

Haritakyadi kwath – An indigenous decoction for Pittaj Mutrakrichha that emphasizes urinary tract infections – A novel case series

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ABSTRACT:

Background:

Urological disorders, or *Mutrarogas*, have been existent since the vedic era. Under the disorders of *Mutravaha Srotas* (urinary system), the term *Mutrakrichha* (Urinary tract infections) mostly refers to *shula* (pain) and *kricchrata* (dysuria). There is an excellent depiction of this illness in almost every classical literature. Our ancient physicians were well-versed in the etiopathogenesis and therapy of these conditions. According to contemporary texts, there is a correlation between these, particularly with urinary tract infections (urethritis and cystitis). Consequently, the goal of the current study was to assess *Pittaj Mutrakrichha* in regard to urinary tract infections and haematuria from the perspective of science. *Pittaj Mutrakrichha* shares symptoms, such as *peeta mutrata* (yellowish urine), *sarakta mutrata* (hematuria), *sadaha mutrata* (burning micturition), *saruja mutrata* (dysuria) and *muhur-muhur mutrata* (frequent micturition, with urinary tract infections). Classical texts mention a variety of decoctions, pills, coarse powders, and local therapies. Oral administration of *Haritakyadi kwath* is one such remedy that was traditionally mentioned to heal the condition.

Objective: To assess the new conceptual drug for *Pittaj Mutrakrichha*, which is non-invasive and aids in regaining the urinary system's normal function by minimizing symptoms and preventing the disease from reoccurring.

Methodology: Current case series on 5 subjects was conducted on pre-diagnosed patients of *Pittaj Mutrakrichha* between age group of 18 to 60 years of age with irrespective of their sex and were treated with oral administration of *Haritakyadi kwath* (50 ml) with honey as *anupan* twice a day pre-prandial for course of 15 days.

Conclusion: Patients at *Pittaj Mutrakrichha* had remarkable relief from the symptoms after oral administration of *Haritakyadi kwath*, which contributed to the discovery of a novel treatment approach to the illness.

KEYWORDS: *Pittaj Mutrakrichha*, Urinary Tract Infection, Haematuria, Dysuria, *Haritakyadi kwath*.

INTRODUCTION:

The traditional Indian medical system known as *Ayurveda* emphasizes a natural, all-encompassing approach to mental and physical well-being. Urine is the primary fluid waste that purges the body of excess *kleda*. The modern period has seen an increase in the vitiation of all three *Doshas* as a result of working patterns, hectic schedules, current lifestyles, and engaging in aetiology (1). This vitiation accumulates in the urinary system, vitiates urine, and results in *Pittaja Mutrakrichha*. When the vitiated *Pitta dosha* and *Vata* (mostly *Apana vata*) reach the *Basti* (urinary bladder) in *Mutrakriccha*, they affect the *Mutravaha Srotas*, causing the patient to experience symptoms like yellowish urine, hematuria, burning micturition, dysuria and frequent micturition (2). It may occur concurrently with a UTI, with the most common complaints being dysuria, burning micturition, haematuria, and increased frequency of urination. The concept of the urinary system is described in *Ayurveda* under the *mootravaha srotas*, which effectively conserves water and other valuable resources while expelling waste products. But there are a lot of diseases that can interfere with this homeostasis, being one of them. In order to maintain the system's regular functioning, numerous *Ayurvedic* formulations are mentioned in classical texts. *Mutrakriccha* and UTIs are related because of their comparable symptoms.

E. Coli is the primary cause of urinary tract infections, which can also be brought on by *Proteus mirabilis*, *Enterobacteriaceae*, *Enterococcus* species, *Pseudomonas aeruginosa*, and *Staphylococcus saprophyticus*. Urinary tract infections can affect the kidneys or bladder. Microbial growth in the urogenital tract, urinary stasis, circumcision in male children, bioflora favouring pathogenic urobacteria, lactobacillus and probiotic products, vaccination, management of dysfunctional elimination syndrome, long-term antibiotic prophylaxis, and repeated catheterization are among the risk factors for recurrent urinary tract infections(3). Urinary tract infections are on the rise, and factors such as obstructive uropathy, severe vesicoureteral reflux, constipation, poverty, and illiteracy all play a role. Although anatomical factors make the lower urinary tract in women more susceptible to infection, a healthy urinary tract is naturally resistant to infections. UTIs primarily affect the urethra and bladder in the lower tract. UTIs in the upper tract, on the other hand, can affect the ureters and kidneys. The presence of blood in the urine is referred to as haematuria.

Urinary tract infections, kidney stones, bladder or kidney infections, certain medications, strenuous exercise, and more serious conditions such as kidney disease or urinary tract cancer can all cause it. By the age of seven, approximately 1.7% of boys and 7.8% of girls experience urinary tract infections (4). When the bacterial count in a midstream urine sample exceeds 104 CFU/ml, it is considered positive for UTI. The overall prevalence of UTI in febrile infants and young children is around 7%, but it varies depending on age, gender, and circumcision status. Modern science has solved the problem to some extent with the introduction of effective antibiotics, but the use of antibiotics has limitations such as side effects, the likelihood of reinfection, relapse even after long-term therapy, and the increasing incidence of resistance (4).

Consequently, numerous *Ayurvedic* formulations that are mentioned in our classical texts were used to treat UTI. Every drug employed in this study possesses qualities such as anti-inflammatory, anti-microbial, anti-pyretic, diuretic and *doshas* pacifying (5).

According to *Ayurvedic* literature, *Haritakyadi Yog* is a polyherbal formulation used to treat UTI (6). The current study's objective was to assess the effectiveness of *Haritakyadi Yoga* in treating urinary tract infections (UTIs), as it may serve as a viable substitute for other contemporary medications currently in use.

Thus, *Mutrakricchra* (Urinary Tract Infection) was elected as the subject of intervention with the drug '*Haritakyadi Kwath*' in this momentous study. Henceforth we discuss about research study of urinary tract infection, which is treated by *Ayurveda* successfully.

AIM:

To evaluate the efficacy of *Haritakyadi Kwath* in management of *Pittaja Mutrakruchha* (Urinary tract infections).

OBJECTIVE:

Whether *Haritakyadi kwath* is a safe and effective treatment for urinary tract infections by reducing symptoms.

Is *Haritakyadi kwath* also be advantageous in getting rid of cystitis or renal or ureteric calculi?

ETIOPATHOGENESIS: (7, 8)

Dry, rough and hot potency food, holding urge to micturate, too much intercourse, excessive physical exercise, drinking alcohol, blood vitiating factors and excessive riding on the back of a fast-moving animal cause urinary tract diseases. These factors get accumulated in the urinary tract and causes symptoms like painful and burning micturition with yellowish discoloration of urine, hematuria, frequent micturition and anuria. (7, 8)

MATERIALS AND METHODOLOGY:

Selection of Patient: 5 patients from OPD and IPD were selected from the hospital; in the age group 18-60 years irrespective of sex, religion, economic status and excluding dropouts.

Study population: Simple Randomised selection of patients was done irrespective of gender presenting with symptoms of *Pittaj Mutrakriccha*.

Consent: Written informed valid consent of the patient was taken prior to commencement of trial.

Follow up: 7th and 15th day.

Assessment: 0th and 15th day.

Investigations: Urine – Routine and Microscopic.

Sample size - 5

METHOD OF COLLECTION OF DATA

Study was carried out on the patients diagnosed as suffering from *Pittaja Mutrakruchra* in the age group 18-60 years irrespective of sex, religion and economic status.

INCLUSION CRITERIA:

Patients presenting with signs and symptoms of *Pittaj mutrakruchha* like:

- *Peeta mutrata* (Yellow discolouration of Urine)
- *Kruchra mutrata* (Dysuria)
- *Sa-daha mutrata* (Burning sensation during micturition)
- *Sa-rakta mutrata* (Haematuria)
- *Muhur muhur mutrata* (increased frequency of urination)
- The age group between 18 years to 60 years.

EXCLUSION CRITERIA:

- Active genital herpes
- Uterine, cervical, vaginal, urethral cancer
- Tubercular cystitis
- Benign or malignant bladder tumours vaginitis
- Patients having other systemic disorders like Diabetes mellitus, HIV-AIDS, Hepatitis, Pregnant women.

ASSESSMENT CRITERIA:

Sr. No.	Parameter	Description	Gradation
	<i>Peeta mutrata</i> (Yellow discolouration of urine)	Whitish yellow colour urine	Grade 0
		Pale yellow colour urine	Grade 1
		Dark colour urine	Grade2
		Very dark yellow colour urine	Grade 3
	<i>Kruchra mutrata</i> (Dysuria)	No pain	Grade 0
		Mild pain	Grade 1
		Moderate pain	Grade2
		Severe pain	Grade 3
	<i>Sa-daha mutrata</i> (Burning sensation during	No Burning Sensation	Grade 0

	micturition)	Burning Sensation lasting for 30 minutes	Grade 1
		Burning Sensation lasting for 30 minutes to 1 hour	Grade2
		Burning Sensation lasting for more than 1 hour	Grade 3
	<i>Sa-rakta</i> <i>mutrata</i> (Haematuria)	Absence of RBC in urine	Grade 0
		Presence of 4-6 number of RBC in urine	Grade 1
		Presence of 6-8 number of RBC in urine	Grade2
		Presence of 8-10 number of RBC in urine	Grade 3
	<i>Muhur muhur mutrata</i> (increased frequency of urination)	Frequency of urination 4-8 times per day	Grade 0
		Frequency of urination 8-10 times per day	Grade 1
		Frequency of urination 10-12 times per day	Grade2
		Frequency of urination 12-14 times per day	Grade 3

Table 1: Assessment criteria gradation

THERAPEUTIC REGIMEN:

Drug: *Haritakyadi Kwath*

Ingredients: Decoction of *Haritaki* (*Terimnalia chebula*), *Gokshura* (*Tribulus terrestris*) , *Aragvadha* (*Cassia fistula*), *Pasanabheda* (*Bergenia ligulata*), *Yavasa* (*Alhagi camelorum*) and honey as *anupana*.

Decoction Preparation Procedure (9):

- Dry medications were sent for standardization after being outsourced from a legitimate retailer.
- *Haritakyadi Kwath* was prepared employing the mentioned method (10).

- 400 ml (16 parts) of water and 25 gm (1 part) of dry coarse powder (five grams each) were stirred together and boiled in a utensil until the mixture reduced to 50 ml (1/8th part).
- Twenty grams of honey were added to the decoction after it had cooled.
- The finished product was standardized.
- The participants received instruction regarding the same preparation approach.

Drug regime	<i>Haritakyadi kwath</i>
Route of administration	Oral
Dose	50 ml
Anupan	Honey
Time of Administration	Twice daily, Before Food
Duration	15 days

Table 2: Therapeutic regimen (10).



Figure 1: Raw drugs mixture



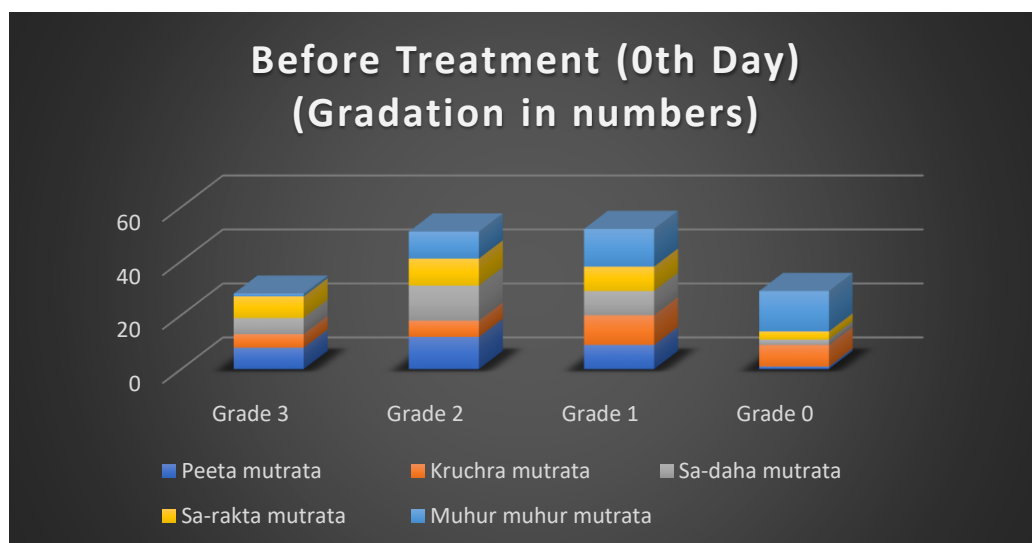
Figure 2: Haritakyadi kwath (Decoction)

OBSERVATIONS & RESULT:

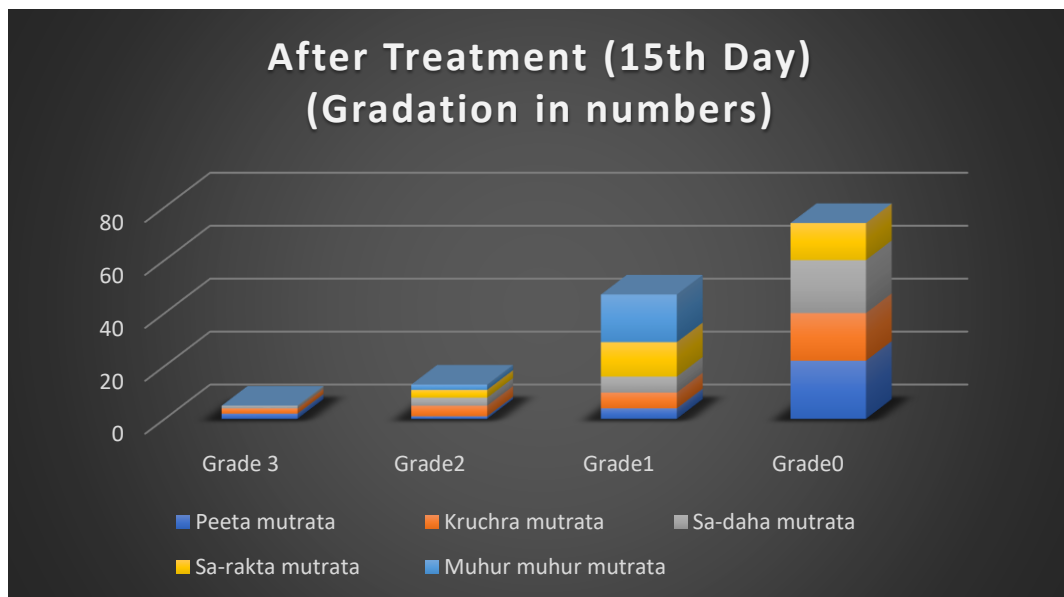
Observation and results were drawn by comparison between before and after treatment findings as follows by simple average method (in accordance to number of patients out of 5):

Gradation	<i>Peeta mutrata</i>		<i>Kruchra mutrata</i>		<i>Sa-daha mutrata</i>		<i>Sa-rakta mutrata</i>		<i>Muhur muhur mutrata</i>	
	0 th day	15 th day	0 th day	15 th day	0 th day	15 th day	0 th day	15 th day	0 th day	15 th day
Grade 3	8	2	5	2	6	1	8	0	1	0
Grade 2	12	1	6	4	13	3	10	3	10	2
Grade 1	9	4	11	6	9	6	9	13	14	18
Grade 0	1	22	8	18	2	20	3	14	5	0

Table 3: Observation table of average subjects grading (before & after treatment).



Graph 1: Before treatment (0th day)



Graph 2: After treatment (15th day)

Graph 1 and graph 2 describes the comparison between the parameters according to its gradation scale on 0th day and 15th day.

DISCUSSION:

Probable mode of action of '*Haritakyadi Kwath*'

Haritaki is used to regulate the bowels and relieve constipation (11).

Aragvadha expel wastes from the body and clears various channels by emulsifies colonic contents and increases water penetration into feces by reducing risk factors such as constipation and indirectly aiding in UTI and also explaining the antipyretic effect by breaking the etiopathogenesis of *jvara* (fever) (12). Pain during micturition is frequently associated with renal stones in UTI. *Acharya Charaka* mentioned *Gokshura* as choice of drug for *Mutrakricchra- Anilharanam Agrya* (excellent medicine for dysuria and *Vata dosha* relief) and included it in *Mutravirechaniya mahakashaya* (diuretic group of drugs) alongside *Pashanbheda*. Therefore, reducing pain critiques and improving micturition frequency have anti-urolithic and diuretic effects. Strong diuretic and nephroprotective qualities of *Gokshura* and *pashanbheda* enhance blood flow to the kidneys. This procedure breaks down kidney stones and increases the amount of water banished through urination, which helps treat urethritis and cystitis. Drugs like *Aragvadha*, *Gokshura*, and *Dhanvaya* could possess an effect on burning micturition owing to their heavy and unctuous properties, sweet in taste and after digestion, and cold in potency, which increase *kapha* and *kleda*. As a consequence, more urine is produced along with *pitta* pacifying, diuretic, urinary bladder cleansing property.(13) The influence of drugs such as *Gokshur*, which is in *Shothahara Mahakashaya* (edema pacifying drugs) and minimizes *shotha* (edema) by virtue of its diuretic property, on periorbital swelling (oedema) in patients with urinary tract infections (14). Additionally, these medications are showing signs of antimicrobial activity, making them beneficial in addressing dysuria brought on by those microorganisms' infections.

These pharmacological characteristics aid the medication in fragmenting down the UTI etiopathogenesis. It has been evaluated that along with antimicrobial; *Gokshur* (13) shows anti-urolithic, diuretic and anti-inflammatory effect. '*Haritakyadi kwath*' play key role in future therapies of UTI. Also, this decoction can be beneficial in treating urinary stones conservatively. (15)

Antibiotic resistance is a critical problem that is escalating globally as a result of antibiotics being prescribed unnecessarily or inappropriately. The precise mechanism for antimicrobial property can be explained using various in vitro studies of individual drugs in *Haritakyadi Kwath*. By using the disk diffusion method, each aspect of *Haritakyadi Kwath* impeded the growth of uro-pathogens and illustrated an antimicrobial effect. (15)

CONCLUSION:

Haritakyadi Kwath is an efficient and secure formulation for *Pittaj Mutrakricchra vyadhi* that can be employed in substitution of other modern drugs. *Haritakyadi kwath* is affordable, easy to administer, and can be taken orally at home. No negative interactions have been observed reported. The pharmacological properties of the drug aid in the breakdown of *Mutrakricchra* pathogenesis. All the contents have antibacterial abilities microbes which lead to UTI. *Haritakyadi Yoga* can also help diminish the likelihood of drug resistance and UTI relapse.

FURTHER SCOPE OF STUDY:

1. *Haritakyadi Kwath* is also useful in renal/ureteric calculus by descriptive action of drugs but study on more subjects is needed for conclusion.
2. Comparative study with oral antibiotics and phytochemical analysis of the finished decoction can be done to prove action of *Haritakyadi Kwath* like anti-microbial, anti-pyretic, etc.

THE CONFLICT OF INTEREST: Nil.

SOURCE OF SUPPORT: Nil.

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