



MANAGEMENT OF MUTRASHMARI WITH TRIVIKRAM RASA

Dr. Amol Thote*¹, Dr. Mukesh Chawla², Dr. Pratibha Mapari³ and Dr. Parikshet Shirode⁴

^{1,2}PG Scholar, Shalyatantra Department, Parul Institute of Ayurveda, Vadodara, Gujarat.

³PG Scholar, Kayachikitsa, Department, Parul Institute of Ayurveda, Vadodara, Gujarat.

⁴Professor Department of Shalyatantra, Parul Institute of Ayurveda, Vadodara, Gujarat.

*Corresponding Author: Dr. Amol Thote

PG Scholar, Shalyatantra Department, Parul Institute of Ayurveda, Vadodara, Gujarat.

Article Received on 21/05/2019

Article Revised on 11/06/2019

Article Accepted on 01/07/2019

ABSTRACT

Ayurveda, is the system of Indian medicine and *science* of life which deals with the wellbeing of mankind, it explains all the aspects of diseases like causes, types, treatment etc of many diseases, the disease of urinary stone is explained under the heading of *Mootrashmari*. The reference regarding it can be found in almost all the *samhitas*, *Acharya Sushruta* has described *nidana*, *samprapti*, *laxanas*, *chikitsa* etc in most scientific manner in separate chapter. **Objective:** To evaluate the efficacy of *Trivikram* rasa in the management of mutrashmari. **Study Design:** open labelled clinical study. **Study selection:** minimum 30 patients of diagnosed with mutrashmari satisfying inclusion criteria was included in study from opd and ipd of parul institute of Ayurveda. **Main outcome measures:** Based on the assessment criteria's the parameters are graded and statistically analysed using Paired 't' test. **Results:** In this study, the subjective and objective parameter shows significant results. **Conclusion:** As the drug caused reduction in size of calculus in some patients and even expulsion of calculus in some others, hence bypassed the operative procedures this drug can be considered as cost effective and safe regarding management of calculus.

KEYWORDS: *nidana*, *samprapti*, *laxanas*, *chikitsa* etc.

INTRODUCTION

Ayurveda, is the system of Indian medicine and science of life which deals with the wellbeing of mankind. It explains all the aspects of diseases like causes, types, treatment etc of many diseases, the disease of urinary stone is explained under the heading of *Mutrashmari*.^[1] In India this disease affect all age group, prevalence is more in men, approximately 5-7 million patients suffer from this disease and at least 1/1000 of Indian population need hospitalization due to Renal calculi disease. In India this disease is found more in stone belt area like Gujarat, Maharashtra, Rajasthan.^[2] In these regions the disease is so prevalent that most of the family will suffer from renal calculi sometime in their lives. In *Ayurveda* various formulation are mentioned for the Mootrashmari management one among them said by *sharangadharsamhita* is *trivikramrasa*^[3], It has unique properties like *lekhana* and *vedanasthapana* So, it has been used effectively and economically on *Mootrashmari*. No research found on evaluate effect of *trivikramrasa* in the management of *Mootrashmari*. So, study on "MANAGEMENT OF MUTRASHMARI WITH TRIVIKRAM RASA" is undertaken.

MATERIALS AND METHODS

AIMS AND OBJECTIVES

- To evaluate the clinical effect of *trivikram* rasa in the management of *Mootraashmari*.
- To study the Aetiopathogenesis of *Mootrashmari* as per *Ayurveda* and contemporary sciences.

Method of preparation of drug

Tamrabhasma was heated in 8 times of *ajadugha* initially. When all of milk was evaporated, *parada* and the *gandhak* were added to it and the solid mass was obtained. "Bhavna" with *nirgundipatrasvarasawa* was given and the obtained solid portion was transferred to *Valukayantra* and heated for 3 hours. It was allowed to cool by itself.^[4] Fine powder of drug was made in *khalvayantra*, The obtained drug was filled in capsules in the dose of 250 mg each.

Study design

A randomized, open labeled single arm, clinical trial study.

Sample size

Minimum 30 Patients were selected from OPD and IPD of Parul Ayurvedic Hospital, Limda.

INTERVENTIONS

- Patients were assessed before and after treatment as per assessment criteria and data was recorded in a special case sheet proforma.
- The nature of study was explained to the patient in detail and written informed consent as per WHO guidelines was taken.
- The patient was having full right to quit the study at time.
- The data was maintained confidentially and subjected to statistical analysis.

Study duration – 30 days.

INCLUSION CRITERIA

- Patients having classical signs and symptoms of Mootrashmari (Renal calculi)
- Size of calculus less than 9 mm was taken.
- Patients age between 16 to 60 years.
- Bilateral and unilateral renal calculi

EXCLUSION CRITERIA

- Patient having Urinary Calculus of size more than or equal to 10mm.
- In case, Patient requires immediate surgical intervention.
- Chronic systemic illness, DM, HTN, HIV and other renal diseases.
- Pregnant and Lactating women.

ETHICAL CLEARANCE

Ethical clearance was obtained from the Institutional Ethical Committee of Parul University with no of PU/PIA/IECHR/2017/46.

CTRI REGISTRATION

This study was registered in Clinical Trial Registry of India with reg no -CTRI/2018/01/011541.

FOLLOW UP STUDY: 15 days.

ASSESSMENT CRITERIA

Subjective parameter were recorded on 1st 15th & 30th day and objective parameter were recorded on 1st and 30th day

SUBJECTIVE PARAMETERS

- 1) Fixed renal pain posteriorly at renal angles or anteriorly at hypochondriac region
- 2) Vomiting
- 3) Burning micturition
- 4) Dysuria

OBJECTIVE PARAMETERS

- 1) Size
- 2) Number of calculus
- 3) Haematuria

Pain was assessed by VAS scale.

INVESTIGATIONS

Urine routine and microscopy Routine haematological investigation like cbc Blood urea, Creatinine, Uric acid, X-ray Kidneys, ureters, and bladder(KUB) USG (Abdomen, pelvis).

OBSERVATIONS

Patients suffering from mutrashmari from Parul institute of Ayurveda, were participated in the clinical trial, the size of sample was 30 excluding the dropouts.

In this study maximum 43.33% patients were from age group of 20-30, 36.67% patients from 31-40 age group, followed by 10.00% from 41-50 and 10.00% from 51-60 age group.

In this study maximum percentage of enrolled patients are male 56.67% and the percentage of female were 43.33% In this study maximum percentage of enrolled patients are hindu 93.33% and the percentage of muslim patients were 6.67% maximum percentage of enrolled patients are married 76.67% and the percentage of unmarried patients are 23.33% 33.33% were graduated, followed by 26.67% were uneducated, 23.33% were post- graduate and 16.67% were under graduated 30% patients were housewife, 26.67% patients are Students, followed by 23.33% were in service, 13.33% were labour and 6.67% were farmer.

According to Socio-economic status maximum patients i.e. 66.67% were from middle class & 23.33% patients belonged to poor class, & 10.00% were from rich class.

According to diet wise classification maximum patients i.e. 53.33% were vegetarian & 46.67% patients were consuming mixed diet maximum percentage of the patients i.e. 30% were habitual of consuming madhura rasa, & amla rasa by 20%, kashaya rasa by 16.67%, and katu rasa by 13.33% and least of lavan rasa by 10.00%.

Among total registered 30 patients, only 10% were having family history of this disease and rest 90.00% was having negative family history.

Maximum patients enrolled in this study were from i.e. 66.67% Jangala Desha, while 20.00% patients were from Anupa and 13.33% of sadharana Desha.

Maximum number of patients (50.00%) in this were habitual of eating viruddhaahara, followed by adhyashana 23.33%, and vishamashana (16.67%).

According to chief complaints all 100% of patients had abdominal pain, and vomiting was complained by 23.33% of patients, dysurea was present in 26.67% of patients & burning micturition was present in 63.33% of individuals.

According to frequency of micturition wise classification maximum patients i.e. 56.67% micturition

of 5-6 times per day, followed by 33.33% micturate 7-8 times per day and finally only 10.00% micturate 3-4 times a day ie 24 hrs.

Among the 30 patients, 66.67% of patients were having unilateral calculi while 33.33% of patients have bilateral calculus.

Maximum 76.69% of patient had the complained pain of calculi from 1-6 months, followed by 16.65% of patients from 6-12 months, and only 6.66% had the pain in chronic origin ie more than 1 year In this study maximum 66.67% patient had moderate pain, followed by 30.00% patients complained of mild pain and lastly only 3.33% patient complained of severe pain.

RESULT

paired t test was applied to the mean score of before treatment and after treatment Assesment of result through subjective parameter:

Pain (vedana) -0.001, Burningmicturation -0.001, Vomiting - 0.001, Dysurea - 0.001, Assesment of result through objective parameter: Size of calculi - 0.001, No of calculi - 0.001.

DISCUSSION

Discussion on disease

The purvarupa said by acharyas are Bastipeeda, Mutrakricchaetc were found in some patients as when USG, and X-ray was done no calculus was seen but after some days 4 months when usg was done due to abdominal pain calculus was seen on 5*7 mm in VUJ so it was found that even purvarupa said by acharyas was evident.

The pain is the important factor in this disease, and it was seen when the calculus was stuck on the juncton of the ureter the intensity of pain was more on the VAS scale it was up to 8, so rescue medication of intramuscular injection dicyclomine lampule was given when intensity of pain was more, and tablet dicyclomine was given alternative to IM dicyclomine if needed.

The total number of drop out were 4 in this study from them 3 were due to pain they got operated for URS and 1 patient failed to came on follow up.

Not all the calculi present in KUB can be diagnosed as per its composition, only the evidence can be found in urine examination, so it becomes challenge for the doctors to treat this disease. Also considering the Sonological diagnosis, the size of calculi can vary from technician to technician and the size of calculus is also not every time possible for the technician to give in 2 dimension, the 2 dimensional image of calculus really helps to manage it as a calculus of size 4*4mm can pass easily but the calculus of size 4*9mm is difficult to pass. Again the shape of calculus plays the important role, but as there is problem in giving 2 dimensional details of calculus how can the sonologist give 3 dimensional

details (which are required to demonstrate the shape of calculus) ?

Discussion on drug

The drug used in this study is trivikrm rasa, which is a herbomineral drug there were many important steps in making this drug, In the nature there are mainly 3 formes of mercury (Elemental, organic & inorganic) among which *parada* can be correlated to inorganic mercury, and among the route in body the inhallation is considered as the most dangeraous route as it effects on lungs which can cause death, so precautions were taken in production of drug some of them was the cap mask was worned when *parada* was produced by *damruyantra*, and while chandelling the *parada* the gold items was removed from hands for eg gold ring.

This drug was made as said in sarangdharsambhita to take equal quantity of *ajakshir* and the *tamtrabhasma* which was practically impossible so the quantity of *ajakshir* was taken 8 times of *tamrabhasma*, all other ingrediants were taken in equal quantity.

After the preparation of drug the drug the drug was filled in capsules in the 250 mg each and prescribed in 1 od with luke warm water in morning empty stomach as it was easy to fill this drug in capsules then to make *vati* of 250 mg which was difficult task and time consuming.

Discussion on subjective parameter pain

None of the patient had severe pain abdomen after completion of treatment and 80.00% patients were get relief from pain. With the t value of 21.00 and P value of <0.001 which is highly significant, It is showing that *trivikram* rasa act as *vedanashamaka* due to *ushnaveerya* and *vatashamana* properties and it also possess significant anti-inflammatory (analgesic) activity.

Dysuria

The effectiveness in this parameter is 70.00% with t-value 3.00 and the level of significance of p-value is <0.01 which is highly significant, this may be due to increased blood flow, vasodilatation, or an inhibition of tubular secretion contributes to an increased excretion, dysuria subside and large intake of water also helps in this process.

Burning micturition

The effectiveness in this parameter is 69.00% with t-value 7.13 and the level of significance of p-value is <0.01 which is highly significant.

Vomiting

87.00% patients were get relief from the symptoms. with t -value 5.89 and the level of significance of p-value is <0.01 which is highly significant.

Discussion on objective criteria

In this study Before treatment, mean size of calculi was 6.50 and after completion of treatment it reduced to 3.87

i.e. reduced by 2.63% with (p value = 0.001) which is significant. This probable mechanism change in this may be following.

There was decrease in size of calculi due to lekhana property of drug and the size of larger calculi was reduced in some patients and in some cases the calculi was broken due to lithotriptic action of drug, significant result was obtained in calculus which has single chemical composition rather than triple phosphate calculi.

Discussion on number of calculi

Before treatment, mean value of Stone number was 2.20 and after completion of study it was reduced to 1.27 i.e. reduced by 68.00% (p value = 0.000) which is also statistically significant. Trivikram rasa have eliminated the stone and causing reduction in the number of stone due to its kapha-vatashamaka properties.

Discussion on Haematuria

Highly significant result was obtained in this parameter this result was calculated from amount of RBC per HPF done in urine microscopic examination before treatment & after treatment, mean before treatment was 1.30 and the mean after treatment was 0.00 with P value of <0.001, Haematuria is caused when stone obstructs the path of urine and rubs on adjacent structures, In this study the size of calculus was markedly reduced so there is good result in this parameter.

Probable mode of action of drug

- Trivikram rasa mainly consists of drugs of vayu and agnimahabhuta, they are expected to act against vitiated kaphadosha, responsible for formation of stones which have dominance of prithvi and jalamahabhuta.
- Ingredients of trivikram rasa have vatakaphahara properties, vatadosha is considered to be main factor responsible for pain and vitiated kaphadosha responsible for formation of stones.
- So due to vatakaphahara properties of trivikram rasa it is most likely to provide relief in pain and stops formation of stones.
- The constituents of trivikram rasa mainly consists katu, tikta rasa laghu, sukshma and snigdha guna, ushnavirya, madhura and katuvipaka These pharmacological properties of Trivikram Rasa induce Vatakapha Shamaka, Agni Deepaka, Ama Pachaka, Lekhana, Vranaropana Karma, Shotha Hara effects.
- Tamra have Deepana effect which regulates Jatharagni. Tamra and Gandhaka have Amapachana properties. Tamra has a strong Lekhana effect and thus it is supposed to reduce the size of the Ashmari and expelled it out from the body.
- Parada and Tamra Bhasma have Sroto Shodhana effect which may relieve Sanga in the Mutravaha Srotasa.

CONCLUSION

- The aim of the present study was to assess the effect of *trivikram rasa* in the patients of *mutrashmari*.
- The sample size of 30 patients, they were administered the capsule containing *trivikramrasa* 250mg once daily in morning empty stomach with luke warm water for the duration of one month 30 days.
- As the drug caused reduction in size of calculus in some patients and even expulsion of calculus in some others, hence bypassed the operative procedures this drug can be considered as cost effective and safe regarding management of calculus.
- The statistical analysis has prove that drug was significantly effective in management of
 - (A) **subjective criteria** like pain, vomiting, burning micturation, dysurea and
 - (B) **Objective criterias** like size and number of calculus and hematuria.
- Hence, regarding management of calculus Null hypothesis (*trivikram rasa* is not effective) was rejected and the alternative hypothesis (*trivikram rasa* is effective) was accepted.

REFERENCES

1. Modi HK, Shinde DL, Kadlaskar BB. The efficacy of Trikantak Churna(Gokshura Beej) with madhu and ajadugdhain mutrashmari (renal calculi). International Journal of Multidisciplinary Research and Development, 2017; 4(2): 210-7.
2. www.indiajournal.com/Arvind P Ganpule et al. Percutaneous nephrolithotomy for pediatric urolithiasis; Symposium, 2010; 26(4): 549-554.
3. Sharangadhar Samhita annotated with DIPIKA Hindi commentary by Dr. Brahmanand Tripathi, Chaukhamba Surbharti Prakashan, Varanasi, Edition: Reprint 2011, Madhyama Khanda Chapter 12/172-174, P-305.