



# “A CLINICAL APPRAISAL AIMED TO ASSESS THE EFFICACY OF CHINCHA PANEYYA KSHARA IN THE MANAGEMENT OF ASHMARI (RENAL CALCULI)”

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**Abstract:** Ashmari is one of the most common diseases affecting Mutravaha Srotas, is an extremely perilous ailment and it may cause the cessation of life. It is a disease of in which an Ashma is formed in urinary system. Ashmari is one of such grave disease, for which it has been included in ‘*Asta Mahagadas*’ by Ashmari. It is compared with urolithiasis, its prevalent with an expectancy of 12% in total population. 50% of the population are severely affected by renal damage, which even leads to a loss of kidneys. Numerous treatment approaches, such as surgical interventions, have been embraced in contemporary urology to address urinary calculus. However, regardless of the treatment administered, there is a significant likelihood of disease recurrence within a decade. So, the main aim of this study is to treat as well as to avoid the recurrence in the Mutrashmari. Acharya Susrutha described Ghritha, Kshara, Kashaya and Kshira preparations for the treatment for Ashmari, where he exclusively described about the usage of Kshara with a special emphasis on Paneeya Kshara in an attempt not only to reduce the size of the Ashmari, but also to breakdown into pieces which easily facilitates to get flushed in the urine.

**Index Terms** - Ashmari, Cincha Paneeya Kshara, Mahagada, Urolithiasis.

## I. INTRODUCTION

Shalya Tantra holds a significant position within Ayurveda as a branch that possesses its own unique characteristics and contributes to the advancement of modern medical information technology. The Susrutha Samhitha stands as the sole text available for surgical practice, providing comprehensive surgical techniques and Para surgical measures. It is acknowledged that certain diseases cannot be effectively managed through conservative treatment alone. Among them, Ashmari is one of such grave disease, for which it has been included in ‘*Ashta Mahagadas*’<sup>1</sup> by Sushrutha. He also termed it as “YAMA” because it gives intolerable pain. It is Kaphapradhana Tridoshaja Vyadhi. It is considered difficult to cure because of its Marmaashrayitwa due to involvement of Basti, which is one among Trimarma. According to Sushrutha, those who neglect the Samshodhana of internal channels and those who engaged in unwholesome dietary habits become the victim of Ashmari. As per clinical features, it is compared to urolithiasis.<sup>2</sup>

A kidney stone usually will not cause symptoms until it moves around within your kidney or passes into your ureters. If it lodged in the ureters, it may block the flow of urine and cause the kidney to swell and the ureter to spasm, which can be very painful. At that point, you may experience these signs and symptoms: Severe, sharp pain in the side and back, below the ribs which is radiating from loin to groin, burning sensation while urination, Fever and chills if an infection is present, A persistent need to urinate, urinating more often than usual or urinating in small amounts, Pink, red or brown urine Nausea and vomiting.<sup>3</sup>

Acharya Sushruta in Sushruta Samhitha Chikitsa Sthana 7<sup>th</sup> chapter described the treatment for Ashmari. Ghritha, Kshara, Kashaya and Kshira preparations for three types of calculi have been mentioned along with indication of appropriate food, drinks and other measures, where he exclusively described about the usage of Kshara<sup>4</sup> (Su.sa.chi.7/27) with a special emphasis on Paneeya Kshara in an attempt not only to reduce the size of the Ashmari, but also to breakdown into pieces which easily facilitates to get flushed in the urine. Among all the Yantras, Upayantra and Anushastras Kshara is supreme because it is most effective and does function like Chedana, Bedhana and Lekhana alleviates all three doshas and acts immediately<sup>5</sup> (su.su11/3).

In Rasa Tarangani chapter 14 Ksharavisheshadivignanya described Chinchā Paneeya Kshara for treatment of Ashmari. Chinchā Kshara is prepared from Chinchā Phala Twak or Kanda Twak. Chinchā Kshara possesses rich medicinal values and is used as an important ingredient in various formulations which are used in the management of Shula, Agnimandhya, Gulma, Mutrakricchra and **Ashmari**<sup>6</sup> (R.T 14/109).

For the present study, Chinchā Phala Twak is taken to prepare Chinchā Kshara. (Rasatantrasara va Siddhaprayogasangraha)

### **AIM OF THE STUDY:**

- To Evaluate the Efficacy of Chinchā Paneeya Kshara in Management of Ashmari.

### **MATERIALS AND METHODS:**

#### **A) Study Design**

The current study is a randomized, open, and controlled clinical research at the OPD/IPD levels with a suitable sample size (n-20). The patients to be included in the clinical trial were allocated in a single group.

#### **B) Source of Patients**

The present study is carried out at S.V. Ayurvedic College & Hospital, Tirupati. Total 20 Patients with Renal calculi having stone size up to 15mm, age between 20 and 60 years of either gender were included in this study.

### **INCLUSION CRITERIA:**

- Patients irrespective of gender
- Patients from age group of 20 – 60 years.
- Radiological evidence of stone (up to 15 mm) in kidney, ureter and urinary bladder.

### **EXCLUSION CRITERIA:**

- Patients with age below 20 years and above 60 years.
- Stone size more than 15 mm.
- Impacted stone at ureter with severe hydronephrosis
- Gross hydronephrosis
- Pyelonephritis
- Uncontrolled diabetic mellitus and hypertension
- Malignancy
- Chronic kidney diseases
- Poorly functioning kidney
- Patients who were contraindicated for Paneeya Kshara (Bleeding diseases, Fevers, Persons of Pitta predominant constitution, Children, the aged, Debilitated, those suffering from giddiness, fainting, blindness).

## DIAGNOSTIC CRITERIA:

The patient was diagnosed on the basis of history, signs & symptoms and physical examination, X-Ray, KUB and USG findings.

**Investigations:** Blood examination: Hb%, TLC, DLC, ESR, Blood urea, Serum creatinine. Urine analysis: Sugar, Albumin, Microscopic - RBC, casts, crystals, epithelial cells and pus cells.

## METHOD OF PREPARATION OF CHINCHA PANEEYA KSHARA:

### MATERIALS AND METHODS:

#### I. MATERIAL:

**Materials:** Chinchā Phala Twak (Rasatantra sara va siddhaprayoga sangraha)

**Chinchā:** Botanical name: Tamarindus indica linn; Family: Caesalpinaceae

**Principle:** Kshara Nirmaṇa vidhi (mrudu Kshara)<sup>7</sup>

**Apparatus:** Gas stove, Iron mesh, Spatula, Vessels, Measuring jar, Khalva yantra

#### II. METHOD OF PREPARATION:

- Chinchā Phala Twak will be collected and completely dried.
- Then it will be placed over the hearth and subjected to fire till it gets converted in to ash.
- The ash will be collected in a stainless steel vessel and allowed for self-cooling. Six parts of water will be added to the ash obtained.
- It will be kept undisturbed overnight then the supernatant water will be collected in another steel vessel carefully without allowing the sediments to enter (Kshara jala)
- It was filtered 21 times to get clean and clear solution like Gomutra varna.
- The collected supernatant water is heated under medium flame on a gas stove till the water content is completely evaporated.
- After the complete evaporation of water content, white coloured flakes (Kshara) will be obtained at the bottom of the vessel.
- They will be pounded in clean Khalva yantra and made into fine powder It will be collected and preserved in air tight glass container.

#### Mode of drug administration:

Chinchā Kshara with the dosage of 1gm once in a day in empty stomach along with lukewarm water for the duration of 30 days and the observations were recorded regularly.

#### INSTRUCTIONS / DIET TO BE FOLLOWED:

1. Drink plenty of Fluids (Water, Coconut water, Lime juice, orange juice)
2. Take buttermilk daily
3. Consume Calcium rich food
4. Fruits – Watermelon, Banana, Apple, Almonds
5. Vegetables – Radish, Cucumber, Bottle guard, Potato, Lemon, Ginger, Coriander, Turmeric, Mint, Carrot and Bitter guard
6. Cereals – Barley, Moong-dal, Horse-gram

#### ASSESSMENT CRITERIA:

The patient's response was assessed on subjective & objective parameters.

#### SUBJECTIVE PARAMETERS:

- Pain abdomen which was radiating from loin to groin.
- Burning micturition.
- Dysuria.
- Hematuria.

**OBJECTIVE PARAMETERS**

- Size of the stone.
- Number of stones.

**Pain**

- No pain – 0
- Occasional pain did not require treatment - 1
- Occasional pain but, required treatment - 2
- Constant dull ache pain, required treatment - 3
- Severe constant pain, but did not show relief even after treatment-4

**Burning Micturition:**

- No burning micturition - 0
- Occasional burning micturition - 1
- Occasional burning micturition, required treatment - 2
- Constant burning micturition required treatment - 3
- Constant severe burning micturition but did not show relief even after treatment - 4

**Dysuria:**

- No dysuria - 0
- Occasional dysuria - 1
- Occasional dysuria which requires treatment - 2
- Constant dysuria which requires treatment - 3
- Constant severe dysuria but did not show relief even after treatment – 4

**Hematuria: On the basis of microscopic urine analysis**

- No RBC/Hpf - 0
- 0 – 5 RBC/Hpf - 1
- 6 – 10 RBC/Hpf - 2
- 11 – 15 RBC/Hpf - 3
- >16 RBC/Hpf - 4

**Objective criteria:****Size of stone:**

- More than 50% of decrease size - Grade 0 Good
- In between 25% to 50% of decrease size – Grade 1 Fair
- Less than 25% of decrease in size - Grade 2 Poor
- No change in size - Grade 3 No response

**OBSERVATIONS:****Table 1: AGE**

Age	Group	%
21-30 years	08	40
31-40 years	06	30
41-50 years	02	10
51-60 years	04	20
<b>Total</b>	<b>20</b>	<b>100</b>

**Table 2: GENDER**

<b>Gender</b>	<b>Group</b>	<b>%</b>
<b>Male</b>	17	85
<b>Female</b>	03	15
<b>Total</b>	<b>20</b>	<b>100</b>

**Table 3: DIET**

<b>Diet</b>	<b>Group</b>	<b>%</b>
Vegetarian	04	20
Mixed	16	80
<b>Total</b>	<b>20</b>	<b>100</b>

**Table 4: SUBJECTIVE PARAMETERS**

<b>Modern parameters</b>	<b>Group</b>	<b>%</b>
Pain	20	100%
Burning micturition	17	85%
Dysuria	17	85%
Hematuria	15	75%

**Table 5: SIZE OF THE STONE**

<b>Size of stone</b>	<b>Group</b>	<b>%</b>
Up to 5 mm	11	55
6-10 mm	09	45
11-15mm	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

**Table 6: SITE OF THE STONE**

<b>Site of stone</b>	<b>Group</b>	<b>%</b>
Kidney	15	75
Ureter	05	25
Bladder	00	00
Urethra	00	00
<b>Total</b>	<b>20</b>	<b>100</b>

\*Some patients were having more than one stone at different sites.

**Table 7: NUMBER OF STONES**

Number of stones	Group	%
Single	10	50
Multiple	10	50
Total	20	100

**Table 8: BILATERAL - UNILATERAL**

	Group	%
Bilateral	12	55
Unilateral	8	45
Total	20	100

**Table 8: EVALUATION OF PARAMETERS WITH STATISTICAL ANALYSIS**

Clinical features	Mean B.T.	Mean A.T.	Mean difference	%	S.D. B.T	S.D. A.T	S.E.	't'	P	SIGNIFICANCE
Pain	2.25	0.65	1.60	71.11	0.85	0.81	0.184	8.7178	<0.0001	YES
Burning micturition	1.60	0.55	1.05	68.70	0.82	0.60	0.135	7.764	< 0.0001	YES
Dysuria	1.35	0.30	1.05	78	0.81	0.47	0.153	6.8418	< 0.0001	YES
Haematuria	1.30	0.35	0.95	70.8	0.92	0.49	0.170	5.5964	< 0.0001	YES

ACTION ON STONE SIZE	Mean B.T.	Mean A.T.	Mean D	% of Relief	S.D B. T	S.D A. T	S.E.	't'	P	SIGNIFICANCE
	5.91	1.90	4.010	67.85	2.056	2.245	0.211	19.061	<0.0001	YES

SIZE(Diameter)	No. of Patients		
	Site	Group I	Effect
up to 15mm	Kidney	15	EXPULSED -9 DECREASE IN SIZE -6
	Ureter	05	EXP-2 DECREASE IN SIZE -3
	Bladder	00	-----
	Urethra	00	-----
TOTAL		20	

## DISCUSSION:

Male patients of age between 3<sup>rd</sup> and 4<sup>th</sup> decades were found more in the study than females are naturally having less testosterone level and are in less risk group. The study showed that the prevalence of the disease was more in persons who undergo sedentary occupation, stressful events, inconsistent dietary habits, reduced water intake, use of increased meat products, increase in concentration of solutes in urine and further their deposition leads to Ashmari formation. Persons who indulge in excessive intake of Alcohol, Coffee, Tea causes rise in uric acid excretion and increased Oxalic acid output, which may help in Ashmari formation. In this study 80% were having Mixed type of diet and 20% were having Vegetarian diet. A high intake of animal protein (egg, chicken, meat) also increases the risk of kidney stone formation. When more animal proteins are consumed, it creates an amino acid load leading to high excretion of uric acid and calcium in turn. Failure to excrete acids into urine leads to the acidification of the blood and this condition can also increase the risk of kidney stones. Kidneys are more prone to calculi formation as these are the main organs in regard to physiology of urine formation. Chances of sedimentation of particles are more in it, as the filtration process takes place here, which may lead to stone formation. Ureteric, bladder and urethral stones are less in number and they are secondary stones. In most subjects' calculi seen bilaterally.

Acharya Susrutha specifically described the use of Paneeya Kshara which helps to disintegrate and remove calculi, cure the symptoms such as pain and burning sensation thereby helps in Ashmari. Chinchā (Tamarindus indica Linn.) is one of the drugs which are included in the group Kshara Asthaka (eight alkalis) is taken for the study because of its properties.

**Role of Chinchā Kshara: Bhasma of Twak** contain Kashaya rasa, Ushna virya so it acts as Kapha-Vata shamaka thus its acts on Ashmari as it is Kaphapradhana Tridoshaja vyadhi. **Kshara of Twak** acts as Shulahara and Agnimandhya nashaka because of its virya. Shulahara property helps to relieve pain and by Deepana property it helps to increase the agni, which further check formation of Ama at jataragni level there by reduces the chances of formation of Ashmari. **Chinchā Kshara** which had both properties of **Chinchā + Kshara** properties, having pH 9.27. Thus, it helps in Breaking & Dissolving the stones, (maybe by acting on Stone by altering the pH) and prevents stone formation. It understood from the analytical study that as Chinchā Kshara contain calcium in high amounts helps to prevent the calcium oxalate stones by Calcium in the digestive tract binds to oxalate from food and keeps it from entering the blood, and then the urinary tract, where it can form stones. Formation of various types of kidney stones is strongly influenced by urinary P<sub>H</sub>. An alkaline P<sub>H</sub> favours crystallisation of calcium and phosphate containing stones whereas acidic urine P<sub>H</sub> promotes uric acid and cystine stones. Potassium present in Chinchā Kshara prevents and treats high acid levels in your body. So, it works by decreasing the amount of acid in your body. The drug might have acted on Ashmari by changing the pH value. Phosphorus present in Chinchā Kshara is a potent inhibitor of crystallization and able to dissolve vast majority of kidney stone components.

After completion of treatment course none of the patient had severe pain in abdomen; only two patients had pain in abdomen which was of mild nature. Burning micturition is seen in almost all subjects and is greatly reduced in 3<sup>rd</sup> week of their treatment period. Dysuria was relieved in 14 patients. All subjects relieved from Haematuria after treatment. Among the 20 subjects, 15 have been diagnosed with kidney stones. Out of these, 9 have successfully passed the stones, while the size of the remaining 6 has decreased. Overall effect of therapy, out of 20 patients, 9 patients (45%) were Moderately improved and 9 patients (45%) was found mild improvement and 2 patients (10%) found to be unchanged. No significant changes were observed in Laboratory investigations after treatment.

Properties of Kshara mentioned in classics are Katu and Lavana Rasa, Ushna Virya and it act as Tridoshaghna. Kshara have Ushna Virya but it acts as Pitta, Shamaka due Prabhava. As Kshara is Tridosaghna, it pacifies all the dosha simultaneously. As Aśmārī is tridoshaja vyadhi, Tridoshghnata effect of Kshara helps to break Tridosha Samprapti of disease. Kshara acts in different modes as Dahana, Pacana, Darana, Vilayana, Sodhana, Soshana and Ropana are its actions which are helpful in removing Sanga i.e. obstruction which is prime cause behind pathology. As Kshara has mutrala property (diuretic effect) there will be increase in the intra luminal pressure. Because of this pressure stone expels as a whole from the urinary tract or change its prior position. Lekhana property of Kshara helps to scrapes the abnormal tissue from its location and destroys it after dissolving it, because of its corrosive nature.

Bhedana property helps to disintegrate urinary stones. By the property of Shodhana, Kshara eliminates the pathogenic organisms from the urinary tract. By virtue of Ropana property, Kshara helps in healing the lacerated mucosal surface of the urogenital tract due to friction of spiky & nodular type of Aśmārī. Kshara

having 'Ksharana' property, it gradually erodes vitiated kapha dosha, kapha is responsible for formation of Ashmari. Kledana property of Kshara may help in relieving symptoms like burning micturition, dysuria. Stone might be dissolved due to the Ashmari Bhedana or Ashmarihara property.

### Conclusion:

The above research study shows a significant reduction in key symptoms such as abdominal pain, dysuria, burning micturition, and stone size. Therefore, the effectiveness of Chinchā Paneeya Kshara in treating Ashmari is highly promising. The lithotriptic action of Chinchā Paneeya Kshara was significant. **Chinchā Paneeya Kshara** possesses the properties regarding to disintegration and expulsion of stones & can produce relief in sign and symptoms of Mutraashmari, which proves that it is also an ideal preparation for the management of Mutraashmari.

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