ROLE OF SHUNTHIYADI GHANA VATI IN THE MANAGEMENT OF MUTRASHMARI (UROLITHIASIS): A REVIEW

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ABSTRACT
Ayurveda, the “Science of Life” is referred as an upanga of Atharvaveda[1], is an encyclopedic ancient time tested method of holistic medicine that deals with the well-being of mankind. Since birth the Urinary System contributes to homeostasis and excretory functions to maintain the equilibrium in the body. Mutrashmari is one of the important diseases of Mutravaha Srotas. It’s resemblance with the Urolithiasis according to contemporary science is well known. Mutrashmari is one of the important diseases which are emerging rapidly today due to sedentary life style, intake of fast food, lack of exercise and busy working schedules. Mutrashmari is a disease, characterized by Nabhi Vedana-Basti Vedana- Sevani Vedana(pain in umbilical region, bladder, perineum), Mutradhara Sanga(obstruction of urine flow) etc. The incidences of Urolithiasis is very high i.e. more than 30 people out of 10,000 in northern India.[2] In Ayurvedic texts several numbers of drugs and formulations are mentioned to treat all types of Ashmari. Among them the ‘Shunthiyadi Ghanavati’ is one which mentioned. This compound has qualities of ashmaribhedan(destruction of stone), mutravirechniya(release urine obstruction), deepanapachana(increase digestive fire), kaphavatashamaka(equilibrium of vata and kapha), vat shoolaprashmana(analgesic) and vranaropana(healing of wound). As it has properties of removing and breaking down of Ashmari.

KEYWORLD: Mutrashmari, urolithiasis, ashmaribhedana, deepen- pachana.

INTRODUCTION
Ayurveda, the “Science of Life” is referred as an upanga of Atharvaveda[3], is an encyclopedic ancient time tested method of holistic medicine that deals with the well-being of mankind. Ayurvedic lexicons have defined Mutrashmari under Kapha pradhana Tridoshaja vyadhi. Mutrashmari is one of the most distressing diseases, thus enumerated among ‘Ashtha mahagada’ and considered as dushchikitsya i.e. difficult to cure. The incidences are quite common among 3rd to 5th decade of life. Presence of structure resembling with stone is called Ashmari. It is said to be one of the eight most troublesome diseases (Mahagadas).[4] Basti, muska & asana desha soola (pain in the lower abdominal region), Mutra krichra (difficulty in urination), Aruchi (loss of appetite), Jwara (fever) found in ashmari. Unfortunately, the available therapies thiazide diuretics, extracorporeal shock wave lithotripsy and percutaneous nephrolithotomy[4] etc. remain costly and in most cases are invasive with side effects. So the ayurveda give many option where Shunthyadi ghan- vati, one of the treatment modalities for urolithiasis which not only expel the stone but also subside the symptoms.

DEFINITION
‘Ashma’ means ‘Stone’, ‘Rati’ means ‘to present’. It means the formation and presence of a substance like stone.[4]

➢ Presence of Stone or gravel in the Passage of urinary outflow especially in Mutravaha- srotas(urinary system) is known as Mutrashmari.[5]
➢ The formation of stony concretions in the bladder or urinary tract.[6]

AETIOLOGY[7]
- Dietetic-vitamin D deficiency
- Altered urinary solutes and colloids
- Decrease urinary citrate
- Renal infection
- Inadequate urinary drainage and urinary stasis
- Prolonged immobilization
SAMPRAPTI
Samprapti ghataka of Mutrashmari

1. Dosha Kapha pradhana Tridosha
2. Dushya Mutra
3. Agni Jatharagnimandya
4. Aama Jatharagni & Dhatvagnimandya janya
5. Adhishthana Basti
6. Srotasa Mutravaha Srotas
7. Srotodushti Sanga
8. Udbhavasthana Pakvashaya
9. Sanchara Sthana Mutravaha Sira, Mutravaha dhamanis, aamashaya-pakvashayagata Mutravaha srotas
10. Vyaktisthana Basti
11. Roga-marga Madhyama
12. Vyadhi svabhava Chirkari
13. Sadhyasadhyata Krichchhrasadhya, Shastrasadhya

MODERN PATHOLOGY

<table>
<thead>
<tr>
<th>Aetiology</th>
<th>Supersaturation</th>
<th>Nucleus formation</th>
<th>Crystallisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Formation Stone</td>
<td>Matrix</td>
<td>Aggregation</td>
<td></td>
</tr>
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</table>

TYPES

<table>
<thead>
<tr>
<th>S. N.</th>
<th>Types</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Shleshmaja</td>
<td>Kukkutanda pratikasham (like colour of hen’s egg)</td>
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<tr>
<td></td>
<td></td>
<td>Bhidyate (cutting pain)</td>
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<td></td>
<td></td>
<td>Nistudyate (pricking pain)</td>
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<tr>
<td></td>
<td></td>
<td>Basti guruta (heaviness in bladder)</td>
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<tr>
<td></td>
<td></td>
<td>Basti sheetata (coldness in bladder)</td>
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<tr>
<td>2.</td>
<td>Pittaja</td>
<td>Bhallatakasthi pratima (like seed of marking nut)</td>
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<tr>
<td></td>
<td></td>
<td>Dushyate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chushyate</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Dahyate (different types of burning in Bladder)</td>
</tr>
<tr>
<td>3.</td>
<td>Vataja</td>
<td>Kadamba pushpa kantakavata (like thorn of kadamb flower)</td>
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<tr>
<td></td>
<td></td>
<td>Teevra vedana (Severe pain during micturition)</td>
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<tr>
<td></td>
<td></td>
<td>Dantan Khadayati (Clenches the teeth)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nabhim peedayati (Squeezes the umbilicus)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medhram mridnati (Touches the penis and scrotal region)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Payum spishati (Touches the perineal region)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vishardhate (Shouts loud)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Vidahati ( Burning sensation all over the body)</td>
</tr>
<tr>
<td>4.</td>
<td>Shukraja</td>
<td>Mutrakrichchhra (reduce burning micturation)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Bastivedana (pain in bladder)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Shvayathu vrishanayo (swelling in testis and scrotum)</td>
</tr>
</tbody>
</table>

IN MODERN VIEW

A. Calcium Oxalate Calculus - 60 to 70% of total calculi.
   - single and is extremely hard.
   - It is dark in color
   - it is covered by sharp projections, which cause bleeding due to injury to the adjacent tissues. This calculus is popularly known as Mulberry calculus

B. Uric Acid and Urate Calculus - Approximately 6% of urinary calculi.
   - multiple and occur in acidic urine.
   - hard, finely granular, round to oval in shape
   - colour varies from yellow to reddish brown.
   - Pure uric acid calculus radio-translucent.
C. Cystine Calculus- It affects in 20,000 people (1 to 2%).
- soft and yellow or pink in color. When
- Pure cystine calculi are radiolucent.
- Development of urinary tract cystine calculus is the only clinical manifestation of “Ground- Glass” appearance.

D. Rare calculus: - These are xanthine, calcium carbonate, Indigo, Ammonium acid, urate calculi, matrix calculi, silicate calculi, rarely bacteria may form small soft concretions.

POORVAROOPA (PRODORMAL SYMPTOM)
- Avila mutrata (change in character of physical urine i.e. Turbidity)[16],
- Sandra mutrata (concentrated urine),
- Bastagandhi mutra (goat like smelling urine),
- Basti, muska & asana desha soola (pain in the lower abdominal region)[16],
- Mutra krichra (difficulty in urination),
- Aruchi (loss of appetite)
- Jwara (fever)

SYMPTOM
1. Quiescent calculus – A few stones particularly the phosphate stones may lie Dormant for quite a long period.[17]

UPADRAVA OF MUTRASHMARI (COMPLICATIONS).

<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Sharkarameha (Gravel in urine)</td>
<td>Calculus Hydronephrosis</td>
</tr>
<tr>
<td>Hrita-peeda (pain in cardiac region), Vamanam (vomitting)</td>
<td>Calculus pyonephrosis</td>
</tr>
<tr>
<td>Kukshi Shoola (pain in lower abdomen), Arochaka(anorexia), Trishna(thirst)</td>
<td>Renal failure</td>
</tr>
<tr>
<td>Pandu(Aemia), Ushna vata (urinary obstruction)</td>
<td>Squamous cell carcinoma</td>
</tr>
</tbody>
</table>

TREATMENT
Unfortunately, then available therapies thiazide diuretics, alkali citrate, extracorporeal shock wave lithotripsy and Percutaneous Nephrolithotomy remain costly and in most cases are invasive with side effects. The side effects may be impairment in renal function, haematuria, hypertension, tubular necrosis or renal fibrosis. Ayurveda has shown various paths to use resources in medical treatment since long time year back. In Ayurveda many resources in a very planned and descriptive manner by formulating various medicine to treat human diseases.[23] Ayurveda, one of the first choice of treatment is oushadhi chikitsa and the surgical management is recommended after failure the all kinds of treatment to control the disease. Acharya Sushruta has dealt in details about the surgical technique i.e. (Chhedana(excision) with Aaharana(extirpation)) for Ashmari, but In the beginning also he says when Ashmari doesn’t get relive by applying Ashmarinashak ghrita, kshara, kashaya(decocion) and uttarbasti then the surgical management to the adopt i.e. Chhedan(excision) with Aaharana(extirpation). Shunthyadi Ghana vati is one of the oushadha chikitsa(conservative treatment) have best option to treat urolithiasis.

SHUNTHYADI GHANA VATI.[24]

<table>
<thead>
<tr>
<th>DRUG</th>
<th>BOTANICAL NAME</th>
<th>DOSHAKARMA</th>
<th>PRADHAN KARMA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shuni[25]</td>
<td>Zingiber officinale</td>
<td>Kaphavatashamak</td>
<td>Deepan(enhance appetite), shoolprashman(alagasesic)</td>
</tr>
<tr>
<td>Aghimant [26]</td>
<td>Clerodendrum phomdis</td>
<td>Kaphavatashamak</td>
<td>Shothahara (reduce oedema)</td>
</tr>
<tr>
<td>Pashanahbedha[27]</td>
<td>Bergeinia ligulata</td>
<td>Tridoshashamak</td>
<td>Ashmari(m争相), Mutral(diuretic)</td>
</tr>
<tr>
<td>Shigrü[28]</td>
<td>Moringa olifiera</td>
<td>Kaphavatashamak</td>
<td>Swedopaga (enhance sweating)</td>
</tr>
<tr>
<td>Varuna[29]</td>
<td>Craetaea murvala</td>
<td>Kaphavatashamak</td>
<td>Ashmari(m争相), Ashmarinashak(destroy stone)</td>
</tr>
<tr>
<td>Gambhari[31]</td>
<td>Gmelina arborea</td>
<td>Tridoshashamak</td>
<td>Shothahara(reduce oedema)</td>
</tr>
</tbody>
</table>
Amaltas[32]  |  Cassia fistula  |  Vatapittamak, Kaphapittasamshodhaka  |  Shothahara(reduce oedema), Virechana(purgation), Vadanasthapana (analgesic)
Hingu[33]  |  Ferula asafoetida  |  Kaphavatamakam, Ptitwardhaka  |  Deepan (enhance appetite), Vatanulomana (reduce vata), Shoolprashmana (analgesic), Mutrajanaan (give colour of urine)
Yavakshara[34,35]  |  Kshara of Hordeum vulgare  |  Kaphashamak  |  Mutral(diuretic), Mutrakrichchhara (decrease painful urination)
Saindav Lavana[36]  |  -  |  Tridoshashamak  |  Deepana (enhance appetite), Vatanulomana (reduce vata)

PATHYA- APHYTA (DIETARY MANAGEMENT)
- PATHYA –Svedana (sweating), Avagahana (sitz bath), Basú (enema), Vandana (vomitting), Virechana (purgation), Langhana(fasting), Purana shaali(old cereals), Yava, Mulaka, Kulttha, Kushmanda, Ardaka, Citrus Fruit, etc.[37]
- APATHYA- Cabbage, Rhubarb, Spinach and leafy vegetables, Tomatoes, Black tea Cocoa, Beetroot Milk, cheese, Leafy vegetables, Dietary protein, Rag i Legumes, Nuts & oils Seeds, Meat, fish, Egg, milk.[38]

DISCUSSION
Most of the contents in this prepared compound are of Kaphavatamak action, by which these compound can prevent process of accumulation of Kapha by apanavayu. Although Mutrashmari is a Kapha dominating disease and Acharya Charaka has clearly mentioned the treatment of Ashmari should be Kaphavatamakah.[39]
In this prepared compound having qualities of Ashmaribhedan (break the stone), Mutral (diuretic), Vatanulomaka (reduce vata), Shothahara (reduce oedema), Deepana-pachana (enhance appetite & digestion) and Shoolprashmana (analgesic). These drugs disintegrate the calculus due to its Tikshana guna. Mutral and shothahara prabhava which clears the tract and shrihika shotha. Also due to this property they help in reliving the patient from severe pain, tenderness and restlessness occurring due to renal colic due to its diuretic, antimicrobial, lithotripter, antispasmodic and anti-inflammatory properties.

Finally, according to above action, the Shunthadi Ghanavati has definately preventive effect on various aspect in the management of Urolithiasis.

CONCLUSION
Ayurvedic lexicons have defined Mutrashmari under Kapha pradhana tridosha vyadhi. Pain in abdomen, burning micturition, Pyuria, recurrent UTI and fever are present as the chief complaints in most of the patients. Shunthiyadi Ghanavati to have highly significant effect on Pain, tenderness at renal angle, burning micturition, dysuria, Haematuria, Pyuria, Mutradrhara Sanga(obstruct urine flow), Mutravikirana (caliber of urine) and Gomedaka prakashaka (like hessonite) due to its diuretic, antimicrobial, lithotripter, antispasmodic and anti-inflammatory properties. This prepared compound medicine has able to disintegrate the formed calculus, moreover it restrict the further recurrence by dominating

the root cause of Mutrashmari (Urolithiasis). No untoward side effects of the prepared drug noticed. it has properties of removing and breaking down of Ashmari and easily available with cost effective safe and effective so, this formulation have excellent option for treatment of mistrushmari (urolithiasis). It is recommended that along with the Ayurvedic therapy, dietary management, and life style modification can be advised to the patient of Mutrashmari (urolithiasis) for the betterment of the life.

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