

AETIOPATHOGENESIS OF MUTRAVAHA SROTODUSHTI

W.S.R. TO U.T.I. AND EFFECT OF CHANDRAPRABHAVATI

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ABSTRACT :

Urinary tract infection is potentially a serious condition and failure to realize this may lead to development of serious chronic pyelonephritis and chronic renal failure. If we look at the symptomatology of *Mutravaha Srotodushti*, it appears that various stages of acute and chronic urinary tract infections have been covered under this heading including the inflammatory conditions with irritation during micturition. With the introduction of effective antibiotics problem has been solved to some extent but the use of antibiotics have its own limitations, side effects and recurrence. Simultaneously, increasing incidence of resistance and high cost of therapy are common problems. Keeping these facts in mind this study was planned. This clinical study was prospective and unicentral work designed to assess the efficacy of *Chandrapraba Vati* in the management of *Mutravaha Srotodushti*. It was carried out in single group with a sample size of 30 patients. Ethical clearance from IEC was obtained. In this randomized clinical trial, patients with age ranged from 15-70 years of either sex were selected strictly following the inclusion and exclusion criteria. The trial drug was prepared and administered as per the textual guidelines. Standard criterias was set for evaluation. Analysis revealed statistically highly significant results on most of the variables of assessment criteria. 48.27% patients were markedly improved and 48.27% were moderately improved. Percentage relief in Dysuria was 82.75%. It reveals that *Chandrapraba Vati* has a tremendous role in the management of *Mutravaha Srotodushti*.

Key words: *Mutravaha Srotodushti, UTI, ChandraprabhaVati*

INTRODUCTION: *Mutravaha Srotas* are the channels that carry the urine to be excreted out of the body¹. Any structural or functional abnormality in these channels is referred to as *Mutravaha Srotodushti*. The vitiated *Vata* (mainly *ApanaVayu*) on reaching *Vasti* (bladder) afflicts the *Mutravaha Srotas*² due to which the patient feels difficulty in

micturition along with symptoms like *Sadaah mutrata*, *Abhikshna mutrata*, *Sashool mutrata*, *Peet/shwet mutrata*, *Krichha mutrata* and *Sarakta mutrata*. The symptomatology of *Mutravaha srotodushti*³ has close resemblance with urinary tract infections, as described in modern texts specifically lower urinary tract infections (urethritis and cystitis)⁴.

While describing the treatment of *Mutravaha Srotodushti*, it has been mentioned to treat it on the same line of treatment as that of *Mutrakrichha*⁵. Therefore in present study an attempt has been made to define *Mutravaha Srotodushti* on scientific grounds in relation to urinary tract infection.

AIMS AND OBJECTIVES:

1. To evaluate the therapeutic effect of *Chandraprabha Vati* in *Mutravaha Srotodushti* as described in *Sharngdhara Samhita*.⁶
2. To review the *Ayurvedic* and Modern literature related to Urinary tract infections.

MATERIALS AND METHODS: This study was unicentral, open and prospective clinical trial in single group with Sample size of 30 patients and was approved by Institutional Ethical Committee. Trial was conducted in the Deptt. of *Rog Nidan* at R.G.G.P.G.Ayu.College & Hospital Paprola, (H.P.). Patients of 15 – 70 years age of either sex were selected for trial. After counseling, informed, written and witnessed consent was received from the patients. Willing Patients then were registered as trial subjects and a trial code was given to each subject. Patients willing for trial and ready to give informed & written consent of age group 15 to 70 years of either sex with the complaints of *Mutravaha Srotodushti* were included in the study.

EXCLUSION CRITERIA: Polycystic kidney, Hydronephrosis, *Mutravaha Srotodushti* associated with complicating foreign bodies like indwelling catheter etc., patients with evidence of malignancy, patients with poorly controlled Diabetes mellitus, patients on prolonged (>6 weeks) medication with corticosteroids, anti-

depressants, anti-cholinergics etc. or any other drug that may have an influence on the outcome of study.

Subject withdrawal criteria: Voluntary withdrawal by the research subject with or without information, unco-operative patient, complication of the procedure or appearance of any ailments during the trial requiring medical or surgical intervention.

Follow-up: 3 follow ups at 7 days interval.

Drug regimen:

- Form - Tablet (250mg) each
- Dose -2 tablets twice daily
- Duration -21 days
- Anupana - Jal
- Patients were advised to take the medicine 20 minutes after the meals.

ASSESSMENT CRITERIA: To assess the various signs and symptoms, Scoring System was adopted.

Subjective criteria: On the basis of clinical symptoms

- i) ***Sadaah Mutrata***
 - No burning micturition 0
 - Mild burning micturition 1
 - Moderate burning micturition 2
 - Severe burning micturition 3
- ii) ***Abhikshna Mutrata (Increased frequency of urine)***
 - Patient passing urine 4-5 times a day 0
 - Patient passing urine 6-10 times a day 1
 - Patient passing urine 11-20 times a day 2
 - Patient passing urine >21 times a day 3
- iii) ***Sashool Mutrata***
 - No pain during micturition 0
 - Mild pain during micturition 1
 - Moderate pain during micturition 2
 - Severe pain during micturition 3
- iv) ***Peeta/ Shweta Mutrata (Turbidity)***
 - No cloudiness/clear urine 0
 - Definite cloudiness (without flocculation) 1

- Granular cloudiness (without flocculation) 2

- Dense opaque cloudy flocculation 3

v) **Krichra Mutrata**

- No difficulty during micturition 0
- Difficulty at the beginning of the act 1
- Difficulty at beginning & partially during rest of the act 2
- Difficulty present throughout the act 3

vi) **Sarakt Mutrata (Haematuria)**

- No RBC /hpf in the urine 0
- RBC 1+/hpf in the urine 1
- RBC2++/hpf in the urine 2
- RBC3+++/4++++/hpf in the urine 3

b. **Objective Criteria:**

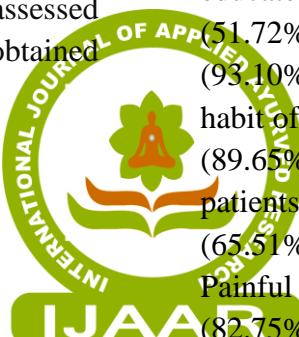
Investigational assessment: Some of the laboratory findings were assessed by grading them and others were assessed simply evaluating the results obtained from them as follows:

i. **Pus cells in urine Grade**

- 0-5/ hpf - 0
- 1+/hpf - 1
- 2++/hpf - 2
- 3+++/ hpf - 3

ii. **Epithelial cells in urine**

- 0-5 hpf - 0
- 1+/hpf - 1



- 2++/hpf - 2
- 3+++/ hpf - 3

3. Urine Culture: Urine culture reports were assessed before & after completion of clinical trial.

4. ESR and TLC: These were also assessed by simply evaluating their values before and after completion of trial.

In this clinical study, total 30 patients were registered and 29 patients completed the trial which were analyzed statistically to obtain the result of therapy. Maximum number of patients in the present study belonged to the age group 15-30 years (51.72%), Female (79.31%), Hindu (96.55%), Married (55.17%), resident of Rural area (86.20%), students (48.27%), educated upto higher secondary level (51.72%), belonged to middle class group (93.10%), mixed diet habit (58.62%), had habit of tea (65.51%), satisfactory hygiene (89.65%). The clinical features found in patients were: Burning micturition (65.51%), Increased frequency (96.55%), Painful micturition (86.20%), Turbid urine (82.75%), Dysuria (68.96%) and Haematuria (10.34%).

RESULTS: Paired T test⁷ was used for the statistical analysis of the observation

Table No.1- Effects of the therapy on clinical features after completion of trial

Clinical features	N	Mean score		Diff.	Percentage Relief	S.D \pm	S.E \pm	T	P
		BT	AT						
Sadaahmutrata	19	1.10	0.31	0.79	71.87	0.90	0.16	4.73	<0.001
Abhikshnmutrata	28	1.82	0.41	1.41	77.35	0.62	0.11	12.12	<0.001
Sashoolmutrata	25	1.58	0.34	1.24	78.26	0.68	0.12	9.69	<0.001
Peetmutrata	24	1.06	0.27	0.79	74.19	0.67	0.12	6.32	<0.001
Krichhramutrata	20	1.00	0.17	0.82	82.75	0.75	0.14	5.87	<0.001
Saraktamutrata	3	0.13	0.06	0.06	50	0.25	0.04	1.44	>0.05

Table No. 2- Effects of the therapy on urine analysis findings

Variables	N	Mean Score		Difference	Percentage Change	S.D _±	S.E _±	T	P
		BT	AT						
Pus cells	21	1.37	0.41	0.96	70	1.11	0.20	4.65	<0.001
Epithelial cells	18	1.06	0.34	0.72	67.74	0.96	0.17	4.06	<0.001

Overall effects- Markedly improved- 14, Moderately improved-14, Unimproved-0 patients

DISCUSSION: *Mutravaha Srotodushti* is a disorder in which *apana vayu* is vitiated and has *pratiloma gati* instead of *anuloma*.⁸



UTI is a common and painful human illness that caused significant morbidity in the pre-antibiotic era. The term UTI encompasses a variety of clinical entities, including asymptomatic bacteriuria, cystitis, prostatitis and pyelonephritis. The urinary tract can be viewed as an anatomical unit united by continuous column of urine extending from urethra to the kidneys; described as *Mutravahasrotas* in Ayurveda. Any condition that permits the stasis or obstruction in the urinary tract, predisposes the individual to UTI. Except among infants and elderly, UTI occurs far more commonly in females than in males. As many as 50-80% of women in the general population acquire at least one UTI during their lifetime⁹.

PROBABLE MODE OF ACTION:

Vasti is the seat of *Vata* and the micturition is under the control of

*Apanavayu*¹⁰. Therefore, *Apanavayu*, *Mutra* and *Mutravaha-srotas* are involved in the pathogenesis of this *vikara*. That's why this drug was selected for the trial which had *Vata-shamaka* properties along with its *mutravirechaniya* and *mutrashodhan* action. It contains such contents which are mainly diuretic, anti-inflammatory, anti-bacterial like *Yavakshaar*, *Guggulu* and *Shilajeet*.

Yavakshaar stimulates kidney thus initiating diuretic action and relieves burning micturition. *Yavakshaar* makes urine pH alkaline which prevents growth of bacteria in urine; thus preventing U.T.I. which is the main cause of dysuria.

Guggulu having *Laghu*, *Tikta Guna*, *katu-Tikta Rasa* and *Ushana Veerya*. *Ushana Veerya* pacifies *Vata*, so it reduces pain. It also acts as anti-

inflammatory and cleanses wounds. Due to *Tikshna Guna* it penetrates *Srotas*.

Most of the contents of the trial drug are having the following properties-

- **Katu Rasa¹¹** is *srotoshodhaka* and also dilates the *srotas*.
- **LaghuGuna¹²** is also *srotoshodhaka*.
- **Teekshna Guna** is *shodhaka, kaphavatanashaka* and *mala pravartaka¹³*.
- **Ushana Veerya** pacifies *vata¹⁴*.
- **Madhura Vipaka** is *srishta-vitta-mutramaruta¹⁵* thus causing diuresis.
- **Madhura Rasa and Madhur Vipaka**- By virtue of these, it is *mutral* and *anulomana* thus relieving *pratiloma gati* of *apana vayu*. It also relieves *mutradaha* which is most common symptom found in all patients.

CONCLUSION: *Chandraprabha Vati* has shown statistically significant results in most of the variables of assessment criteria. It reveals that *Chandraprabha Vati* has a definitive role in the management of *Mutravaha Srotodushti*.

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