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# Prospective clinical trial in the management of *Mutrashmari* through *Avapidaka Snehapana* and *Matra Basti*

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## ABSTRACT

**Background:** *Ashmari Roga* is considered as one of the *Ashta Maha Gada* considered difficult to cure because of its *Marma Ashrayatwa*, due to the involvement of *Bahu Dosh* and *Basti*, which is one of the *Tri Marma*, *Acharyas* has specifically mentioned many treatment modalities for reducing the symptoms as well as eliminating the *Ashmari* from its root, in which *Basti* and *Virechana* is having prime importance. So here an attempt is made to compare and study the efficacy of *Basti* and *Virechana* in *Mutrashmari*. **Objective:** To study the effect of *Avapidaka Snehapana* followed by *Virechana* and *Shamanoushadhi* and *Matrabasti* followed by *Shamanoushadhi* in the management of *Mutrashmari*. **Materials and methods:** 40 patients diagnosed with *Mutrashmari* (urinary calculus) and fulfilling the inclusion criteria were selected and randomly divided into 2 groups. In Group A: *Amapachana* with *Hingvastaka Churna*, *Avapidaka Sneha* with *Punarnavadi Ghrita* and *Virechana* with *Trivrut Mrudvika Rasa* followed by *Shuntyadi Kwatha* as *Shamanoushadhi*, In Group B: *Amapachana* with *Hingvastaka Churna*, *Varunadhya Taila Matra Basti* followed by *Shwadamstra Kwath* as *Shamanoushadhi*. Pain (from loin to groin), Nausea, Dysuria, Haematuria, Burning Micturation, Number of stones, Size of stones, Site of stone, Hydroureter and Hydronephrosis were assessed before and after treatment. The total duration of the study was 60 days or up to expulsion of the stone with 45 days of follow up. **Results:** In this study, Group A shows statistically more significant result than Group B. **Conclusion:** Both Group A and Group B have shown significant outcomes in all parameters with proper diet and regimen. Reoccurrence of stone was not found in a single subject.

**Key words:** *Mutrashmari*, *Urinary Calculi*, *Avapidaka Sneha*, *Virechana*, *Matra Basti*.

## INTRODUCTION

Since *Veda Kala* the human beings are suffering from *Mutravaha Srotovikaras* in which *Mutrashmari* is an important one. The *Mutravaha Srotas* is one among

the *Abhyantara Srotas*, the group of organ concerned with *Utpatti* and *Visarjana* of *Mutra* is called *Mutravaha Srotas*.<sup>[1]</sup> *Basti* and *Vankshana* are said to be the *Mula* of this *Srotas*.<sup>[2]</sup> it plays a very important role in excretion of waste products of *Sharira* and thus maintains the health, when *Mutravaha Srotas* get vitiated it produce many *Mutravaha Sroto Vikaras* in that *Ashmari*.<sup>[3]</sup> is one. *Charaka* has considered it in *Marma Gata Vyadi* due to its *Marma Asrayatva*. *Ashmari Roga* is considered as one of the *Asta Maha Gada*.<sup>[4]</sup> considered difficult to cure because of its *Marma Ashrayatwa*, due to the involvement of *Bahu Dosh*.<sup>[5]</sup> and *Basti*, which is one of the *Tri Marma*, being the *Vyakta Sthana*. The word *Ashmari* is derived from root 'Ash' denoting to 'Ashm' means Stone or Gravel. Thus formation of stone in *Mutra Patha* (urinary system) is known as *Mutrashmari*. *Shareera* is

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formed through *Panchmahabhutas*. When *Aap Mahabhuta* decreases and the *Prithvi Mahabhuta* increases, attains *Kathinyata* in *Mutravaha Srotas* and produces the *Ashmari*. *Mandagni* plays another important role here, which leads to improper digestion and metabolism there by leading to the formation of *Ama*, which is the root cause for the manifestation of diseases.<sup>[6]</sup>

Renal calculi occurs in people of all parts of the world with a lower life time risk of 3-15% in the West, 25% in Asia, 20% in India. Renal calculi are quite common and usually affects people who are between 20 to 60 years of age, they affect male more than female. It is estimate that renal colic affects about 10-20% of male, and 3-5% of female. Out of which 50% may end up with loss of kidney and renal damage. Recurrent stone formation is a common problem with all types of stones.<sup>[7]</sup>

In *Ayurvedic* literature all sorts of methodologies including surgical techniques have been described. According to *Brihatrayis*, before going for surgical procedures one should try with oral medication by adopting *Ghrita*, *Taila*, *Paniya Kshara*, *Shamanoushadhi* along with other procedures like *Virechana*, *Uttarabasti*, *Matrabasti* etc.

*Ashmari* is having properties like *Rukshata*, *Kharatva*, *Kathinata* thus *Snehana* plays an important role in *Samprapti Vighatana*. Due to its *Snigdghata*, *Mandaguna*, *Pichchilata* and *Kleda Guna* it helps in the easy detachment of *Ashmari* from its roots. Due to its *Mruduguna*, *Saraguna* makes *Ashmari* to easily pass out from *Mutravaha Srotas*.

Here *Avapidaka Sneha* is one of the ideal choices of *Snehana*, as explained by *Vagbhata* in *Astanga Hrudaya Sutrasthana* 4<sup>th</sup> chapter "*Rogaanutpaadaniya Adhyaya*". The diseases in *Adhonaabhogata Vata* can be pacified by the administration of medicated ghee in *Madyama Matra* - the quantity that digests within a period of 12 hours only. In two divided doses - One part of *Ghee* before food and the Second part after the proper digestion of formerly taken *Ghee* and Food. This mode of administration of *Ghrita* is known as '*Avapidaka*

*Sneha*'. It helps in reducing the *Vibhanda Lakshanas*, *Mutrasanga*, *Adhmana*, *Atopa* etc. intern helps in reducing the abdominal pressure.<sup>[8]</sup>

After *Avapidaka Snehapana*, *Sadhyovirechana* with *Trivrutt Mrudvika Rasa*<sup>[9]</sup> to expel the *Doshas* from its root and reduce the recurrent formation of stones. *Trivrutt* simply does the *Sukha Virechana* and removes the *Doshas* from root.

For another group again *Snehana* with *Matrabasti* through *Varunadhya Taila* as explained by *Chakradatta*.<sup>[10]</sup> *Basti* is said in *Ayurveda* as half of the whole treatment schedules. It is said to control almost all the disease, all the *Dosha* and it is very acute on its onset of action. *Charaka* explained about *Matrabasti* in *Sidhisthana Snehavyapadsidhi Adhyaya*. In *Krusha*, *Durbhala* and in *Vata Vikara Matrabasti* is advisable. It does the *Vata Shamana* and *Anulomana*, *Dhatu Poshana* so in *Durbala Ashmari Rogi* the *Matrabasti* is beneficial.<sup>[11]</sup>

## OBJECTIVES OF THE STUDY

To evaluate the efficacy of *Avapidaka Snehapana* followed by *Virechana* and *Varunadhya Taila Matra Bastis*.

## MATERIALS AND METHODS

### Study design

- Type of study : Interventional
- Number of Groups : 2
- Masking : Open label
- End point : Efficacy

### Criteria for selection

Patient suffering from *Mutrashmari*, fulfilling inclusion criteria and willing to participate in the study were registered.

### Inclusion criteria

- Patients with clinical features of *Mutrashmari* (Urolithiasis) were selected.
- Presence of calculi diagnosed by Radiological methods measuring <8mm was selected.

- Patients of either sex between 18 to 60 years of age were included in the study.

#### Exclusion criteria

- Patient with impaired Renal functions, Renal failure, Renal obstruction, Severe Hydronephrosis, Any severe complications or needing surgical interventions.
- Patient having Urinary stone measuring >8mm in size.
- Patients who are pregnant and lactating women are excluded.
- Patients associated with uncontrolled systemic and metabolic diseases were excluded.
- Patients who are unfit for *Avapidaka Snehapana*, *Virechana* and *Matrabasti* were excluded.

#### Diagnostic Criteria

Diagnosis was based on subjective as well as objective criteria of *Mutrashmari* as well as 'Ultra Sonography'.

#### Subjective Criteria

*Shula* (radiating pain from loin to groin region), *Mutrakruchra* (dysuria), *Sarakta Mutra* (hematuria), *Mutra Daha* (burning micturation), *Hrullas* (nausea), etc.

#### Objective Criteria

- Tenderness in the renal angle.
- Size of the calculi before and after treatment assessed by USG.
- No. of Calculi before and after treatment assessed by USG.

#### Investigation (pre and post treatment)

- Hematological - Hb%, TC, DC, ESR, HIV, HBsAg, HCV, Sr.Creatinine, Blood Urea
- USG - Abdomen and Pelvis
- X-ray KUB (if necessary)
- Urine - Physical & Microscopic examination

#### Intervention

##### Group A

- Ama Pachana:** *Ama Pachana* with *Hingvastaka Churna*<sup>[12]</sup>

*Matra* : 3 to 5 gms twice a day.

*Kaala* : *Samudga* with *Ghritha*

Duration : Till the *Nirama Lakshana*

- Snehaprayoga**

*Abhyanatara*: *Avapeedaka Snehapana* with *Punarnavadi Ghrita*.<sup>[13]</sup>

*Matra*: *Roga* and *Rogi Balanusara*

*Bahya*: *Abhyanga* with *Tila taila* followed by *Nadi Swedana*.

- Virechana:** *Virechana* with *Trivrut Mrudvika Rasa*.

*Matra*: As per *Koshtha* of patient

- Samsarjana Krama** (according to the *Shuddhi* achieved)

After completing the *Virechana Karma*, patient shall be allotted for *Shamanoushadhi*.

- Shamanoushadhi:** *Shuntyadi Kwatha*<sup>[13]</sup>

*Matra*: 30 to 40 ml twice a day before food

Duration: 45 days.

**Follow up period:** 60 days or up to expulsion of stone.

##### Group B

- Ama Pachana:** *Ama Pachana* with *Hingvastaka Churna*

*Matra*: 3 to 5 gms twice a day

*Kaala*: *Samudga* with *Ghritha*.

Duration: Till the *Nirama Lakshana*.

- Sneha Prayoga**

*Sthanika Abhyanga* with *Tila taila* followed by *Nadi Sweda*.

- Basti Prayoga:** *Matra basti* administration of *Varunadhya Taila*.

*Prakshepaka: Shatahwa and Saindava Lavana*

*Kaala: 7days.*

*Matra: Roga and Rogi Balanusara.*

*Basti Parihara Kala: Upto 15 days .*

After completing the Matra basti patient shall be allotted for *Shamanoushadhi*.

#### 4. *Shamanoushadhi: Shwadamstradi Kwatha*<sup>[14]</sup>

*Matra: 30 to 40 ml twice a day before food.*

Duration: 45 days

**Follow up period:** 60 days or up to expulsion of stone.

**Total duration of the study :** approximately 60 days.

#### Criteria for Assessment

*Snehapaana, Virechana and Matra Basti* are assessed on the basis of classical reference.

Assessment was carried out on the basis of improvement found on subjective as well as objective parameters.

Improvement in sign and symptoms of *Mutrashmari* i.e. subsiding pain, dysuria, nausea, fever, haematuria, burning micturation, etc. have been assessed on the basis of specially prepared proforma and scoring pattern by 0 - 3 scoring nill, mild, moderate and severe respectively for both subjective as well as objective parameters.

#### Overall assessment of therapy

Overall assessment of the therapy was made on the basis of improvement in *Shula, Mutra Pravrutti*, and USG Findings, along with general improvement in *Agnibala*.

The obtained results were measured as mentioned below,

| Result          | Criteria              |
|-----------------|-----------------------|
| Complete relief | 100%                  |
| Marked relief   | Above 76% improvement |
| Moderate relief | 51 to 75% improvement |
| Mild relief     | 26 to 50% improvement |

|           |                       |
|-----------|-----------------------|
| No relief | Below 25% improvement |
|-----------|-----------------------|

#### Status of patients

| Status     | Group A | Group B |
|------------|---------|---------|
| Registered | 20      | 20      |
| Completed  | 20      | 20      |

#### OBSERVATIONS AND RESULTS

All the 40 subjects registered for the present study were ranging from 18 to 60 years, of which maximum subjects 17 (42.50%) out of 40 were between 18-30 years, 14 subjects (37.50%) were between 31-45 years and 8 subjects (20.0%) were between 46-60 years. A prevalence of sex was more in Males i.e. 31 male (77.50%). Distribution of the patients according to religion, showed higher incidence of *Mutrashmari* 30 subjects (75.00%) were Hindu and 10 Subject (25.00%) were Muslims. In this study 33 subjects (82.50%) were Educated and 7 subjects (17.50%) were Illiterate. The incidence of *Mutrashmari* was found to be high in married (72.50%) people.

In this study highest numbers of subjects are affected by consuming *Ruksha Pradhana Ahara*. Due to excessive consumption of *Ruksha Ahara* makes the *Drava Roopi Mutra* to dry in *Mutrapatha* and form the *Ashmari*. Vitiating factors of *Kapha Pradhana Tridosha* include *Katu-Amla-Lavana Rasa Pradhana Ahara* and *Rooksha, Guru Guna Pradhana Ahara*, which might have lead to the occurrence of disease in most number of individuals. In this study out of 40 subjects, Maximum 22 subjects (55%) reported to have chronic onset while 18 subjects (45%) had insidious onset.

In this study, 18 subjects (45.00%) were having multiple stones, 11 subjects (27.50%) were having single stone and 11 subjects (27.50%) were having two stones. Out of 40 subjects, No any subjects had Pus cells in urine examination and 1 subjects (05.00%) had RBC's in the Urine (haematuria).

In this study all 40 subjects had a pain at loin to groin region in anterior abdomen and in supra pubic region pain as a main complaint. Usually *Vataj Ashmari* produced a pain due to its horn like structure makes the friction in urinary tract but in *Pitta-Kaphaja*

*Ashmari* there may symptomless initially but in day today activities like riding, jumping, running, during journey due to that jerk stone makes the friction in urinary tract that produce the pain, so in this study had observed all patients came with pain as a main complaint.

This study brings to light the bitter truth about the Indian society in regard to their negligence towards ailments. We found that most of the subjects approached our OPD only after their day to day lifestyle started getting hampered due to the severity of the disease.

## RESULTS

Group A showed significant improvement in dysuria in *Mutrashmari* and rest of parameters are showed highly significant in Group A. No any heamaturia subject had reported in group A may be because blood in urine subject may have more fear about disease. (Table 1)

**Table 1: Showing effect of therapy on subjective & objective parameters in Group A.**

| Parameter           | n  | $\bar{X}$<br>BT | $\bar{X}$<br>AT | %<br>of<br>Relief | SD   | SE   | t     | p     | Re<br>m. |
|---------------------|----|-----------------|-----------------|-------------------|------|------|-------|-------|----------|
| Dysuria             | 09 | 0.65            | 0.1             | 84.61             | 0.73 | 0.16 | 3.24  | <0.01 | S.       |
| Burning Micturition | 11 | 0.85            | 0.2             | 76.47             | 0.61 | 0.13 | 4.61  | <0.01 | H.S.     |
| Nausea              | 14 | 1.05            | 0.25            | 76.19             | 0.67 | 0.15 | 4.49  | <0.01 | H.S.     |
| Fever               | 11 | 0.75            | 0.15            | 80.00             | 0.66 | 0.14 | 3.94  | <0.01 | H.S.     |
| Hematuria           | 0  | 0               | 0               | 0                 | 0    | 0    | 0     | 0     |          |
| Pain                | 20 | 2.3             | 0.25            | 89.13             | 0.46 | 0.10 | 18.58 | <0.01 | H.S.     |
| Renal               | 11 | 1               | 0               | 85.               | 0.   | 0.   | 5.0   | <0.0  | H.S      |

|                  |    |      |      |       |      |      |       |       |      |
|------------------|----|------|------|-------|------|------|-------|-------|------|
| Angle Tenderness | 3  |      | 15   | 00    | 72   | 16   | 8     | 01    | .    |
| Size of Calculi  | 20 | 2.35 | 0.35 | 85.10 | 0.62 | 0.13 | 14.65 | <0.01 | H.S. |
| No of Calculi    | 20 | 2.15 | 0.35 | 83.72 | 0.74 | 0.16 | 10.48 | <0.01 | H.S. |

Group B showed highly significant results in renal angle pain, dysuria, nausea and all objective parameters, where as in fever, heamaturia and in burning micturition *Matrabasti* showed only significant result. (Table 2)

**Table 2: Showing effect of therapy on subjective and objective parameters in Group B.**

| Parameter              | n  | $\bar{X}$<br>BT | $\bar{X}$<br>AT | %<br>of<br>Relief | SD   | SE   | t     | p     | Re<br>m. |
|------------------------|----|-----------------|-----------------|-------------------|------|------|-------|-------|----------|
| Dysuria                | 11 | 0.6             | 0.1             | 83.33             | 0.5  | 0.11 | 4.35  | <0.01 | H.S      |
| Burning Micturition    | 09 | 0.65            | 0.1             | 84.61             | 0.63 | 0.14 | 3.79  | >0.01 | S        |
| Nausea                 | 12 | 0.85            | 0.2             | 76.47             | 0.72 | 0.16 | 3.89  | <0.01 | H.S.     |
| Fever                  | 10 | 0.65            | 0.15            | 76.92             | 0.67 | 0.14 | 3.24  | >0.01 | S        |
| Hematuria              | 01 | 0.1             | 0               | 100               | 0.43 | 0.09 | 1.00  | >0.01 | S        |
| Pain                   | 20 | 2.2             | 0.3             | 86.36             | 0.6  | 0.13 | 13.07 | <0.01 | H.S      |
| Renal angle Tenderness | 12 | 0.85            | 0.25            | 76.47             | 0.66 | 0.14 | 3.94  | <0.01 | H.S.     |
| Size of calculi        | 20 | 2.35            | 0.5             | 78.72             | 0.62 | 0.13 | 14.65 | <0.01 | H.S.     |
| No of calculi          | 20 | 1.95            | 0.45            | 76.31             | 0.80 | 0.18 | 7.84  | <0.01 | H.S.     |

Overall study states that Group A had shown more significant result than Group B means *Avapida Snehapana* followed by *Virechana* is more effective in *Mutrashmari* than *Matrabasti*.

**Table 3: Showing the Overall effect of study in both Groups.**

| Remarks                    | Group A | %  | Group B | %  | Total | Percentage (%) |
|----------------------------|---------|----|---------|----|-------|----------------|
| Marked Relief (Above 76%)  | 16      | 80 | 10      | 50 | 26    | 65             |
| Moderate Relief (51 - 75%) | 04      | 20 | 10      | 50 | 14    | 35             |
| Mild Relief (26 - 50%)     | 00      | 00 | 00      | 00 | 00    | 00             |
| No Relief below (25%)      | 00      | 00 | 00      | 00 | 00    | 00             |

In this study out of 40 subjects, Maximum of 65 subjects (65.00%) got marked relief and 14 Subjects (35.00%) had Moderate relief.

## DISCUSSION

### Probable mode of action of *Hingwastaka Churna*

*Hingwastaka Churna* mainly contains the *Dravyas* like *Hingu*, *Shunti*, *Ajamoda*, *Saindhava*, *Dwe Jeeraka*, *Pippali* and *Maricha* which are mainly *Deepana*, *Pachana*, *Vatanulomana*, *Udvestana*, *Uttejaka*, *Balya*, *Mutravartaka*, *Srotoshodaka*, *Shula Prashamaniya* properties like *Laghu*, *Tikshna*, *Ushna Virya*, *Tridosahara*. The main ingredient is *Hingu* (*Asafoetida*) which is *Katu Rasa*, *Katu Vipaka*, *Ushna Virya*, *Kapha Vata Shamaka*, *Kapha Durgandhahara*, *Kapha Nisaraka*, as *Ashmari* is formed by *Kapha Pradhana Tridosha* vitiation, this *Ama Pachana Dravya* act as *Doshapratyanika* as well as *Vyadhi Pratyanyika*.

### Probable mode of action of *Punarnavaadi Ghrita*

*Punarnavaadi Ghrita* which mainly contain the *Dravyas* like *Punarnava* and *Gokshura*. *Punarnava* having the properties like *Katu Rasa*, *Katu Vipaka* and *Usna Virya*. *Gokshura* having the properties like

*Madhura Rasa*, *Madhura Vipaka*, *Sheeta Virya*. Both drugs having opposite *Virya*, *Rasa* and *Vipaka* that makes the *Tridosha Shamaka* like *Vata-Pittanashaka*, *Kaphanisaaraka*, *Vrusha*, *Shothagna*, *Mutrala*, *Balya*, *Vedanastapana*. Both these drugs acts on *Mutra Vaha Srotas* does the *Shodhana* of *Basti* and removes the unwanted particles like uric acid, phosphate, alkaline etc. from *Vrukka* (kidney).

### Probable mode of action of *Trivritta Mrudvika Rasa*

All *Brihatrayis* and *Laghutrayis* had explained *Trivrutta* under *Virechaniya Gana*. Having the properties like *Katu* and *Madhura Rasa*, *Laghu*, *Ruksha* and *Tikshna Guna* and *Usna Virya* does the *Sukha Virechana*, *Lekhana* of *Vata* and *Kapha*, *Rechana* of *Pitta Dosh* and moreover it is very safe to use. *Mrudvika* comes under *Snehopaga* and *Virechanopaga Gana*, it act as diuretic and increase frequency and volume of urine. It soothes the inner layer of bladder. For this reason *Mrudvika* is added with *Trivrutta*.

### Probable mode of action of *Shuntyadi Kwatha Churna*

All ingredients of *Shuntyadi Kwatha Churna* basically does the *Karma* like *Vatanulomana*, *Shulaprashamana*, *Shothagna*, and *Mutrala*, Some drugs having properties like *Lekhaniya* and *Kapha Nisaraka* and some drugs like *Pashanabhedhi* and *Varuna*; due to their *Prabhava* does the *Ashmari Bhedhana*. Some drugs like *Apamarga*, *Shigru* due to their *Kshariya Guna* acts on *Kapha* and *Ashmari*.

### Probable mode of action of *Varunadya Taila*

In *Varunadhya Taila*, *Varuna Panchaga* and *Gokshura Panchagas* are used. *Varuna* is used to stimulate digestive fire and used to pacify *Kapha* and *Vata Dosh*. It is used to treat urine retention, calculi, abdominal tumors and worm. *Varuna* is best litholytic herb and it has been used throughout ages to treat crystalluria and urolithiasis.

### Probable mode of action of *Shvadamstradi Kwatha Churna*

Main ingredients are *Shvadamstra* (*Gokshura*), *Shunti*, *Varuna*, *Eranda Patra Churna* all in coarse powder. All

these drugs are *Vatanulomana*, *Shulaprashamana*, *Raktashodana*, *Yakrututtejaka*, *Mutravishoda*, *Lekhana* properties mainly effect on *Mutra Vikaras* like *Ashmari*, *Mutrakruchra*, *Mutraghata* and does the easy *Anulomana*, *Shodana*, *Nisaarana* of *Mala*.

## CONCLUSION

On the basis of the results of this study it can be concluded that *Hingwastaka Churna* for *Amapachana* in both groups, *Punarnavadi Ghrita* for *Avapidaka Snehapana*, *Trivrutt Mrudvika Rasa* for *Virechana* and *Shuntyadhi Kwath* as *Shamanoushadi* showed better relief to the patients of *Ashmari* particularly in reduction of pain, *Mutradaha* and expulsion as well as descending the stones than *Matrabasti* with *Varunadya Taila*, *Shvadamstradi Kwath* as a *Shamanaoushadi*. Overall both treatments were better in providing the relief to the patients of *Mutrashmari*. No recurrence was reported by the patients within 45 days of follow up period as they had been instructed to not suppress natural urges, drink sufficient quantity of fluid and dietary regimen to maintain adequate hydration and decrease chance of urinary super saturation with stone-forming salts.

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