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**ADEQUACY OF *KARKOTIMOOOL CHOORNA* (SINGLE DRUG  
THEREPY) IN *MOOTRASHMARI* (RENAL CALCULI) W.S.R  
NEPHROLITHIASIS- A CASE STUDY**

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**ABSTRACT**

According to Web-search and personal observation, Urbanization, Sedentry lifestyle ,controlling of natural urges and prolonged working pattern in IT Industries has marked impact on the cases of *Mootravaha srotas* disease (Urinary system). *Mootrashmari* (Nephrolithiasis) [1] is one of the important disease of *Mootravaha srotas* (Urinary system).Calculi is a defined as abnormal concretion (hardness or mass) occurring in the body and usually composed of minerals salts. Calculi may be formed anywhere in the urinary tract i.e. kidney, ureter and bladder. Calculi in other place like gall bladder, salivary duct salivary glands, lactiferous ducts, lacrimal glands and ducts seminal vesicle etc., were not mentioned in any *ayurvedic* texts [2]. In *Mootrashmari* (Nephrolithiasis), there is tendency of sharp pain in abdomen associated with sense of streel. Only surgical interventions are fruit-full tool for management, according to modern science. Frequent-episodes of renal colic is a real agony for these patients, at this condition analgesics are useful for certain period. Nephrolithiasis has recurrent episodes where surgical approach is not possible every time. In Ayurveda scriptures along with surgical intervention, conservative treatment modalities are mentioned [2]. Thorough literary study highlights the efficacy of *Karkotimool choorna* in various urinary disorders. In *Gadnighraha kayachikitsa khanda* [3] 27/44 and *Bhavaprakasha*

*nighantu shakvarga* mention clearly that *Mootrashmari* can be treated by *Karkotimool choorna* within 10 to 15 days. This article encompasses a case of Renal Calculus treated with effectual role of *karkotimool choorna*.

**Keywords:** *Ayurveda, Mootravaha srotas, Mootrashmari, Renal, calculi (calculus), Karkotimool Choorna*

## INTRODUCTION [6]

*Mootrashmari* (Nephrolithiasis) is identified as a global problem with incidence of 0.1 % to 6 % in general population. Acharya Sushruta, had mentioned many causes of *Mootrashmari* (Nephrolithiasis) in *ashmari nidana adhyaya* third [2, 6]

“*Samsodhanaaseelasya, Apatya karinah, prakupitah sleshmaa mootra samprikto anupravisya Bastim Asmareem Janayati*” (Sus-Ni. 3/4)

1. *Asamsodhana* [2]:- Accumulation of toxins and waste products due to failure of purification through *pancha karmas*.
2. *Apathya Sevana* [2]:- Irregular diet and improper behaviour, less intake of water over sweating due to over exertion, running etc.,

*Asmari Samprapti* [2, 6]: The *sleshma* gets vitiated first and solidifies the urine next. The *mootra* (solid) constituents of urine are precipitated in the kidney ureter and bladder and thus produces *Asmari*. *Acharya Susruta* in this context, while describing *mootravaha srotases* explains the process of *Asmari* formation as follows [2, 6].

*'Nadeebhi rupaneetasya mootrasya maashayantaraat Jagratah swapataschaiva sa nishyandena pooryate Aamukhat saliley nyastah paarsvebhyah pooryate navah Ghato yadha tadha viddhi vastir mootrena poorryate Evameva pravesena vatah pittam kaphopi vaa Mootra yukta upasnehaat pravishya kurutesmareem apsu swachchaaswapi yadha nishiktasu nave ghathe kaalaantarena pankah syat asmaree sambhavasthatha Samhantyaapo yadha divyaa marutognischa vaidyutah Tadvad balasam bastistham Ooshma samhanti saanilah* (Sus-Ni. 3/23,24,25,26 )

While Allopathy attributes the disparity between colloid & crystalloid ratio to be the main cause of the calculi, Ayurveda attributes the defect in filtration of blood and reabsorption of certain constituents of the urine to be its main cause. The process of urine formation as stated by *Acharya Susruta* [6] is compared with the leakage of water into a new earthen pot placed in water upto the level of it's neck.

If this analogy is critically studied, we can presume that the process of filtration at the level of kidney is a highly selective

process. *Ayurveda* (Acharya Susruta) [6] further describes that.

1. The *Basti* (Urinary apparatus) collects urine through a process of *nishyandana* (filtration) [2].
2. This filtration takes place uninterruptedly day in and day out irrespective of the individual's sleeping or wakeful condition [2].
3. When the vitiated *vata*, *pitta*, and *kapha* individually or collectively bring about *mootra dushti*, then through *upasneha nyaya* (contamination or combination), the bladder will be filled with urine [2].
4. This is just like the formation of sediment at the bottom of a fresh earthen pot filled with the water though pure, but when stagnated for a long time. Here an important point to be understood through this that the author has quoted [2].

Jala is equal to Water, Ghata= earthen pot, Kalantara = stagnation  
Panka= mud

To Compare with 1. filtrate (*jala*) 2. *Vasti* (*ghata*) 3. Sedi ment (*panka*) 4. Reabsortion of water (*kalantara*) The process of dehydration stagnation and presence of abnormal constituents in urine alter the ratio in colloids and crystalloids [2].

one of them is “*Asanshodhanshilya* and *Apathyakar ahar* (Impure acidic food intake) and *Apathyakar Vihar*”(unacceptable way of daily life style )due to which people are likely to acquire this disease. *Ashmari* is considered as *Mahagada* (being difficult to cure) because of *marmashryi* (Occuring at Vital organ) and involvement of *bahu* (multiple) *doshas*. *Ashmari* (Calculi) is *tridoshajanya* in origin with kapha as dominant humour [2].

Formation of any urinary calculi. It is as follows [4, 5]

**Urinary saturation → Super saturation →  
Nucleation → Crystal growth → Crystal  
aggregation → Crystal retention  
calculi formation [3]**

The cause for calculi formation is due to many factors like concentrated urine deficient of calculi inhibitor substance like mucopolysaccharides, citrate etc. How- ever the role of heredity and diet factor like imbalance of electrolytes, calcium phosphates ,oxalate magnesium due to abnormal metabolism, deficiency of vitamin A etc, have their own role.

According to *Madhavanidan*, *saraktamootraprvrutti* (Haematuria) is one of the major symptoms seen in *mootrashmari* (Renal Calculi) . *Basti* (Urinary Bladder) is *vyaktasthan* of *Ashmari* [10] (calculi) and *its* one among the *Dashpranayatana* (Vital-organ) explained by *Acharya Charaka*. In this

disease symptoms are like severe pain in abdomen (colicky nature) which radiates from loin to groin region. Among all the pain, abdominal colic always draws not only patient's attention but also the curiosity of surgeon. Severity and colicky nature are caused by hyper-peristalsis and spasm occurs in smooth muscle of ureter. When calculi becomes impacted colicky nature turns into consistent dull pain often felt at iliac fossa. calculi are old anguish of the human body and occur at several site particularly in kidney, urinary bladder and ureter. Hence there is a need to understand the disease and to find a best solution that not only treats the condition but also prevent the disease at primary and secondary levels.

#### **Aims and Objectives:**

To assess the effect of *Karkotimool Choorna (Single drug therapy)* in *Mootrashmari (renal calculi)* w.s.r Nephrolithiasis [2].

#### **Materials and Methods:**

- Informed consent was taken from patient in his language before treatment.
- For the present study a 52 years old male patient having symptoms of *Udarshool (Abdominal pain)* since 15 days at right flank region, *Sadah mootra pravurutti (Burning Micturition)*, Nausea since 3 days ,

vomiting of one episode yesterday discussed in detail manner [1, 4].

- **Assessment criteria :-**
- **Follow Up-** on day 0, 7 & 15<sup>th</sup> day follow up.
- **Subjective Criteria: [1]**
  - *Udarshool ( Abdominal pain )* (As Pre- Visual Analogue Scale)
  - *Sadah Mootra Pravrutti (Burning Micturition)*
  - *Sarakta Mootra Pravrutti (Hematuria)*
- **Objective Criteria:**
  - Size of *Ashmari (In mms)*
  - Numbers of *Ashmari (In numbers)*
  - Site of *Ashmari (In USG(A+P))*

#### **CASE HISTORY:-**

A 52 years male patient came to OPD with c/o *Udarshool (Abdominal pain)* since 15 days at right flank region, *Sadah mootra pravurutti (Burning Micturition)*, Nausea since 3 days , vomiting of one episode yesterday. Dysuria felt by patient normally at beginning of urination which is of pricking type and intermittent in nature. Patient was asymptomatic two and half months ago. One day suddenly he noticed severe pain in abdomen and associated with vomiting and nausea with burning micturition .He consulted a nearby physician and got temporary relief for the above complaints. Later he observed that pain in abdomen and burning micturition

were persisting after few days and for which he approached our hospital in search of alternative remedy. According to his statement, it was found that the pain was intermittent and colicky in nature and it was appreciated on right side of abdomen.

### PAST HISTORY

No history HTN /DM/Hypo or hyperthyroidism or any other major medical or surgical history

### FAMILY HISTORY

No history of same illness in any of the family members.

- **Personal History:**

- **Appetite-** Normal
- **Addiction** – Mishri,alcohol
- **Bowel Habit-** Normal Two times in a day.
- **Urine-** Normal color with adequet amount but burning in sensation.
- **Sleep-** Disturbed due to colicky pain.
- **Diet-** Mixed

- **On General Examination:**

- Patient was hemo - dynamically stable.
  - Pulse rate- 84/min regular with Normal volume.
  - Blood Pressure -110/70 mmHg in sitting position).
  - Respiratory Rate- 19/ min.

- Cardiovascular System- S<sub>1</sub> and S<sub>2</sub> Normal.
- Central nervous system- Conscious, Oriented.
- Per abdomen examination- radiating pain from loin to groin region.

As advised, Patient came for Ultrasonography - Abdomen-Pelvic region on 15 March 2021,and the report divulge that renal calculi of size 4 mm is seenat the junction of upper & mid pole region of right kidney. His Blood and urine report was normal.

As per classics, majority of clinical features of *Mootrashmari* such as '*Udarshoola*' (Pain abdomen) '*sadaha mutra*' (Burning micturition) were observed. On the basis of the *nidana* (Etiology) and *rupa* (Clinical features) this clinical condition can be correlated as *Vatajashmari* [7, 9].

### DRUG CONTENT [3]

*Karkotimool choorna*

### TREATMENT DETAILS [3]

*Karkotimool choorna*- 2 grams TDS

(Before Breakfast, Before Lunch, Before Dinner).

**Treatment Course** -15 Days

**Route of administration**-Orally

**Anupana:** Usna Jala

**Duration:**-Thrice before meal.

**Follow up:**- 0<sup>th</sup>,7<sup>th</sup>,15<sup>th</sup> Days.

**Investigations<sup>1</sup>:**-Before Treatment/ After treatment

**MATERIAL AND METHODOLOGY**

[3, 6, 8]

The drug was cleaned and dried properly. They are finely powdered and sieved. The

powder is fine to the extent of at least 80 mesh sieves. It should not adhere together or become moist. The finer powder has better therapeutic value.

|                       |  |
|-----------------------|--|
| <b>DRUG NAME</b>      | <i>Karkotimool</i>                                 |
| <b>FAMILY</b>         | <i>Cucurbitaceae</i>                               |
| <b>BOTANI AL NAME</b> | <i>Cucumis utilissimus</i>                         |
| <b>RASA</b>           | <i>Madhur</i>                                      |
| <b>VIRYA</b>          | <i>Sheeta</i>                                      |
| <b>VIPAKA</b>         | <i>Madhur</i>                                      |
| <b>Guna</b>           | <i>Laghu-Ruksha.</i>                               |
| <b>DOSHA KARMA</b>    | <i>Kapha Vaat Vardhak</i>                          |
| <b>UPYUKTA ANGA</b>   | <i>Mool</i>  |
| <b>PROPERTIES</b>     | <i>Ashmari bhedana, Mootra krichrahar, Mootral</i> |

**ASSESSMENT CRITERIA:-**

During his first follow up, it was noticed that all the clinical features were absent except pain abdomen, burning micturition (less intensity). Then we advised to repeat ultrasonography pelvis abdomen on 02/04/2021. Report divulge that, there was

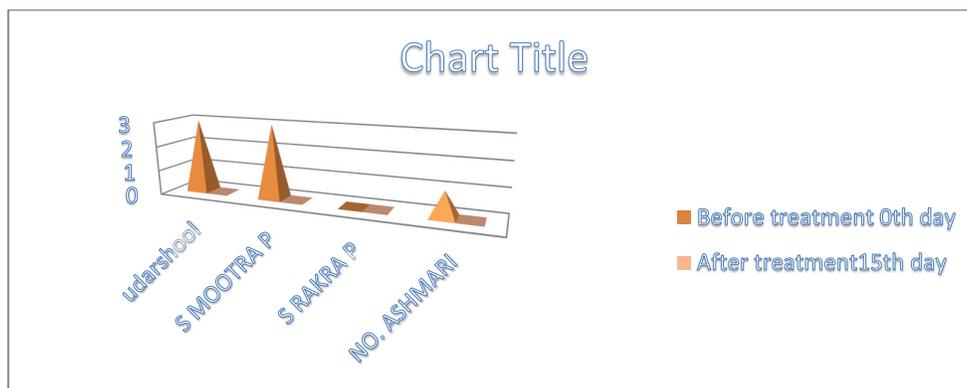
only tiny concretions seen in right kidneys. He was asked to stop all internal medications and continue only *Pathya-pathya* chart.

**Observation:-** Observations will be drawn from the outcome of the treatment.

Table 1: Clinical Assessment and Observation Table

| Clinical feature                                     | Follow up        |                     |                     |                      |
|--|------------------|---------------------|---------------------|----------------------|
|  | Before treatment | 0 <sup>th</sup> day | 7 <sup>th</sup> day | 15 <sup>th</sup> day |
| <i>Udarshool (Pain in abdomen)</i>                   | 3                | 3                   | 2                   | 0                    |
| <i>Sadaha Mootra Pravrutti (Burning Micturation)</i> | 3                | 3                   | 1                   | 0                    |
| <i>Sarakta Mootra Pravrutti (Hematuria)</i>          | 3                | 3                   | 1                   | 0                    |
| Size of <i>Ashmari</i> (Calculi)                     | 1(4 mm)          | 1(4 mm)             | -                   | (2 mm Concretion)    |
| Numbers of <i>Ashmari</i> (Calculi)                  | 1                | 1                   | -                   | Concretion           |

**Graphical Presentation of Clinical Assessment:**

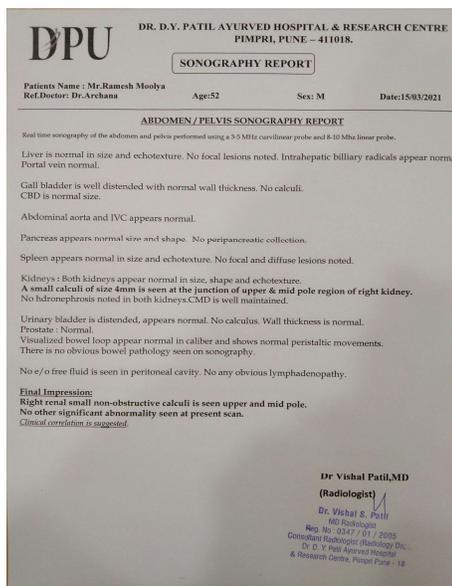


In X- axis denoted by symptoms and Y- axis denoted grading of symptoms

**USG REPORT:-**

**Before Treatment-** Non obstructive calculi in right kidney 4 mm calculi present in right kidney. Possibility of calculus in left lower ureter is likely (15/03/2021).

**After Treatment-** Currently there is tiny concretions of size up to 2 mm are seen in both kidneys (02/04/2021).



USG-Before Treatment



USG-After Treatment

Table 2: Pathyapathya chart [8, 9]

| Ahara varga(food habits) | Pathya                                       | Apathaya                            |
|--------------------------|--|-------------------------------------|
| Vegetable                | Carrots, karela (Bitter guard), Pumpkin.     | Brinjal, spinach, Tomato, Cucumber. |
| Cereals                  | Moong dal, Barley                            | Oat meal, Fine wheat flour(Maida).  |
| Fruits                   | Apple, Almonds, Lemon, Plum                  | Amla, Kiwi, Chickoo.                |
| Miscellaneous            | Pineapple juice, Aloevera juice, butter milk | Chocolates, Cashew nuts, Coffee.    |
| Healthy food (Kidney)    | Garlic, Yoghurt, Papaya                      | Mashroom , Peas, Rajma              |
| Vihara (Activities)      | Regular exercises                            | Sweating, Controlling natural urges |

**Consent:-**

Written informed consent and accompanying images were obtained from patient for publication of this case report.

**Conflict of Interest:-**

There is no conflict of interest.

**DISCUSSION**

Effect of *Karkotimoola choorna* is *Ashmari-bhedna* (Lithotriptic action) *Mutrakritahara* (Relieving Dysuria) due to

*Laghu ruksha guna* and appreciative results were observed in disintegration and elimination of urinary calculi from urinary tract [3].

After completion of treatment, statistically high significant results were observed in *Udarshoola* (pain) and *Sadaha Mootra Pravrutti* (burning micturition).

**CONCLUSION**

*Acharya Sushruta* says 'Nidana Parivarjana' (avoidance of the causative factors) is major treatment tool for any disease [6].

The *Ahara-Vihara* (Diet and good conduct of life) also play vital role towards the management of disease. As this is single case study the same intervention can be used on larger population to see the efficacy of *Karkotimool choorna* in the management of *Mootrashmari* (Renal calculi) [3].

**Benefits of the study:-**

The correct use of prophylactic and therapeutic medication decreases the agony of patient by its diuretic and lithotriptic action concerned with expulsion of the calculi. To decrease the risk of further calculi formation, patient is strictly advised to follow certain *Pathyapathya and Aharvihara* (rule of conduct, diet and life style regime) during the course of Ayurvedic treatment and thereafter to prevent reoccurrence. There is a wide scope for further detail study with more study group with proper data analysis.

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