

Clinical Researches Carried Out on *Mootrashmari* at Jamnagar

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Abstract

Mootrashmari (Urinary Stone or urolithiasis) is most common disease of urinary system. Urolithiasis causes pain, loss of working time, medical expenses, need for hospitalization and an infrequent cause of renal failure. In modern science the best possible treatment for urinary calculus is use of various drugs to correct involved pathologies and use of diuretics as well as surgical intervention including open surgery, percutaneous techniques (PCNL), Extra Corporal shock wave lithotripsy (ESWL) etc. Even after surgery there are high chances of recurrence because urinary stones have peculiar tendency of recurrence. Similarly in *Ayurveda* also, various researches are going on to find out a suitable treatment option to manage *Mootrashmari*. *Acharya Sushruta* has described various medicines as well as surgery in *Mootrashmari*. In this review article, in most of the studies *Ghritha*, *Kwaatha*, *Choorna*, *Kshaara Dravyas*, were given in the one group of patients and showed the encouraging results. This review article is attributed to the researches on *Mootrashmari* carried out at I.P.G.T. & R.A., Gujarat Ayurved University, Jamnagar, and Gujarat.

Keywords: Ayurved; *Mootrashmari*; Urolithiasis; Urinary Stones; Kidney Stones.

Introduction

Mootraashmari or urinary stone is the most painful and common disease of the urinary system. It is the third most common affliction of the urinary tract, exceeded only by urinary tract infection (UTI) and Benign prostatic hyperplasia (BPH) [1-3]. As per classics *Ashmari* is included in *Ashtamahagada* (eight grave diseases in Ayurved) due to its fatal nature [4]. Description of *Ashmari* is found in almost all *Samhitas* of Ayurveda as well as in *Vedas*, either as a type of *Mootraghata* (Charaka) or as a separate disease (Sushruta)[5-6]. Sushruta the father of surgery has described *Mootrashmari* first time in details including etiological factors, classifications, symptomatology, pathology, complications and its management in a most scientific manner. In persons, who does not follows *Shodhana* (purification) treatment and who uses unwholesome items, *Shleshma Dosha* gets aggravated, and saturates the urine in system. This

saturated urine (*Shleshma Yukta Mootra*) is the material (cementing substance) which causes urinary stone formation. *Sushruta* has described various medicines as well as surgery for management of *Mootrashmari*. Medicinal treatment has been advised to be undertaken in the early stage of the disease. Indication for the surgical management has mentioned along with a note of caution regarding its complication and doubt for success [7]. *Sushruta* has advised that surgery to be undertaken only on failure of conservative treatment and when death becomes inevitable if not treated surgically.

As per Ayurveda, medicinal treatment includes use of various *Ghritha*, *Kshara*, *Kwatha*, *Choorna*, *Kshira*, *Dravyas*, *uttarbasti*, etc [8]. Modern science also emphasizes on involvement of various factors like heredity, age, sex, metabolic disorders, sedentary life style, hydration status, mineral content of water, nutritional deficiency etc., for urinary stone formation. Urolithiasis typically occurs in middle age which is the most productive years of life [9]. In developing countries like India prevalence of urolithiasis is increasing day by day. The best possible treatments for urinary calculus are use of certain medicines including various diuretics as well as surgical intervention which includes open surgery, percutaneous techniques, ESWL etc [10]. However, all these methods have chances of recurrence due to its peculiar tendency. Even after surgery patients

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have to take medicines to check its further recurrence. In this way the need of medicinal treatment is always required in urinary stones. An alarming rise in the incidence of urolithiasis and motivation started by world health organization (WHO) to explore the possibility of cure through traditional system has created a momentum for further research in the light of *Ayurvedic* resources. In this review total 12 PG research studies and one PhD research work carried out at institute for post graduate teaching and research in Ayurveda (IPGT & RA) Jamnagar have been reviewed to find the effective modalities or formulations in the management of *Mootraashmari*.

Materials and Methods

Materials

Research works done on the management of *Mootrashmari* (Urolithiasis) were collected manually from the library of Shalya tantra department and data available in *Ayurveda* database, on all PG/Ph.D. theses carried out at I.P.G.T. & R.A. Jamnagar from 1978 to 2012.[11]

Methods

After review of research work done on *Mootrashmari* (Urolithiasis) it was observed that most of the authors have selected different oral formulations as mentioned in the classics. So the methodology adopted in almost all works was different which is given in respective research study in this article. The drugs in the forms like *Kwath*, (decoction) *Kshara* (alkalies from herbs) and *Ghrita* (medicated ghee) were tried for their efficacy in the management of *Mootrashmari*. Each groups and categories were given different types of drugs formularies and tested for their efficacy. The *Kwath* preparations like *Ashmarihara kwath*, *Punarnava Kwath*, *Sunthyadi Kwath*, *Kulattha kwath* and *Nagaradi Kashaya* were tried in management of *Ashmari*. In *Ghrita* preparations *Varunadi Ghrita* and *Pahasnbhedadi Ghrita* was tried in the treatment of *Ashmari*. The *Kshara* preparations like *Kshara Parpati*, *Tiladi Kshara*, *Palasha Kshara* were also compared with other formulation for its efficacy. The combine formulations newly prepared from the classics like *Virtarvadi* compound, *Punarnavadi* compound *Ghanavati*, *Shikhiadi* compound, *Badarashma Pishti*, were also tried in some research studies.

Ashmarihara kwath

The study has been planned with aim to evaluate clinical effect of *Ashmarihara kwath* in the management

of *Mutrashmari* (Urolithiasis) [12-13]. The ingredients of *Ashmarihara kwath* are ingredients are *Pashanbhedha*, *Erandkarkati mool*, *Shatavari*, *Gokshura*, *Varun*, *Trapusha beeja*, *Kush mool*, *Kash mool*, *Sagawana*, *Dhana (rice) moola*, *Punarnava*, *Amruta*, *Apamarga*, *Jatamansi*, *Khurasani yavani*. For that purpose 7 patients of *Mutrashmari* (urinary calculus) were treated with *Ashmarihara kwatha*. Out of them four stones were observed in kidney, 2 stones in ureters and one stone in urinary bladder. The *Ashmarihara kwath* was administrated 60 ml daily two times after meal for four weeks. In result there was relief in *Mutradaha* (burning micturition), *Saraktamutra* (haematuria) and *vedana* (pain) in all the patients. Out of 7 patients, two patients got complete cure, in which the stone was in ureter. Finally author concluded the study that *Ashmarihara kwath* has diuretic property and improved the renal function. In cases of bladder stone and renal stone there was only symptomatic relief but stone was remained as such.

Punarnava Kwath

The study conducted with aim to find the role of *Punarnava* (*Beerhavia diffusa* Linn) in cases of *Mutrashmari* [14]. In this study the selected 20 patients of *Mutrashmari* were divided into two categories. In Cat-1 (n=10) the patients having tinny calculi of size less than 5 mm and in Cat-2 (n=10) the patients of *Mutrashmari* having the size of stone more than 5 mm were treated with same drug *Punarnava Kwath*. In all cases the *Punarnava Kwath* 60 ml after meal two times a day for 4 week was given. Patients were followed up to 1 month after drug therapy.

Maximum number of stones found in ureteric region (n=17) whereas in kidney stone were found in three patients. In urine examination maximum patient have urinary infection. In Cat-1 out of 10 patients 8 patients have ureteic stones and 2 patients had renal stones. Out of 10 patients in Cat-2 one patient had kidney stone and 9 patients have ureteric stones. After completion of the study of 4 weeks in 8 patients, calculi was expel out while 2 patients had only symptomatic relief. Group-B only in two patients, stone expelled out and in 8 patients the size of stone was reduce and symptomatic relief was found. There was no change in pH value in both the groups. No untoward effect observed amongst the treated patients. Hence, study was concluded that *Punarnava kwath* reduce the size of calculi having properties like diuretics anti-inflammatory, anti-infective.

Virtarvadi compound

The study was planned with aim to find the clinical effect of *Virtarvadi* compound in treatment of

Mutrashmari [15]. The ingredients of the *Veeratarvadi* compound are *Veerataru*, *Pasanabheda*, *Gookshura*, *Varuna*, *Punarnava*, *Apamarga*, *Shatavari*, *Kusha*, *Jatamasi* and *Prasika yavani*.

Total 30 patients of *Mutrashmari* were selected and divided into two groups; in Group-I the size of calculi <5 mm while in Group-II the size of calculi >5mm. In Group-I (n=22) patients were treated with decoction of *Veeratarvadi* compound in the dose of 60 ml three times a day. The patients of Group II (n=8) were kept on diet regimen as control group. In diet, patient advised to take plenty of water, Kulatha, Lemons, Apple Moong dal, Rajma, Mushrooms and Coconut water. Patient advised to avoid spinach, lady finger, brinjal capsicum, tomato, grapes, chickoo, cashew nut, milk, tea, coffee, and calcium content foods. In both groups the duration of therapy was 3 months. Out of 30 patients; kidney stone was observed in 3 patients, ureteric stone was seen in 26 patients and urinary bladder stone was noted in one patient.

In patients of group-I complete relief of symptoms like *Nabhivedana*, *Bastivedana*, *Sevanivedana*, *Sarudhirmutrata*, *Mutravikirna*, *Gomedaka Prakasha*, *Atyavilata*, *Sadahamutrata* and *sasiktam* was found. Overall 72.27% patients got complete cured, 22.73% showed improvement while in Group-II negligible relief was noticed in these symptoms. Hence, study concluded that *Veeratarvadi* compound is effective in symptomatic relief in *Mutrashmari*.

Ashmarihara kwatha and *Kshara Parpati*

The study has been planned to find the role of indigenous drug compound in the management of *Mutrashmari* [16]. For that purpose, 24 patients (Male=16, Female=8) of *mutrashmari* were divided into two groups. Patients of Group A (n=12) treated with *Ashmarihara kwatha* 60 ml along with *Kshara Parpati* 1.25 gm twice daily for three months [17]. In group B (n=12) placed only on a prescribed diet regimen for three months as controlled group. In group-A the patients having the size of calculi = <5 mm; while in group-B: the patients having the size of calculi >5mm were included in the study. In both groups 6 stones were found in kidney, 13 stones in urethra and 5 stones in urinary bladder.

In group-A out of 12 stones 8 stones were expelled while in group-B not a single stone was expelled. In group-A, all the symptoms were relieved 100% except *Sashulamutrata* (85.2%) and *Atibaddhata* (80%). In group B, there was no significant improvement was observed in symptomatic relief. In group-A, 66.67% patients were completely cured and improvement was seen 33.33% while in group B 100% patient remained unchanged.

Sunthyadi Kwath

The study was planned with aim to find the role of *Sunthyadi Kwath* in the management of *Mutrashmari* [18-19]. The selected patients of *Mutrashmari* were divided into two groups group-I and group-II having size of stone less than 5mm and more than 5mm respectively. In Group I (n=16) –Treated group, *Shunthyadi Kwatha* 80 ml thrice daily was given oral for 3 months. In Group II (n=9) i.e. placebo control, two capsuls of 500mg filled up with starch was given oral thrice in a day for 3 months. Patients of both groups were advised to take normal diets. Patients were advised to follow up every week for 6 months.

In group-I remarkable improvements was observed in symptoms of pain (89%), burning micturition (71%), dysuria (64%), Hematuria and in ability to void easily (70%) respectively. But in group-II mild symptomatic relief was found in the all the patients. Stone size less than 5mm of 10 patients in group I, 4 stones expelled out, 3 stones were in downward displacement and 1 stone remains unchanged. Stone size more than 5mm of 6 patients in group II, 1 stones expelled out, 1 stones was in downward displacement and 2 stone remains unchanged.

Punarnavadi compound *Ghanavati* and *Kulattha kwath*

The study planned with objective to evaluate the role of *Punarnavadi* compound in the management of *Mutrashmari* [20]. The ingredients of *Punarnavadi* compound are *Punarnava*, *Pashanbheda Kantakari*, *Brahati*, *Varun*, *Kush*, *Kasha*, *Gokshur*, *Shilajeet*. The selected 20 patients were divided into three groups. In group-I (n=7): *Punarnavadi* compound *ghanavati* 500 mg for 90 days; in group-II (n=6): *Niruh Basti* as a *Karma Basti* by *Punarnavadi* compound was given for 30 days. In group-III (n=7): *Punarnavadi* compound *Ghanavati* 500 mg with *Kulattha kwath* 50 ml was given oral for 90 days.

Effect of therapy

Group I: cured 5%, markedly improved 15%, Improved 10%, unchanged 5%

Group II: cured 5%, markedly improved 15%, Improved 5%, unchanged 1 patient

Group III: cured 15%, markedly improved 5%, Improved 15%

The effect of *Punarnavadi* compound *Ghanavati* 500 mg with *Kulattha Kwath* 50 ml is more effective on stones less than 5mm in diameter which were present in ureter. In patients of *Punarnavadi* compound

Ghanavati group serum creatinine, serum calcium, serum uric acid, blood urea, total protein levels were reduced after treatment. Finally authors concluded the study that *Punarnavadi* compound *Ghanavati* prevents further increase in the size of urinary calculi.

Badarashma Pishti

The study was designed to find the role of *Badarashma Pishti* in the management of *Mutrashmari* [21]. The patients of *Mutrashmari* were divided into two groups and two categories. The patients of group-A (n=25) treated with *Badarashma Pisti* 500 mg thrice daily for 3 months. In Group B (n=10) patients were treated with 500mg capsule filled with starch thrice daily for 3 months as placebo control group.

Category I= stone size less than 5mm in diameter irrespective of site and variety.

Category II= stone size more than 5mm in diameter irrespective of site and variety.

In group-A, highly significant effect was observed in pain (54.76%), burning micturition (75%), Haematuria (72.97%), dysuria (62.85%), pain in renal angle (42.85%), nausea and vomiting (57.14%), fever with rigor (71.42%), local irritation and urgency (71.72%) respectively. In group-B (Placebo) there was insignificant effect on the above symptoms.

It was observed that in the Group-A 32% patients cured, 16% patients markedly improved and 16% remained unchanged. In placebo group 20% got improved as patients consumed plenty of fluids and 80% patients remained unchanged. Stone size less than 5mm of 10 patients in group-A 6 stones expelled out, 2 stones were decrease in its size, 3 stones were in downward movement and 1 stone remains unchanged. Stone size more than 5 mm of 18 patients in group-A 3 stones expelled out, 7 stones were decrease in its size, 5 stones were in downward movement and 3 stone remains unchanged.

Shikhiadi Compound

This study has been planned with aim to know the effect of *Shikhiadi* compound on urinary stones of size less than 1.5 cm [22]. The selected patients were divided into two groups. In Group-A (n=24) Tablet *Shikhiadi* compound was administered in the dose of 250 mg thrice daily with plain water for 3 months. The patients in Group B (n=6) were treated with wheat powder capsules as a control group with plain water for 3 months.

The patients of Group-A (treated group), showed highly significant effect on symptoms like *Nabhi*

vedana, *Basti vedana*, *Mutradhara sang*, with the percentage relief of 56.4%, 64.65% and 56.39% respectively, statistically the effect was highly significant ($P < 0.001$). Further the therapy showed significant effect on symptoms i.e. *Mehana vedana*, *Gomedaka prakasha*, *Sarudhira mutrata* with the percentage relief of 57.47%, 50.12% and 50.0% respectively, statistically the effect was significant at the level of ($P < 0.05$) and ($P < 0.01$). The therapy showed insignificant effect on symptoms like *Sevani vedana* *Mutravikirina*, *Atyavilata* and *Sasiktam* with the percentage relief of 100%, 37.5%, 33.3% and 33.3% respectively.

In Group-B (placebo), insignificant effects on either of the symptoms till the end of 3rd month of treatment. Statistically the effect was insignificant at the level of ($P > 0.10$). In patients of group-A (according to modern) remarkable improvement was observed in symptoms like pain, burning micturition, haematuria, dysuria, nausea and vomiting, tenderness in renal angles and fever with the percentage relief of 57.0%, 68.82%, 57.87%, 77.0%, 70.08%, 68.43% and 87.5% respectively, which was statistically highly significant ($P < 0.001$). In addition the therapy showed improvement on the associated symptoms i.e. local irritation, urgency and constipation with the percentage relief of 66.6%, 70.4% and 50.2% respectively.

Nagaradi Kashaya and Ashmarihara kwatha

The study designed to find the effect of *Nagaradi Kashaya* in the management of *Mutrashmari* (urolithiasis)[23]. The selected patients were divided into two groups; in Group-I (n= 15) *Nagaradi kwatha* 10gms while in Group-II (n=8) *Ashmarihara kwatha* 10gms twice daily after food for a period of 30 days was prescribed. Patients were categorised in two categories according to the size of stones. In category-I the stone size less than 5mm while in category-II stone size more than 5mm were enrolled.

Out of 15 patients in group-I, 1 patient cured (11.11%), 4 patients markedly improved (44.45%), 2 patients improved (22.22%) 2 patients unchanged (22.22%). Out of 3 patients of ureteric stones, 2 patients were cured (66.67%) and 1 got improved (33.33%). Two patients having bladder stone was improved with relief of 100% and one patient having stone in urethra was cured with relief of 100%.

Out of 8 patients in group-II, 1 patient cured (20%), 2 patients markedly improved (40%), 1 patients improved (20%) 1 patients remain unchanged (20%). Only one patient of ureteric stones was cured with relief of 100% and 1 got improved (33.33%).

Stone size less than 5mm of 3 patients in group-I, 1 stone was in downward displacement 2 stone remains unchanged and in group-II of 6 patients 2 stones expelled out, 1 stone decreased in size. Stone size more than 5mm of patients in group-A of 12 patients, 4 stones expelled out, 1 stone was in downward displacement and 5 stone remains unchanged, 2 stones became decrease in size and in group-II of 5 patients, 1 stone decreased in size, 4 stones remains unchanged. Author concluded the study that *Nagaradi Kashya* possesses the properties to expel the stones and symptomatic relief in sign and symptoms of urinary stones better than *Ashmarihara kwath*.

Nagaradi Kashaya and *Asmarihara Kashaya*

This study has been planned with aim to know the Nephroprotective and lithotriptic activity of *Nagaradi kasaya* and a stone measuring size less than 5mm, irrespective of its site and variety was considered under this category. [24] The selected patients were divided into two groups. In Group-I (n=10), *Nagaradi Kashaya*, 10 gm twice a day for 60 days was administered. The patients in Group-II (n=10) were treated with *Asmarihara Kashaya*, 10 gm twice a day for 60 days as a control group for 60 days.

Nagaradi Kashaya provided highly significant relief in pain (45.71%) and burning micturition (80.76%). Effect was statistically significant in dysuria (30.00%) and tenderness at renal angle (66.66%), followed by insignificant relief in haematuria and pyuria. *Asmarihara Kashaya* provided highly significant relief in pain (55.88%). Effect was statistically significant in burning micturition (20.00%), dysuria (57.14%) and tenderness at renal angle (62.50%), followed by insignificant relief in haematuria and pyuria.

Tiladi Kshara and *Varunadi Ghrita*

This study has been planned with aim to know the effect of *Tiladi Kshara* and *Varunadi Ghrita* on urinary stones of size up to 5 mm [25]. The selected patients were divided into three groups. In group-A (n=10) Cap. *Tiladi Kshara* was administered in the in the dose of 500 mg twice daily with plain water for 60 days. The patients in group-B (n=10) were treated with Cap. *Varunadi Ghrita* 500mg twice daily for 60 days and in group-C (n=9) patients were treated with *Swarjika Kshara* 500 mg twice daily in capsules form as a control group with plain water for 60 days orally.

After completion of the treatment with *Tiladi Kshara* (group-A), the effects on the clinical features were observed that *Tiladi Kshara* provided highly

significant relief in pain (54.54%), burning micturition (80.00%) and dysuria (66.67%). Statistically significant effect was observed in tenderness at renal angle (50%) followed by insignificant relief was observed in hematuria (85.71%) and pyuria (69.23%). In *Varunadi Ghrita* (group-B) there was highly significant relief in pain (87.88%), burning micturition (90.00%), dysuria (100.00%) and hematuria (76.47%). Statistically significant effect was observed in tenderness at renal angle (100%) and insignificant result was observed in pyuria (57.89%). *Swarjika Kshara* (group-C) provided statistically highly significant relief in burning micturition (66.67%), statistically significant result was observed in pain (46.15%) and dysuria (50.00%) while insignificant result was observed in pyuria (09.09%), hematuria (42.86%) and tenderness at renal angle (62.50%).

Pahasnbhedadi Ghrita

The study was planned to evaluate the efficacy of *Pashanabhedadi Ghrita* clinically and experimentally [26].

Clinical trial was carried out on 60 patients of *Ashmari* divided in to two groups. In group-A, control drug (Plain Ghee-PG) 5 gm, twice a day and in group-B test drug (*Pashanabhedadi Ghrita*-PBG), 5 gm, twice a day with lukewarm water was given for sixty days. All the patients after completion of 2 months treatment were followed up for two months at the interval of one month and they were instructed to follow the *Pathya-Apathya*. *Pashanabhedadi Ghrita* showed its potential to alleviate the clinical features of *Ashmari* with better result on the overall assessment in comparison to plain *Go-Ghrita*. Finally, study was concluded that *Pashanabhedadi Ghrita* possesses the properties to disintegrate and expel the *Ashmari* (urinary stones) without any adverse effect.

Validation of drug was also done through experimental study conducted by inducing renal calculi in albino rats with gentamycin injection and ammonium oxalate rich diet. Test drug was administered concomitantly in the dose of 900mg/kg for 15 consecutive days. Concomitant treatment of *Pashanabhedadi Ghrita* attenuates blood biochemical parameters non-significantly where as it significantly attenuated lipid peroxidation and enhanced glutathione and glutathione peroxidase activities. It also decreased crystal deposition markedly into the renal tubules in number as well as size and prevented damage to the renal tubules. The findings showed that *Pashanabhedadi Ghrita* is having significant anti-urolithiatic activities against

ammonium oxalate rich diet plus gentamycin injection induced urolithiasis in rats.

After comprehensive study of *Pashanabhedadi Ghrita* on *Ashmari* (urolithiasis) in experimental model followed by clinical trial on 60 patients, study concluded that *Pashanabhedadi Ghrita* has significant anti-urolithiatic activities and having marked anti-oxidant activity explored in experimental study.

Ashmarihara Kwaatha and *Palaasha Kshaara*

The study was planned to evaluate the efficacy of *Palaasha Kshaara* and *Ashmarihara Kwaatha* in the management of *Ashmari* (Urolithiasis) [27] In group-A (n=20) *Ashmarihara Kwaatha* 20 ml was given with the *Prakshepa* of *Yava Kshaara* 250 mg thrice a day for 60 days. In Group-B (n=20) capsules of *Palaasha Kshaara* 250 mg was given thrice a day with luke warm water for 60 days.

In group-A statistically highly significant results were observed in *Vedana* (pain), *Mootradhara Sanga* and burning micturition. Statistically significant results were observed in *Sarudhira Mootrata* (haematuria) and increased frequency of micturition. Insignificant result was observed in feature of *Atiavila Mootrata* (Turbid urine). In group B statistically highly significant results were observed in *Vedana* (pain), *Mootradhara Sanga*, *Sarudhira Mootrata* (haematuria) and increased frequency of micturition. Statistically insignificant results were observed in *Atiaavila Mootrata* (Turbid urine) and burning micturition.

Overall assessment of therapy showed that out of 20 patients in group-A (*Ashmarihara Kwatha*), 4 patients (20.00%) were cured, 4 patients (20.00%) were got marked improvement, 6 (30.00%) patients got moderate improvement and 4 (20.00%) patients were observed mild improvement whereas no improvement was seen in 2 (10.00%) patients. Out of 20 patients in group-B (*Palasha Kshara*), 2 patients (10.00%) were cured, 4 patients (20.00%) were got marked improvement, 5 (25.00%) patients was felt moderate improvement and 6 (30.00%) patients were received mild improvement whereas no improvement was seen in 3 (15.00%) patients. After completion of therapy, *Ashmarihara Kwatha* showed better results in combating symptoms of *Ashmari* whereas *Palasha Kshara* showed slightly better result in reducing size of stones. Overall assessment of results showed that *Ashmarihara Kwatha* is better than *Palasha Kshara* in improving the clinical conditions of the patients.

Conclusion

The review of research studies conducted on *Mutraashmari* (*Urolithiasis*) showed that patients can be treated with *Ayurvedic* formulations as mentioned in the classics. Hence, the principal of treatment mentioned in classic like the *Kwath* preparations like *Ashmarihara kwath*, *Punarnava Kwath*, *Sunthyadi Kwath*, *Kulattha kwath* and *Nagaradi Kashaya* have definite role in management of *Ashamari*. In *Ghrita* like *Varunadi Ghrita* and *Pahasnbhedadi Ghrita* showed effective in the treatment of *Ashamari*. The *Kshara* like *Tiladi Kshara*, *Palasha Kshara* and *Kshara Parpati* were also found beneficial in *Mootrashmari*. The formulations like *Virtarvadi* compound, *Punarnavadi* compound *Ghanavati*, *Shikhiadi* compound, *Badarashma Pishti*, were also effective in *Ashmari*. In all the studies there was no any adverse effect of any drug was noted mentioned drugs or formulations were well tolerable.

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