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 Dosha 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 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.[1] Basti and Vankshana are said to be the Mula of this Srotas[2] it plays a very important role in excretion of waste products of Shareera and thus maintains the health, when Mutravaha Srotas get vitiated it produce many Mutravaha Srotavikaras in that Ashmari[3] 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[4] considered difficult to cure because of its Marma Ashrayatwa, due to the involvement of Bahu Dosh[5] 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
formed through Panchmahabhutas. When Aap Mahabhuta decreases and the Prithvi Mahabhuta increases, attains Kathinyata in Mutrvaha 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.[6]

Renal calculi occurs in people of all parts of the world with a lower life time risk of 3-15% in the West, 2 5% 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.[7]

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 Snigdhata, 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 4th chapter “Rogaanutpaadaniya Adhyaya”. The diseases in Adhonaabhishta Vata can be pacified by the administration of medicated ghee in Madhyama 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, Adharma, Atopa etc. intern helps in reducing the abdominal pressure.[8]

After Avapidaka Snehapan, Sadhyvirechana with Trivrutt Mrudvika Rasa[9] 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.[10] 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 Sidhishtha Snehavyapadsidhi Adhyaya. In Krusha, Durbha 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.[11]

OBJECTIVES OF THE STUDY

To evaluate the efficacy of Avapidaka Snehapan 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**

1. Tenderness in the renal angle.
2. Size of the calculi before and after treatment assessed by USG.
3. 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**

1. **Ama Pachana:** Ama Pachana with Hingvastaka Churna
   
   **Matra**: 3 to 5 gms twice a day.
   
   **Kaala**: Samudga with Ghritha
   
   **Duration**: Till the Nirama Lakshana

2. **Snehaprayoga**

   Abhyanatara: Avapeedaka Snehapana with Punarnavadi Ghrita.
   
   **Matra**: Roga and Rogi Balanusara
   
   **Bahya**: Abhyanga with Tila taila followed by Nadi Swedana.

3. **Virechana:** Virechana with Trivrut Mrudvika Rasa.
   
   **Matra**: As per Koshtha of patient

4. **Samsarjana Krama** (according to the Shuddhi achieved)

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

5. **Shamanoushadhi:** Shuntyadi Kwatha
   
   **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**

1. **Ama Pachana:** Ama Pachana with Hingvastaka Churna
   
   **Matra**: 3 to 5 gms twice a day
   
   **Kaala**: Samudga with Ghritha
   
   **Duration**: Till the Nirama Lakshana

2. **Sneha Prayoga**

   Sthanika Abhyanga with Tila taila followed by Nadi Swedana.

3. **Basti Prayoga:** Matra basti administration of Varunadhya Taila.
Prakshepaka: Shatahwa and Saindava Lavana

Kaala: 7 days.

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

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, hematuria, 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,

<table>
<thead>
<tr>
<th>Result</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete relief</td>
<td>100%</td>
</tr>
<tr>
<td>Marked relief</td>
<td>Above 76% improvement</td>
</tr>
<tr>
<td>Moderate relief</td>
<td>51 to 75% improvement</td>
</tr>
<tr>
<td>Mild relief</td>
<td>26 to 50% improvement</td>
</tr>
</tbody>
</table>

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 Pradhanah 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 (hematuria).

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 hematuria subject had repotted 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.

<table>
<thead>
<tr>
<th>Parameter</th>
<th>n</th>
<th>X_BK</th>
<th>X_AT</th>
<th>% of Relief</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>Rem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysuria</td>
<td>9</td>
<td>0.6</td>
<td>0.1</td>
<td>84.61</td>
<td>0.73</td>
<td>0.16</td>
<td>3.2</td>
<td>&lt;0.01</td>
<td>S.</td>
</tr>
<tr>
<td>Burning Micturation</td>
<td>2</td>
<td>0.6</td>
<td>0.1</td>
<td>76.47</td>
<td>0.61</td>
<td>0.13</td>
<td>4.6</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>Nausea</td>
<td>4</td>
<td>1.0</td>
<td>0.25</td>
<td>76.19</td>
<td>0.67</td>
<td>0.15</td>
<td>4.4</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>Fever</td>
<td>1</td>
<td>0.7</td>
<td>0.15</td>
<td>80.66</td>
<td>0.66</td>
<td>0.14</td>
<td>3.9</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>Heumaturia</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Pain</td>
<td>2</td>
<td>2.2</td>
<td>0.3</td>
<td>86.36</td>
<td>0.6</td>
<td>0.13</td>
<td>13.0</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>Renal angle Tenderness</td>
<td>2</td>
<td>0.8</td>
<td>0.2</td>
<td>76.47</td>
<td>0.6</td>
<td>0.1</td>
<td>3.9</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>Size of calculi</td>
<td>2</td>
<td>2.3</td>
<td>0.5</td>
<td>78.72</td>
<td>0.6</td>
<td>0.1</td>
<td>14.0</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>No of calculi</td>
<td>2</td>
<td>1.9</td>
<td>0.4</td>
<td>76.31</td>
<td>0.8</td>
<td>0.1</td>
<td>7.8</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>n</th>
<th>X_BK</th>
<th>X_AT</th>
<th>% of Relief</th>
<th>SD</th>
<th>SE</th>
<th>t</th>
<th>p</th>
<th>Rem.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysuria</td>
<td>1</td>
<td>0.6</td>
<td>0.1</td>
<td>83.33</td>
<td>0.5</td>
<td>0.1</td>
<td>4.3</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
<tr>
<td>Burning Micturation</td>
<td>0</td>
<td>0.6</td>
<td>0.1</td>
<td>76.47</td>
<td>0.6</td>
<td>0.1</td>
<td>3.7</td>
<td>&lt;0.01</td>
<td>S</td>
</tr>
<tr>
<td>Nausea</td>
<td>1</td>
<td>0.8</td>
<td>0.2</td>
<td>76.72</td>
<td>0.7</td>
<td>0.1</td>
<td>3.8</td>
<td>&lt;0.01</td>
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<tr>
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<td>0.6</td>
<td>0.1</td>
<td>76.36</td>
<td>0.7</td>
<td>0.1</td>
<td>3.2</td>
<td>&lt;0.01</td>
<td>S</td>
</tr>
<tr>
<td>Heumaturia</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td></td>
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<tr>
<td>Pain</td>
<td>1</td>
<td>2.2</td>
<td>0.3</td>
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<td>1.9</td>
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<td>0.8</td>
<td>0.1</td>
<td>7.8</td>
<td>&lt;0.01</td>
<td>H.S</td>
</tr>
</tbody>
</table>
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.

<table>
<thead>
<tr>
<th>Remarks</th>
<th>Group A</th>
<th>%</th>
<th>Group B</th>
<th>%</th>
<th>Total</th>
<th>Percentage (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Marked Relief (Above 76%)</td>
<td>16</td>
<td>80</td>
<td>10</td>
<td>50</td>
<td>26</td>
<td>65</td>
</tr>
<tr>
<td>Moderate Relief (51 - 75%)</td>
<td>04</td>
<td>20</td>
<td>10</td>
<td>50</td>
<td>14</td>
<td>35</td>
</tr>
<tr>
<td>Mild Relief (26 - 50%)</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
<tr>
<td>No Relief below (25%)</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
<td>00</td>
</tr>
</tbody>
</table>

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, Vatunulomana, Udvestana, Uttejaka, Balya, Mutrapravartaka, Srotoshodaka, Shula Prashamaniya properties like Laghu, Tikshna, Ushna Virya, Tridoshabhara. The main ingredient is Hingu (Asafoetida) which is Katu Rasa, Katu Virya, Usna 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 Pratyanika.

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 Virya and Usna Virya. Gokshura having the properties like Madhura Rasa, Madhura Vipaka, Sheet 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 Dosha and moreover it is very safe to use. Mrudvika comes under Snehapaga 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, Shulaprashtamana, Shothagna, and Mutrala. Some drugs having properties like Lekhaniya and Kapha Nisaraka and some drugs like Pashanabhedi and Varuna; due to their Prabhava does the Ashamari Bhedhana. Some drugs like Apamarga, Shigru due to their Khariya 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 Dosha. 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, Shulaprasamana, Raktashodana, Yakrutttejaka, 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 Snehapan, Trivutt Mrudvika Rasa for Virechana and Shunyaadh 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 Matratabasti with Varunadya Taila, Shvodamstradi 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.

REFERENCES


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