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Ayurvedic regimen on *Pittaj mutrakrucchra* (Lower urinary tract infection) in child

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Abstract

According to Ayurveda, *Mutrakrucchra* (Dysuria) is a disease of *Mutravaha Srotas* (lower urinary tract infection). The symptoms of different types of *Mutrakrucchra* particularly *Pittaj Mutrakrucchra* consist of *Peeta Mutrata* (yellow color urine), *Sarakta Mutrata* (haematuria), *Sadaha Mutrata* (burning micturition), *Saruja Mutrata* (painful micturition) and *Muhurmuhu Mutrata* (frequent urination). The above-mentioned symptoms have a close resemblance with lower urinary tract infections. Infections confined to Lower UTI commonly cause dysuria with burning micturition, frequency, and urgency. Lower urinary tract infection includes cystitis and urethritis. Hence this attempt of the present article made to define *Pittaja Mutrakrucchra* in a scientific way W.S.R. LUTI. The disease *Pittaj Mutrakrucchra* is well acknowledged in classical texts of Ayurveda with different treatment methods, which can be synchronous to urinary tract infection on theoretical and clinical symptomatology of the disease.

Keywords: *Pittaj Mutrakrucchra*, UTI, *Ervarubijadi Yog* with *Tandulodak* and *Chandraprabha Vati*

Introduction

The urinary tract is the third most common site of infection in children after the gut and respiratory tract, involving the lower urinary tract (cystitis, urethritis) or upper urinary tract infection (pyelonephritis) or both [1]. About 2-8% of children develop UTI by the age of 14 years [2]. About 1-3% boys and 3-8% girls suffer with at least one attack of symptomatic UTI by 14yrs of age. In addition, asymptomatic bacteriuria is seen in 1-3% of infants, pre-school children and school-age girls (not boys) [3]. It is an important cause of morbidity and might result in renal damage often in association with vesicoureteral reflux [4]. Etiological factors of *Mutravaha Srotas Dushti* can be taken as *Hetu* of *Mutrakrucchra Roga*. *Nidan*as are classified according to involved *Dosha* causing *Mutrakrucchra*. According to Ayurveda, *Pittaj Mutrakrucchra* due to consumption of *Ushna*, *Tiksna*, *Ruksha Ahara* and *Mutra Vegadharana*, less water intake, maintaining poor hygiene leads to aggravation of *Pitta* followed by *Kapha* and *Vata* causes impairment in the functioning of *Basti* (urinary bladder). *Dosha*, *Dhatu* and *Mala* are the three main entities of our body. For a healthy body one should have equilibrium of *Dosha* and *Dhatu* the same way proper and continuous excretion of *Mala* is of equal importance. *Samprapti* of any disease is a pathogenesis of that particular disease starting from *Hetu* which causes imbalance in *Dosha* and the spread of *Dosha* to parts other than their *Swasthanas* (site). *Mutrakrucchra* is well explained by *Acharya Charak*. Due to *Hetu Sewan* the *Doshas* get vitiated and get lodge in *Basti* which causes defects in functions and structures of *Mutramarga* i.e. the pathway of urine flow resulting in *Mutrakrucchra* disease. Urinary tract infections such as the abnormal color of urine can be compared with *Sarakta* or *Sapeeta Mutrata*, burning sensation while micturition can be compared with *Sadaha Mutrapravrutti*, and pain while micturition can be compared with *Krucchra* or *Sadaha Mutrapravrutti*, Frequency and urgency can be compared with *Muhurmuhu Mutrapravrutti*. Manifestations of dysuria in infants and children, Infants are unable to express their symptoms and hence, the observations made by the mother can at times offer us important clues in diagnosing dysuria in infants. The manifestations in infants are crying while passing urine, touching off and on the hypo-gastric region and genitals by hand, and goose skin.

Prohibitions:- The patient suffering from different types of *Mutrakrucchra* should avoid exercise, suppress the manifested natural urges, dry articles of food pastries, exposure to strong wind, strong rays of the sun, and food having an astringent taste.

Upadhravas: *Upadhravas* of *Mutrakrucchra* in general are explained by *Acharya Kashyapa*. Those are *Karshya*, *Arati*, *Aruchi*, *Anavasthiti*, *Thrishna*, *Shoola*, and *Vishada* [5].

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The case study discussed here is of 8-year-old female child, who had recurrent episodes of burning micturition and frequently received modern treatment but had temporary relief and relapses were frequent. Then she came to Ayurvedic OPD and was given an Ayurvedic regimen (*Ervarubijadi Yog with Tandulodak and Chandraprabha Vati*). The child had significant relief from signs and symptoms of recurrent episodes of UTI. The recurrence of the disease was found markedly reduced. Ayurvedic management proved to be beneficial in this case of recurrent UTI.

Case Study

Aims and Objective: To evaluate the role of Ayurvedic Regimen in the management of *Pittaj Mutrakucchra*.

Study Design: Present study is a single case study conducted in the department of *Kaumarbhritya* of CSMSS Ayurved College, Kanchanwadi Chatrapati Sambhajanagar Maharashtra.

Materials and Methods

Case Report: A 8 years old female, living in Chatrapati Sambhajanagar, presented in the Outpatient Department (OPD) of CSMSS Ayurved College Kanchanwadi on 07/12/2023 with complaints of *Saruja* (painful), *Sadaha* (burning micturition), *Muhurmuhu Mutrapravritti* (increased frequency of urination) with *Peeta Mutrata* (dark yellow), persistent urge to urine. These symptoms have been recurring on and off for the past 1-2 months. So she came to OPD to take an Ayurvedic regimen.

History of Present Illness: Patient was healthy before 2 months. But suddenly she suffered with first episode of UTI with the above complaints. Further, she had recurrent episodes of burning micturition. Within 2 months she had 4-5 episodes of LUTI.

History of Past Illness: H/O recurrent episodes since 1-2 months. No H/O any other major illness or any surgery.

Drug History: Frequent use of antibiotics for the last 2 months.

Family History: NAD

Birth History: Non-specific

General Examination

Table 1: Showing general examination

General Appearance	Fair
Temp.	98.6 0F
Pulse	92/min
RR	20/min
Height	126 cm
Weight	27 kg

Physical Examination

Table 2: Showing *Ashtavidha Parikshan*

<i>Nadi</i>	<i>Pittapradhan-vaat</i>
<i>Mala</i>	2 times/day
<i>Mutra</i>	8-10 times/day
<i>Jivha</i>	<i>Niram</i>
<i>Shabda</i>	<i>Spashta</i>
<i>Sparsha</i>	<i>Ushna</i>
<i>Druk</i>	<i>Prakrut</i>
<i>Aakruti</i>	<i>Madhyam</i>

Clinical Findings

- Clinical examinations revealed *Pittapradhan-vaat Prakruti* having *Tikshna Agni Bala*, *Mrudu Koshta* and *Madhyam Sharir Bala*.
- The patient was afebrile with 110/70 mm Hg blood pressure. Pulse rate-92/min, RR-20/min.
- On the systemic examination, no abnormality was found in respiratory, cardiovascular, and central nervous system activity.
- Per abdominal examination revealed soft and non-tender.
- Mutravasrotas* examination
- Mutra Matra-Muhurmuhu* (frequent)
- Varna-Peeta*
- Gandha-Durgandha*
- Mutrapravritti*-8-10 times/day micturition with *Daha* and *Ruja*.
- In urine routine examination, dark yellow color slightly turbid with trace albumin, pus cells were 8-10 HPF, epithelial cells 4-5 & RBC 3-4 cells were present.

A patient having symptoms of *Peeta Mutrata*, *Saruja Mutrata*, *Sadaha Mutrata*, *Kruchra Mutrata*, and *Muhurmuhu Mutrapravritti*. After 7 days of treatment, it recovered quite positively. Repeat urine routine examination revealed 1-2/HPF pus cells, Epithelial cells 1-2/HPF, and RBC nil with pale yellow color urine.

Diagnosis: Clinically on the basis of signs and symptoms of *Pittaj Mutrakucchra*. Urine-routine & microscopic.

Treatment Plan

1) Ervarubijadi yog with Tandulodak (rice-wash water) [6] *Ervarubijadi Yog* contains *Ervarubij choorna*, & *Yashtimadhu choorna*, & *Devdaru Choorna* in equal quantity along with *Tandulodak* (rice water). *Tandulodak* is obtained by soaking and squeezing one *Pala* of broken rice and water eight times [7]. All the ingredients have their own properties. 5 gm *Ervarubijadi Choorna* with *Tandulodak* in 3 divided doses.

2) Chandraprabha Vati:- 250 mg----1 Tab BD after meal Nidanapanchaka

The manifestation of any disease is described in five steps in Ayurveda these are *Nidana*, *Purvarupa*, *Rupa*, *Upashaya* and *Samprapti*. These help in proper diagnosis of disease.

Nidana: *Aharaj-Ruksha Ahara*, habitual eating of incompatible food items like spicy, excess pickle, junk food, *Katu*, *Amla*, *Lavana Rasatmak Ahar Ati Sewana*. *Viharaj-riding fast cycle*, common washrooms. Activities-The suppression of natural urges- Suppression of micturition, defecation and flatulence.

Poorvarupa: *Saruja*, *Sadaha Mutrapravritti*.

Rupa: *Saruja* (painful), *sadaha* (burning), *Peeta Mutrata* (yellow color), *Muhurmuhu Mutrapravritti* (frequent urination).

Samprapti or pathogenesis of dysuria: When the *Doshas* being vitiated due to their specific aggravating factors reached the urinary bladder individually or combined, those afflict the urinary passage. In such a condition the patient passes urine with difficulty. If *Pitta* is the cause of dysuria the patient passes yellow and blood-mixed urine repeatedly with difficulty, pain, and burning sensation. In

Kashyapa Samhita it is described that *Mutrakrucchra* is *Pittapradhana Tridoshaja Vyadhi*.

In the above patient due to habitual eating of incompatible food items, *Vata Prakopjanya Vihar* and the suppression of natural urges *Pittapradhan Tridosha* vitiated and due to their (*Doshas*) specific aggravating factors reached the urinary bladder individually or combined, and afflicted the urinary passage resulting in *Pittaj Mutrakrucchra*.

Samprapti Ghataka

Table 3: Showing Samprapti Ghatak

<i>Dosha</i>	<i>Pittapradhan Tridosha</i>
<i>Dushya</i>	<i>Mutra</i>
<i>Srotas</i>	<i>Mutravaha</i>
<i>Agni</i>	<i>Jataragni and Dhatwagni</i>
<i>Udbhavasthana</i>	<i>Amashaya Pakwashaya</i>
<i>Sanchara Sthana</i>	<i>Mutramarga</i>
<i>Vyakt Sthana</i>	<i>Mutramarga</i>
<i>Rogmarga</i>	<i>Madhyama</i>

Table 4: Showing grading scale of subjective and objective criteria [8]

Grades	<i>Saruja (Pain)</i>	<i>Sadaha (Burning)</i>	<i>Mutravravritti (Frequency)</i>	Color of urine	No. of Pus cells	No. of RBC
--	No pain	No pain	No frequent micturition (normal 6-8 times)	Clear to Pale yellow	No pus cells	No RBC
+	Occasional only at starting of micturition	Occasional only at starting of micturition	Frequent but controlled (8-10 times)	Dark yellow	0-5 pus cells/HPF	0-5 RBC
++	Tolerable at starting and during micturition	Tolerable at starting and during micturition	Often frequent not able to control (10-12 times)	Amber	6-10 pus cells/HPF	6-10 RBC
+++	Unable to tolerable and prolonged for long time	Unable to tolerable and prolonged for long time	More than 12	Orange / Red	11-15 pus cells/HPF	11-15 RBC
++++					>16 pus cells/HPF	>16 RBC

Observation and result

Table 5: Showing observation and result

Observation	Before regimen	After completion of regimen
<i>Sadaha Mutravrittii</i>	++	--
<i>Saruja Mutravrittii</i>	++	--
<i>Muhurmuhu Mutravrittii</i>	++	--
Color of urine	Dark Yellow	Pale Yellow
No of pus cells	++	--
No of RBC	+	--
pH of urine	5	6

Assessment of Result

Table 6: Showing assessment of result

Sr. No.	Efficacy of the regimen	Relief in signs & symptoms in percentage
1	Excellent	Above 75%
2	Moderate	50-75%
3	Mild	25-50%
4	Ineffective	Below 25%

Discussion

Nidana Parivarjan is the first line of management in *Pittaj Mutrakrucchra*. The child had specific *Aharaj* and *Viharaj Hetu*. The *Ervarubijadi Yog* was given to the patient in the

form of *Choorna* along with *Tandulodak* and *Chandraprabha Vati*.

Mode of Action

Table 7: Showing mode of action

Drug name	<i>Ervarubij</i> [9]	<i>Yashtimadhu</i> [10]	<i>Devdaru</i> [11]
Latin Name	<i>Cucumis sativus</i>	<i>Glycerrhiza glabra</i>	<i>Cedrus deodara</i>
Family	Cucurbitaceae	Leguminosae	Pinaceae
Rasa	<i>Madhur</i>	<i>Madhur</i>	<i>Tikta, Katu</i>
Virya	<i>Sheeta</i>	<i>Sheeta</i>	<i>Ushna</i>
Vipaka	<i>Madhur</i>	<i>Madhur</i>	<i>Katu</i>
Guna	<i>Laghu, Ruksha</i>	<i>Guru, Snigdha</i>	<i>Laghu, Snigdha</i>
Doshakarma	<i>Pittashamak</i>	<i>Vatapittashamak</i>	<i>Vatakaphaghna</i>
Karma	<i>Mutral, Dahashamak</i>	<i>Mutral, Mutravirajaniya, Vedanasthapak, Dahashamak</i>	<i>Mutrajana, Vedanasthapak</i>
Prayojyanga	<i>Beej, Phal</i>	<i>Mula</i>	<i>Kandsar, Tail</i>

1. ***Ervarubij Choorna*:** The probable mode of action of this drug can be assumed due to its predominance of *Mutral Karma* (diuretic property). Due to its *Mutral Karma*, the seed acted as a diuretic and also has cooling and nutritive

properties [12]. *Ervarubij* has *Madhur Rasa, Sheeta Virya* and *Madhur Vipak*. The pain was due to aggravated *Vata Dosha* and the burning micturition was due to aggravated *Pitta Dosha*. So, because of *Madhur Rasa* and *Sheeta*

- Virya*, it was found to help relieve the symptoms -pain and burning micturition respectively.
- Yashtimadhu Choorna:** Being *Madhur* and *Snigdha*, it is *Pittaghna*, and being *Guru*, *Snigdha*, and *Madhur*, it is *Vataghna*. So, being *Vatapittashamak* it eliminated *Daha* and the pain associated with *Mutrakrucchra*. It has a property- *Mutravirajaniya*. Due to this *Karma*, it eliminated the dark yellow discoloration of *Mutra* caused by *Pittaprapok*. Like *Ervarubij Yashtimadhu* also has diuretic property.
 - Devdaru Choorna:** It acted as *Mutranjana* because of *Ushna* and *Snigdha* *Gunas*. It eliminated *Mutragata Doshas* due to its *Tikta Rasa*. It should be used to cause *Kledashoshana* if present in urine in excess form. By eliminating *Pooya* and *Kleda* due to its *Ushna*, *Tikta*, and *Snigdha* *Guna* it acted as *Kledashoshak* and *Mutrashodhak*.
 - Chandraprabha Vati** ^[13]: It is effective against urinary tract infection and painful urination. It helps to remove harmful toxins from the body. It promotes healthy functioning of the kidneys. It is also proven beneficial chronic kidney disease, kidney stones and cystitis. It is indicated in all types of *Mutrakrucchra*. The drugs like *Vacha*, *Guduchi*, *Haridra*, *Pippali*, *Gajpippali*, *Maricha*, *Shunti*, *Kshara*, *Guggulu* etc. These *Vati* act as a diuretic, anti-inflammatory, antispasmodic, antiseptic and antibacterial, as a *Rasayan*, improve bladder tone.

After taking this treatment for seven days, the patient got satisfactory relief without any recurrence. Also, He was advised to avoid incompatible food items and avoid holding natural urges that aggravate the *Doshas*.

Conclusion

Almost all ingredients have diuretic properties along with *Madhur*, *Tikta*, *Katu*, *Sheeta*, *Ushna*, *Laghu*, and *Snigdha*, properties and these properties acted on the *Mutravaha Srotas*. From this study, after the pre and post-assessment of intervention, it can be concluded that the *Ervarubijadi Yog* with *Tandulodak* and *Chandraprabha Vati* can be effective in the management of *Pittaj Mutrakrucchra* in the child.

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