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"TO STUDY THE EFFECT OF APAMARGAPANIYAKSHARA IN MOOTRASHMARI."

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ABSTRACT:

To study the *Mootrashmari* as described in Ayurvedic literature as well as urinary calculi as per modern medical science. *Ashmari* is one of the *Mahagadas*. *Apamarga* is very much cost effective and can be easily available roadsides. In this study taken 15 patients gives *apamarga paniya kshara Apan Kal* Dose-15 ML twice with equal amount of water for a 10 days.

After the completion of treatment there was significant relief in the symptoms of abdominal pain, burning micturation, frequency of micturation Helpful in painless expulsion of calculus. To treat small urinary stones, *Apamarga paniya kshara* is considered the foremost Ayurvedic medicine.

Keywords:

Mootrashmari ,urinary calculi, abdominal pain, burning micturation,, *apamarga paniya kshara*

INTRODUCTION

Since ancient times the problem of 'Mootrashmari' is known to mankind as one among the most troublesome obstructive uropathic disorders. It is considered as "Mahagada" in Ayurvedic Classics. Detailed description regarding etiopathogenesis (*Samprapti*), signs & symptoms (*Lakshanas*) and management of the disease (*Chikitsa*) can be seen in Ayurved Samhita Granthas. In modern medical science, the disease can be correlated with the nearest clinical entity "Urolithiasis" or "Urinary Calculus".

According to Acharya Sushrut, body is based on three basic pillars i.e. "Tristambha" Dosha, Dhatu and Mala. Among those the malas are produced as result of *Pachan Kriya* (digestion and metabolism) of food and eliminated from the body through their respective channels. Mootra is one of the Drava Malas for which a specialized production and excretion system is present in our body and is called as "*Mootravaha Strotas*." "*Ashmari*" is the one of the most common disorder of the Mootravaha Strotas.

Urinary disorders have specific identity both in Ayurved as well as Modern medical science. The problem of *Mootrashmari* is very common and ancient one to affect both children as well as adult. Approximately 2%

of population experiences the disease in lifetime. It is more commonly seen in males than females, with peak incidence in second and third decades of life. Today's developing world has given mankind a vicious lifestyle with excessive physical and mental stress. It is supplemented by unnatural food habits like fast food. These factors lead to disturbed bowel habits with irregular timings, less water intake, suppression of natural urges, constantly sitting work and improper sleep time table. As a result of all these factors, rise in many diseases including urinary disorders is seen.

'*Mootrashmari* or Urolithiasis' is a common problem. The formation of stone is due to the factors like concentrated urine, deficiency of stone inhibitor substances like mucopoly saccharides, citrate etc. However hereditary and dietary factors like imbalance of electrolytes such as Calcium, Phosphates, Oxalate, Magnesium, abnormal metabolism, deficiency of vitamin A etc. have their major role in formation of calculus.

The conventional system of modern medicine offers numerous treatment modalities through both medicinal and surgical procedures for the management of urinary calculus. The modalities like extra corporeal Shock Wave Lithotripsy (ESWL), Percutaneous Nephrolithotomy (PCNL), URS and Laser etc. having their own merits and demerits and certain limitations. These procedures reduce

the rate of open surgery in urolithiasis. But these are very much costly and limited to urban areas only as well as with high incidence of recurrence.

Hence it is the need of society to find out an alternative which should be cost-effective, easily available and with minimum adverse effects with lesser chances of recurrence for the management. The science of Ayurveda has always provided a great contribution towards physical as well as mental fitness of mankind. While going through different Ayurvedic literature we come across ApamargaPaniyakshara used in Mootrashmari. As the drug is easily available and can be given on O.P.D. basis.

NEED FOR STUDY

ApamargaPaniyaksharPrayoga is one of the unique treatment fulfilling all the norms of ideal treatment in Mootrashmari.

Hence I have decided to work on the burning medical issue of the society. So considering the importance of this disease, results of Ayurvedic treatment and the graceful guidance of my teachers, I have selected this topic for dissertation-"To Study The Effect Of ApamargaPaniyaKshara In Mootrashmari."

AIMS AND OBJECTIVES

- 1) To study the *Mootrashmari* with special reference to Urolithiasis as described in Ayurvedic literature as well as modern medical science.

- 2) "To Study The Effect Of ApamargaPaniyaKshara In Mootrashmari." on the basis of statistical analysis.

PREVIOUS WORK DONE

Lot of previous work has been done on "Mootrashmari" but few of them are:-

1. Effect of *paniyakshara* preparation in urolithiasis by Dr V.K.Pandey in 1980 from B.H.U.
2. The effect of *Tilanalkshara* yoga in the management of *mootrashmari* by Dharampal S.L. in 2001-02 from R.G.U.H.S. Bangalore.

A clinical evaluation of

paniyayavaksharaprayog in

mootrashmari w.s.r.t. urolithiasis by Amol Pawar in 2010 from M.U.H.S. Nashik

1. Effect of *kalian kshara* in Mootrashmari (urolithiasis) by Beena K.G. in 2000 from Trivendram University.
2. Role of *Nagaradikashaya* in management of *mootrashmari* (urolithiasis) by chowatiyashaileshin 2004 from Jamnagar university.
3. Role of *Eladichoorna* in the *Ashmari* (urolithiasis) by *Narsimhulu* in 2004 from Hyderabad University.

METHOD OF PREPARATION OF APAMARGA PANIYA KSHARA

Apamargapanchang



Dried Apamarga Plant (15 Kg)

↓ (Added Shudha)

Jaddedsudha



Burnt



Apamarga Ash (2 Kg)



Added 6 times of water (12 litres)



Kept for whole night



Filter 21 times through Cloth.



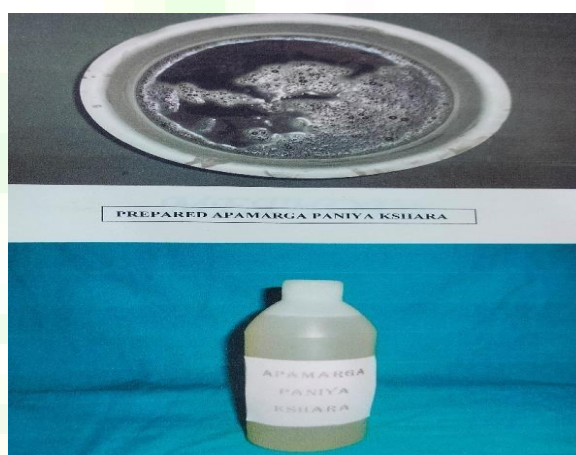
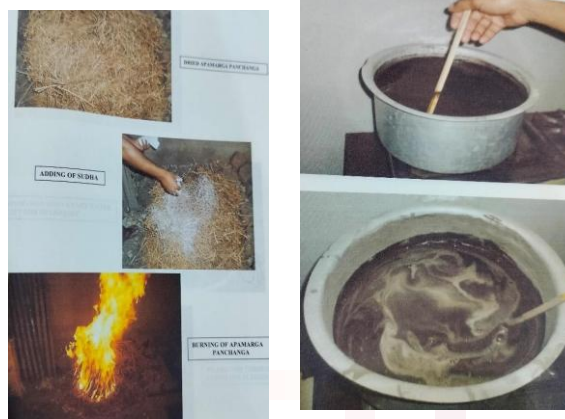
To get clean and clear solution



Filtered solution and residual part separated



APAMARGA PANIYA KSHARA



MATERIALS & METHOD

In the last 2 to 3 decades there is an increased global demand for natural plant based medicinal products for various health problems. Therefore, it is much more necessary to standardize them with certain research methods and establish their exact pharmacology through proper clinical studies,

The clinical research study was designed as follows-

1. Clinical trial
2. Inclusion and exclusion criteria
3. Method of administration of drug
4. Clinical parameters for the assessment of results.

Clinical Trial:**Design -**

A prospective, randomized, single blind, controlled clinical trial was conducted on 15 patients

Selection of Patients:

1. Patients registered in hospital either in OPD or IPD were selected for study.
2. Written informed consent was taken from every patient.
3. Proper case history was taken and special case record form was prepared.
4. Clinical findings were recorded as per case proforma

Inclusion Criteria:

1. Uncomplicated Patients having renal / ureteric/ Bladder calculi less than 7mm in size will be selected randomly.
2. Age between 15yrs to 55 yrs

Exclusion Criteria

1. Age below 15 yrs and Above 55 yrs.
2. Calculus more than 7 mm in size.
3. Deranged Kidney Functions.
4. Other complications related to kidneys/ureter/bladder.

Investigations:

Investigations are done as and when required

- A) Urine Analysis: Routine and microscopic
- B) Ultrasonography: Abdomen and pelvis before and after treatment.
- C) Blood Urea Level
- D) Sr. Creatinine level

According to selection criteria, 15 patients were selected for clinical trial.

1. Method of administration of drug :

| | |
|----------------------------|---------------------------|
| 1) Route of administration | Oral |
| 2) Dose | 15 ml twice/day |
| 3) Anupan | water |
| 4) Sevan Kala | Apan Kala |
| 5) Duration | maximum given for 10 days |

Authentication of drug-

Apamarga was authenticated from reputed institute

Standardization of drug-

Apamargapaniyakshar was prepared in RasashastraBhaishajya Kalpana Department of our hospital under expert's supervision and standardized from reputed institute.

Follow up study-

Thorough clinical assessment is done before subjecting patient for clinical trial detailed assessment of the patient. Using various clinical parameters, on 1st, 5th, 10th & 15th day respectively.

Clinical Parameters for the Assessment of results:**Subjective Parameters**

1. Pain in abdomen
2. Burning micturation
3. Frequency of micturation
4. Any associate symptoms.

Objective Parameters

1. Size of calculus.
2. Site of calculus.

Analysis of Subjective Parameters:

1.Pain in abdomen:

| | |
|---|--|
| 0 | No pain at all |
| 1 | Pain (mild) but not disturbing the routine life. |
| 2 | Pain causing disturbance in daily routine life. |
| 3 | Severe pain. (patient rolls on bed in agony) |

2.Burning micturation:

| | |
|---|---|
| 0 | Absent. |
| 1 | Burning only while micturition |
| 2 | Burning persist for longer time after micturition |
| 3 | Continuous burning sensation |

3.Frequency of micturation:

| | |
|---|-----------------------------|
| 0 | 3-5 times per day |
| 1 | 6-7 times per day |
| 2 | 8-10 times per day. |
| 3 | More than 10 times per day. |

3.Associate symptoms(like hematuria, fever, nausea, vomiting, painfull micturition)

| | |
|---|---|
| 0 | No any associate symptommal. |
| 1 | Present only one associate symptom. |
| 2 | Present two associate symptoms. |
| 3 | present more than two associate symptoms. |

Analysis of objective parameters:

1.Size of Ashmari:

| | |
|---|---------------------------|
| 0 | No Calculus |
| 1 | Tiny Renal Concreations |
| 2 | Calculus Upto 4mm of Size |
| 3 | Calculus 5-7 Mm of Size |

2.Site of calculus

- 1Ra-Right kidney upper pole,
- 1Rb-Right kidney middle pole,
- 1Rc-Right kidney lower pole,
- 2Ra-Right upper ureter,
- 2Rb-Right middle ureter,
- 2Rc-Right lower ureter,
- I La-Left kidney upper pole
- 1Lb-Left kidney middle pole
- 1Lc-Left kidney lower pole
- 2La-Left upper ureter
- 2Lb-Left middle ureter
- 2Lc-Left lower ureter
- 3-Bladder calculi

Place of Work

Clinical study was carried out at Shalya Tantra Department of the hospital attached to our college.

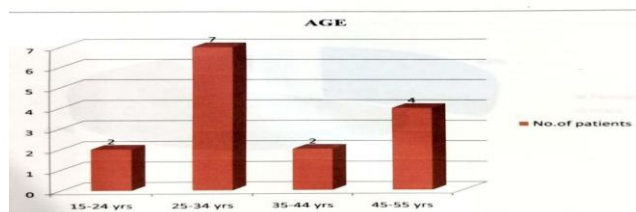
Observations:

Observations were represented with the help of various tables and graphs. Statistical analysis was done by paired t-test. Statistical significance was set at $P < 0.05$ for paired t-test

OBSERVATION & RESULTS

Distribution of patients according to age:

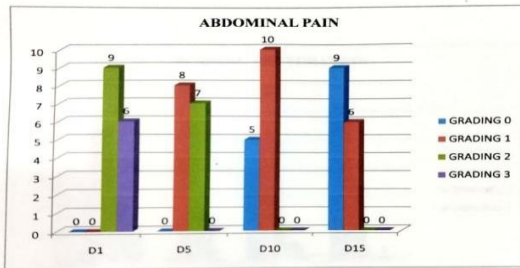
| Age in years | No.of patients | Percentage |
|--------------|----------------|------------|
| 15-24 years | 02 | 13.33% |
| 25-34 years | 07 | 46.66% |
| 35-44 years | 02 | 13.33% |
| 45-55 years | 04 | 26.66% |
| Total | 30 | 100.00% |



TO STUDY THE EFFECT OF APAMARGAPANIYAKSHA

ABDOMINAL PAIN

| Grade | No. of patients | | | |
|-------|-----------------|----|-----|-----|
| | D1 | D5 | D10 | D15 |
| 0 | 00 | 00 | 05 | 09 |
| 1 | 00 | 08 | 10 | 06 |
| 2 | 09 | 07 | 00 | 00 |
| 3 | 06 | 00 | 00 | 00 |

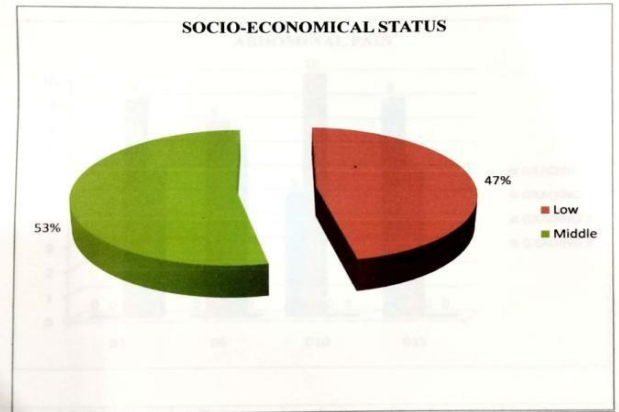


| | B.T. | A.T. | t-cal | t-value | p-value |
|------|------|------|-------|---------|----------|
| Mean | 2.4 | 0.4 | 11.44 | 2.14 | 0.000086 |
| S.D. | 0.48 | 0.48 | | | |

Since p-value is less than 0.05 we reject Ho i.e there is significant reduction in abdominal pain after treatment

Distribution of patients according to socio-economical status :

| Socio-Eco. Status | No. of patients | Percentage |
|-------------------|-----------------|------------|
| High | 00 | 0.00% |
| Middle | 07 | 46.66% |
| Lower | 08 | 53.33% |
| Total | 15 | 100.00% |

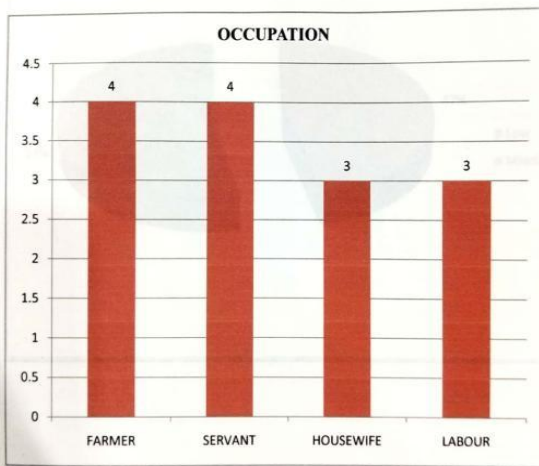


There was no significant difference by economical status of patients in the study and those were 8 & 7 respectively

Comparatively males were more affected than females i.e 10 males (67%)

Distribution of the patients according to Occupation.

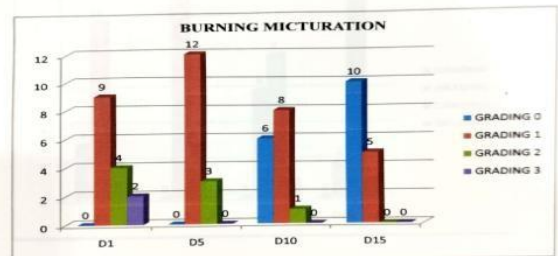
| occupation | No. of pts. | Percentage |
|-------------|-------------|------------|
| Student | 01 | 6.66% |
| Farmer | 01 | 6.66% |
| Servant | 06 | 40% |
| Housewife | 04 | 26.66% |
| Buisnessmen | 01 | 6.66% |
| Labour | 02 | 13.33% |
| total | 15 | 100.00% |



The affected working class of peoples was from servant class those were 6 i.e 40% followed by housewives and labour class respectively.

Burning micturation

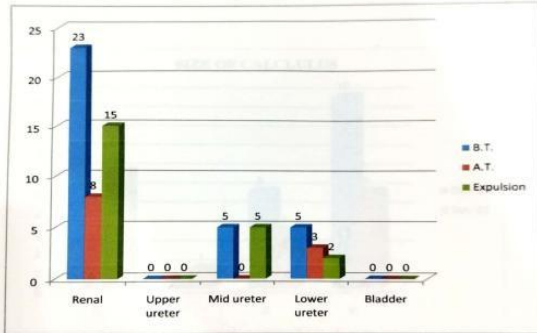
| Grade | No. of patients | | | |
|-------|-----------------|----|-----|-----|
| | D1 | D5 | D10 | D15 |
| 0 | 00 | 00 | 06 | 10 |
| 1 | 09 | 12 | 08 | 05 |
| 2 | 04 | 03 | 01 | 00 |
| 3 | 02 | 00 | 00 | 00 |



| | B.T. | A.T. | t-cal | t-value | p-value |
|------|------|------|-------|---------|---------|
| Mean | 1.53 | 0.33 | 7.5 | 2.14 | 0.00016 |
| S.D. | 0.72 | 0.47 | | | |

Since p-value is less than 0.05 we reject Ho i.e there is significant reduction in burning micturation after treatment.

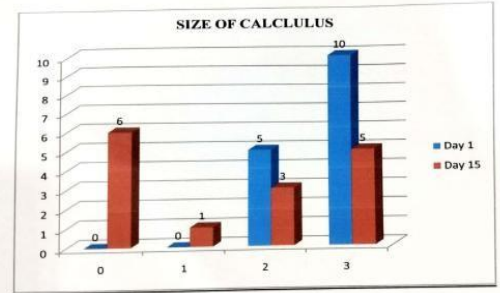
| Site of calculus | Before treatment | After treatment | Expulsion |
|------------------|------------------|-----------------|-----------|
| Renal | 23 | 08 | 15 |
| Upper ureter | 00 | 00 | 00 |
| Mid ureter | 05 | 00 | 05 |
| Lower ureter | 05 | 03 | 02 |
| Bladder | 00 | 00 | 00 |
| Total | 33 | 11 | 22 |



Total percentage of calculus expulsion is 66.66% and that too more in ureteric calculi than renal calculus.

Distribution of patients according to size of calculus

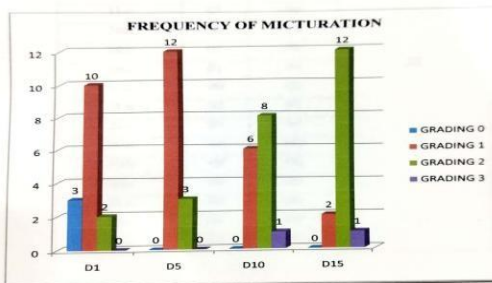
| GRADE | Size of Ashmari | |
|-------|-----------------|------|
| | D-1 | D-15 |
| 0 | 0 | 6 |
| 1 | 0 | 1 |
| 2 | 5 | 3 |
| 3 | 10 | 5 |



At the end of treatment there was significant reduction in size of calculus and 6 patients were free of calculus.

Frequency of micturition :

| Grade | No. of patients | | | |
|-------|-----------------|----|-----|-----|
| | D1 | D5 | D10 | D14 |
| 0 | 03 | 00 | 00 | 00 |
| 1 | 10 | 12 | 06 | 02 |
| 2 | 02 | 03 | 08 | 12 |
| 3 | 00 | 00 | 01 | 01 |



| | B.T. | A.T. | t-cal | t-value | p-value |
|------|------|------|-------|---------|---------|
| Mean | 1.10 | 0.93 | 8.33 | 2.14 | 0.044 |
| S.D. | 0.57 | 0.45 | | | |

Since p value is less than 0.05 but there is slightly difference in frequency of micturition before and after treatment with satisfactory voiding and increased urine output

Expulsion of calculus according to site

| Site of calculus | Group A | | expulsion |
|------------------|---------|------|-----------|
| | B.T. | A.T. | |
| 1Ra | 02 | 02 | 22 |
| 1Rb | 04 | 02 | |
| 1Rc | 01 | 00 | |
| 1La | 04 | 00 | |
| 1Lb | 05 | 04 | |
| 1Lc | 01 | 00 | |
| 2Ra | 00 | 00 | |
| 2Rb | 01 | 00 | |
| 2Rc | 01 | 00 | |
| 2La | 00 | 00 | |
| 2Lb | 02 | 00 | |
| 2Lc | 01 | 01 | |
| 3Ra | 00 | 00 | |
| 3Rb | 00 | 00 | |
| 3Rc | 00 | 00 | |
| 3La | 00 | 00 | |
| 3Lb | 00 | 00 | |
| 3Lc | 00 | 00 | |

1Ra-Right kidney upper pole, 1Rb-Right kidney middle pole, 1Rc-Right kidney lower pole, 2Ra-Right upper ureter, 2Rb-Right middle ureter, 2Rc-Right lower ureter, 3-Bladder calculi

1La-Left kidney upper pole, 1Lb-Left kidney middle pole, 1Lc-Left kidney lower pole, 2La-Left upper ureter, 2Lb-Left middle ureter, 2Lc-Left lower ureter

DISCUSSION

The great Indian system of medicine- Ayurveda (science of life) has always provided a good contribution to treat various diseases including that of urinary system. With the revolutionary changes in various imaging technique taking place day to day, it is much mandatory to analyse various Ayurvedic drugs for their different pharmacological activities in the management of urolithiasis. Also there is a need for research oriented systemic investigation and evaluation of their efficacies.

On the basis of etiopathogenesis of urolithiasis it can be concluded that a drug- Which can correct crystalloid colloid imbalance and relieves the binding mucin of calculus.

Which have urinary antiseptic and antispasmodic properties with diuretic action. Which can relax the muscles of urinary bladder and prevent the supersaturation of

crystalloids. Which posses anti-inflammatory activity on urinary system

Will have a possible role in the treatment of urolithiasis.

Here on analysing the data to evaluate the clinical efficacy of Apamargapaniyakshara as an internal medicine for the management Mootrashmari, it was found that Mootrashmari described in Ayurvedic Literature resembles urolithiasis in many ways like symptoms, line of treatment etc.

Age incidence:

Agewise distribution of patients showed that 02 patients (13.33%) in the age group of 15 to 24 yrs, 07 patients (46.66%) in the age group of 25 to 34 yrs, 02 patients (13.33%) in the age group of 35 to 44 yrs, 04 patients (26.66%) in the age group of 45 to 55 yrs.

Thus Patients having age between 25-34 years are more sufferer of this disease. may be because of this age group is working age group so due to work and shift duties they tends to gets addicted to fast foods and neglects themselves.

Sex wise distribution:

According to sexwise distribution out of 15 patients, incidence of Mootrashmari was observed In males 10 patients (66.66%) and In female 05 patients (33.33%).

In the study groups, majority of patients were male. may be due to males has to work more than females and addicted and negligence towards

Prakruti Incidence:

According to *Prakruti* of the 15 patients taken for study, it is observed that 09 patients (60%) of *VatakaphaPrakruti*,

03 patients (20%) of *PittavataPrakruti*,

03 patients (20%) of *PittakaphaPrakruti*.

Incidence of *mootrashmari* is noted higher in *vata-kaphaprakruti* patients. Because *ashmari* is a *kaphadoshpradhanvyadhi*...

Diet:

Dietary distribution showed that out of 15 patients, 14 patients (93.33%) were having mixed diet and 01 patient (6.66%) has pure vegetarian diet.

The incidence is slightly high in mixed diet taking persons.

Marital Status:

Marital status wise distribution showed that 05 patients (33.33%) were married and 10 patients (66.66%) were unmarried.

but by this one cannot draw any conclusion because it has no role to play in disease formation.

Socio-economic status:

It reveals that

07 patients (46.66%) were from middle economical class, 08 patients (53.33%) from low economical class.

Probably it might be due to charity provided by the hospital.

Discussion regarding Lakshanas:

Patients of *Mootrashmari* were provisionally diagnosed by the signs and symptoms created by the presence of *Ashmari* in the urinary system i.e.

Abdominal pain

Burning micturation

Frequency of micturation

Associated symptoms like fever, haematuria, painfullmicturation, nausea, vomitting etc.

These are the highlighted symptoms.

According to Hetu:

The data collected in clinical study revealed that '*Vegavarodh*' is the most significant cause in almost all cases. Ayurved has described '*Vegavarodh*' as the root cause of many diseases. Thus we can say that principles of Ayurved are long standing firm guidelines for today's world also.

Discussion regarding *Upashava-Anupashay* in *VyadhiLakshan*:

Discussion regarding statistical analysis of the trial drug *Apamargapaniyakshara* in *Mootrashmari* was done by applying unpaired T test. Results drawn are as follows:

ABDOMINAL PAIN:

Ho:-Their is no significant difference BT & AT in symptoms HI:-There is significant reduction in symptoms after treatment

| | B.T | A.T. | t-cal | t-value | p-value |
|------|------|------|-------|---------|---------|
| Mean | 2.4 | 0.4 | 11.44 | 2.14 | 0.000 |
| S.D. | 0.48 | 0.48 | | | 086 |

Since p-value is less than 0.05 we reject Ho ie there is significant reduction in abdominal pain after treatment.

BURNING MICTURATION

Ho:-There is no significant difference between BT & AT in symptoms HI:-There is significant different in symptoms after treatment

| | B.T | A.T. | t-cal | t-value | p-value |
|------|------|------|-------|---------|---------|
| Mean | 1.53 | 0.33 | 7.5 | 2.14 | 0.000 |
| S.D. | 0.72 | 0.47 | | | 16 |

Since p-value is less than 0.05 we reject Ho ie there is significant reduction in burning micturation after treatment

FREQUENCY OF MICTURATION

Ho:-There is no significant difference between BT & AT in symptoms. HI:-There is significant reduction in symptoms after treatment.

| | B.T. | A.T. | t-cal | t-value | p-value |
|------|------|------|-------|---------|---------|
| Mean | 1.10 | 0.93 | 8.33 | 2.14 | 0.044 |
| S.D. | 0.57 | 0.45 | | | |

Since p value is less than 0.05 but there is slightly difference in frequency of micturation before and after treatment with satisfactory voiding and increased urine output

Discussion regarding site and expulsion of calculi:

In the study, out of 15 patients, 06 patients 40% were free of calculi at the end of therapy the percentage expulsion of urteric calculi was more than renal may be due to its diuretic effect the stone ws displaced from its posion and due to its antispasmodic action the smooth muscles of the bladder gets relaxed and helps in casily expulsion of calculus.

Probable mode of action:

On analysis of the subjective and objective parameters, *Apamargapaniyakshara* is found effective to minimise the symptoms of *Mootrashmari*. Here an attempt is made to produce a probable hypothesis regarding the action of *Apamargapaniyakshara*.

Kapha and *Vata* always play a major role in urolithiasis. As *Apamargapaniyaksharaa* is *Kaphavataghna* in its *Doshaghata*, it is helpful for Shaman of associated *Doshas* taking part in etiopathogenesis of *Mootrashmari*.

Ruksha, *Laghu*, *Tikshna*, *Shighragami* properties of *Apamargapaniyakshara* reduces the chances of nidus formation as well as

reduces the growth of stone by inhibiting the binding property of

Kaphadosha. Because of the *ksharan* action, they gradually erode vitiated *kapha* and bring it downwards.

Apamargapaniyaksharaa have *mootrala* effect there-by increasing intra-luminal pressure. Because of this pressure, calculus is expelled quickly as a whole from urinary system. As earlier stated, hyper-concentration of the urine results into formation of urolithiasis.

Apamargapaniyakshara's Diuretic activities either promote or increase the amount of urine excretion and helps in preventing the hyper-concentration of urine as well as further complications.

Chemically

Apamargapaniyaksharaa is potassium carbonate which increases the concentration of potassium in intra cellular fluid there by enhances osmotic activity which tends to force water and electrolyte into extra cellular fluid and the colloidal osmotic pressure of the plasma proteins which draw water back in the vessels. It helps in its diuretic activity without depleting serum potassium level which is a common demerit of other diuretic drugs.

Ksharas having properties like *lekhan*, *bhedan*, *ashmarighna* act over compact molecules of calculus, thereby making the bond in molecules weak and reduces the size of stone.

Apamargapaniyaksharaa removes obstruction from urinary tract by flushing the urine by its *Sarak* property. They increase peristaltic movements of smooth muscles in urinary system and in turn help in expulsion of urinary calculus.

Active ingredient of *Apamarga* seeds is *saponine* acts as a diuretic so it increases intraluminal pressure & flow of urine in ureter and helps to wash out calculus.

As *Acyranthine* one of the principal constituent of *Apamargapaniyakshara* is anti-inflammatory in nature it reduces pain in abdomen associated with calculus

The pH of *PaneeeyaApamargapaniyakshara* is 10.63. This alkaline nature of the drug reduces acidic condition of the urine, which is one of the main causes of calculus formation.

The normalization of pH of urinary passage helps to dislodge the lithus.

Apamargapaniyaksharaa reduces burning micturition, pain in abdomen associated with calculus by maintaining urine pH and anti-inflammatory action.

Thus, action of *Paneeeya*

Apamargapaniyaksharaa may ultimately result in painless expulsion of *mootrashmari* by relaxation of smooth muscles.

Ashmari is a disease of *mootravahastrotas* which is under influence of *Apana-vayu*. So *PaneeeyaApamargapaniyakshara* is given in *apana-kala* i.e. before meal to enhance the action of drug. Selected drug i.e.

Apamargapaniyakshara is easily available and doesn't need special preparations.

As the drug is given by oral route, there is no need of hospitalization. The drug can be given on O.P.D. basis.

SUMMARY

Mootrashmari was considered as one of the *mahagadas* by Ayurvedic Acharyas. No doubt that it is a disease which is difficult to cure and at many times requires surgical intervention i.e. always very expensive with limitation to urban areas only.

All the other treatment modalities in modern science are very costly and insufficient to reduce the prevalence of *mootrashmari*. Hence we have to face many problems to treat *Mootrashmari* effectively.

Reviewing all the things the topic "To study the effect of *apamargapaniyakshara* in *mootrashmari*" was selected for dissertation.

Review of literature was taken to collect the information about *mootrashmari*, its management and related *Sharirarachana* and *kriya* according to Ayurveda as well as modern science.

Apamargapaniyakshara was manufactured according to guidelines mentioned in *sharangdharsamhita*.

Patients were selected as per selection criteria from the hospital attached to our college randomly.

Trial group patients were given *Apamargapaniyakshara* in the dose of 15 ML twice a day along with water for 10 days.

Same diet and behavior regimen was instructed to all patients, so that all of them were almost under similar conditions.

Records were kept during the course of the treatment on 1st, 5th, 10th & 15th day.

The findings were converted into various tables and graphs. Observations and results were discussed.

Efficacy of *Apamargapaniyakshara* was observed

Any side-effects or adverse effects were looked for.

Conclusions were drawn on the basis of observations and results.

CONCLUSION:

From the clinical trials conducted to "To study the effect of *Apamarga paniyakshara* in *mootrashmari*" following conclusions can be drawn -

Apamargapaniyaksharaa has shown significant relief in the symptoms of *Mootrashmari* like abdominal pain, burning micturation, frequency of micturation, etc.

Action of drug is due to its *chhedan*, *bhedan*, *lekhan*, *ashmarighna* properties.

Apamargapaniyaksharaa also possesses Mootral property i.e. diuretic action which is helpful for expulsion of calculi.

In this study, it was found that the proposed duration of treatment is 10 days, which was

insufficient in some cases to expel the calculus. Hence it may require a longer time to get significant effect.

During the study, there were no adverse effects or complications and the treatment was well tolerated by all the patients.

From the study, it can be concluded that administration of *Apamarga panyakshara* can be applied as an effective treatment method for *mootrashmari* which may overcome the surgical intervention by easy, comparatively cheap and painless expulsion of *ashmari*.

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