

ORIGINAL RESEARCH ARTICLE - CLINICAL STUDY

Efficacy of *Varunadi kwath* in the management of *kaphaja ashmari* w.s.r. to vesical phosphate calculus, a clinical study

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ABSTRACT

One of the most common cause for stone formation is urine infection which leads to phosphate stone formation. When we see the symptoms and consistency of *kaphaja ashmari* mentioned in ayurvedic texts it may be correlated with the phosphate calculus in modern medical science. In ayurveda, *kapha dosha* in increased quantity has been accepted as the main reason for the formation of *mutrashmari*. In the present clinical study, 30 patients of *kaphaja mutrashmari*, was studied with *Varunadi Kwath* for 90 days and the effect of the drug on the signs and symptoms were studied. The trial compound has shown encouraging symptomatic relief in most of the clinical features with expulsion of stone. During the trial periods the treated group had shown no side effects of the drug compound.

Keywords : *kaphaja ashmari, phosphate calculus, urine infection, varunadi kwath*

Introduction

Ayurveda is the ancient Indian medical science Ayurveda combines physical, psychological and spiritual therapies as an approach to health. Formation of stones in the urinary tract is a global phenomenon and is described in ancient ayurvedic scriptures as *mutrashamari*. It is said to be one of the eight most troublesome diseases (*mahaorgas*). The important factor i.e. the diagnostic part in case of a stone, the advice given by ancient acharyas seems to be true even at present who were of the idea that before going for the treatment sure shot diagnosis is important both for the physician and the patient. There are useful management and herbal treatments for urolithiasis that have been currently investigated extensively. Charaka has advised medical management and Sushruta advised both conservative and surgical removal of stone through perennial root lithotomy. Formation of *mutrashmari*, according to Sushruta, is due to *srotovaigunya* resulting

from *dushita kapha* localized in *basti*, in conjunction with *pradushita vata* and *pitta* is responsible for the cause of *ashmari*. According to ayurved *srotovaigunya* resulting from *dushit kapha* localised in *basti* in conjunction with *pradushit vata* and *pitta* is responsible for the formation/ cause of *ashmari*. An alarming rise in the incidence of urolithiasis coupled with a motivation provided by W.H.O. to explore the possibility of discovering cure on traditional line has created an impetus for further research in the light of ayurvedic knowledge. One of the most common cause for stone formation is urine infection which leads to phosphate stone formation. When we see the symptoms and consistency of *kaphaja ashmari* mentioned in ayurvedic texts it may be correlated with the phosphate calculus in modern medical science. Coming to the treatment portion many principles have been adopted to tame this problem. These are-

- ❖ Increased fluid intake to dilute the urine.
- ❖ Antimicrobial to eliminate the infection.
- ❖ Balanced diet to ensure adequate intake of vitamins.

Apart from it the main treatment for urinary calculi falls into following categories:-

- ★ Conservative treatment
- ★ Medical treatment
- ★ Non-operative
- ★ Operative

Looking into the gravity of the problem it has been decided to work on Varunadi Kwath, a preparation advocated by Chakradutt.

● **Aims and objectives:**

The present research work has been undertaken with the following aims and objectives-

- To study the disease kaphaja mutrashmari in terms of its aetiopathogenesis, clinical manifestations with possible correlation to the description available in ayurvedic as well as modern medicine for urinary stones.
- To assess the efficacy of Varunadi kwath in the management of kaphaja ashmari.
- To find out a safe, simple, effective and economical method of treating kaphaja ashmari.

❖ **Selection of the Drug**

Selection of the drug is made by following points-

- ✓ The preparation is described exclusively for mutrashmari.
- ✓ The ingredients used to make this drug are easily available.
- ✓ The drug is very much cost effective.
- ✓ Varunadi Kwatha and Yava Kshar are prepared in our N.I.A., Pharmacy by proper menour.

❖ **Drug administrations:**

Patients were treated with Varunadi Kwatha with dose of

40 ml twice a day for 90 days along with Yava Kshar and the observations were noted down regularly on follow ups. All the patients were instructed to follow their diet as advised. Further all the patients were instructed to take plenty of water.

❖ **Materials and methods**

The patients attending O.P.D. & I.P.D. of hospital N.I.A., Jaipur were selected for the present clinical study.

- ◆ All the patients in the present study were selected between the age group of 16 to 60 years.
- ◆ All the patients were chosen irrespective to their sex, religion, occupation etc.
- ◆ A special performa was prepared on the basis of signs and symptoms of mutrashmari described in ayurvedic and modern text.
- ◆ Diagnosis was made on the basis of special performa prepared in relation to signs and symptoms of kaphaja ashmari Routine and microscopic examination of urine, presence of RBC, Pus cells, epithelial cells, renal casts and crystals were carried out.
- ◆ Special investigations such as X-ray (KUB region) were taken for the confirmation of the diagnosis. Ultrasonography of KUB region was done in cases of radiolucent stone and to know the site and size of stone.

◆ **Inclusion Criteria:**

- Age between 16 to 60 years
- Increased frequency of micturition
- Burning micturition
- Haematuria
- Pyuria
- Fever
- Dysuria

◆ **Exclusion Criteria:**

- Age less than 16 years and more than 60 years
- Renal tuberculosis

- Diabetes Mellitus
- Hypertension
- Polycystic kidney
- Renal failure
- Pyelonephritis

◆ **Sampling Technique**

A total number of 30 Patients with signs and symptoms of kaphaj ashmari were registered from O.P.D. & I.P.D. of hospital of National Institute of Ayurveda, Jaipur. The patients were selected

★ **Dose:**

- Varunadi kwath-10 gm. Twice a day
- Yava kshar-500mg twice daily.

★ **Duration:**

- 3 months (90 days)

➤ **Criteria for Assessment:**

Assessment of the therapy was done according to scoring technique, observed in the relief of signs and symptoms and investigations of the disease kaphaja ashmari as various investigations are also there to make a diagnosis and the count the extent of relief.

➤ **Subjective Criteria**

The symptoms were noted before and after treatment. Assessment of the therapy was done according to the relief observed in the following symptoms with the help of scoring pattern i.e. pain burning micturition dysuria

➤ **Objective Criteria**

Various signs e.g. hematuria pyuria ph of urine wbc count of urinewere noted and investigations were done before and after treatment.

❖ **Plan of work :** The study was carried out as follows-

• **Performa**

A Special performa was prepared to maintain the records of all finding regarding the patients.

• **Investigations**

For the purpose of assessing the overall condition of the patients complete urine(routine and microscopic), plain X-ray (KUB region), USG (KUB region) were carried out before and after completing the due course of the treatment. The changes in the values and in signs and symptoms were recorded for the assessment of results. The changes in the values and in signs and symptoms were recorded for the assessment of results relief.

All the patients who were studied under this clinical trial were instructed to have regular check up at the internal of 30 days for the period of 3 month (90 days). During this period patients were examined thoroughly for the signs and symptoms. Additionally, they were instructed about pathya and apathya.

❖ **Observation and result:**

In the clinical studies carried out in the present series, it was observed that maximum number of patients (76.66%) in the present study were in the age group of 16-35 yrs. Sex wise distribution of patients reveals that the highest number of patients were male i.e. 66.66% followed by female 33.33%. Analysis based on socio-economic status of the patients of present study, depicts incidence of kaphaj mutrashmari among lower middle 63.33% and poor 23.33% classes of society. Distribution of the patients according to diet, showed little higher incidence of mutrashmari (kaphaja type) in vegetarians i.e. 53.33% followed by non-vegetarians i.e. 46.66%. Maximum number of patients were possessing vata-kapha prakriti i.e. 46.66% followed by 30% kapha-pitta prakriti. 73.33% of the patients in the present study were having negative family history, where as 26.66% were having positive family history.

❖ **Clinical recovery:** The therapy (Varunadi kwath with Yava kshar orally) provided excellent relief in gomedaka prakasha (100%), sarudhiramutrata (100%), basti guruta(92.00%), mehana vedana (93.33%), mutradharasanga (91.89% nabhi vedana (95.83%), basti vedana (92.11%), vishirñadhara(91.07%), ati avilamutrata (91.38%), , basti shitalata(87.18%), sevani vedana(87.50), pain

(82.46%), burning micturition (91.04%), haematuria (86.21%), dysuria (82.35%), pyuria (91.80%) and fever (88.88%). The relief was found statistically highly significant ($P < 0.001$).

❖ **Effect of therapies on urine Analysis:**

In present study, complete urine analysis was carried out. Microscopic urine analysis revealed that 86.21%, 91.80% and 92.31% relief was observed in R.B.C., pus cells and W.B.C. respectively. The alkaline nature of urine changes to normal ph up to 90.28%. The treated group showed highly significant effect ($P < 0.001$) in pus cells, R.B.C., W.B.C. and urine Ph.

❖ **Effect of therapies on stones at different site and size:**

From the study, the patients treated with drug compound has shown good effect on uretero vesical junction stones, Both bladder and UV junction stone and bladder stones of 6mm-10mm in diameter and less effect on stones of 11mm-20mm in diameter.

Objective parameters: There was highly significant result in various clinical features like, basti vedana nabhi vedana sevani vedana mehan vedana mutradhara sanga sarudhira mutrata etc. as showed in table no 1& 2

Table no. I

Clinical Features	Mean		%	S.D.	S.E.	‘t’	P
	B.T.	A.T.					
Basti vedana	1.27	0.10	92.11	0.99	0.18	06.48	<0.001
Nabhi vedana	0.80	0.03	95.83	1.22	0.22	03.43	<0.001
Sevani vedana	0.53	0.07	87.50	0.97	0.18	02.63	<0.01
Mehan vedana	1.50	0.10	93.33	1.10	0.20	06.96	<0.001
Mutradhara sanga	1.23	0.10	91.89	0.97	0.18	06.38	<0.001
Sarudhira mutrata	0.60	0.00	100	0.93	0.17	03.53	<0.001
Gomeda prakasham	0.40	00	100	0.86	0.16	02.56	<0.01
Ati avilamutrata	1.93	0.17	91.38	0.97	0.18	09.96	<0.001
Basti guruta	1.67	0.13	92.00	0.86	0.16	09.76	<0.001
Basti shitalata	1.30	0.17	87.18	1.04	0.19	05.96	<0.001
Vishirnadhara	1.87	0.17	91.07	0.95	0.17	09.78	<0.001

Table no. II

Clinical Features	Mean		%	S.D.	S.E.	‘t’	P
	B.T.	A.T.					
Pain	1.90	.33	82.46	0.50	0.09	17.03	<0.001
Burning micturition	2.23	.20	91.04	0.56	0.10	20.03	<0.001
Haematuria	0.97	.13	86.21	1.32	0.24	03.47	<0.001
Dysuria	1.13	.20	82.35	0.87	0.16	05.89	<0.001
Pyuria	2.03	.17	91.80	0.57	0.10	17.89	<0.001

From the study, the patients treated with drug compound has shown good effect on uretero vesical junction stones, both bladder and UV junction stone and bladder stones of 6mm-10mm in diameter and less effect on stones of 11mm-18mm in diameter as mentioned in table no 3.

Table no. III

Size	Site	No.of patients	Effect
6-10 mm	Uretero vesical junction	2	Exp.2, DS.-0, DM.-0, NC-0
	Bladder	4	Exp.4, DS.-0, DM.-0, NC-0
	Both bladder and UV junction	3	Exp.3, DS.-0, DM.-0, NC-0
11-18 mm	Uretero vesical junction	3	Exp.1, DS.-2, DM.-1, NC-0
	Bladder	11	Exp.8, DS.-3, DM.-0, NC-0
	Both bladder and UV junction	7	Exp.2, DS.-5, DM.-3, NC-0

Microscopic urine analysis revealed that the alkaline nature of urine changes to normal ph up to 90.28% and 92.31% relief was observed in W.B.C. respectively which are showed in table no 4 & 5.

Table no. IV

Features	Mean		%	S.D.	S.E.	‘t’	P
	B.T.	A.T.					
Urine ph	2.40	.23	90.28	0.59	0.11	20.04	<0.001

Table no. V

Features	Mean		%	S.D.	S.E.	‘t’	P
	B.T.	A.T.					
W.B.C. in Urine	2.17	0.17	92.31	0.53	0.10	20.86	<0.001

Discussion:

Total 30 no of patients were registered for the study. The study showed that males were more predominant for stone formation than female. Occupational distribution of patients indicates that highest number of the patients i.e. 40% were self employed, As per observation the highest number of patients i.e. 40% were addicted to tea/coffee Distribution of the patients according to diet, showed little higher incidence of mutrashmari (kaphaja type) in vegetarians i.e. 53.33% followed by non-vegetarians i.e.

46.66%. Maximum number of patients were possessing vata-kapha prakriti i.e. 46.66% followed by 30% kapha-pitta prakriti. Kapha dosha can easily be provoked in kaphaja prakriti persons, so they are more prone to kaphaja diseases, among which mutrashmari All the main signs and symptoms were given scoring as mentioned in the criteria for assessment in clinical study. The effects of therapies on signs and symptoms were assessed on the basis of these scorings.

The therapy (Varunadi kwath with Yava kshar orally) provided excellent relief in gomedaka prakasha (100%), sarudhiramutrata (100%), basti guruta(92.00%), mehana vedana (93.33%), mutradharasanga (91.89% nabhi vedana (95.83%), basti vedana (92.11%), vishirñadhara(91.07%), ati avilamutrata (91.38%), , basti shitalata(87.18%), sevani vedana(87.50), pain (82.46%), burning micturition (91.04%), haematuria (86.21%), dysuria (82.35%), pyuria (91.80%) and fever (88.88%). Among clinical features, about Burning micturition the patients responded at first and relieved within two weeks. The relief was found statistically highly significant ($P < 0.001$). prakupitta pitta and secondary infections were the causes for this sadahamutrata. This prakupita pitta has antagonised with pittahara properties like tikta and kshaya rasa and the infection was controlled by mutrala property of Gakshura of the drug compound. Nabhi vedana, basti vedana and haematuria have responded well. The drug compound showed good result on kaphaja vesical stone. Ph of urine came to normal from alkaline stage.

Probable mode of action of drug compound:

For the manifestation of the disease 'ashmari', the 'kaphadosha' is the main factor, which contribute the nucleus for the pathogenesis. It can be clarified that kapha is essential for ashmari formation, because kapha possess prithvi mahabhuta and also having the property of bandhana. It is also a known fact, that when the urine becomes stagnated in the urinary system for long time, it gets concentrated and infected. Thus there is more chance yielding for phosphate stone formation. For that, the main motto of the treatment must be kaphahara, lekhana and mutrala (diuretic).

The formulation taken for the study is indicated in 'ashmari roga' by the author of 'Chakradutta' by the name 'Varunadi kwath' The compound possess all the needful actions like kaphahara, lekhana and mutrala. The ingredients of the compound pacify kapha dosha by virtue of their ruksha guna, katu vipaka and ushna virya and also shows "lekhana" property due to ushna virya. The lekhana karma is again enhanced by famous lekhana

dravya i.e. yavakshar, which is one ingredient in it.

All the ingredients in the drug Varunadi Kwath, are having a particular mode of action on dosa, dushya, agni and srotas. The properties of the ingredients like vedana sthapan, vatanulomana, shulaprashaman, daha prashmana, trishnahara, bhedana, shothahara, medohara, mutrala, mutra virecaniya, deepana, pachana act on the dosa(vata, pitta and kapha), dusya(rasa, mutra), srora(mutravaha srota) and agni. e.g.

The drug Varunadi kwath, are having a particular mode of action on dosa, dushya, agni and srotas as follows-

Vata - Vedana sthapan, vatanulomana, shulaprashaman

Pitta - Daha prashmana, trishnahara

Kapha - Bhedana, shothahara, medohara

Dushya (rasa mutra) - Mutrala, mutra virecaniya

Agnimandya - Deepana, pachana

Mutravaha srotodusti – Mutrala, mutra virecaniya

Thus The vatanulomana , shothahara and mutrala properties of ingredients helps to relieve pain and sthanika sotha. Jwara is also relieved due to the jwarahara action of Pasanbhed, Varun and Shunthi. Deepana property of drug helps to increase the agni, which further check the formation of ama at jatharagni level itself. Pachana property of ingredients helps in assimilations of drug in the body in case of jatharagnimandya. Due to the ashmari bhedana or ashmari hara property of ingredients present in the drugs, stone might be dissolved.

Remaining drugs of the compound act as mutrala (diuretic) by virtue of their 'sheeta virya' and madhur rasa. Gakshura, Varun, Yavakshra and Pasanbheda, these well known mutrala dravyas are again an ingredient in this formulation.

All the ingredients of the drug, by their bhedana, ashmarihara and kaphahara karmas along with mutrala karma, are helpful to reduce the size of the ashmari and expelled it out from the body.

The ingredient (Gokshura, Pashanabheda etc.) in good

proportion with Yavakshar, have cumulative effect as ashmai bhedana, mutrala and vrana ropana, and yavakshara with its lekhana, shodhana etc. properties may have reduced the size of the stone and Varunadi kwath made them easy to expelled out .

Thus in total this formulation has the capacity to disintegrate the pathogenesis of the disease 'ashmari' and due to its diuretic action it flushes out the disintegrated 'ashmari' by the process of diuresis.

Conclusion:

- ✍ From the study of ancient surgical treatise, it becomes evident that the urological problems form an important part of medical deliberations. The clear cut cause of the disease is still unknown. But in ayurveda, kapha dosha in increased quantity has been accepted as the main reason for the formation of mutrashmari.
- ✍ The concepts of mutrashmari, its classification, symptomatology, etiological factors pathology, complications and management have been dealt with both medico surgical producers.
- ✍ The study suggests that kaphaja ashmari can occur in both the sex at any age, but the age group of third and fourth decades of life is more likely to get mutrashmari.
- ✍ Through urine the stone forming dosha- vata, pitta and kapha comes in the system. The process of "anu pravesha" (diffusion layer wise) takes place in the stagnated urine. The dosha with cementing substances form urinary stone of that particular doshas. In ayurveda, kapha dosha in increased quantity has been accepted as the main reason for the formation of mutrashmari.
- ✍ The predominant dosha in ashmari is kapha. So, guru, sheeta, snigdha, madhura ahara, irregular food habits, days sleep etc. may increase kapha leading to formation of mutrashmari.
- ✍ There are more chances of mutrashmari formation in the persons having kaphaja-pittaja prakriti.
- ✍ Majority of stones were seen in the bladder followed by uretero-vesical junction.

- ✍ Patients having kaphaj type of ashmari were selected.
- ✍ Varunadi kwath was found to have highly significant effect on nabhi vedana, basti vedana, mutradharasang, significant effect on mehana vedana, gomedaka prakasha and sarudhiramutrata .
- ✍ Treated group was found to have highly significant effect on pain, burning micturition, haematuria, dysuria and pyuria.
- ✍ The drug compound has shown its role in decreasing pus cells, R.B.C, W.B.C and Ph of urine.
- ✍ The drug compound was found to be effective in stones of urinary bladder.
- ✍ The drug compound was found to be effective on kaphaj ashmari,
- ✍ The overall effect obtained shows the 66.66% of the patients recorded a complete cure, 13.33% were markedly improved and 20% were improved and the result is statistically highly significant.
- ✍ Observations obtained from the treated group had shown no side effects of the drug compound.

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सारांश:

मूत्र संक्रमण अश्मरी रोग की उत्पत्ति में एक महत्वपूर्ण कारण है जो उत्पन्न करने का भी एक कारक है। आयुर्वेद में वर्णित कफज अश्मरी के लक्षण के अनुसार इसको आधुनिक चिकित्सा विज्ञान में चीवेचीजम बंसबनसने के साथ तुलना कर सकते हैं।

आयुर्वेद में वर्धित कफ दोष को ही अश्मरी उत्पत्ति की प्रधान कारण माना गया है।

प्रस्तुत शोध कार्य में कफज मूत्राश्मरी के कूल 30 रोगीयो को वरुणादि क्वाथ से 90 दिन तक चिकित्सा की गई और औषधि के प्रभाव का अध्ययन किया गया। लक्षण और अश्मरी निष्काषन में योग का उत्साह जनक परिणाम प्राप्त हुआ।

प्रयोग अवधि के दौरान योग का कोई भी प्रतिकूल प्रभाव नहीं देखा गया।