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Clinical study

## Managing *Mutrashmari* through *Ayurvedic* Drugs - II: *Shwet Parpati*

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### ABSTRACT-

This paper presents the findings of a clinical trial conducted in the suburbs of Jammu ( Jammu & Kashmir State ) to assess the efficacy of *shwet parpati* therapy – an *Ayurvedic* mineral compound, on a random sample of ten *mutrashmari* patients. In all there were 14 calculi sites, of which 8 (57 %) were in Kidney and 6 (43 %) were in Ureter. There were 6 (43 %) calculi sites which were uni-lateral and single, 2 sites (29 %) were multiple (double) but unilateral while the remaining 2 (28 %) were bi-lateral and single in each kidney. All the calculi cases were in the size range of 4 – 8 mm. The *shwet parpati* therapy completely cured 4 (28.6 %) of the cases. It markedly improved 5 (35.7 %) cases and improved 3 (21.4 %) of the cases. Only 2

(14.3 %) cases did not show significant response to therapy. The **overall rating** of the therapy was 1.8. In all there were 8 Kidney stones. Two stones (25.0 %) were completely cured, 3 (37.5 %) were markedly improved. Two (25.0 %) were improved towards curing but 1 (12.5 %) did not respond to the therapy. **Overall rating** of the therapy was 1.8. There were 6 Ureter stones. Two (33.3 %) each, were cured and markedly improved. One (16.7 %) was improved and the remaining 1 (16.7 %) did not respond to therapy significantly. **Overall rating** of the therapy towards Ureter Stones was 1.8. *kaphaja* was represented in 4 (40 %) of the patients, followed by 3 (30 %) in *vataja* and 3 (30 %) in *pittaja ashmari*. This shows the dominance of *kaphaja* type of *ashmari* in the study area. There were 8 stones with *kaphaja ashmari*, out of which 3 (37.5 %) were completely cured, 4 (50%) stones were markedly improved and 1 (12.5%) showed improvement in symptoms. The therapy depicted good **overall rating** of 2.3. There were 3 stones of *pittaja ashmari* type and no complete cure was noticed in this case. Two (66.7 %) cases were markedly improved and the remaining 1 (33.3 %) showed improvement. The **overall rating** was 1.7. There were 4 stones in *vataja ashmari* cases, out of which 2 (50.0 %) were completely cured, while the remaining 2 (50.0 %) stones did not respond to the therapy significantly. The therapy depicted an **overall rating** of 1.5. The effect of *shwet parpati* was **highly significant** on *basti vedana* (58.3 %), *nabhi vedana* (58.0 %), *mehan vedana* (55.6 %) and on *gomeda prakasam* (50.0 %). The effect was also **significant** on *mutradhara sanga* (71.4 %) and *atiavila mutrata* (71.4 %). While non-significant effect was observed on *sarudhiramutrata* (66.7 %) and *sevani vedana* (8.3 %). Nausea & vomiting and fever parametres did not affect the sample cases. The effect was **highly significant** on burning micturition (66.7 %), tenderness at renal angle (60.0 %), Pain (48.1 %) and on dysuria (47.1 %). While non-significant effect was found on haematuria (30.0 %). The post-therapy laboratory results in comparison to pre-therapy results showed a decreasing trend in certain parametres while an increasing trend in others. All the parameters, however, remained within their **normal limits** both in the pre & post-therapy observations. The *shwet parpati* therapy showed an **Overall success rate of 60.0 %** in mitigating the problems of *mutrashmari* and removal/disintegration of calculi.

**Keywords :-** *shwet parpati*, Kidney stones, *mutrashmari*,

## INTRODUCTION

Urinary stones have an incidence of about 12 % in India, and it is estimated that about half of it may end up losing kidneys. Globally also, its incidence is high, about 6 million people in USA alone, suffer from this disease.

*Mutrashmari* is a disease pertaining to *mutravaha srothas* which comes under *basti marma*. *Ashmari* gets formed when *vata* dries up the *mutra*, *sukra*, *pitta* or *kapha* stored in the urinary bladder<sup>(1)</sup>, leading to distention of bladder, severe pain in and around it, difficulty in micturition etc<sup>(2)</sup>.

Formation of *mutrashmari*, according to *Sushruta*, is due to *srotovaigunya*, resulting from *dusita kapha* localized in *basti*, in conjunction with *pradusita vata* and *pitta*, is responsible for the cause of *ashmari*. *Ayurvedic* texts have described four types of urinary calculi: *sleshmaashmari*,

*pittaashmari*, *vataashmari*, and *sukraashmari*<sup>(3)</sup>. These stones are found in all parts of the urinary tract, the kidney, the ureters and the urinary bladder. The factors responsible for the formation of calculi have been well documented<sup>(4-10)</sup>.

Responsible factors<sup>(11)</sup> have also been identified in modern system for calculi formation. Surgery often remains the treatment of choice, but recurrence is, generally inevitable in about 60% of cases. Herbal drugs have proven effects like *imuno-modulation*, *adapto-genic* and *antimutagenic*. The WHO Canberre conference in 1976, promoted the concept of 'Traditional' medicines for the developing countries.

among the patients infested with this *roga*, in the bio-physiological and socio-economic conditions that existed in the suburbs of Jammu (Jammu & Kashmir State). The findings might guide the doctors and researchers to workout suitable amendments and strategies to further enhance its efficacy and practical adoption for managing *mutrashmari roga*.

Accordingly, an attempt has been made in this paper to present the findings of a clinical study conducted on the traditional *ayurvedic* mineral compound *shwet parpati* against *mutrashmari roga*.

## MATERIALS AND METHODS

A research experiment was planned to evaluate the efficacy of *shwet parpati*<sup>(12)</sup> - a mineral compound known to be effective against *ashmari*, under suburbs of Jammu conditions (JIAR & R.S. Pura, Jammu & Kashmir State). The bench mark level of the study was reported by Suden<sup>(13)</sup>.

## AIMS & OBJECTIVES

The aims & objectives of the study was to quantitatively, evaluate the efficacy of the *ayurvedic* drug *shwet parpati* in managing *mutrashmari roga*, with respect to prominent signs, symptoms and sufferings, prevalent

**Treatment Details :** 1 gm *choorna* of *shwet parpati* was given orally twice daily for 60 days. After completion of this medication, follow up was done, which consisted in

observing the patients' signs, symptoms and sufferings at every successive 15 days by an *ayurvedic* doctor for one month.

**Shwet Parpati's Ingredients :** *shwet parpati* <sup>(14,15,16)</sup> is prepared adopting *parpati kalpana* method with the following ingredients' proportions (16:2:1) :

1. **Kalmi shora** ( $KNO_3$  - potassium nitrate) :  
480 g (40 *tola*).
2. **Spatika** ( $K_2SO_4$   $Al_2(SO_4)_3$   $24H_2O$  - Double sulphate of potash & alum) :  
60 g (5 *tola*)
3. **Navasadar** ( $NH_4Cl$  - ammonium chloride) :  
30 g (2 ½ *tola*)

*Rasatarangini* <sup>(17,18,19)</sup> has described in detail the medicinal merits of the three constituents of *shwet parpati* which are described below **Suryakshara**:*vidagdhaajeerna*(indigestion), *asmari*(urinarycalculi), *mutrakrichra*(urinary diseases), *agnimandya*(loss of appetite), *panduroga*(anaemia), *prameha*(urinary disorders/diabetes mellitus).

**Sphatika**:*visarpa* (erysipelas), *switra* (vitiligo), *vranaropana* (heal the wound),*netraroga* (eye disorders), *vishamajwara* (Chronic fever), *grahani*

(Sprue/IBS), *rudirasravrodhini* (stops bleeding).

**Navasadara** : *gulma*(gaseous tumour of abdomen), *adhmana*(fullness of abdomen), *mukhasosha* (dryness of mouth), *vrishchikavishanashaka*(antidote of poison of scorpion), *hridroga*(heart disorders), *netrya*(cures eye ailments), *kushta*(skin disorders).

**Aushada Kaala**: The *shwet parpati choorna* capsule has to be taken half an hour before breakfast in the morning and one hour after dinner at bed time daily for consecutive 60 days.

#### **Anupana & Dietetics :**

1-Take the medicine with either cold water, *narikel jala*, *ikshurasa* (sugarcane juice), *mishri yukta dugdha*, *karpura yukta jala*, or other *mutrala kashaya* (diuretic decoctions) can be taken as *anupana*.

2-The patients were advised to observe their normal dietetics

(i)-maintain regular intervals between two meals

(ii)-desist from all the diets which are directly or indirectly contributory to the formation of stone

(iii)-observe *pathya* and *apathya*

(iv)-to take plenty of water

**Pathya** : *sheetal ahara- vihara* ( cold regimen)

**Apathya** : *ushna ahara sewana, teekshana ahara sewana, katu ahara sewana, vidahi ahara sewana and atapa sewana*

### **Shweta parpati side effects**

It is contraindicated in children, pregnant and lactating mothers. Over-dosage and long term use may cause poisonous side effects.

**Selection of Patients** : The selection of ten *mutrashmari* patients on random basis, was made out of patients coming to the OPD's at the Department of *Shalya Tantra*, JIAR, and at Community Health Centre (District Hospital), RS Pura, Jammu, for medical advice, adopting the following Inclusion and Exclusion criteria:

### **Inclusion Criteria :**

- 1-The *mutrashmari* patients (diagnosed **radiologically** and **micro-biologically** ) suffering from calculi, but of size not greater than 8 mm
- 2-Patients in the age group:21-60 years
- 3-Patients ready to undertake all the radiological and other diagnostic tests
- 4-Patients ready to report to OPD at times when required
- 5-Patients ready to regularly take the recommended medicines and observing the

recommended dietetics & *anupana* observe *pathya* & *apathya* as a long term practice

### **Exclusion Criteria :**

1-Patients suffering from other serious ailments like tuberculosis, asthma, impending renal failure, staghorn calculus, severe haematuria, immediate surgical requirement and complications, etc.

2-Patients having stone size larger than 8 mm

3-Patients outside the age group :21-60 years

The following diagnostic tests were conducted before initiation and conclusion of the study : *TLC, DLC, Hb* and *ESR*; *Blood urea, serum creatinine, S. fasting blood sugar, S. cholesterol*, presence of *RBC, pus cells, epithelial cells, renal casts and crystals* in urine; *X-ray* and *ultrasonography* of *KUB* region to confirm the presence and measure of the size of calculi.

**Statistical Design** : The clinical trial was conducted as a Completely Randomized Design with 10 *mutrashmari* patients as replications.

To introduce objectivity into the signs and symptoms of a disease, the concept of **scoring** or **scaling** was adopted. **Subjective criteria** : Assessment of *mutrashmari* was done on a graded 5-point scale (0 – 4 ) with increasing symptom severity :



**1-Pain degree score :** 0 = No pain ; 1 = Occasional pain, did not require treatment ; 2 = Occasional pain but, required treatment; 3 = Constant dull ache pain, required treatment; 4 = Severe constant pain, but did not show relief even after treatment.

**2-Burning micturition degree score :** 0 = burning micturition; 1 = occasional burning micturition; 2 = occasional burning micturition, requiring treatment; 3 = constant burning micturition requiring treatment; 4 = constant severe burning micturition but no relief even after treatment.

**3-Dysuria score :** 0 = no dysuria; 1 = occasional dysuria; 2 = occasional dysuria requiring treatment; 3 = constant dysuria which requiring treatment; 4 = constant severe dysuria but show no relief even after treatment.

**4-Tenderness in renal angle score :** 0 = no tenderness; 1 = mild tenderness; 2 = moderate tenderness; 3 = severe tenderness; 4 = acute tenderness.

**5-Hematuria :** 0 = no RBC/Hpf ; 1 = 0–5 RBC/Hpf ; 2 = 6–10 RBC/Hpf ; 3 = 11–15 RBC/Hpf ; 4 = >16 RBC/Hpf.

**6-Pus cells :** 0 = no pus cells/Hpf; 1 = 0–5 pus cells/Hpf; 2 = 6–10 pus cells/Hpf; 3 = 1–15 pus cells/Hpf; 4 = >16 pus cells/Hpf.

**Criteria for Measuring Total Effect of a Therapy:** For assessing the total effect of therapy, following 4-point graded scale was adopted for scoring the symptoms :

**1-3=Cured :** 76 - 100 % relief :- Complete relief in subjective signs and symptoms. Absence of any calculus in urinary tract with radiological evidence

**2-2=Markedly Improved :** 51 – 75 % relief :-Relief in subjective signs and symptoms. Downward movement or partial disintegration of *mutrashmari* with radiological evidence.

**3-1=Improved :** 26 – 50 % relief :- Relief in signs and symptoms. Without any change in size of stone confirmed with radiological evidence.

**4-0=Unchanged :** 0 – 25 % relief :- Relief in subjective sign and symptoms

#### **Measurement of The Effect of Therapies :**

The Effect or Relief from a therapy is defined as follows :

$$1- \text{Effect} = ( \text{BT} - \text{AT} ),$$

$$2- \text{Relief} (\%) = ( \text{Effect} \times 100 ) / \text{BT}$$

where BT and AT are the disease symptoms ( scored or rated adopting an appropriate graded scale) before and after the therapy. These are in fact the weighted averages, especially in this paper.

**Overall Rating** = is the weighted average (in this article), weights being the observed scores, by adopting a suitable graded scale. This is an **excellent objective** method developed and used in this study . Similarly, other clinical symptoms were allotted the scores on the basis of severity. Some attributes were easily understandable in their presence(1) or absence(0). The results were also often presented as frequency, number, percentage etc. for better acceptance in these formats.

**Overall success rate of a therapy (%)** = **overall rating** x 100/maximum grade point of the scale. **Overall complete cure (%)** = percent cured cases.

**Overall no cure (%)**= percent unchanged cases.

**Statistical analysis** : Proper statistical analysis of the data generated from the clinical trial was carried out while considering the Completely Randomized Design. Specifically, the following analysis was carried out:

**CD(0.05) or CD(5%)**: Critical difference at 5 % level of significance to test the significance of the difference between two means. It is, in fact a practical form of the *Student's t-test*.

## RESULTS & DISCUSSION

### Results

**Sites of calculi** : The *shwet parpati* therapy was replicated on 10 randomly selected *mutrashmari* patients. In all, there were 14 calculi sites, of which 8 (57 %) were in Kidney and 6 (43 %) were in Ureter (Table-

1). Thus, *mutrashmari roga* was primarily located in Kidney and Ureter organs. None of the registered (OPD) bladder stone patients met the inclusion criteria, particularly pertaining to the size of the calculi, so none of them could be inducted into this Clinical Trial

Site	S	M	B	T	%
Kidney	4	1x2	1x2	8	57
Ureter	2	1x2	1x2	6	43
Total	6	2x2	2x2	14	100

\*:S=Single & Unilateral, M=Multiple(double) & Unilateral, B=Bilateral & Single in each Kidney, T=Total

**Uni-lateral and Bi-lateral stones :** There were in all 14 *ashmari* sites, out of which 6 (43 %) were uni-lateral and single, 2 sites (29 %) were multiple (double) but unilateral while the remaining 2 (28 %) were bi-lateral and single in each kidneys (Table-1).

**Size range of calculi :** Calculi were classified into two size ranges namely < 4

mm & 4 – 8 mm. Further, if a patient was having calculi at more than one site, he was included in the study (Table-2) for his largest calculi size only. On **overall basis**, all the calculi cases i.e. 100 % were in the size range of 4 – 8 mm and none was in the range of < 4 mm.

**Table-2: Calculi sizes.**

Size(mm)	No.	%
< 4 mm	0	0
4 – 8 mm	10	100

### Major Complaints

**Ayurvedic system :** Information on a number of major *ayurvedic* complaints was recorded. The results are presented in Table-3. **On overall basis**, *ati-avilamutrata*, *nabhi vedana*, *mutradhara sanga* and *basti vedana*, *sevani vedana* were the most common problems prevalent in about 70–90 % of the patients. and *gomeda prakasam*, *mehan vedana* and *sarudhira mutrata* were common in 50 % cases. *mutra vikirana*,

*sasikitam*, *visirnadhara*, and *mrudanti medhara* were present in about 10 % of the cases and were relatively insignificant in importance<sup>(20)</sup>.

**Effect on *Mutrashmari* :** Results are presented in Table-3 . The *shwet parpati* therapy completely cured 4 (28.6 %) of the cases. It markedly improved 5 (35.7 %) cases and improved 3 (21.4 %) of the cases. Only 2 (14.3 %) cases did not show significant response to therapy. The **overall rating** of the therapy was 1.8.



**Effect on Kidney Stones :** In all there were 8 Kidney stones. Two stones (25.0 %) were completely cured, 3 (37.5 %) were markedly improved. Two (25.0 %) were improved towards curing but 1 (12.5 %) did not respond significantly to the therapy . **Overall rating** of the therapy was 1.8 (Table-3).

**Effect on Ureter Stones :** There were 6 ureter stones. Two (33.3 %) stones were completely cured, 2 (33.3 %) stones were markedly improved, 1 (16.7 %) was improved. While 1 (16.7 %) did not significantly respond to the therapy. Overall rating was 1.8 (Table-3).

**Table-3: Effect of *Shwet Parpati* on *Mutrashmari***

Grade of Cure	Kidney		Ureter		Total	
	No.	%	No.	%	No.	%
<b>Cured</b>	2	<b>25.0</b>	2	<b>33.3</b>	4	<b>28.6</b>
<b>Markedly Improved</b>	3	<b>37.5</b>	2	<b>33.3</b>	5	<b>35.7</b>
<b>Improved</b>	2	<b>25.0</b>	1	<b>16.7</b>	3	<b>21.4</b>
<b>Unchanged</b>	1	<b>12.5</b>	1	<b>16.7</b>	2	<b>14.3</b>
<b>Total</b>	<b>8</b>	<b>100.0</b>	<b>6</b>	<b>100.0</b>	<b>14</b>	<b>100.0</b>
<b>Overall Rating</b>	<b>1.8</b>	-	<b>1.8</b>	-	<b>1.8</b>	-

**Effect on *Ashmari* Types :** All the three types of *ashmari* viz. *kaphaja*, *pittaja* and *vataja* were present in the study. The results are reported in Table-4. *kaphaja* was represented in 4 (40 %) of the patients,

followed by 3 (30 %) in *vataja* and 3 (30 %) in *pittaja ashmari* conforming to the *prakrti* and *nidanas* of the patients. This shows the dominance of *kaphaja* type of *ashmari* in the study area

Type	No.	%
<i>Kaphaja</i>	4	40
<i>Pittaja</i>	3	30
<i>Vataja</i>	3	30

***Kaphaja Ashmari*** : There were 8 stones with *kaphaja ashmari*, out of which 3 (37.5 %) were completely cured, 4 (50%) stones were markedly improved and 1 (12.5%) showed improvement in symptoms. The therapy depicted good **overall rating** of 2.3 (Table-5).

***Pittaja Ashmari*** : There were 3 stones of *pittaja ashmari* type and no complete cure was noticed in this case. Two (66.7 %) cases were markedly improved and the remaining 1 (33.3 %) showed improvement (Table-5). The **overall rating** was 1.7.

Grade of Cure	<i>Kaphaja</i>		<i>Pittaja</i>		<i>Vataja</i>		Total	
	No.	%	No.	%	No.	%	No.	%
<b>Cured</b>	2	28.6	0	0.0	2	50.0	4	28.6
<b>Markedly Improved</b>	3	42.8	2	66.7	0	0.0	5	35.7
<b>Improved</b>	2	28.6	1	33.3	0	0.0	3	21.4
<b>Unchanged</b>	0	0.0	0	0.0	2	50.0	2	14.3
<b>Total</b>	7	100.0	3	100.0	4	100.0	14	100.0
<b>Overall Rating</b>	2.0	-	1.7	-	1.5	-	1.8	-

### Net Effect of *Shwet Parpati* Therapy

**Ayurvedic Parametres :** For in depth evaluation of *shwet parpati* therapy, its effect was studied on the following 8 impotant *ayurvedic* parametres associated with *ashmari* (Table-6). The effect of a therapy was measured on each of these paremetres, singly and collectively by the method described under Methodology. The effect of

*shwet parpati* was **highly significant** (Table-7) on *basti vedana* (58.3 %), *nabhi vedana* (58.0 %), *mehan vedana* (55.6 %) and on *gomeda prakasam* (50.0 %). The effect was also **significant** on *mutradhara sanga* (71.4 %) and *atiavila mutrata* (71.4 %). While non-significant effect was observed on *sarudhiramutrata* ( 66.7 %) and *sevani vedana* (8.3 %).

**Table-6 : Ayurvedic Parametres**

1. <i>Nabhi Vedana</i>	5. <i>Mutradhara Sanga</i>
2. <i>Basti Vedana</i>	6. <i>Sarudhiramutrata</i>
3. <i>Sevani Vedana</i>	7. <i>Gomeda Prakasam</i>
4. <i>Mehan Vedana</i>	8. <i>Atiavilā Mutrata</i>

**Table-7: Pre & Post-Shwet Parpati Therapy Scores (Ayurvedic System)\* on Ashmari patients**

Parametre	BT	AT	%	CD(5%)	Parametre	BT	AT	%	CD(5%)
<i>Nabhi Vedana</i>	2.4	1.0	58.0	<b>0.69<sup>1</sup></b>	<i>Mutradhara Sanga</i>	0.7	0.2	71.4	<b>0.38<sup>5</sup></b>
<i>Basti Vedana</i>	1.2	0.5	58.3	<b>0.35<sup>1</sup></b>	<i>Sarudhiramutrata</i>	0.9	0.3	66.7	<b>0.69<sup>ns</sup></b>
<i>Sevani Vedana</i>	1.2	1.1	8.3	<b>0.38<sup>ns</sup></b>	<i>Gomeda Prakasam</i>	1.8	0.9	50.0	<b>0.41<sup>1</sup></b>
<i>Mehan Vedana</i>	0.9	0.4	55.6	<b>0.30<sup>1</sup></b>	<i>Atiavila Mutrata</i>	0.7	0.2	71.4	<b>0.38<sup>5</sup></b>

\* : BT, AT: Before, After treatment. Superscript 1, 5 indicate significant differences (BT-AT) at 1 % & 5% P values respectively. Superscript ns indicate non-significant differences (BT-AT) at P=5%. The difference (BT-AT) which is less than CD(5%) value is non-significant (P>0.05).

**Modern Parameters :** The performance of the therapies was evaluated on the 7 parameters of the modern system (Table-8).

**Table-8 : Modern System Parameters**

Pain	Dysuria
Burning Micturition	Fever
Nausea & Vomiting	Hematuria
Tenderness in Renal angle	-

Nausea & Vomiting and Fever parametres did not affect the sample cases. Therefore , they are excluded in the further presentation of results. The results are presented in Table-9. The effect was **highly significant** on

burning micturition (66.7 %), tenderness at renal angle (60.0 %), pain (48.1 %) and on dysuria (47.1 %). While non-significant effect was found on hematuria (30.0 %)

Table-9: Pre & Post-*Shwet Parpati* Therapy Scores (Modern System)\* on *Ashmari* patients

Parameter	BT	AT	%	CD(5%)
Pain	2.7	1.4	48.1	0.35 <sup>1</sup>
Burning Micturition	1.8	0.6	66.7	0.30 <sup>1</sup>
Hematuria	1.0	0.7	30.0	0.51 <sup>ns</sup>
Dysuria	1.7	0.9	47.1	0.45 <sup>1</sup>
Tenderness in Renal angle	1.0	0.4	60.0	0.51 <sup>1</sup>

\* : BT, AT: Before, After treatment. Superscript 1 indicates significant differences (BT-AT) at 1 % P values. Superscript ns indicate non-significant differences (BT-AT) at P=5%. The difference (BT-AT) which is less than CD(5%) value is non-significant (P>0.05).

### Laboratory Investigations

#### Effect of *Shwet Parpati* Therapy on

**Laboratory Investigations :** The results for Hematological Bio-chemical and Urological Parameters are presented in the Table-10. The Post-therapy results in comparison to Pre-therapy results showed a decreasing trend in certain parameters and an increasing trend in the others. All the parameters,

however, remained within their **normal limits** both in the Pre & Post-therapy observations. But the extent of increase or decrease was statistically found to be non-significant (P>0.05) except in *S. calcium*. The magnitudes of increase or decrease of AT values over the corresponding BT values were very small and are, practically of little clinical significance.



Table-10: Laboratory Tests of *Shwet Parpati* Therapy Group cases.

Parametres	AT	BT	Increase or Decrease (%)	Parametres	AT	BT	Increase or Decrease (%)
<i>Neutrophils*</i>	57.9	56.9	-1.7	<i>S. chloride</i>	101	101	0.0
<i>Lymphocytes*</i>	30.8	29.7	-3.6	<i>S. calcium</i>	9.4	9.1	-3.2 P < 0.05
<i>Eosinophils*</i>	4.2	4.1	-2.4	<i>S. phosphate</i>	3.4	3.3	-2.9
<i>Monocytes*</i>	6.9	6.9	0.0	<i>S. albumin</i>	4.2	4.3	+2.3
<i>TLC*</i>	8640	8780	+1.6	<i>S. globulin</i>	2.3	2.4	+4.3
<i>ESR</i>	16.5	16.4	-0.6	<i>S. uric acid</i>	4.2	4.1	-2.4
<i>Hb gm%</i>	9.9	10.1	+2.0	<i>F. Blood Sugar</i>	82.5	82.3	-0.2
<i>Blood Urea L</i>	27.6	26.8	-2.9	<i>pH</i>	5.4	5.18	-4.6
<i>S. creatinine</i>	0.94	0.98	+4.2	<i>RBC*</i>	1.9	1.5	-21.1
<i>S. cholesterol</i>	190	186	-2.1	<i>Pus Cells*</i>	1	0.8	-20.0
*: Count.							

## DISCUSSION

Incidence of *mutrashmari roga* was twice more in Kidneys than in Ureter. *Shwet parpati* therapy clearly demonstrated its curative role in 85.7 % cases, and it also completely cured 28.6 % calculi cases. Though, all the three types of *ashmari* were present, but *kaphaja* was relatively more predominant in the study area. *Shwet parpati*

therapy appeared to be more effective in *kaphaja* and *vataja asmari* types in comparison to *pittaja ashmari*. *Shwet parpati* significantly mitigated the symptoms of *basti vedana*, *nabhi vedana*, *mehan vedana*, *gomeda prakasam*, *mutradhara sanga* and *atiavila mutrata*. This finding is in resonance with that of Sudeen<sup>(21)</sup>. *Shwet parpati* was also

effective in managing burning micturition, tenderness at renal angle, pain and on dysuria.

*Shwet parpati* is also called *shital parpati*, *kshar parpati* and *vajra kshar*, as all its ingredients are *kshariya* i.e. alkaline in nature<sup>(22)</sup>. On the basis of the contents and preparation method (*parpati kalpana*)<sup>(23)</sup> of *shweta parpati*, it has unique features like **diuretic, analgesic, anti-inflammatory** and **urinary supportive** action which accelerate blood flow to kidneys, promoting their functionality and increasing urine output. These salts and their alkaline pH would act as deterrent to bacterial survival within the Urinary tract. All the three components are diuretics i.e. *mutrala*. *Shweta parpati* has, thus multi-modal curative effects on

*mutrashmari*, *mutrakrichra* as diuretics, alkalizer etc (Gurjar *et al*)<sup>(24)</sup>. It, therefore, balances *vata* and *pitta*. *Suryakshara* and *sphatika* drugs contribute K<sup>+</sup> ions which act as alkalinizer suitable in dysurea. Urinary tract alkalinizer produces an alkaline load that increases urinary pH and raises urinary citrate by augmenting citrate clearance without measurably altering ultra filterable serum citrate. This produces urine that is less conducive to crystallization of stone-forming salts (Geethubalakrishnan *et al*)<sup>(25)</sup>.

#### **Probable Mode of Action of *Shwet Parpati***

: The ingredients in these therapies are having specific mode of action due to the presence of different types of signs and symptoms described in Table-11

**Table-11 : Probable Mode of Action of Ingredients of *Shwet Parpati*.**

<i>Vata</i>	<i>Pitta</i>	<i>Kapha</i>	<i>Dusya</i> ( <i>Rasa– Mutra</i> )	<i>Agnimandya</i>	<i>Srotodusti</i>	<i>Mutravaha Srotodusti</i>
<i>Vedana Sthapana</i>	<i>Daha Prasamana</i>	<i>Bhedana</i>	<i>Mutra Virechaniya</i>	<i>Deepana</i>	<i>Sanga</i>	<i>Mutra Virechaniya</i>
<i>Vatanulomana</i>	<i>Trsahara</i>	<i>Sothahara</i>	<i>Mutrala</i>	<i>Pachana</i>	-	<i>Mutrala</i>
<i>Sulaprasamana</i>	-	<i>Medohara</i>	-	-	-	-

The following properties of the *ayurvedic* drugs *shwet parpati* explain their efficacy in the management of *mutrashmari* :

1-The *vatanulomana*, *sothahara* and *mutrala* properties of ingredients help to relieve pain and *sthanika sotha*.

2-*Deepana* property of drugs helps to increase the *agni*, which further check the formation of *ama* at *jatharagni* level itself.

3-*Pachana* property of ingredients help in assimilation of drugs in the body in case of *jatharagnimandya*.

4-Stone might be dissolved due to the *Asmari Bhedana* or *Asmarihara* property of ingredients present in the herb and in the mineral compound.

## CONCLUSION

**Overall success rate** of *shwet parpati* therapy remained at 60 %. **Overall**

**complete cure** percentage remained at 28.6 % while **Overall no cure** percentage remained at 14.7 %. The success rate can be improved further, by incorporating effective and compatible *ayurvedic* amendments like *karpura*, *tankana* etc. So, it can be concluded that *shwet parpati* therapy possesses the properties regarding improvement, downward movement, disintegration and expulsion of stones and can produce significant relief in sign, symptoms and sufferings of both *ayurvedic* and modern systems' parametres of *mutrasmari*. The present study could not, however lead to conclusive results on *pittaja ashmari*, for want of adequate data, therefore, more elaborate studies on this aspect stand indicated.

## REFERENCES

1. Tripathi, I and Tripathi S ,Vagbhata. Ashtangahridaya., 1 ed., Krishnadas Accademy, Varanasi, India;1994: p. 118.
2. Srikant, MKR (Ed), English, Madhavakara. Madhavanidhanam.In: , 3 ed.,Varanasi, India; 2000: p. 113.
3. Shastri, K (Commentary), Sushruta. Sushrutha Samhita Part 1. 8 ed., Varanasi, India Chowkhamba Sanskrit Sansthan,; 1993: pp. 240-41.
4. TVJ and Pandurang, S (Commentary), Agnivesha. Charaka Samhita, Charaka and Dridhabala (Revised), Chakrapanidatta, 3 edn, India, Nirnaya Sagar Press, Bombay,; 1941 p. 599.
5. Tripathi, I and Tripathi S,Vagbhata. Ashtangahridaya., 1 ed., Krishnadas Accademy, Varanasi, India;1994: p. 118.
6. Srikant, MKR (Ed), Madhavakara. Madhavanidhanam. English, 3 ed.,Varanasi, India; 2000: p. 113.
7. Shastri, K (Commentary),Sushruta. Sushrutha Samhita Part 1, 8 ed., Varanasi, India Chowkhamba Sanskrit Sansthan,; 1993 pp. 240-41.
8. Shastri, K (Commentary),Sushruta. Sushrutha Samhita Part 1, 8 ed., Varanasi, India Chowkhamba Sanskrit Sansthan,; 1993 pp. 240-41.
9. Kunte, AM and Atri, KR (Colated), Pradkar, HS and Panduranga, J , Vagbhata. Astanga Hridayam, Bombay, India; Nirnaya Sagar Presee, 1939: p. 498.
10. Shastri SS (Ed), Yogaratnakara. Yogaratnakar. Varanasi, India; Chowkhamba Sanskrit Sansthana, 1939: p. 506.
11. Tiselius, H.G, Ackermann, P, *et al.* Guidelines on urolithiasis, Eur. Urol., 2001; 40: 363.
12. Vaidya Yadavji Trikamji Acharya, Virachit Siddhayoga Sangraha, 13 ed., Baidyanath Ayurved Bhavan Publication, 2007: pp. 96 -97.
13. Suden, A. The Bio-Physiological and Socio-Economic Profile of Mutrashmari Patients. IRJAY:2020 3(1) pp. 59-79.
14. Pandit Kashinath Shastri ,Shri Sadanand Sharma, Rasatarangini ,11 ed., Delhi Motilal Banarasidas Publication,; 2004: pp. 330-331.

15. Ambikadatta Shastri, Shri Vagbhatacharya Virachit ,Rasratna Samucchaya ,9- ed., Varanasi Chaukhamba Publication, 1995: pp. 61-66,72.
16. Pandit Kashinath Shastri ,Shri Sadanand Sharma, Rasatarangini ,11- ed., Delhi Motilal Banarasidas Publication,; 2004: pp. 326 -330.
17. Sri Sadanandasharma.Ksharavisheshadi Vigyaniya Chaturdasha Taranga .In :Kashinathshastri (Ed.)Rasatarangini. Motilal banarasidas, Varanasi;1971: p.36.
18. Sri Sadanandasharma. Talakadi Vigyaniya EkadashaTaranga. In:Kashinathshastri(Ed.) Rasatarangini. Motilal Banarasidas,Varanasi;1971: pp.181-183.
19. Sri Sadanandasharma.Ksharavisheshadi Vigyaniya Chaturdasha Taranga. In:Kashinathshastri(Ed.) Rasatarangini. Motilal Banarasidas,Varanasi;1971: pp. 5-7.
20. Suden, A. The Bio-Physiological and Socio-Economic Profile of Mutrashmari Patients. IRJAY:2020 3(1) pp. 59-79.
21. Suden, A. The Bio-Physiological and Socio-Economic Profile of Mutrashmari Patients. IRJAY:2020 3(1) pp. 59-79.
22. Vaidya Yadavji Trikamji Acharya, Virachit Siddhayoga Sangraha. 13- ed.,Baidyanath Ayurved Bhavan Publication,2007: pp. 96 -97.
23. Vaidya Yadavji Trikamji Acharya, Virachit Siddhayoga Sangraha. 13- ed.,Baidyanath Ayurved Bhavan Publication,2007: pp. 96 -97.
24. Gurjar JS *et al.* A pharmaceutical review study of *shweta parpati* on *mutrakrichra*. WJPR, 2019: 8(7), pp. 441-447.
25. Geethubalakrishnan, Vineeth P K, Ramesh N V. Effect of Swetha Parpati in Mutrakrichra. JMPAS,2017:1 (1): pp. 588-595.