

Correlation of Urine Analysis with *Mutrakriccha* Types: A Modern and Ayurvedic Approach

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Abstract: This study investigates the relationship between *Mutrakricchra*, a urinary disorder characterized by painful symptoms such as burning sensation, frequent urination, and blood - stained urine, and various parameters of urine routine microscopy examination. Traditional Ayurvedic practices emphasize a holistic approach to addressing the root causes of *Mutrakricchra*, presenting effective alternatives to antibiotics and synthetic alkalizers. The disorder may manifest alongside conditions such as haemorrhoids, kidney stones, and urinary obstruction, complicating diagnosis and treatment. Utilizing diagnostic methods described in Ayurvedic texts, including *Rogi Rog Pariksha*, *Dashvidh Pareeksha*, and *Ashtavidha Pareeksha*, this study aims to integrate modern diagnostic tools with traditional knowledge. By focusing on urine analysis, this research seeks to provide insights that could enhance clinical practice and contribute to a better understanding of urinary disorders within the medical community.

Keywords: *Mutrakricchra*, urine routine microscopy

1. Introduction

Ayurveda, regarded as the oldest healing science, traces its origins to the *Vedas*, with the term "*Ayurveda*" in Sanskrit translating to "the science of life." In *Ayurvedic* philosophy, urine (*Mutra*) is produced from the waste components (*Kitta Bhaga*) of food (*Ahara*) through the action of digestive fire (*Jatharagni*). Urinary disorders fall under the category of *Mutravaha Srotas* and are classified into two main conditions: *Mutrakricchra* and *Mutraghata*.

While the symptoms of *Mutrakricchra* and *Mutraghata* may appear similar, ancient scholars such as *Acharya Dalhana*, *Acharya Chakrapani*, and *Acharya Vijayarakshita* have made distinctions between the two. The primary difference lies in the intensity of obstruction (*Vibandha* or *Avrodha*), which is more pronounced in *Mutraghata*. In cases of *Mutrakricchra*, patients typically experience a burning, tingling, and stinging sensation in the urethra before, during, and after urination. It is believed that the aggravated *Doshas*, resulting from repeated exposure to causative factors, either individually or collectively, reach the bladder (*Basti*) in *Mutrakricchra*. In contrast, *Mutraghata* signifies a stage of *Sthana Samsraya* (localization of disease), leading to more severe manifestations.

Symptoms of *Mutrakricchra* include burning sensation (*Daha*), pain (*Ruja*), frequent urination (*Muhurmutrata*), and heaviness in the bladder (*Basti Guruta*). This disorder is extensively detailed in all major *Ayurvedic* texts. Currently, there is an observed increase in hospital visits related to disorders of the *Mutravaha Srotas*, attributed to unhealthy dietary practices (*Mithya Ahara*) and lifestyle habits (*Mithya Vihara*), such as consuming adulterated food and contaminated water, alongside the prevalent use of germicidal medications.

Diseases arising from the vitiation of *Mutravaha Srotas* include *Mutraghata*, *Mutrakricchra*, *Mutrashmari*, and *Prameha*. Understanding the etiological factors, pathogenesis, symptomatology, treatment modalities, and dietary habits is essential for effective management of these disorders.

Mutrakricchra can be correlated with dysuria, defined as pain, burning, or discomfort during urination, and must be differentiated from other forms of bladder discomfort, such as suprapubic or retropubic pain, which usually intensifies with bladder volume. Dysuria affects approximately 3% of adults over 40 years of age. The most common pathogenic organism in urinary tract infections (UTIs) is *Escherichia coli* (*E. coli*), which can ascend through the urinary tract or enter via hematogenous routes, leading to acute onset symptoms including chills, fever, loin pain, and dysuria.

Classical texts characterize the condition with the phrase "*Dukhen Mutra Pravritti*," encompassing any form of discomfort during urination under the umbrella of *Mutrakricchra*. This broad term aligns with conditions classified in modern medical science as UTIs, wherein part of the urinary tract is infected.

This study aims to establish relationships between different types of *Mutrakricchra* and various parameters of urine examination. Statistical analyses reveal correlations between urinary parameters and *Ayurvedic* urinary disorders. Notably, *Vataja Mutrakricchra* shows a moderate positive correlation with specific gravity and calcium oxalate crystals, indicating that the severity of *Vataja* symptoms correlates with increased specific gravity. *Pittaja Mutrakricchra* demonstrates moderate positive correlations with foul Odor and glucose levels. Additionally, *Kaphaja Mutrakricchra* correlates with red blood cells (RBCs) and white blood cells (WBCs), suggesting cystitis.

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Abhighataja Mutrakricchra shows weak positive correlations with bilirubin, glucose, and bacterial presence, while *Shakrat Mutrakricchra* exhibits positive correlations with bilirubin, glucose, and bacteria, reflecting increased severity. Lastly, *Ashmarijanya/Sharkara Mutrakricchra* reveals strong positive correlations with calcium oxalate crystals and epithelial cells, highlighting the importance of these findings in identifying individuals at risk.

Aims and Objectives

- 1) To observe and establish the relation between different types of *Mutrakriccha* and Physical parameters of urine.
- 2) To observe and establish the relation between different types of *Mutrakriccha* and Chemical parameters of urine.
- 3) To observe and establish the relation between different types of *Mutrakriccha* and Microscopic parameters of urine.

2. Material and Methods

The material used for study is categorized under the following headings –

Literary sources: For the present study, literary data was obtained from *Vedic* scriptures, *Ayurvedic Samhitas*, and *Sanskrita* dictionaries. Retrospective study of database books related to modern science, research studies published in peer-reviewed journals and conference proceedings and various web-resources like Google, DHARA etc. was done for seeking information about related research works.

Clinical study: A total of 50 patients with classical features of *Mutrakriccha* attended the OPD and IPD of Rog Nidan department at Rishikul Campus Hospital, UAU, Haridwar. They were randomly selected for this study, regardless of their sex, religion, occupation, etc.

Assessment tools: Clinical features, subjective and objective parameters.

Clinical study: A total of 50 patients with classical features of different type of *Mutrakriccha* is selected, out of which, 50 patients who fulfilled the inclusion and exclusion criteria were registered for the study and evaluated in detail based on the *Lakshana* of different type of *Mutrakriccha* assessment criteria and urine examination.

Criteria for selection of patients

Inclusion Criteria -

The following point as inclusion criteria were considered in the study.

- Age criteria: 18 yrs to 60 yrs.
- Patient having Lakshana of *Mutrakriccha Vyadhi* as per *Ayurvedic* Classic were included under the study.

Exclusion Criteria

- The following point as exclusion criteria were considered in the study.
- Age of patient less than 18 yrs and more than 60 yrs.
- Patients having any surgical history of urinary tract.
- Patients having HIV.

- Patients having any other major illness systemic disorders.

Criteria for assessment –

- 1) **Subjective criteria** - *Lakshana* of different type of *Mutrakriccha*
- 2) **Objective criteria** - Routine and Microscopic examination

Subjective criteria

VATAJ MUTRAKRICCHA

Table 1

S. No	Symptoms	Present	Absent
1	vYieYia ew= (Less quantity of urine)		
2	leqRihMi eq"d (Pain in scrotum during micturition)		
3	leqRihMiesgu (Pain in penile during micturition)		
4	leqRihMicfLrfHk% (Pain in bladder during micturition)		

PITTAJA MUTRAKRICCHA

Table 2

S. N	Symptoms	Present	Absent
1	eq". ka ew= (yellow hot urine)		
2	jaa ew= (red urine)		
3	vfXuuknaekukHkS (burning micturition)		

KAJAJA MUTRAKRICCHA

Table 3

S. N	Symptoms	Present	Absent
1	स्निग्ध मूत्र (Sticky Urine)		
2	शुक्ल मूत्र (Whitish Urine)		
3	मनुष्ण मूत्र (Hot Urine)		
4	eq"d xq#fHk% (Heaviness of scrotum)		
5	esgu xq#fHk% (Heaviness of penile)		
6	cfLrfHk%xq#fHk% (Heaviness of bladder)		

SANNIPATAJA MUTRAKRICCHA

Table 4

S. N	Symptoms	Present	Absent
1	nkg (burning)		
2	'khr (cold)		
3	#tkfo"Vks (feeling cold & chills with pain and post voided burning micturition)		
4	ukuko. kaZ ew= (Different colour of urine)		
5	rkE; ekuLrq —PN"s. k (black out during micturition)		

ABHIGATAJ MUTRAKRICCHA

Table 5

S. N	Symptoms	Present	Absent
1	Hk'kosnu% (Very painful)		

SHAKRIT MUTRAKRICCHA

Table 7

S. N	Symptoms	Present	Absent
1	vk/ekua (flatulence)		
2	l'kwya (with pain)		
3	ew=l ³ ~xa (stranguary)		

ASHMARIJ/SHARKARA MUTRAKRICCA

Table 8

S. N	Symptoms	Present	Absent
1	âRihMk (pain in cardiac region)		
2	osiFkq (tremors)		
3	'kwyadq {kkS (abdominal pain)		
4	ofâ% lqnqçZy (diminished digestion)		
5	ewPNkZ (unconsciousness)		
6	ew=k?kk'p (obstruction in urine)		

3. Observation and Result

In this study we observe that prevalence of the disease is the majority (42%) were aged 31 - 50 years, with a notable female predominance (64%). Most patients (70%) were married, 83% identified as *Hindu*, and 64% belonged to a middle socioeconomic status. Educationally, 28% were uneducated, and 46% were housewives. The dominant taste was *Lavan Rasa* (74%), while dietary habits showed that 52% had irregular diets. In terms of appetite, 62% reported moderate appetite, and sleep disturbances affected 48% of patients. Bowel habits indicated that 38% had irregular movements, with 22% experiencing constipation. Exercise habits were poor, with 52% not exercising at all. Addictions were common, with 82% consuming tea/coffee and significant percentages engaging in smoking, tobacco use, and other habits. The study of various types of *Mutrakriccha* revealed distinct symptoms corresponding to classical descriptions. In

Vataja Mutrakriccha, 80% of patients reported oliguria and lower abdominal pain, consistent with classical signs. In *Pittaja Mutrakriccha*, burning micturition was prevalent, with 96% experiencing this symptom and 82% reporting pain along with yellow urine, aligning with traditional features. For *Kaphaja Mutrakriccha*, 98% experienced heaviness in the lower abdomen, alongside reports of sticky and whitish urine, reflecting classical characteristics. *Sannipataja Mutrakriccha* showed that 98% had burning micturition, with 36% experiencing chills and blackouts during urination, consistent with classical symptoms. In *Abhigataja Mutrakriccha*, 8% reported painful micturition. *Shakrit Mutrakriccha* presented with flatulence in 50% of cases and pain in 26%, matching classical presentations. Finally, in *Ashmarjanya/Sharkara Mutrakriccha*, 78% of patients reported diminished digestion, and 76% experienced abdominal pain, which aligns with traditional descriptions.

The study examining the physical, chemical, and microscopic parameters of urine in various types of *Mutrakriccha* revealed findings that align closely with classical *Ayurvedic* descriptions based on *Dosha* involvement. The physical parameters showed variations in urine colour, clarity, and consistency that corresponded with classical texts. In the chemical analysis, pH levels were consistent with the characteristics of *Vataja* and *Pittaja Mutrakriccha*, with most patients exhibiting no protein or red blood cells (RBCs) in their urine, aside from minimal RBC presence in some cases; glucose levels were also absent or minimal, with some variability in *Vataja* and *Pittaja* cases. The microscopic examination identified mild haematuria as most common in *Vataja* and *Pittaja Mutrakriccha*, alongside elevated white blood cell counts and a higher prevalence of yeast infections in these cases. Granular casts were specifically associated with *Pittaja Mutrakriccha*, while non - cellular elements were more varied in *Vataja* cases, and cholesterol crystals were notably frequent in *Pittaja*. Overall, the study confirmed that both subjective and objective urine parameters in *Mutrakriccha* are consistent with traditional *Ayurvedic* descriptions, reinforcing the significance of *Dosha* dominance in these conditions.

Karls pearson correlation method used to check correlation between two parameters and obtained result.

Table 9

S. NO	Physical Exa.	Sample Size	p*	r*	Correlation
1	Volume oliguria	50	0.732	0.732	No relation
2	Specific Gravity (1.003to1.030)	50	0.562	0.563	No relation
	> (1.003 to 1.30)	50	0.03524	0.423	Moderate Positive relation
3	Odour Foul	50	0.0523	0.0523	No relation
4	Colour red	50	0.294	0.151	No relation
5	Appearance turbid	50	0.772	0.0420	No relation
6	PH 5	50	0.0516	0.277	No relation
	>5	50	0.0685	0.466	No relation

Karl Pearson's correlation coefficient was computed to test the correlation between *Vataj Mutrakrichha* and urine

physical parameters. From the table, we can observe a positive correlation between specific gravity and *Vataj*

Mutrakrichha, as indicated by a p - value of less than 0.05. A moderately positive correlation was found between specific gravity and *Vataj Mutrakrichha* ($r = 0.423$). Therefore, we can conclude that there is a significant correlation. For other

parameters, the p - value is greater than 0.05, indicating no significant correlation between *Vataj Mutrakrichha* and the other urine physical parameters.

Table 10

Types of <i>MUTRAKRICCHA</i>	Physical examination	Result	Chemical examination	Result	Microscopic examination	Result
<i>VATAJ</i>	SPECIFIC GRAVITY	MS	NS		CRYSTAL (calcium oxalate)	WS
<i>PITTAJ</i>		NS	Glucose	WS	RBC WBC	WS MS
<i>KAPHAJ</i>	NS			NS	RBC WBC	WS MS
<i>SANNIPATAJ</i>	NS			NS	-	-
<i>ABHIGHATAJ</i>	NS		GLUCOSE	MS	Bacteria Cast (Red Cell)	MS MS
<i>SHAKRAT</i>	NS		BILIRUBIN GLUCOSE	MS MS	Cast (Red Cell)	MS
<i>ASHMARJANYA</i>	NS		NS		Epithelial Cell Calcium Oxalate	HS MS
<i>SHARKARA</i>	NS		NS		Epithelial Cell Calcium Oxalate	MS

4. Discussion

The provided table serves as a crucial illustration of the complex relationship between the severity of different types of *Mutrakriccha* and the associated urine parameters. The physical, chemical, and microscopic examination results for various types of *Mutrakriccha*, highlighting the differences and similarities among them. *Vataja Mutrakriccha* exhibits a specific gravity indicating mild significance, along with the presence of calcium oxalate crystals, which may suggest metabolic issues. In *Pittaja Mutrakriccha*, glucose is detected, and there are significant amounts of red blood cells (RBCs) and white blood cells (WBCs), which could indicate inflammation or infection, consistent with classical descriptions of this type. The results for *Kaphaja Mutrakriccha* show no significant findings in the physical and chemical examinations, but RBCs and WBCs are present microscopically, suggesting that there may be underlying conditions that require further investigation. *Sannipataja Mutrakriccha* shows no significant findings across all examinations, indicating a potential need for more specific diagnostic criteria. In *Abhighataja Mutrakriccha*, the presence of glucose and bacteria, along with red blood cell casts, suggests a urinary tract infection or renal impairment. The *Shakrat* type shows significant levels of bilirubin and glucose, as well as red cell casts, which could indicate liver dysfunction or haematuria. Finally, both *Ashmarjanya* and *Sharkara Mutrakriccha* reveal the presence of epithelial cells and calcium oxalate crystals, suggesting potential kidney stone formation or metabolic issues. Overall, the table illustrates how the examination results correspond with classical *Ayurvedic* understanding of these conditions, reinforcing the importance of a holistic approach in diagnosis and treatment.

5. Conclusion

In this study, when we analyzed the different types of *Mutrakriccha* and their physical parameters of urine, the

specific gravity was found moderately positive relation in the case of *Vataja Mutrakriccha* and foul odor was found moderately positive relation in *Pittaja Mutrakriccha*. no significant relation was found in any other type of *Mutrakriccha*.

When we analysed the different types of *Mutrakriccha* and their chemical parameters of urine, glucose was found to be weakly positive relation were having in *Pittaja Mutrakriccha*. and weakly positive relation in *Sannipataja Mutrakriccha*. Glucose was moderately positive relation in *Abhighataja Mutrakriccha*, while bilirubin and glucose were moderately positive relation in *Shakrat Mutrakriccha*. No significant relationship was found in *Vataja*, *Ashmari* and *Sharkara Mutrakriccha*.

In the study, we analysed the different types of *Mutrakriccha* and the microscopic parameters of urine. Crystals (calcium oxalate) were found to be weakly positive relation in *Vataja Mutrakriccha* and RBCs were weakly positive relation, while WBCs were moderately positive relation in *Pittaja Mutrakriccha* and *Kaphaja Mutrakriccha*. Bacteria and casts (red cells) were moderately positive relation in *Abhighataja Mutrakriccha*, and bacteria and red cell cast were moderately positive relation in *Shakrat Mutrakriccha*. Epithelial cells were highly positive relation, and calcium oxalate was moderately positive relation in *Ashmarjanya Mutrakriccha*. . No significant relationship was found in *Sannipataja Mutrakriccha*

References

- [1] <https://www.aafp.org/article/Dysuria:EvaluationandDifferentialDiagnosisinAdults> Abstract Data Taken
- [2] Text book of pathology Harsh mohan 8th edition captor 22 the kidney and lower urinary tract pag no 711. JAYPEE the health sciences publisher.

- [3] Madhava nidanam “madhukosh” vyakhya vibhushitam shriyadunandan Upadhyay chukhambha Prakashan Varanasi adhyay 30page 552.
- [4] Sushruta Samhita, Vidyotini Hindi Commentary, Chaukhambha Bharti Academy, Varanasi, Reprint Year
- [5] Ashtang Hridya, Srimad Arundatt Krita Sarvanga Sundarakhya Teeka Published by Motilal Banarasi Dass,
- [6] Ashtang Hridya, Srimad Arundatt Krita Sarvanga Sundarakhya Teeka Published by Motilal Banarasi Dass, The Punjab Sanskrit Book Depot, Lahore 1993, A. H. Chi - 11, Page Nmb 803.
- [7] Kashyap Samhita, Sanskrit Introduction by Nepal Rajguru Pandit Hemraj Sharma, Vidyotni HindiCommentary, Hindi Translational of Sanskrit Introduction by Shei Satyapal Bhisagacharya Chaukhambha Sanskrit Sansthana, 3rd Edition, khila sthana 10, Antarvartini Chikitsa Adhyaya/144 - 145, Page Number 301.
- [8] Kashyap Samhita, Sanskrit Introduction by Nepal Rajguru Pandit Hemraj Sharma, Vidyotni Hindi Commentary, Hindi Translational of Sanskrit Introduction by Shei Satyapal Bhisagacharya Chaukhambha Sanskrit Sansthana, 3rd Edition, Khila sthana11/11, Page Number 305
- [9] Bhela Samhita, Text with English Translation Commentary and Critical Notes, Dr K. H. Krishnamurthy, EditorProf Priyavrat Sharma, Chaukhambha Visvabharti, Varanasi Reprint Year 2006, Chikitsa Sthana 12, Page No.371.
- [10] Madhav Nidan With Madhukosh Sanskrit Commentary by Shri Vijayraksita & Shri Kanthadatta WithVidyotini Hindi Commentary Revised &Edited by Prof. Yadunandan Upadhyaya, Part - 1, ChaukhambhaPrakashan, Varanasi, Adhyaya - 30 (Mutrakrichhra Nidana), 31 (Mutraghanta Nidana), 32 (Ashmari Nidana).
- [11] Yoga Ratnakar, Pt. Sadashiv Shastri Joshi, Printed by Jaya Krishna Das Gupta, Vidya Vilas Press Varanasi City Mutrakrichhra Nidana, Page Number 50 - 60.
- [12] Sushruta Samhita, Vidyotini Hindi Commentary, Chaukhambha Bharti Academy, Varanasi, Reprint Year 2017, Voll, Su. Sha.9/12.

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