

**A STUDY OF CLINICAL AND LABORATORY PROFILE OF MUTRASHMARI
W.S.R TO UROLITHIASIS AND ITS MANAGEMENT
WITH GOKSHURADI GUGGULU**

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ABSTRACT :

Urological problems remain an important part of the medical science, evident from the ancient literature. *Acharya Shushruta* 'the father of surgery' has explained urinary calculus under the heading of Ashmari and included it in the "*Asthmahagada*". The *Mutrashmari* (urinary stones) have peculiar tendency of recurrence despite their surgical removal which prove that surgery is not the only remedy. To avoid the incidence of recurrence and in search of an effective conservative treatment the present work has been undertaken.

The study has been carried out with *Gokshuradi Guggulu* indicated by *Sharngdhar samhita* madhyam khand vat kalpna adhyay. Total 38 patients of *Mutrasmari* fulfilling all the inclusion and exclusion criteria were registered from O.P.D./I.P.D. of Rajiv Gandhi Govt. Post Graduate Ayurvedic college & Hospital, Paprola, Himachal Pradesh. These patients were given 250mg tablets of *Gokshuradi Guggulu* (2 tablet in the morning and 2 tablets in the evening) for 45 days. The effect of treatment was assessed in relation to improvement in overall clinical signs and symptoms on the basis of grading and scoring system. The spastically analysis of these scores was done before and after the treatment and improvement was assessed on percentage basis. The *Gokshuadi Guggulu* is very effective in reducing most of clinical sign & symptoms as well as size of calculi and its excretion from the body.

Key words: *Mutrashmari*, Urolithiasis, *Gokshuradi Guggulu*,. *Asta Mahagad*

About the topic: Many research works has been carried out in different institution on *Mutrashmari*. Most of the experiments are based on the management of the disease only. This study is based on the laboratory as well as clinical findings of the effect of *Gokshuradi Guggulu* on Urolithiasis and such type of research has not been done anywhere prior to this. It has been found that, the trial drug is very

much effective to give relief from *Mutrashmari*. On taking the drug regularly with proper do's and don'ts advised for *Mutrasmari* disease, may avoid going for a surgery as its treatment.

INTRODUCTION: '*Ashmari*' comprises of two words '*Asma*' and '*Ari*'. '*Asma*' means stone or a gravel and '*ari*' means enemy¹. *Ashmari* is a disease in which

there is formation of stone, exerting great suffering to human being like an enemy.

Ayurveda has considered *Ashmari* mainly as '*Mutra ashmari*' (Urolithiasis), which is emerging as a sequel to deranged *Mutra Pravritti* leading to deterioration in urine excretion and micturition. *Mutrashmari* is a disease of *Mutravaha strotas* and has been considered as one of the '*Asta Mahagadas*' i.e. one of the deadly diseases.²The symptoms of *Mutrashmari* like agonizing pain over *Nabhi*, *Vasti*, or at *Sevani*, *Medhra* during micturition, sudden ceasation of urine flow, blood stained urine, twisting and slitting of urine, aggravation of pain during running, jolting etc., are similar to the symptoms of urolithiasis of modern science. Hence urolithiasis can be co-related with the *Mutrashmari* mentioned in Ayurveda.³

Urolithiasis: Ouron (Urine) + Lithos (stone) It is the formation of urinary calculi, which are calculi formed or located anywhere in the urinary system. Most common disease of the urinary system. It occur more frequently in men than in women and in whites than in black. Composed of urinary salts bound together by colloid matrix of organic material. It consists of a nucleus around which concentric layers of urinary salts are deposited.

Aetiology:

- Hyperexcretion of relatively insoluble urinary constitute
- Physical changes in the urine
- Altered urinary crystalloid and colloid

Types of renal calculus:

Primary stone: appear in apparently healthy urinary tract formed in acidic urine. ex.

1. Oxalate stone
2. Uric acid stone
3. Cystine

4. Xanthine

5. indigo

Secondary stone: formed as a result of inflammation alkaline urine, infected urine

1. Phosphate calculus

2. Mixed calculus

Clinical feature

- Renal pain (renal colic)
- Ureteric colic
- Referred pain
- Haematuria
- hydronephrosis
- Tenderness
- Guarding and rigidity
- Swelling

Aims and objectives of the Research work:

1. To evaluate the therapeutic effect of *Gokshuradi Guggulu* in *Mutrashmari* as described in *Sharngdhara Samhita*.⁴

2. To review the *Ayurvedic* and *Modern* literature related to Urolithiasis.

MATERIALS AND METHODS:

This study was unicentral, open and prospective clinical trial in single group with Sample size of 38 patients and was approved by Institutional Ethical Committee. Trial was conducted in the Deptt. Of *Rog Nidan* at R.G.G.P.G.Ayu.College hospital Paprola, (H.P.). Patients from 18 – 65 years age of either sex were selected for trial. Patients were registered for trial according to inclusion criteria.

Inclusion criteria:

- Patients of either sex, age 18-65 years
- Single or Multiple calculi having size ≤ 15 mm each in any part of urinary system
- Patients who are not interested to undergo for surgery and those who are unfit for surgical intervention.

Exclusion criteria:

- Pyelonephritis.
- Patients with obstructive uropathy.
- Patients with known metabolic/endocrinal disorder favouring calculus formation.
- Patient with impaired renal function or any severe complication, Patients with evidence of malignancy Patient with poorly controlled diabetes mellitus.
- Patients on prolonged (>6 weeks) medication with corticosteroids, antidepressants, anticholinergics etc. or any other drug that may have an influence on the outcome of study.

- Patients with concurrent serious hepatic disorders.
- Patients with severe pulmonary dysfunction.

Criteria for Assessment: The effect of treatment was assessed in relation to improvement in overall clinical signs and symptoms on the basis of grading and scoring System. Based on various investigations like urine, blood, biochemical Examination, x-ray (K.U.B.), U.S.G. (K.U.B.) done before and after the treatment.

Subjective criteria:

On the basis of symptoms of the disease <i>Mutrashmari</i> - Urolithiasis		
Pain		
• No Pain	-	0
• Occasional pain requiring no treatment	-	1
• Occasional pain, require treatment	-	2
• Constant dull pain, require treatment	-	3
• Constant severe pain, require treatment but did not show any relief	-	4
Burning Micturition		
• No burning micturition	-	0
• Occasional burning micturition, require no treatment	-	1
• Occasional burning micturition, which require treatment	-	2
• Constant burning micturition, require treatment	-	3
• Constant severe burning micturition, require treatment but did not show any improvement	-	4
Dysuria		
• No dysuria	-	0
• Occasional dysuria, require no treatment	-	1
• Occasional dysuria, require treatment	-	2
• Constant dysuria, require treatment	-	3
• Constant severe dysuria, require treatment but not shown any relief	-	4
Tenderness		
• No tenderness	-	0

• Mild tenderness	-	1
• Moderate tenderness	-	2
• Severe tenderness	-	3
• Very severe tenderness	-	4
R.B.C. / HPF		
• No R.B.C. / HPF	-	0
• 0-5 R.B.C./HPF	-	1+
• 6-10 R.B.C. / HPF	-	2++
• 11-15 R.B.C. / HPF	-	3+++
• > 16 R.B.C./HPF	-	4++++
Pus Cells		
• No pus cells	-	0
• 0-5 pus cells	-	1+
• 6-10 pus cells	-	2++
• 11-15 pus cells	-	3+++
• > 16 pus cells	-	4++++
Crystal / HPF		
• No Crystal / HPF	-	0
• 0-5 Crystal /HPF	-	1+
• 6-10 Crystal / HPF	-	2++
• 11-15 Crystal / HPF	-	3+++
• > 16 Crystal /HPF	-	4++++



Effect of therapy on stone at different site and size:

Sr.No	Stone size	Site of Stones	Result
1	5.0mm	Lt. lower pole calyx	Expelled out
2	6.0mm	Lt . Middle Calyx	Expelled out
3	6.0mm	Lt. ureteric (at UVJ)	Expelled out
4	4.0mm	Lt. lower pole calyx	Expelled out
5	3.5mm 5.0mm	Rt. lower pole calyx Rt. Ureteric lower third	Unchanged Expelled out
6	7.0mm 4.0mm 4.0mm 5.0mm	Lt. upper pole Lt. middle pole Lt. Lower pole Rt. upper pole	Expelled out Expelled out Unchanged Expelled out
7	6.0mm 8.0mm	Lt. upper pole Lt. Ureteric lower third	Unchanged Expelled out
8	4.0mm 4.6mm	Rt. Lower pole Lt. middle pole	Unchanged Expelled out
9	4 mm	Lt. Middle Calyx	Expelled out

10	7.6mm	Lt. ureteric calulus	Unchanged
11	14mm 10mm	Rt. ureteric calulus Lt. ureteric calulus	Reduced to 10.0mm Reduced to 7mm
12	5mm	Rt. ureteric calulus	Expelled out
13	7mm 3mm	Rt. Lower pole Lt. middle pole	Unchanged Expelled out
14	7mm	Lt. ureteric calculus	Expelled out
15	4mm	Vesical calculus	Expelled out
16	4.0mm 4.5mm 6.0mm 9.5mm	Rt. upper pole Lt. middle pole Lt. lower pole Lt. ureteric calulus	Expelled out Unchanged Unchanged Expelled out
17	12.0mm	Rt. ureteric calulus(PUJ)	Reduced to 8mm
18	5.0mm	Lt. lower pole	Expelled out
19	4.0mm 3.0mm	Rt. middle pole Rt. lower pole	Expelled out Expelled out
20	6.0mm	Lt. lower pole	Expelled out
21	5.0mm 4.5mm 5.0mm 4.5mm 3.5mm 6.0mm	Rt. upper pole Rt. mid pole Lt. upper pole Lt. mid pole Lt. lower pole Lt. lower pole	Expelled out Expelled out Expelled out Expelled out Expelled out Expelled out
22	6.0mm	Rt. Mid pole	Expelled out
23	5.0mm	Rt. Upper pole	Expelled out
24	7.5mm	Lt. lower pole	Expelled out
25	6.0mm	Rt. upper pole	Expelled out
26	4.0mm	Lt. Lower pole	Expelled out
27	5.0mm	Vesical calculus	Expelled out
28	6.5mm	Lt. Mid pole	Expelled out
29	5.2mm	Rt. Ureteric calculus	Expelled out
30	4.5mm	Lt. Mid pole	Expelled out
31	6.0mm 4.5mm	Rt. Mid pole Rt. Mid pole	Reduced to 5mm Expelled out
32	5.0mm	Rt. Upper pole	Expelled out
33	4.0mm	Lt. Mid pole	Expelled out
34	5.0mm 5.5mm 10.5mm	Rt. Mid pole Lt. Lower pole Lt ureteric calculus	Expelled out Expelled out Expelled out
35	4.0mm 6.0mm	Lt. Upper pole Lt ureteric calculus	Unchanged Expelled out

36	14.0mm 24.0mm	Lt. Upper pole Lt. Upper pole	Expelled out Reduced to 12.0mm
37	4.0mm 5.0mm	Lt ureteric calculus Lt ureteric calculus	Expelled out Expelled out
38	14. 0mm	Lt. Upper pole	Reduced to 10.0mm

Subject withdrawal criteria: Voluntary withdrawal by the research subject with or without information, uncooperative patient, complication of the procedure or appearance of any ailments during the trial requiring medical or surgical intervention.

Follow-up: 3 follow ups at 15 days interval.

Drug regimen:

- Form: Tablet (250mg) each
- Dose :4 tablets Gokshuradi guggulu twice daily with *Pashanbhed Kwath* after meal
- Duration:45 days

ASSESSMENT CRITERIA: Assessment was done on subjective criteria i.e. Pain, Tenderness, Burning micturation, Dysuria, haematuria and pyuria. Each variable of the criteria was graded according to the severity.

In this clinical study, total 42 patients were registered, in which 38 patients completed

the trial and all were analyzed statistically to obtain the result of therapy. Maximum number of patients in the present study belonged to the age group 18-40 years (55.25%), Male (52.63%), Hindu (97.36%), Married (76.32%), resident of Rural area (76.32%), private employee (57.90%) and belonged to middle class group (97.37%) addiction of both smoking and alcohol (26.31%), satisfactory hygiene (94.73%), education high secondary (57.89%) and vegetarian diet (73.68%), Hard stool consistency (80%), Hard irregular bowel habit (60 %). The clinical Features found in Patients are Pain (100%), Burning micturation (60.62%), Dysuria (42.10%), Tenderness (13.15%), Haematuria (02.63%), Pyuria (10.52%).

RESULTS: Paired T test⁵ was used for the statistical analysis of the observation.

Table No. - 1 Effect of Gokshuradi Guggulu on clinical criterion after completion of the trial:

Sign Symptom	Mean		% Diff.	S.D	S.E±	‘t’	p	Results
	BT	AT						
Pain (<i>Nabhi & Basti Vedana</i>)	2.26	0.42	81.41	0.67	0.11	16.72	<0.001	HS
Burning Micturation	0.81	0.05	93.82	0.75	0.12	6.26	<0.001	HS
Dysuria (<i>Mutradhara Sanga</i>)	0.52	0.05	90.38	0.60	0.09	4.83	<0.001	HS
Tenderness at renal angle (<i>SevaniVedana</i>)	0.23	0.05	78.26	0.51	0.16	0.08	<0.05	S
Haematuria (<i>SarudhiraMutrata</i>)	0.42	0.13	69.04	0.51	0.08	3.46	0.001	HS
Pyuria (<i>Ati avilamutrata & Gomeda Prakasham</i>)	0.73	0.15	77.33	0.82	0.13	4.3	<0.001	HS

Cured-23, Markedly improved- 3, Moderately improved-10, Unimproved-2 Patient

DISCUSSION: Urolithiasis or formation of urinary calculi at any level of the urinary tract is a common condition. It is the estimate that 2% of the population experiences renal stone disease at sometimes in their life with male-female ratio of 2:1. The peak incidence is observed in 2nd to 3rd decades of life.⁶ The description of *Ashmari* is the specific contribution of *Acharya Sushruta* and he has included it in the *ASTHA MAHAGADA* ⁷, The clear cut cause of the disease is still unknown. But in *Ayurveda*, *Kapha dosha* in excessive quantity has been accepted as the main reason for the formation of *Mutrashmari*.⁸ According to modern science the formation of stone in urinary system is one of the main problems of the urology. The causes and mechanism of their formation is still not certain but various factors like age, sex, irregular food habits, metabolic disorders, sedentary life style, occupation, hydration status, nutritional deficiency & geography etc. may be responsible for the formation of stone.

Possible Mode of Action:

Ayurveda Aspect:The main factor of *Ashmari* formation is *Agnimandhya* which causes obstruction in urinary system (*Mutravaha Srotasa*) and is responsible for formation of urinary calculi. Most of the ingredients of *Gokshuradi Guggulu* have the property of *Ama pachana* and *Agni sandipan*.⁹

Action of preparation on Srotodusti:Due to the predominant of *Katu Rasa* of the ingredients it dilates the *Srotas* which results in relieve of pain and also helps in clearance of *Srotas*.¹⁰

Action of Samprapti Vighatana:The ingredient of *Gokshuradi Guggulu* having *Ushna Veerya* which is just opposite to the

causative *Mahabhut Jala* which. The ingredient having *Laghu*, *Ushana*, *Ruksha* & *Tikshna Guna* are just opposite of factors help in formatting urinary Calculi (The *Prithavi* & *Jala Mahabhuta*). *Gokshur* having *Snigdha Guna*, *Madhur Rasa* & *Sheeta Veerya* passifies *Vata* & *Pitta*. Due to abundant presence of *lavan* and *Ksharabh* its act as diuretics and help in expulsion of *Ashmari* from urinary tract.¹¹ *Guggulu* having *Laghu*, *Tikta Guna*, *katu-Tikta Rasa*, *Ushana Veerya* pacifies *Vata*. So reduces pain caused by calculi. It also acts as anti-inflammatory, purifies wound. Due to *Tikshna Guna* it penetrates *Srotas*.¹² *Triphala* cause *Tridosha* shaman so helpful in calculi.¹³ *Trikatu* due to its *Tikshana Guna* *Ushana veerya* passifies *Vat Kapha Shamaka* and reduce pain. *Mustak* having *Laghu*, *Ruksha Guna*, *Katu Tikta Rasa* & *Katu Vipaka* & *Sheeta Veerya* do *Kapha Shamaka* and diuretics property.¹⁵ *Pashan bheda* having *Laghu Tikshana Guna*, *Tikta Kashaya Rasa*, *Katu Vipaka*, *Ushana Veerya* causes *Vat Kpha Shamka* & Diuretics in action.¹⁶ The beautiful story behind the action of the drugs *Prakarati Sama Samaveta Siddhant* due to Which the 9 ingredient when given as preparation exerts stones synergistic property & help to treat the disease by decreasing and destroying underlying pathology.

CONCLUSION: *Gokshuradi Guggulu* has shown statistically significant results in all the variables of assessment criteria. It reveals that *Gokshuradi Guggulu* has a definitive role in the management of *Ashmari*.

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