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A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFECT OF VARUNADI TAILA AND KULATTADYA GHRITA MATRABASTI FOLLOWED BY SWADAMSHTRADI KWATHA IN MOOTRASHMARI VIS A VIS UROLITHIASIS

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ABSRACT

Mutrashmari is one of the most common disorders of Mutravaha Srotas, characterized by the formation of urinary stones and known for its recurrent nature, thereby being included under Ashtamahagada. In contemporary medicine, it is correlated with urolithiasis based on similar clinical features. Factors such as dietary habits, water intake, climate, and geographical conditions play a significant role in its pathogenesis. Ayurveda emphasizes both the prevention of stone formation and the elimination of existing calculi through Shodhana, Shamana, and Shastra Karma, with Trividha Basti Karma considered the treatment of choice, especially in the early stages. The present study focuses on the therapeutic efficacy of Matra Basti with Kulatthadi Ghrita and Varunadi Taila, along with Shamana Aushadhi such as Swadamshtradi Kwatha, as described in Chakradatta, due to their Ashmari Bhedana, Ashmari Patana, and Mutrala properties in the management of Mutrashmari.

Objective

1. To evaluate the combined efficacy of varunadi taila matrabasti with swadamshtradi kwatha in the management of Mutrashmari vis a vis Urolithiasis in group A

2. To evaluate the combined efficacy of kulattadhya ghrita matrabasti with swadamshtradi kwatha in the management of Mutrashmari vis a vis Urolithiasis in group B

3. To Compare the Efficacy Between Group A And Group B.

Methods: A comparative clinical trial was conducted on 40 patients, who were equally divided into two groups. Group A was administered Varunadi Taila Matra Basti (70 ml) for 8 days, while Group B received Kulatthadhya Ghrita Matra Basti (70 ml) for the same duration. From the 9th day onwards, both groups were given Swadamshtradi Kashaya orally in a divided dose of 24 ml twice daily before food with honey as Anupana for 30 days. Assessments were carried out on the 0th, 9th, and 39th days using subjective and objective parameters, including ultrasonography. Statistical analysis was performed using SPSS software with appropriate tests. **Results**: Group A showed an overall improvement of 74.65%, while Group B demonstrated a slightly higher overall improvement of 76.70% from Pretest to Post-test. Both groups showed substantial progress, with Group B showing a marginally greater overall effect. **Conclusion**: Kulattadhya Ghrita proved more effective than Varunadi Taila in relieving symptoms of Mootrashmari.

KEYWORDS: Mootrashmari, Urolithiasis, Kulattadhya Ghrita, Varunadi Taila, Swadamshtradi kwatha.

INTRODUCTION

Mutrashmari is one of the most common disorders of Mutravaha Srotas, defined in Ayurvedic literature as a stone-like formation within the urinary tract.[1] Acharya Sushruta described it as *Antaka Pratima* due to the severe and intolerable pain it produces.[2] In contemporary medicine, Mutrashmari is correlated with urolithiasis, a condition characterized by the formation of urinary calculi anywhere in the urinary system. Urolithiasis has a worldwide distribution, with a prevalence of 1–5% in Asia[3] and about 12% in India, and nearly 50% of affected individuals may develop renal damage.[4] It commonly affects males more than females, with peak incidence between 30–50 years, and shows a high recurrence rate.[5,6] Its epidemiology varies with geographical, dietary, climatic, and socioeconomic factors.[7]

Modern management includes conservative flush therapy for small stones and surgical or minimally invasive procedures for larger calculi; however, these interventions are costly,

associated with complications, and lack effective lithotriptic drugs.[8] In Ayurveda, Basti Karma is regarded as *Ardha Chikitsa*[9] and plays a pivotal role in the management of Mutravaha Srotovikaras. Repeated administration of Basti is specifically indicated in Mutrashmari, with Matra Basti being a simple, safe, and minimally restrictive procedure. Classical texts describe Varunadi Taila and Kulatthadhya Ghrita as possessing Ashmari-hara and Ashmari-bhedana properties, while Swadamshtradi Kwatha is indicated for Ashmari-shoolaghna action.

Considering the limitations of modern treatment and the therapeutic potential of these classical formulations, the present comparative clinical study was undertaken to evaluate the effect of Varunadi Taila and Kulatthadhya Ghrita Matra Basti followed by Swadamshtradi Kwatha in the management of Mutrashmari vis-à-vis urolithiasis.

MATERIALS AND METHODS

Study design: It is a comparative clinical trial with pre, mid and post-test design.

Source of drug

Varunadi taila, Kulattadhya ghrita and Swadamshtradi kwatha was specially prepared & procured for the study from a GMP certified pharmacy, S N PANDIT & SONS, Mysore.

Source of data

Subjects were incidentally selected from OPD & IPD of Government Ayurveda Medical College and Hospital, Mysuru and Government Hi-Tech Panchakarma Hospital, Mysuru.

Sample size and sampling method

Sample size minimum of 40 subjects, 20 in each group. A total 40 subjects having the signs and symptoms of fulfilling the inclusion criteria were registered for the study with the help of a Performa designed for the purpose of study, there were 3 dropouts. (1 Patient discontinued treatment because of family emergency and 2 patients did not came for follow up) Study was completed in 40 subjects, 20 in each group. Informed consent was taken at the time of registration. Incidental selection and purposive sampling technique was employed.

Inclusion criteria

Subjects diagnosed to have urinary calculi (solitary or multiple) by USG Abdomen and pelvis, located anywhere in the kidney, ureter, bladder were included in the study

• All individuals irrespective of gender, caste, religion belonging to age group of 18-60 yrs were included for the study.

• Stones measuring <8mm by USG Abdomen and Pelvis were included.

Fresh and treated cases of Mutrashmari vis à vis Urolithiasis were taken for the study.

✓ Fresh cases including, freshly detected and untreated cases of Mutrashmari vis à vis Urolithiasis.

✓Treated cases including, individuals those who were under any treatment of Mutrashmari vis a vis Urolithiasis and were willing to voluntarily discontinue the ongoing treatment were considered, in such cases wash out period of 1 week was advised with repeat USG abdomen and pelvis.

Exclusion criteria

• Subjects with acute urinary colic with impaired renal function test, Severe hydronephrosis, Oliguria/Anuria and complications requiring surgical management were excluded.

• Subjects with uncontrolled systemic disorders that might interfere with present intervention were excluded (Hba1c>9%, Rbs >250mg/dl, HTN >160/100mmhg)

• Pregnant and Lactating mothers were excluded from the study.

• Subjects who are unfit for Basthikarma were excluded.

Diagnostic Criteria

Subjects were screened for following Lakshanas like, Basthishoola, Sarakta mootrata, Mutradaha, Mutrakricchra. In above subjects, diagnosis was made through USG abdomen and pelvis.

Investigation

Subjects were diagnosed on the basis of Ultrasonography (USG) of the Kidney, Ureter, and Bladder (KUB) region.

However, investigations were conducted to rule out other systemic disorders. investigations such as Hb%, TC, DC, ESR, Urine sugar, albumin and microscopic examination.

Assessment criteria

Primary assessment parameters Ultrasonography of abdomen and pelvis were done before the beginning of intervention and after the completion of intervention.

Following parameters were assessed,

➢ Number of stones.

➢ Size of the stone.

➢ Site of the stone.

Secondary assessment parameters

Table No 1: Table showing parameters of subjective criteria taken in the study.

SUBJECTIVE CRITIRIA:

1.SHOOLA		**GRADE 0**	**NONE**	Absent
		GRADE 1	**MILD**	Occassionally persists,doesn`t disturb day-today activities
		GRADE 2	**MODERATE**	Persists and disturbs day-today activities
		GRADE 3	**SEVERE**	Intolerable pain

1.SARAKTA MOOTRATA		**GRADE 0**	**NONE**	Absent
		GRADE 1	**MILD**	Presence of 3-5 RBC`s in the urine
		GRADE 2	**MODERATE**	Presence of 10-20 RBC`s in the urine
		GRADE 3	**SEVERE**	Presence of >20 RBC`s in the urine

1.MOOTRA KRICHRTA		**GRADE 0**	**NONE**	Absent
		GRADE 1	**MILD**	Occasional pain during micturition
		GRADE 2	**MODERATE**	Tolerable pain while initiation and during micturition
		GRADE 3	**SEVERE**	Tolerable burning micturition in the morning and during initiation of micturition.

1.MOOTRA DAHA		**GRADE 0**	**NONE**	Absent
		GRADE 1	**MILD**	Rarely noticed either on initiation or at the end of micturition
		GRADE 2	**MODERATE**	Tolerable burning micturition in the morning and during initiation of micturition
		GRADE 3	**SEVERE**	Intolerable burning micturition on initiation, during ,prolonged after micturition

Intervention

The interventions were as follows

Group A was administered with Varunadi taila matrabasti in the dose of 72ml for 8 days, from 8th day onwards Swadamshtradi Kashaya is given orally, in the divided dose of 24ml in the morning and night before food with Honey as Anupana for 30 consecutive days.

Group B was administered with Kulattadhya ghrita matrabasti in the dose of 72ml for 8 days, from 8th day onwards Swadamshtradi kashaya is given orally in the divided dose of 24ml in the morning and night before food with Honey as Anupana for 30 consecutive days.

Duration of the intervention- 38 days.

Assessment schedule

Pretest assessment - 0th day before intervention.

Mid test assessment - 9th day after completion of Matrabasti

Post test assessment - 39th day after completion of intervention.

Statistical methods

The result was compared and analyzed statistically by using the following statistical methods: Descriptive statistics- Mean (SD), Median (IQR), Standard deviation, Percentile. Inferential testing – Mann – Whitney U test, Wilcoxon matched pairs test, independent t Test. All the statistical methods were done using SPSS windows.

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RESULTS

Effect on Shoola: Both groups showed a highly significant reduction in Shoola. By Day 9, pain decreased by over 94% in both groups ($p=0.0001$) with identical mean score reductions and no intergroup difference. By Day 39, complete pain relief (100%) was observed in all participants, with no significant difference between treatments, indicating equal efficacy.

Effect on Mutrakrichra: Both groups showed statistically significant improvement in Mutrakrichra. By Day 9, symptom reduction exceeded 87% in both groups ($p<0.01$), with no significant intergroup difference. By Day 39, sustained improvement was observed, with comparable reductions and similar clinical outcomes in both groups, indicating equivalent effectiveness of the interventions.

Effect on Sarakta mutrata: Both groups showed improvement in Sarakta Mutrata, though changes were not statistically significant. By Day 9, partial symptom reduction was observed in both groups with minimal effect sizes and no intergroup difference. By Day 39, complete symptom resolution was noted in both groups; however, the improvements remained statistically non-significant, indicating comparable outcomes for both interventions

Effect on Mutradaha: Both groups showed a highly significant reduction in Mutradaha. By Day 9, symptom reduction exceeded 96% in both groups (p=0.0001), with strong effect sizes and no significant intergroup difference. By Day 39, complete resolution (100%) was observed in all participants, confirming equal and sustained efficacy of both interventions.

Results on Number of stones

Both Group A and Group B showed small, non-significant reductions in symptom scores after the intervention. Group A had a mean reduction of 0.35 (p = 0.6554) and Group B 0.25 (p = 0.8287). No significant differences were found between groups at pretest, posttest, or in change scores, and effect sizes were small. Overall, both groups performed similarly, with only modest, non-significant improvement.

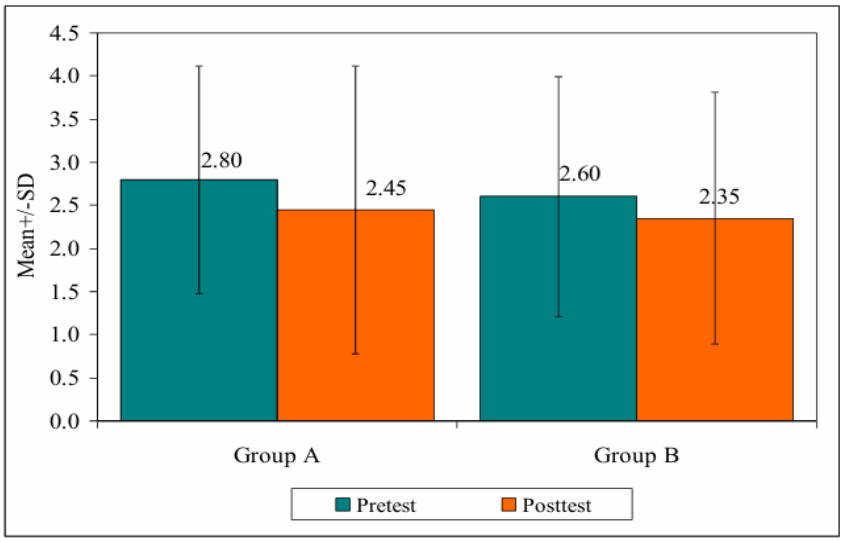

Illustration 1: Showing Comparison of different treatment time points with number of stones in Group A and Group B (Wilcoxon matched pairs test).

Results on size of the stone

Both groups showed significant pretest–posttest improvement. Group A had a 25.07% reduction (mean change = 1.29, p = 0.0009), while Group B showed a greater 27.63% reduction (mean change = 1.57, p = 0.0002). Both interventions were effective, with Group B demonstrating a stronger effect.

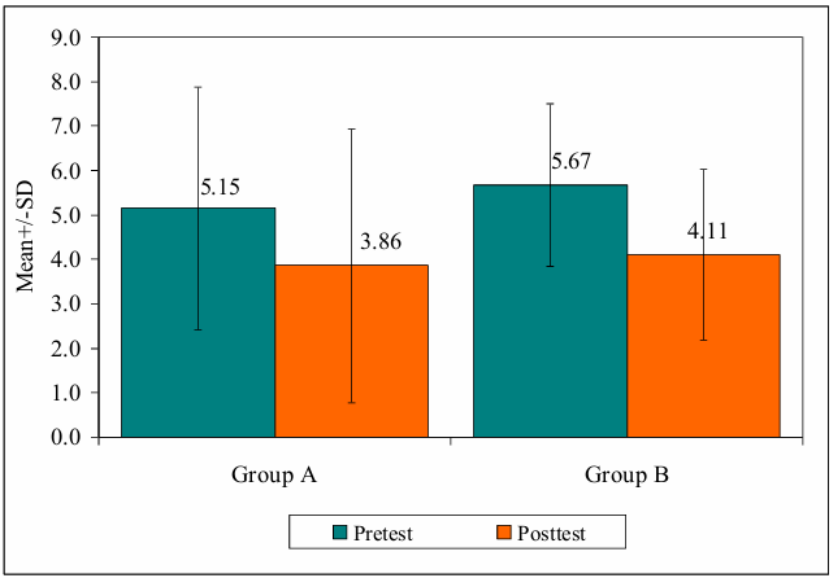

Illustration 2: Showing comparison of different treatment time points with size of stones (in mm) in Group A and Group B (Wilcoxon matched pairs test)

Results on the site of the stone

By the end of treatment, 6 subjects (15%) expelled their stones—3 in Group A and 3 in Group B. The remaining 85% in both groups retained stones in the kidney. There was no significant difference between groups ($\chi^2 = 0.000$, $p = 1.000$).

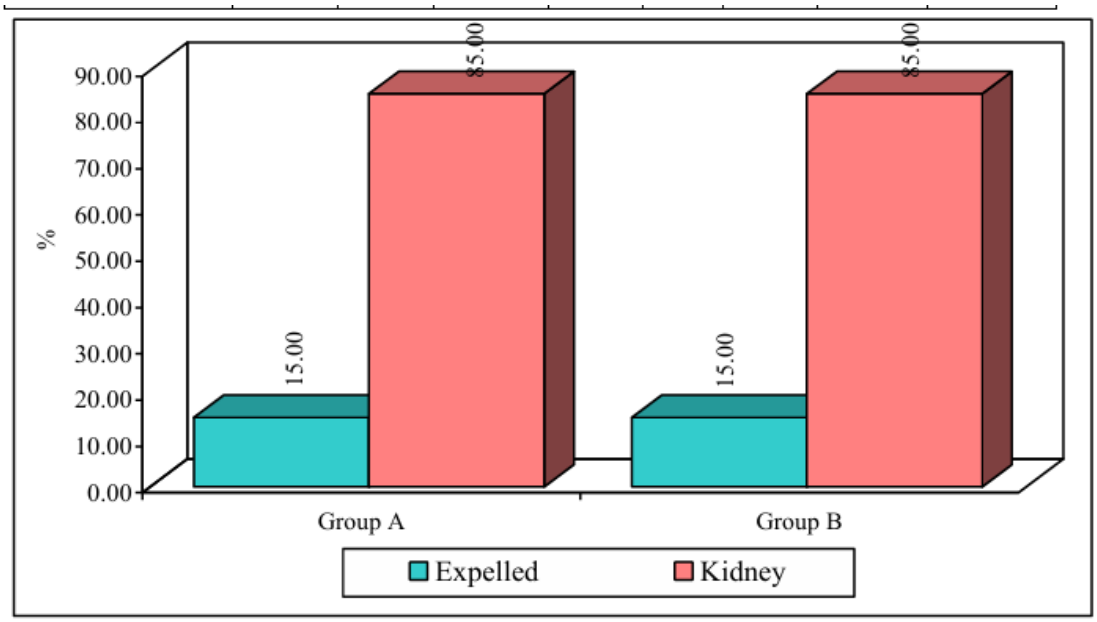

Illustration 3: Showing comparison of different treatment time points with site of stones.

RESULTS BASED ON OVERALL ASSESMENT

Overall: Group A showed an overall improvement of 74.65%, while Group B demonstrated a slightly higher overall improvement of 76.70% from Pretest to Post test. Both groups showed substantial progress, with Group B showing a marginally greater overall effect.

Qualitative Parameters

Table No 2: Overall changes from day 0 to day 39 in Group A and Group B.

Parameters	Changes from	Group A	Group B
Shoola	Day 0-Day 9	94.29	94.44
	Day 0-Day 39	100.00	100.00
Mutrakrichra	Day 0-Day 9	87.50	89.47
	Day 0-Day 39	100.00	100.00
Sarakta mutrata	Day 0-Day 9	50.00	66.67
	Day 0-Day 39	100.00	100.00
Mootradaha	Day 0-Day 9	96.77	96.88
	Day 0-Day 39	100.00	100.00

Quantitative Parameters

Table No 3: Overall changes from pretest to posttest in Group A and Group B.

USG NOS (number of stone)	Pretest -posttest	12.50	9.62
Size of stone (in mm)	Pretest -posttest	25.07	27.63
Overall	Pretest to posttest	74.65	76.70

DISCUSSION

Kulatthadi Ghrita[10]

Kulatthadi Ghrita, described in *Chakradatta* under *Ashmari Adhikara*, is an Ashmarihara formulation prepared with Kulattha, Saindhava lavana, Vidanga, Sharkara, Padmaka, Yavakshara, Kushmanda beeja, and Gokshura beeja as *kalka*, Varuna *kwatha* as *drava*, and Ghrita as *sneha*. The ingredients collectively exhibit antiurolithiatic, diuretic, nephroprotective, antioxidant, and urine-alkalizing actions. Drugs like Kulattha, Varuna, and Yavakshara help in disintegration and dissolution of calculi, while Gokshura, Kushmanda,

Vidanga, and Padmaka promote diuresis and flushing of stones. Ghrita enhances drug efficacy, softens the *srotas*, and facilitates stone expulsion. Overall, Kulatthadi Ghrita is tridoshaghna and acts through *Ashmari bhedana*, *Mutrala*, and *Basti shodhana* effects, aiding stone expulsion and reducing recurrence.

Swadamshtradi kwatha[11]

Gokshura is Tridoshahara with prominent *Mutrala* and *Basti shodhaka* actions; its constituents inhibit calcium oxalate crystal formation and protect renal epithelial cells. Eranda, with *Rechana* and *Bhedana* properties, shows strong antiurolithiatic, anti-inflammatory, and antioxidant effects by reducing urinary stone-forming factors. Shunthi acts as a potent *Dipana* and bioavailability enhancer, supporting renal protection and preventing recurrence. Varuna is a key *Ashmarihara* drug, promoting stone disintegration and normalization of urinary pH. Madhu acts as a *Yogavahi* and *Lekhaneeya*, enhancing drug efficacy and scraping stone-forming substances.

Together, the formulation is Tridoshahara (predominantly Vata-Kapha hara) and works through stone disintegration, diuresis, urinary cleansing, and prevention of recurrence.

Varunadi taila[12]

Gokshura (Tribulus terrestris) is a Tridoshahara drug with strong *Mutrala* and *Basti shodhaka* actions. Its phytochemicals inhibit calcium oxalate crystal formation and protect renal epithelial cells, indicating both preventive and curative potential in urolithiasis.

Varuna (Crataeva nurvala) is a key Kapha-Vatahara herb with *Bhedana* and *Mutrajanana* properties. Constituents like lupeol reduce oxidative stress, normalize urinary pH, and significantly decrease stone formation and recurrence.

Tila taila, due to its *Snigdha* and *Vatahara* properties, facilitates smooth passage of stones, enhances the action of Varuna and Gokshura, reduces inflammation and pain, and supports stone expulsion and prevention of recurrence.

CONCLUSION

In this comparative clinical study on Mutrashmari (urolithiasis), the highest prevalence was seen in the 31–45 year age group (47.5%), with males (57.5%) more commonly affected. Most participants were married, from middle or lower-middle socioeconomic groups, and engaged in sedentary or physically demanding occupations such as homemaking and farming.

Sedentary lifestyle, low water intake, mixed diet with high protein, excess tea consumption, and substance use emerged as important risk factors. Clinically, both treatment groups achieved rapid and complete symptom relief by Day 39, with good safety and tolerability. Group B demonstrated greater reduction in stone size and overall improvement, while Group A showed a slightly better reduction in stone number. Mild, self-limiting adverse effects were noted. Overall, both interventions were effective, safe, and well-tolerated in the management of urolithiasis.

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