



## Research Article

### FAR-FETCHED PROPERTIES OF *VARUN MOOLA (CRATAEVA NURVALA ROOTS)* & *PALASHPUSHPA (BUTEA MONOSPERMA FLOWERS)* TO MANAGE UROLITHIASIS

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#### ABSTRACT

Urolithiasis is a worldwide problem having no sparing with any group like geographical, cultural or racial. Urinary calculi may cause obstruction, hydronephrosis, infection and hemorrhage in the urinary tract. The management of Urolithiasis with the procedures like surgery, lithotripsy and laser therapy were not only costly but also their recurrence rate are uncertain. But Ayurveda can be the good option to fill this gap with good results. Hence it is necessary and need to explore an Ayurvedic preparation which can resolve this problem with accurate results. And *Varun* roots and *Palash* flowers *Kwath* will be the best option to manage Urolithiasis.

Present study was carried out on 30 patients suffering from Urolithiasis. It was a single blind clinical study to evaluate the efficacy of *Varun Moola* and *Palashpushpa Kwath* by subjective and objective criteria. 40 ml mixture of decoction was given twice daily for 30 days or till symptoms relieved whichever is earlier.

The study revealed that there were significant and positive results of the applied drugs found on the management of Urolithiasis due to its diuretic, anti-infective, anti-biotic and anti-inflammatory properties. These drugs not only reduces symptoms like pain, dysuria, nausea, vomiting, and burning micturition but also helps to reduced pus cells and RBC's in urine as well. This contributes to control urinary tract infection resulting to cure Urolithiasis without producing any adverse effects on patients.

**KEYWORDS:** *Ashmari*, Urolithiasis, *Varun Moola (Crataeva nurvala roots)*, *Palashpushpa (Butea monosperma flowers)*, *Kwath*, Management.

#### INTRODUCTION

Urolithiasis is one of the most troublesome disorders and is considered as *Daruna Vyadhi*.<sup>[1]</sup> It is characterized by the process of calculi (singular of multiple) in the urinary tract. It is more common in the male than that of female. The causes of renal calculi were deficiency of vitamin A, hot climate, decrease in citrate level, infection in kidney, prolong immobilization, hyperthyroidism, hyperoxaluria, cystinuria and stasis due to obstruction in urine flow.<sup>[2]</sup>

Urolithiasis can be correlated with *Mutrashmari* as per their signs and symptoms cited in various Ayurvedic texts. It is a disease of *Mootravaha strotas*. According to the Ayurveda, formation of *Mutrashmari* is due to drying of *Kapha* because of the action of *Vata* and *Pitta*.<sup>[3]</sup>

Where as in modern science the stages of stone formation are as follows.<sup>[4]</sup>



In modern science this disease managed by flush therapy, anti spasmotic, anti-biotic and various advance surgeries like PCNL, ESWL and URS. But limiting factors of these treatments are their cost, availability<sup>[5]</sup> and the chance of success. Acharya Sushruta said that, before going for the surgery first try to control the disease with the help of medicine if it is not possible then only go for surgery. The medicinal treatment which is in the form of *Churna*, *Kashaya*, *Ghrita*, and *Paniya kshara*. *Varuna* has anti lithiatic, anti inflammatory, anti biotic<sup>[6]</sup> and *Palashpushpa* has diuretic property<sup>[7]</sup> which would be the great option to

control this disease. These incredible properties insist me to study their role in Urolithiasis.

#### STATEMENT OF THE STUDY

Role of *Varun Moola (Crataeva nurvala roots)* & *Palashpushpa (Butea monosperma flowers)* *Kwath* in the management of Urolithiasis.

#### AIMS AND OBJECTIVES

1. A conceptual study on *Mootrashmari* w.s.r.to Urolithiasis and its management.
2. A clinical study on *Mootrashmari* w.s.r.to Urolithiasis and its management.

3. To evaluate the efficacy of *Varun Moola* (*Crataeva nurvala* roots) & *Palashpushpa* (*Butea monosperma* flowers) *Kwath* In the management of Urolithiasis.

### MATERIALS AND METHODS

It is simple, random, systematic, and focused group study with sample size 30. It was conducted on patients who were suffered from Urolithiasis. The study samples were selected randomly from Department of *Shalyatantra* of Jammu Institute of Ayurveda & Research. The records of samples under study were maintained according to standardized proforma for quality assurance on regular basis. Inclusion and exclusion criteria were set to achieve and get genuine results of the study.

#### Inclusion Criteria

1. Patients of age between 20-60 years of both sexes were selected for the study.
2. Only those patients, who were suffering from Urolithiasis, were considered for the study.

#### Exclusion Criteria

1. Patients of both the sexes who were not follows the inclusion criteria for age were excluded from the study.
2. Patients or patients who were suffering from major psychiatric illness, chronic disease and acute condition were excluded from the study.
3. Alcoholic, drug users and drug dependent were also excluded from the study to achieve better results.

#### Drug Medley

The mixture of decoction was given in 40 ml twice daily for 30 days or till symptoms relieved whichever is

earlier. The mixture was used to prepare fresh on daily basis, which helps to get and maintain quality output. Prescribed dose of the medicine were as follows.

*Varuna Moola Kwath* → 20 ml }  
*Palashpushpa Kwath* → 20 ml } BD x 30 days

#### Course of action

All 30 registered, clinically diagnosed and confirmed patients of *Urolithiasis* have been gone through the above procedure of drug medley. And to achieve the results of the procedure patients were observed on regular basis at least for a month or till the symptoms of the disorder relieved. Meanwhile they were examined thoroughly and their findings were assessed and recorded according to the criteria mentioned in proforma for further analysis.

#### Follow Up

Patients were followed up after every 7<sup>th</sup> day and changes, improvements; deterioration and any other effects produced after the therapy were recorded properly for further analysis.

#### Criteria for assessment

Most of the signs and symptoms of *Mootrashmari* described in Ayurveda are subjective in nature, but some are in objective in nature, which were depend on the investigations like urine (Routine and microscopic), USG (KUB) done before and after treatment. Here, to achieve exact results of the study on the basis of statistical analysis we have been adopted multidimensional scoring system which is as follows.

**Table 1: Symptoms and grading criteria for Subjective assessment**

Grade & Meaning	Grade	Meaning	Grade	Meaning	Grade	Meaning	Grade	Meaning
<b>Symptoms</b>	<b>0</b>	<b>Absent</b>	<b>1</b>	<b>Mild</b>	<b>2</b>	<b>Moderate</b>	<b>3</b>	<b>Severe</b>
Pain	0	Absent	1	Mild	2	Moderate	3	Severe
Nausea	0	Absent	1	Mild	2	Moderate	3	Severe
Vomiting	0	Absent	1	Mild	2	Moderate	3	Severe
Dysuria	0	Absent	1	Mild	2	Moderate	3	Severe
Burning Micturition	0	Absent	1	Mild	2	Moderate	3	Severe
Frequency of Micturition (times)	0	2 to 3	1	5 to 6	2	8 to 9	3	>10
Fluid intake in litre	0	Absent	1	< 1	2	< 2	3	> 3

**Table 2: Indicators and grading criteria for Objective assessment**

<i>Symptoms</i>	Grade	Meaning	Grade	Meaning	Grade	Meaning	Grade	Meaning
Site of the Stone	0	Absent	1	Ureter	2	Kidney	3	Both
RBC's Count/HPF	0	Absent	1	1 to 5	2	7 to 10	3	>10
Pus Cells	0	Absent	1	1 to 5	2	7 to 10	3	>10

#### OBSERVATIONS

- Study was conducted on 30 established cases of Urolithiasis.
- Out of total 30 patients 60% were male and remaining was female.
- 70% of the patients have drink less than 3 liter fluid daily.

- Pain was the prominent symptom found in all patients suffering from Urolithiasis.
- 90 % of the patients complained that their frequencies of micturition were increased.
- 70 % of the patients complained burning sensation during micturition.
- 63.3% of the patients complained symptoms like nausea and dysuria.

- 23.3% of the patients complained vomiting symptom.
- 93.3 % of the patients have found RBC's cell in their urine test.
- 80 % of the patients have found Pus cell in their urine test.
- 93.3 % of the patients have found single stone in there USG report.
- 73.3% of the patients have found stone in Ureter in there USG report.

The disease *Mootrashmari* can be correlated with urolithiasis. In Ayurvedic literature the cause of this disease was diet having *Guru- Snigda aahara* and less fluid intake.<sup>[8]</sup> These food rich in uric acid, calcium, and oxalate which helps in the formation of stones. The highest incidence of Urolithiasis found in male patients than that of female. It may be due to the habits of tea, coffee and tobacco chewing which is more common in males. There is another theory that testosterone hormones also play an important part in the formation of *Mootrashmari*.

## DISCUSSION

### Probable mode of action of *Varun Moola (Crataeva nurvala roots)* and *Palashpushpa (Butea monosperma flowers)*

Characteristics	<i>Varun Moola (Crataeva Nurvala Roots)</i>	<i>Palashpushpa (Butea monosperma Flowers)</i>
<i>Guna</i>	<i>Laghu, Ruksha</i>	<i>Laghu, Ruksha</i>
<i>Rasa</i>	<i>Tikta, Kashaya</i>	<i>Katu, Tikta, Kashaya</i>
<i>Vipaka</i>	<i>Katu</i>	<i>Madhur</i>
<i>Virya</i>	<i>Ushna</i>	<i>Shita</i>
<i>Prabhava</i>	<i>Asmari Bhedana</i>	----
<i>Karma</i>	<i>Ashmari-Bhedana, Mutrala, Mootrakrichchra, Sankarmanapratirodi</i>	<i>Mutrala, Mootrjanan, Mootrakrichchra.</i>

*Palashpushpa* has *Madhurvipaka* and *Shitavirya*, it increases urine production and has diuretic property.<sup>[9]</sup> It facilitates the calculi to bring downward and flush out the calculi. It is also used in dysuria i.e. difficulty in micturition.

*Varunmoola* has *Laghu ruksha* property, *Tikta kashaya rasa* and *Ushna virya*<sup>[10]</sup> because of that it absorbed *Kleda*, and reduces the infection. In case of infection in the kidney- urea splitting organism commonly causes stone formation<sup>[11]</sup> i.e. E-coli, staphylococcus, streptococcus, proteus etc. *Varuna* has anti-inflammatory and anti-infective property which not only helps to reduce pain and inflammation but also helps to control UTI too. The best part of the *Varun Moola* is that, it has *Ashmari bhedana prabhava*. Due to this property these drugs directly acts on calculi and helps to flush it out resulting to control Urolithiasis.

*Varun Moola* and *Palashpushpa Kwath* used for *Mootrashmari* were highly effective because of their far-fetched properties. *Varun* especially useful in complaints of urinary systems such as kidney and bladder stones. It has analgesics and anti inflammatory property. *Palashpushpa* has diuretic property and useful in complaints like difficulty in micturition. The symptoms of *Mootrashmari* pain, dysuria, burning micturition were controlled by these drugs. Nausea and vomiting are associated with pain frequency. When pain reduced, the symptoms like nausea and vomiting also reduced and diminished.

The effectiveness of the treatment were concluded on the base of comparing before treatment and after treatment scores of subjective and objective criteria

## RESULTS

### Statistical Analysis

Statistical analysis was conducted on SPSS software, paired sample t- test were used to find out the significant level of these drugs. By comparing before and after statistics at 95% confidence level it showed that almost all pairs were statistically significant.

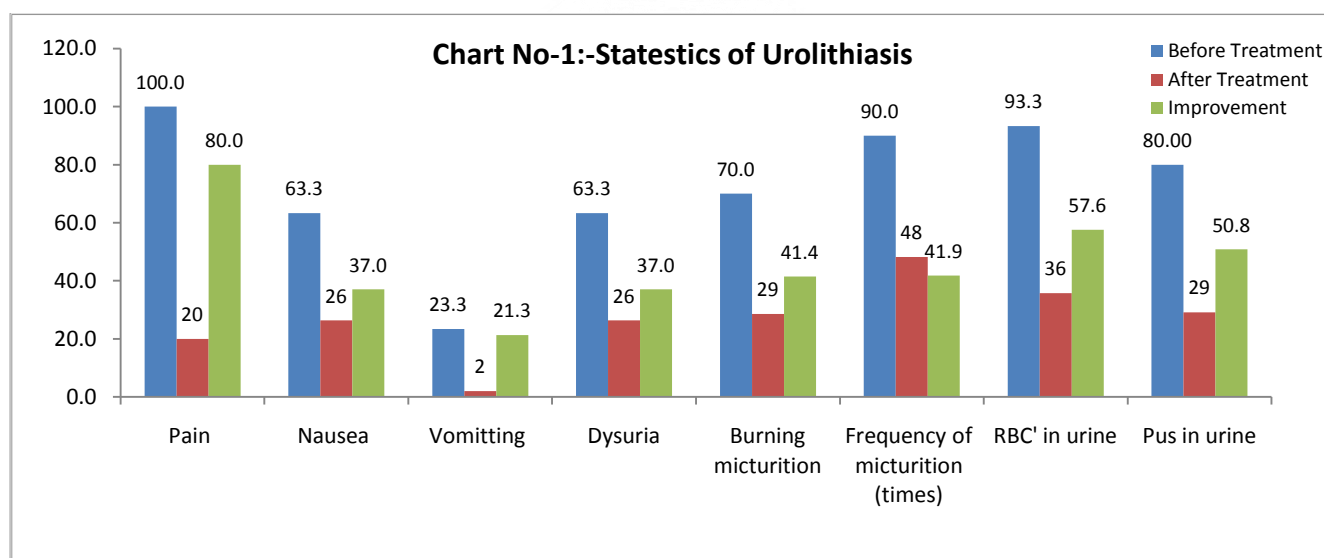
S. No.	Symptoms of Urolithiasis	Separate Samples Statistics						Paired Differences				
		Mean		SD		SEM		Mean	SD	SEM	t	Sig. (2-tailed)
		BT	AT	BT	AT	BT	AT					
Pair 1	Pain	1.700	0.200	0.651	0.407	0.119	0.074	1.500	0.509	0.093	16.155	0.000
Pair 2	Nausea	0.733	0.167	0.640	0.379	0.117	0.069	0.567	0.504	0.092	6.158	0.000
Pair 3	Vomiting	0.267	0.067	0.521	0.254	0.095	0.046	0.200	0.407	0.074	2.693	0.012
Pair 4	Dysuria	0.833	0.167	0.747	0.379	0.136	0.069	0.667	0.547	0.100	6.679	0.000
Pair 5	Burning Micturition	1.033	0.200	0.809	0.407	0.148	0.074	0.833	0.648	0.118	7.047	0.000
Pair 6	Frequency of Micturition	1.400	0.433	0.770	0.504	0.141	0.092	0.967	0.414	0.076	12.794	0.000
Pair 7	RBC's	1.433	0.333	0.774	0.479	0.141	0.088	1.100	0.481	0.088	12.535	0.000
Pair 8	Pus cells	1.167	0.233	0.791	0.430	0.145	0.079	0.933	0.583	0.106	8.764	0.000

Statistical analysis shows that there are significant differences on the symptoms occur in before and after treatment values; which indicate that *Varunmoola Kwath* is highly significant on the management of Urolithiasis.

Here it was seen that after completion of the course 80% of the patient's relieved from Pain, RBC & Pus cell count were reduces in the patients 57.6% and 50.8% respectively, Frequency and burning micturition were controlled by 41.9% and 41.4% in the patient after treatment. Symptoms like Nausea and Dysuria were controlled after treatment it was 37% in both symptoms. Lastly 21.3% of the patients show reduces in the symptoms of vomiting.

**Table 5: Improvement statistics of Urolithiasis symptoms**

Symptoms of Urolithiasis	Before Treatment		After Treatment		Improvement	
	Frequency	%	Frequency	%	Frequency	%
Pain	30	100.00	6	20	24	80.0
Nausea	19	63.33	5	26	14	37.0
Vomiting	7	23.33	2	2	5	21.3
Dysuria	19	63.33	5	26	14	37.0
Burning micturition	21	70.00	6	29	15	41.4
Frequency of micturition	27	90.00	13	48	14	41.9
RBC' count in urine	28	93.33	10	36	18	57.6
Pus cell count in urine	24	80.00	7	29	17	50.8



## CONCLUSION

The present study revealed that Urolithiasis is worldwide problem. *Varunmoola* has lithotriptic, diuretic, anti-infective, anti-biotic and anti-inflammatory properties and *Palashpushpa* has diuretic property. It was found that these drugs have lithotriptic action which expel out calculi from urinary tract. Decoction of *Varun Moola* and *Palashpushpa* reduced pain, dysuria, nausea, vomiting, burning micturition, pus cells and RBC's in urine. Due to these incredible properties these drugs were found efficacious in the management of *Mootrashmari*. However with respect to size and site of stone no much change were observed. These drugs are economical and highly effective without producing any adverse effects.

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