is a stone like structure anywhere in the *Mutravaha Srotas* which can be compared with renal calculi and one among the *Astamahagada*, clinical features as renal angle pain, haematuria, pyuria and dysuria. Peak age is 3<sup>rd</sup> to 5<sup>th</sup> decade while majority of patients report regarding onset of disease in 2<sup>nd</sup> decade of life and male to female ratio is 3:1. **Objectives:** To compare the effect of *Gokshura Churna* over *Tilanalakshara Yoga* in the management of *Mutrashmari* with special reference to Renal calculi. **Materials and Methods:** 30 patients were selected on the basis of inclusion criteria and divided into 2 groups with 15 patients in each group by chit method. Group A was treated with standard drug *Tilanalakshara Yoga* and Group B was treated with trial drug *Gokshura Churna*. **Results:** It was found that standard group reduced the abdominal pain by 85.1%, dysuria by 89.4%, renal angle tenderness 88.4%, haematuria 100%, pyuria 100%, size of renal calculus 41.9% by 21<sup>st</sup> day of treatment. In study group it was observed that abdominal pain reduced by 92%, dysuria 96.1%, renal angle tenderness 91.6%, haematuria 100%, pyuria 100% and size of renal calculus 48.5% by 21<sup>st</sup> day of treatment. **Conclusion:** This assessment showed *Gokshura Churna* had significant result over *Tilanalakshara Yoga* in both subjective and objective parameters with P value <0.0001.

**Key words:** *Mutrashmari*, *Renal Calculi*, *Gokshura Churna*, *Tilanalakshara Yoga*.

## INTRODUCTION

Ayurveda is considered as the oldest holistic healing system of mankind and it is primarily a lifestyle and preventive medicinal system, moreover it is the ancient medical science of our civilization. Ayurveda initially have main two streams that are medicine and

surgery. *Agnivesha Tantra* is the prime literature of medicine and *Sushruta Samhita* is the main pillar of Ayurvedic surgery. There is a general impression that *Sushruta Samhita* is the only ancient Indian Ayurvedic text book of surgery. These surgical methods which are pioneered by Ayurveda in ancient Indian time are known by the name *Shalya Tantra*.

*Ashmari* is one of the most common disorders of *Mutravaha Srotas* and one among the *Astamahagada*. The word '*Ashma*' means 'stone' and '*Ari*' means 'enemy'. The formation of stone which cause great pain and suffering to the body like an enemy is called *Ashmari*.<sup>[1]</sup> It is one such dreadful disease similar to *Anthaka* which needs surgical intervention at times it crosses the limit.<sup>[2]</sup>

*Acharya Sushruta* explains *Lakshana* of *Ashmari* as pain in any one of region like *Nabhi* (umbilical), *Basti* (bladder), *Seevani* (perineal raphe), *Mehana* (penis),

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*Mutraddharana* (obstruction in flow of urine), *Sarudhiramutrata* (haematuria), *Mutravikirana* (scattering of urine), *Gomedakaprakasa* (passing of urine like Gomed), *Sasikata* (with gravels) and *Visrujati* (turbid).<sup>[3]</sup> Renal calculus is a solid piece of material which is formed in the kidneys from minerals in urine.<sup>[4]</sup> Renal calculi are most common disorder of urinary tract and present with clinical features as renal angle pain, haematuria, pyuria and dysuria. Based on the constituent of the stone, renal calculi are classified as oxalate stones (75%), phosphate stones (10-15%), uric acid stones (5%), urate stones and cystine stones (2%).<sup>[5]</sup>

From a survey on kidney stones, it was reported that high incidences of renal calculi were among individuals belonging to large family size and in urban people (66.67%) as compared to rural (33.33%).<sup>[9]</sup> Peak age is 3<sup>rd</sup> to 5<sup>th</sup> decade while majority of patients report regarding onset of disease in 2<sup>nd</sup> decade of life and male to female ratio is 3:1.<sup>[6]</sup>

In modern science different treatment modalities have been explained to manage renal calculi as Percutaneous Nephrolithotomy (PCNL), Extracorporeal Shock Wave Lithotripsy (ESWL) but they produce complications like renal haematoma, severe haematuria, injury to adjacent structures, fragmented stone retain in ureter.<sup>[5]</sup> If the calculi are not expelled by PCNL or ESWL then surgery is the ultimate choice.

Various research works have been conducted in the management of Renal calculi. *Paneeya Kshara* is one of the potent preparations indicated in *Ashmari*.<sup>[7]</sup> *Tilanala Kshara* is a formulation explained by *Acharya Yogaratnakara* in *Ashmari Adhikara*.<sup>[8]</sup> *Acharya Sushruta* says that before going for surgical procedures one should try to manage with oral medications.<sup>[9]</sup>

Hence to avoid surgery, a unique Ayurvedic formulation *Gokshura Churna* explained by *Acharya Sushruta* in *Mutrashmari Chikitsa* was taken for the study. This formulation is a combination of *Gokshurabeeja Churna* with *Madhu* taken along with *Aviksheera* as *Anupana*.<sup>[10]</sup>

This preparation is having the qualities such as *Mutrala*, *Lekhana*, *Trishnahara*, *Yogavahi*, *Medhogna* etc., which help in disintegration and flushing out the calculi. This prescription has minimal drugs, easily accessible, easy for preparation. Thus the study is undertaken to observe the effect of *Gokshura Churna* in the management of *Mutrashmari*.

### OBJECTIVE OF THE STUDY

To compare the effect of *Gokshura Churna* over *Tilanalakshara Yoga* in the management of *Mutrashmari* with special reference to renal calculi.

### MATERIALS AND METHODS

#### Materials required for study

The following are the materials used for the study

- *Tilanalakshara Yoga* (standard group)
- *Gokshura Churna* (study group)

#### Methodology

The trial was done with a unit of 30 patients selected on the basis of inclusion criteria. Patients were clinically examined thoroughly. USG abdomen and pelvis was used for diagnosis. After proper case history taking, examinations and investigations, data are recorded in specially designed clinical case performa.

#### Group A: Standard group - *Tilanalakshara Yoga*

Route : Oral

Dosage : *Tilanalakshara* 500mg with *Madhu* 12gms before food twice a day

*Anupana* : *Goksheera* 100ml

Duration : 21 days

#### Group B: Study group - *Gokshura Churna*

Route : Oral

Dosage : *Gokshura Churna* 6gms with *Madhu* 12gms before food twice a day

*Anupana* : *Aviksheera* 100ml

Duration : 21 days

**Intervention:** During the study patients were advised oral analgesics for intolerable pain of renal calculi.

**Observations:** The parameters were recorded according to case proforma before and after treatment, patient was asked to report on 7<sup>th</sup> day, 14<sup>th</sup> day and 21<sup>st</sup> day during treatment.

**Follow-Up:** After completion of treatment patient was asked to report for follow-up study on 30<sup>th</sup> day and 45<sup>th</sup> day.

**Investigations:** RBS, Blood urea, Serum creatinine, Urine analysis, USG abdomen and pelvis

**Diagnostic Criteria**

- a) Clinical features of renal calculi as renal angle pain (abdominal pain), haematuria, pyuria and dysuria.
- b) USG Abdomen and Pelvis findings for site and size of calculi.

**Selection of patient**

Patients were selected from the OPD and IPD of Shalya Tantra, BVVS Ayurved Hospital, Bagalkot and also through various camps conducted. The patients were enrolled in the study based on the following criteria.

**Inclusion criteria**

- a. Patients between age group of 20 to 50 years of either sex.
- b. Patients with renal angle pain (abdominal pain), haematuria, pyuria and dysuria.
- c. Patients with Renal calculi of size less than 10 mm in kidney evidenced by USG Abdomen and Pelvis.

**Exclusion criteria**

- a. Patients with systemic disorders like Ischemic Heart Disease, Tuberculosis, Diabetes mellitus, Hypertension etc.
- b. Patients with hydronephrosis, hydroureter.
- c. Patients with calculi in pelviureteric junction, ureter and bladder.
- d. Patients with impaired renal function and renal carcinoma.

e. Pregnant women.

**Assessment Criteria<sup>[11]</sup>**

The result of treatment was evaluated as per grading given to subjective and objective parameters.

**Subjective Parameters**

- a. Abdominal pain
- b. Dysuria
- c. Tenderness over renal angle

**Objective Parameters**

- a. Haematuria
- b. Pyuria
- c. Size of Renal calculi

**Statistical Analysis**

Paired ‘t’ and unpaired ‘t’ tests were used to find out difference between each subjective and objective parameter and analyzed these differences.

**OBSERVATIONS AND RESULTS**

**Table 1: Standard group observations on highest incidence**

Observations	Standard group	Study group	Total	Percentage
Age group (20 – 30)	08	08	16	53.3%
Sex (Male)	12	10	22	73.3%
Religion (Hindu)	08	12	20	66.6%
Education (Literate)	11	12	23	76.6%
Marital status (Married)	11	8	19	63.3%
Economic (Middle)	11	7	18	60%

Occupation (Business)	06	04	10	33.3%
Inhabitance (Urban)	13	08	21	70%
Diet (Mixed)	11	06	17	56.6%
Prakruti (PK)	05	04	09	30%

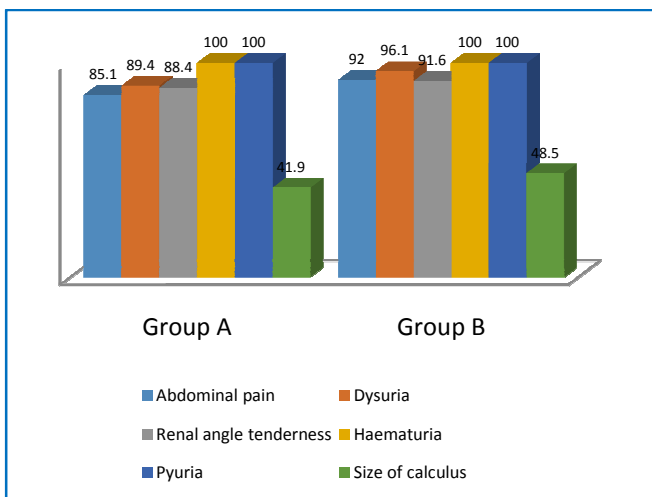
**RESULTS**

**Table 2: Overall result after treatment**

Parameters	Group A	Group B
Abdominal pain	85.1%	92%
Dysuria	89.4%	96.1%
Renal angle tenderness	88.4%	91.6%
Haematuria	100%	100%
Pyuria	100%	100%
Size of renal calculus	41.9%	48.5%

The study was conducted by administrating drug in both groups for 21 days; it is found that the main clinical features like abdominal pain, dysuria and haematuria were reduced noticeably. But with respect to site / size of the stone, no much change were observed.

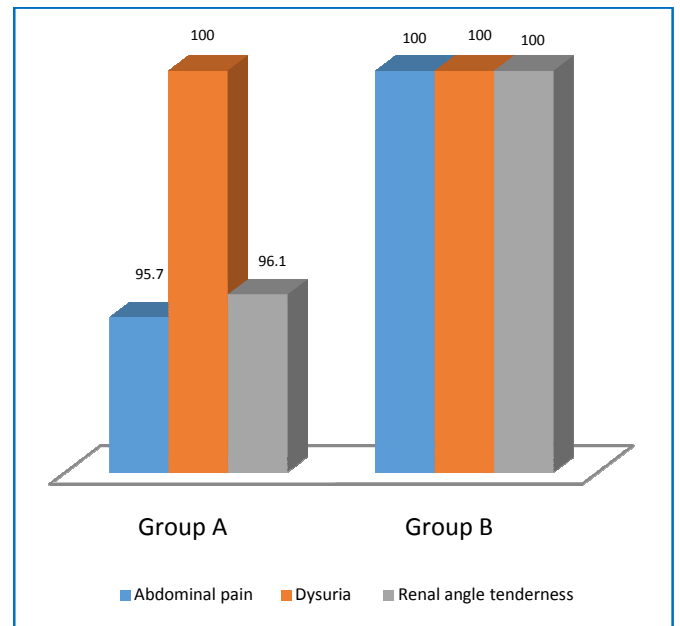
**Graph 1: Overall result after treatment**



**Table 3: Overall result during follow-up**

Result	Group A	Group B
Abdominal pain	95.7%	100%
Dysuria	100%	100%
Renal angle tenderness	96.1%	100%

**Graph 2: Overall result during follow-up**



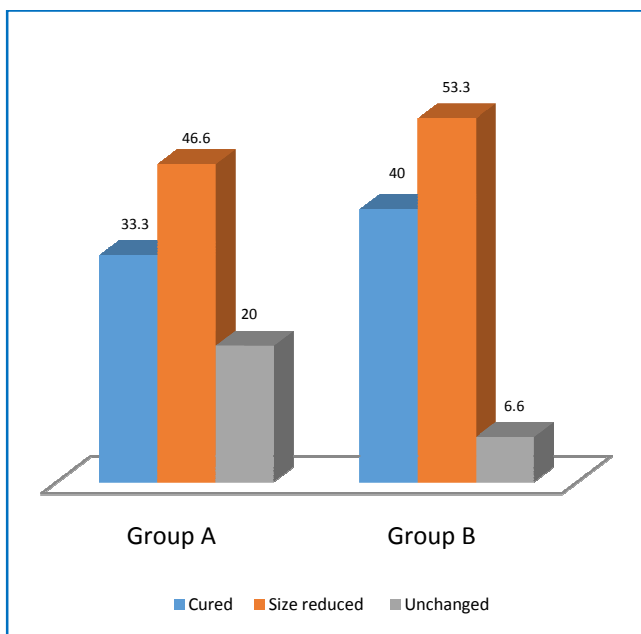
After follow up (45<sup>th</sup> day) of study; it was observed that 95.7% abdominal pain, 100% dysuria and 96.1% renal angle tenderness were reduced in group A (Tilanalakshara Yoga) and 100% reduction in all features was observed in group B (Gokshura Churna).

**Table 4: Overall result of Renal Calculi after treatment**

Calculus result	Group A		Group B	
	Number	Percentage	Number	Percentage
Cured (Expulsion)	05	33.3	06	40
Size reduced	07	46.6	08	53.3
Unchanged	03	20	01	6.6
<b>Total</b>	15		15	

The observation on overall result of renal calculi after treatment shows that, out of 15 patients of standard group, 05 patients cured, 07 patients calculus size reduced and 03 patients unchanged in calculi size. In study group patients (15) 06 patients cured, 08 patients calculus size reduced and 01 patient unchanged in calculi size.

**Graph 3: Over all result of renal calculi after treatment**



## DISCUSSION

### Abdominal pain

The effect of *Tilanala Kshara* on abdominal pain showed no reduction on 1<sup>st</sup> day of treatment, while on 7<sup>th</sup> day negligible (19.4%) abdominal pain reduction was noted. On 14<sup>th</sup> day onwards 48.9% to 85.1% of abdominal pain reduced by 21<sup>st</sup> day. Maximum improvement noted on 30<sup>th</sup> and 45<sup>th</sup> day with 93.6% and 95.7% reduction in pain with P value <0.0001

The effect of *Gokshura Churna* on abdominal pain showed no reduction on 1<sup>st</sup> day while on 7<sup>th</sup> day and 14<sup>th</sup> day 24% and 52% abdominal pain reduced respectively. 92% of maximum improvement was observed on 21<sup>st</sup> day. During follow up 100 % reduction in abdominal pain was noted with p value <0.0001.

In the study all patients (30) presented with abdominal pain but intensity varied, 10 patients had grade 4 pain. It was found that abdominal pain reduced earlier in study group with relief of 92% noted on 21<sup>st</sup> day, where as in standard group it was 85.1%.

*Gokshura* being *Madhura* in *Rasa* and *Guru Guna* helps to relieve *Vata Dosha* and indirectly *Vedana* and by *Guna* it has *Anulomana (Mutrala)* action.

### Dysuria

The effect of *Tilanala Kshara Yoga* on dysuria showed negligible (21%) reduction on 7<sup>th</sup> day of treatment while 52.6% on 14<sup>th</sup> day was noted. Maximum reduction noted on 21<sup>st</sup> and 30<sup>th</sup> day with 89.4% and 94.7% respectively and dysuria was completely reduced on 45<sup>th</sup> day with significant P value 0.005.

The effect of *Gokshura Churna* on dysuria showed negligible (3.8 %) reduction on 1<sup>st</sup> day of treatment, while on 7<sup>th</sup> and 14<sup>th</sup> day dysuria reduced with 34.6% and 61.5% respectively. Maximum improvement (96.1 %) noted on 21<sup>st</sup> day and during follow up 100% reduction with significant P value 0.0006 was noted.

From the study it was found that dysuria reduced earlier in study group and relief of 96.1% was noted on 21<sup>st</sup> day where as in standard group it was 89.4%. *Gokshura* being *Sheeta Veerya*, *Mutrala* and *Krimighna* helps to get rid of dysuria.

### Renal angle tenderness

Abdominal palpation was done for the assessment of renal angle tenderness. Effect of *Tilanala Kshara Yoga* had shows negligible reduction (15.3%) in renal angle tenderness on 7<sup>th</sup> day. On 14<sup>th</sup> and 21<sup>st</sup> day 61.5% and 88.4% tenderness was reduced respectively.

Maximum improvement in renal angle tenderness noted on 30<sup>th</sup> and 45<sup>th</sup> day 92.3% and 96.1% with p value <0.0001.

Abdominal palpation was done for the assessment of renal angle tenderness. Effect of *Gokshura Churna* had no reduction in renal angle tenderness on 7<sup>th</sup> day. On 14<sup>th</sup> and 21<sup>st</sup> day 66.6% and 91.6% tenderness was reduced respectively. During follow up 100%



improvement was noted with significant P value <0.0001.

On examination 15 patients presented with grade II renal angle tenderness while 13 patients had grade I tenderness and only 02 patients had grade III tenderness. The effect of *Gokshura Churna* was found more effective in relieving the tenderness.

#### Haematuria

In standard group 01 patient was found with haematuria and in study group 03 patients were found with haematuria. After treatment in both the groups the patients were cured of it by 100% with P value 0.334 in standard and P value 0.096 in study group.

*Tilanala Kshara Rakta Stambana* property and *Gokshura Sheeta Virya* does vasoconstriction, so these may help in relieving haematuria. *Gokshura* shows more significant in relieving haematuria with P value 0.096.

#### Pyuria

In the study of 30 patients of renal calculi, 04 patients were found in each study and standard group and both groups were cured with 100% after treatment with P value 0.055 in standard group and P value 0.040 in study group. *Gokshura Krimigna* property may help in significant relieving of pyuria with P value.

#### Size of renal calculi

In the study of 30 patients, reduction of renal calculi size/flushed noted as 41.9% with P value 0.0025 in standard group and 48.5% with significant P value 0.0006.

*Tilanala Kshara* and *Madhu* have *Lekhana Guna* may help in reduction of renal calculi size but *Gokshura* has *Ashmari Bhedana* as well as *Mutral Guna* may help in significant reduction (48.5%) of renal calculi size.

#### CONCLUSION

The study entitled "The effect of *Gokshura Churna* over *Tilanalakshara Yoga* in the management of Mutrashmari" - A randomized comparative clinical study was an effort to find out an effective treatment

for renal calculi. Based on extensive clinical trial with *Gokshura Churna* over *Tilanala Kshara Yoga* was carried out and following conclusions were arrived. For study 30 patients were registered and all the 30 patients completed the treatment. It was found that standard group (*Tilanala Kshara Yoga*) reduced the abdominal pain by 85.1%, dysuria by 89.4%, renal angle tenderness 88.4%, haematuria 100%, pyuria 100%, size of renal calculus 41.9% by 21<sup>st</sup> day of treatment. In study group (*Gokshura Churna*) it was observed that abdominal pain reduced by 92%, dysuria 96.1%, renal angle tenderness 91.6%, haematuria 100%, pyuria 100% and size of renal calculus 48.5% by 21<sup>st</sup> day of treatment. This assessment showed *Gokshura Churna* had significant result over *Tilanala Kshara Yoga* in both subjective and objective parameters with P value <0.0001.

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