



Research Article

CLINICAL EVALUATION OF PANIYA KSHARA IN MUTRAKRICHHA W.S.R. TO LOWER URINARY TRACT INFECTION: A CONTROLLED RANDOMISED CLINICAL TRIAL

Gupta Sudesh¹, Sharma Kumar Arun^{2*}, Sharma Sakshi², Prasher Aarushi², Manhas Raman²

¹Professor and HOD, ²Final year P.G. Scholar, Department of Shalya Tantra, Jammu Institute of Ayurveda and Research, Nardini (Raipur), Jammu, India.

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ABSTRACT

Mutrakrichha is a disease in which *Mutra* is voided with much *Dukha* (discomfort). The word *Mutrakrichha* comprises of two words, *Mutra* and *Krichha*, which means *Krichha pravritti* of *Mutravahana* (difficulty in micturition). *Mutrakrichha* comes under the disorders of *Mutravaha srotas* and mainly deals with *Shool* (pain) and *Krichhata* (dysuria). *Mutrakrichha* can be an independent disease as well as associated symptom in other disease. In the contemporary science, the disease with similar signs and symptoms are Lower urinary tract infection. Lower urinary tract infection is the most common infection known to mankind and a common condition seen in general practice. Urinary tract infection affects more than 150 million people every year worldwide. It is well explained by all the *Acharyas*. *Charaka* has described eight types of *Mutrakrichha*. *Acharya Sushruta* in *Uttra-Tantra* has separately described *Mutraghata* and *Mutrakrichha*. *Acharyas* have mentioned drugs having antibacterial and diuretic property in *Mutrakrichha chikitsa*. *Paniya kshara* is an age old treatment modality used since ancient times. To evaluate the role of *Paniya kshara* in *Mutrakrichha*, a total of thirty patients were selected with complaints of painful micturition, fever, urgency and tenderness. Patients were given *Paniya Kshara*. The study revealed highly significant results in terms of pain, fever, urgency and tenderness.

*Address for correspondence

Dr. Arun Kumar Sharma

Final year P.G. Scholar,
Department of Shalya Tantra,
Jammu Institute of Ayurveda
and Research, Nardini (Raipur),
Jammu.

Email:

sharma.arun2420@gmail.com

INTRODUCTION

Mutrakrichha is one of the elaborately explained *Rogas* in all major *Ayurvedic* classics [1-3]. As the name suggest, it means the *Krichhata* or difficulty during passing urine. *Mutra Pravritti* is considered one among the *Adharaniya Vegas*. In general *Mutra Krichha* is classified into 8 types according to the *Nidana* and *Lakshanas*. In our classical text the urinary disorders are described in the form of 8 types of *Mutraghatas*^[4], 20 types of *Prameha*^[5], 8 types of *Mutrakrichha* and 4 types of *Ashmaris*. *Acharya Kashyapa* had also described the sign and symptoms of *Mutrakrichha* in *Vedna Adhyaya*^[6].

Despite of different etiologies explained in various *Ayurvedic* texts, the *Nidana* of *Mutrakrichha* causes change in the concentration of urine which enhances the growth of microbes in urinary tract.

Similarly the *Lakshanas* of *Mutrakrichha* are also similar to that of symptoms of lower urinary tract infection. Urinary tract infections are among the most prevalent microbial diseases. Urinary tract infections are second in frequency after upper respiratory tract infections [7].

Urinary tract infection refers to the presence of microbial pathogens within the urinary tract usually classified by the site of infection. Bacteria are by far the most common invading organisms but fungi, yeast and virus also produce urinary tract infections.

The main causative pathogens involved in UTI is *Escherichia coli*, which accounts for 80% of all episodes. Other significant pathogens include *Staphylococcus saprophyticus*, *Klebsiella pneumoniae* and *Proteus mirabilis*.

Recently there has been greater emphasis on the search for herbal preparations that can help in the management of urinary disorders. In the Indian Medical Literature, many drugs have been advocated for this indication. *Paniya Kshara* is a natural and effective alkalizer, which not only relieves burning micturition, but also soothes inflamed urinary mucosa. It restores normal urinary PH and normalizes the frequency of micturition. *Paniya Kshara* can cure the disease as it increase the *Agnibala* of patient and maintain the digestive equilibrium.

AIMS AND OBJECTIVES

To evaluate the role of *Paniya Kshara* (*Kamalnaal*) in *Mutrakrichha*.

MATERIAL AND METHODS

Paniya Kamalnaal Kshara was used for the study. Its preparation involves collection of *Kamalnaal* (Lotus stem) raw drug which was dried in shade and burnt to ashes in a large iron pan. The total volume of ash (which was devoid of mud, stones and charcoal) was mixed with 6 times of water and mixture was left overnight. The next morning only the supernatant fluid was collected, which was then filtered 21 items using a filter paper to obtain *Gaumutra Varna Ksharjala*. The *Ksharjala* was then heated in a pan in mild moderate flame with intermittent stirring continuously till it become thick in consistency. When it was completely moisture free it was then cooled down and made to fine powder like consistency. Then it was weighed and stored in an airtight container.

Clinical Study

Source of data

The present study has been conducted by selecting patients from OPD/IPD of Shalya Tantra, Jammu institute of Ayurveda and Research, Jammu and Sri Sain Charitable Trust Hospital, Pamposh colony, Janipur, Jammu. The patients were screened on clinical grounds and routine laboratory investigations to establish the nature of urinary problems.

Sample size= 30 patients

Inclusion Criteria

- Age between 15 to 60 years.
- Patients of either sex are taken.
- Patients with all types of *Mutrakrichha*.
- Willing and able to participate for study.

Exclusion Criteria

- Age less than 15 years and more than 60 years.
- Patients suffering from renal calculus.
- Malignancy

- Patients suffering from any major systemic disease like Diabetes Mellitus, Hypertension, Renal failure.

INTERVENTION:-

Duration of treatment = 15 days

Follow up = 2 months fortnightly

ASSESSMENT PARAMETERS

The results were evaluated by subjective and objective parameters.

Subjective Criteria

Assessment of the therapy was done according to the relief observed in the signs and symptoms, with help of scoring pattern.

Painful micturation	Scoring
Absent	: 0
Mild	: 1
Moderate	: 2
Severe	: 3

Burning micturation	Scoring
Absent	: 0
Mild	: 1
Moderate	: 2
Severe	: 3

Fever	Scoring
Absent	: 0
Mild	: 1
Moderate	: 2
Severe	: 3

Urgency	Scoring
Absent	: 0
Mild	: 1
Moderate	: 2
Severe	: 3

Frequency of micturation	Scoring
01-03 times	: 0
04-06 times	: 1
07-09 times	: 2
>10 times	: 3

Objective Criteria

Based on various investigations like urine (Routine and Microscopic), Culture and Sensitivity, USG (KUB), done before and after treatment.

Tenderness	Scoring
Absent	: 0
Mild	: 1
Moderate	: 2
Severe	: 3

Pus cells	Scoring
Absent (0)	: 0
Mild (1-5)	: 1
Moderate (6-10)	: 2
Severe (>10)	: 3

The present study revealed that the maximum number of patients were in age group of 40 years and above i.e. 63.3%. About 76.6% were Hindus. Maximum number of patients were females i.e. 56.6%. Incidence of occupation revealed that the maximum number of patients were having desk work i.e. 60%. Socio- economic status revealed that the maximum number of patients i.e. 90% were above poverty line and 10% of patients were married. Maximum number of patients i.e. 80% were from rural area. About 53.3% were having mixed diet and 83.3% were having fluid intake of less than 3 litres per day. The study further revealed that 56.7% patients were having *Vatta-Pittaja Prakriti*.

OBSERVATIONS AND RESULTS

Table 1: Effect of therapy on painful micturition

BT	AT	SD	SE	"t" value	P value	Significance
2.7000	1.6667	0.764	0.764	7.399	<0.001	Highly Significant

In case of painful micturition, the p value comes out to be less than 0.001 which states that the effect of therapy is found to be statistically highly significant.

Table 2: Effect of therapy on burning micturition

BT	AT	SD	SE	"t" value	P value	Significance
0.9333	0.2333	0.46609	0.08510	8.226	<0.001	Highly Significant

The p value comes out to be less than 0.001 which states that the effect of therapy in burning micturition is found to be statistically significant.

Table 3: Effect of therapy on frequency of micturition

BT	AT	SD	SE	"t" value	P value	Significance
2.2667	1.2667	1.11417	0.20342	4.916	<0.001	Highly Significant

In frequency of micturition the p value comes out to be less than 0.001, which states that the effect of therapy is found to be statistically highly significant.

Table 4: Effect of therapy on difficulty in micturition

BT	AT	SD	SE	"t" value	P value	Significance
2.3000	1.4000	0.95953	0.17518	5.137	<0.001	Highly Significant

The p value comes out to be less than 0.001 which states that the effect of therapy on difficulty of micturition is found to be statistically highly significant.

Table 5: Effect of therapy in fever

BT	AT	SD	SE	"t" value	P value	Significance
2.3000	1.4000	0.95953	0.17518	5.137	<0.001	Highly Significant

The p value comes out to be less than 0.001 which states that effect of therapy in fever is found to be statistically highly significant.

Table 6: Effect of therapy on urgency

BT	AT	SD	SE	"t" value	P value	Significance
0.6333	0.1000	0.73030	0.13333	4.000	<0.001	Highly Significant

The p value comes out to be less than 0.001 which states that the effect of therapy in case of urgency, comes out to be statistically highly significant.

Table 7: Effect of therapy on pus cells

BT	AT	SD	SE	"t" value	P value	Significance
1.1071	0.4286	0.54796	0.10356	6.553	<0.001	Highly Significant

The p value comes out to be less than 0.001 which states that the effect of therapy in case of pus cells comes out to be statistically highly significant.

DISCUSSION

The incidence of disease is more common in middle age persons. This age group persons are maximum exposed to etiological factors, hence the more incidence in this age group. More female patients may be because of females are more prone to urinary tract infection as females have a shorter urethra which shortens the distance that bacteria must travel to urinary bladder. The higher percentage of cases recorded only reflects the higher percentage of Hindus. Observation pertaining to occupation of the patients in the present study suggest that tedious and laborious work, contribute to formation of disease. Mixed diet has also shown its role in causation of disease and most of them are in habit of consuming spicy, fried, fast food which are consistently increasing acidic burden of body. Maximum number of patients were married and this is because the married are more exposed to bacterial transmission due to increased sexual activity. Statically highly significant results were obtained in relief of painful micturition, difficulty in micturition, fever, urgency and pus cells.

Probable mode of action

Kamalnaal is *Sheetvirya* [8]. Its role in urinary tract infection like diuretic, lithotriptic etc are due to its *Dahaprashman*[9], *Mutravirechaneeya*[10], *Mutraviranjaniya* [11] properties.

It also neutralizes acidic medium of urine as it has alkaline nature so avoids further multiplication of bacteria.

Nelumbo nucifera produce a number of important secondary metabolites like alkaloids, flavonoids, steroids, triterpenoids, glycosides and polyphenols [12].

The study of ethnomedical uses and pharmacological activities of *Nelumbo nucifera* have brought out is [13].

Anti inflammatory, bacteriostatic, antiviral, antipyretic, analgesic, antihelminthic, cosmetic, antioxidant, lipolytic, diuretic, antidiabetic, vasodilating effects, consolidation of kidney function, anti fibrosis, hepatoprotective, astringent, immunomodulatory, antihyperlipidemic activity etc.

CONCLUSION

Mutra Krichha is mainly seen in between the age group of above 40 years. It is more common in females. Difficulty in micturition is feature of *Mutra Krichha*. In this study, 14 patients having difficulty in micturition have responded successfully. Regarding urinary tract infection, painful micturition, difficulty in micturition, pus cells, the drug has shown its efficacy over relieving these troublesome features. By the diuretic action of *Kamalnaal Paniya Kshara*, the renal tubular acidosis /alkalinity is changed and brought back to normal range.

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