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**BEYOND ANTIBIOTICS: EXPLORING *DURALABHADI KASHAYA*
GHANVATI FOR *MUTRAKRICHHRA* IN FEMALE POPULATION W.S.R
TO URINARY TRACT INFECTIONS**

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ABSTRACT

One of the most prevalent infections that affect people is urinary tract infection. Uro-pathogenic bacteria, typically *Escherichia coli*, rise from the perineum into the bladder and overcome host innate immunity to cause simple infections in otherwise healthy women. Patients with abnormalities in the anatomy or function of the urinary tract are at risk of developing complicated infections.

The purpose of this study is to assess *Duralabhadi Kashaya Ghanavati's* antibacterial activity and clinical suitability for treating *Mutrakrichha* associated with urinary tract infection. By understanding this healthcare providers will be able to provide a range of evidence-based options for managing UTIs, allowing for personalized and holistic care that goes beyond pharmaceutical solutions.

10 diagnosed cases of *Mutrakrichha* were selected from OPD of Parul Ayurved Hospital between the age group of 18- 40 years. They were administered *Duralabhadi Kashaya Ghanavati* 2BD after food for 7 days. Subjective parameters like fever, dysuria, frequency, and urgency of urine were assessed as well as objective criterias like urine analysis was also done before and after the treatment. In females with urinary tract infection, *Duralabhadi Kashaya Ghanavati* was able to promote analgesia, and improvement in urine analysis parameters as well.

Keywords: Ayurveda, *Mutrakricchra*, Urinary Tract Infection, Urogynecology

1. INTRODUCTION

3–5% of women and 1-2% of girls aged 4–12 have asymptomatic bacteriuria. In females under the age of 13, symptomatic infections are uncommon, but after adolescence, the prevalence rises; in research on acute urinary tract infections in young women, the rate was 0.5–0.7 per person-year. Twenty to twenty-five percent of women experience recurrent UTIs, which are typically exogenous re-infections. When young women arrive with acute dysuria, they typically have acute vaginitis, acute urethritis, or acute cystitis. In healthy women, recurrent UTIs (more than three infections in a 12-month period) are linked to both acquired behavioral host factors and underlying genetic variables. The majority of women's simple infections don't cause kidney damage or long-term consequences [1].

In *Trimala-Mutra* is in charge of *Bastipoorna* and *Kledavhanam* among these [2]. The pathophysiology of *Mutrakrichhra* has been described by *Acharya Charak*. In *Mutrakrichhra*, certain etiological conditions cause *Tridosha* to become vitiated, either separately or in combination. Then, in the *Basti*, these vitiated *Doshas* worsen and interfere with the *Mutravaha Srotas*, specifically *Mutrakrichhra*, which result in *Mutravikara* [3, 4].

Samprapti Ghatak [5]

Dosha: Pitta Pradhan Tridoshaj

Dushya: Mutra

Srotas: Mutravaha

Sroto Dushti: Sang

Agni: Mandagni

Adhistan: Basti, Mutramarg

Sanchar Sthan: Mutramarg

Rog Marg: Mutramarg

2. MATERIAL AND METHODS

This study was conducted in patients having *Mutrakrichhra* (Urinary Tract Infection). A total of 10 subjects were enrolled in the study. Before enrolment in the study patients were screened for Urinary Tract Infection. Urine Routine & Microscopy examination on Day 1, Day 8 and Day 15 of treatment CBC before treatment were done.

Inclusion Criteria: -

- *Lakshana* of *Mutrakrichhra* which are like lower urinary tract infections like Burning (*Sadahamutrata*), Dysuria (*Sarujamutrata*), Frequency (*Muhur-Muhurmutrata*), urgency, strangury and Suprapubic tenderness.
- Age group in between 18 to 40 years.
- Patient suffering from fever.
- Laboratory investigations showing pus cells in urine (>5 pus cells/HPF).
- Subjective parameter score total ≥ 6 .

Exclusion Criteria: -

- Patients not willing for trial.

- Patients suffering from medical illness like Poly-cystic kidneys, Hydronephrosis, Impaired renal functions, Malignancy of genito-urinary tract, Immuno-compromised patient, Uncontrolled Hypertension, Diabetes.
- Patients suffering from white discharge per vagina.
- Pregnant women suffering from UTI.

Intervention: *Duralabhadi Kashaya Ghanavati* has been mentioned in *Mutrakrichhra Chikitsa* in Dr. Indradev Tripathi's *Gadanigraha Nighantu*, Chapter 27, Shloka no. 40, page 663.

Contents:

1. *Duralabha (Fagonia cretica)*
2. *Pashanabheda (Bergenia ciliate)*
3. *Haritaki (Terminalia chebula)*
4. *Kantkari (Solanum xanthocarpurn)*

5. *Yashtimadhu (Glycyrrhiza glabra)*

6. *Dhanyaka (Coriandrum sativum)*

Method of preparation:

All the component drugs of *Duralabhadi Kashaya* were taken in equal proportion (1 part) and 8 parts of water was added to it. The mixture was boiled over mild fire until 1/4th part of liquid remained.

To get in the form of *Ghana*, filtered *Kwatha* was then reduced to a stage where material became 'thick sticky semi solid mass.' Then this semi solid material was taken out for drying. Once the material dried sufficiently then fine powder was made out from it. This fine powder was taken in the tablet making machine for making tablets of desired size. Then parameters such as friability, hardness, weight, disintegration time etc. were done before giving it final touch.

1. **Assessment criteria:**

SUBJECTIVE PARAMETERS

1.	DYSURIA (<i>SARUJA MUTRATA</i>)	SCORE
	Absence of pain during micturition	0
	Mild pain during micturition	1
	Moderate pain during micturition	2
	Severe pain during micturition	3

2.	BURNING MICTURITION (<i>SADAHA MUTRATA</i>)	SCORE
	No burning during micturition	0
	Mild burning during micturition	1
	Moderate troublesome burning micturition	2
	Severe burning during micturition	3

3.	FREQUENCY (<i>MUHUR- MUHUR MUTRATA</i>)	SCORE
	Normal number of micturition (6 to 8times)	0
	Frequent controllable micturition (9 to 10 times)	1
	Frequent not controllable (11 to 12 times)	2
	Persistent many times more than 12 times	3

4.	URGENCY	SCORE
	No Urgency	0
	Urgency but can control	1
	Urgency and difficult to control	2
	Urgency and difficult to control, passes few drops of urine	3

5.	STRANGURY	SCORE
	No strangury	0
	Mild strangury	1
	Moderate strangury	2
	Severe strangury	3

6.	SUPRAPUBIC TENDERNESS	SCORE
	No tenderness	0
	Patient allow examination but complains pain	1
	Patient resist examination	2
	Patient don't allow the examiner to touch	3

OBJECTIVE PARAMETERS

1.	PUS CELLS	HAEMATURIA	EPITHELIAL CELLS	SCORE
	0-4/HPF	No RBC in urine (less than 3)	0-2 epithelial cells	0
	5-7/HPF	3-5 RBC/HPF	3-20 epithelial cells	1
	8-10/HPF	6-8 RBC/HPF	21- 40 epithelial cells	2
	10/HPF and more	8 to plenty RBCs	Above 40 epithelial cells	3

Intervention: *Duralabhadi Kashaya Ghanavati* 2BD after food for 7 days.

RESULTS:

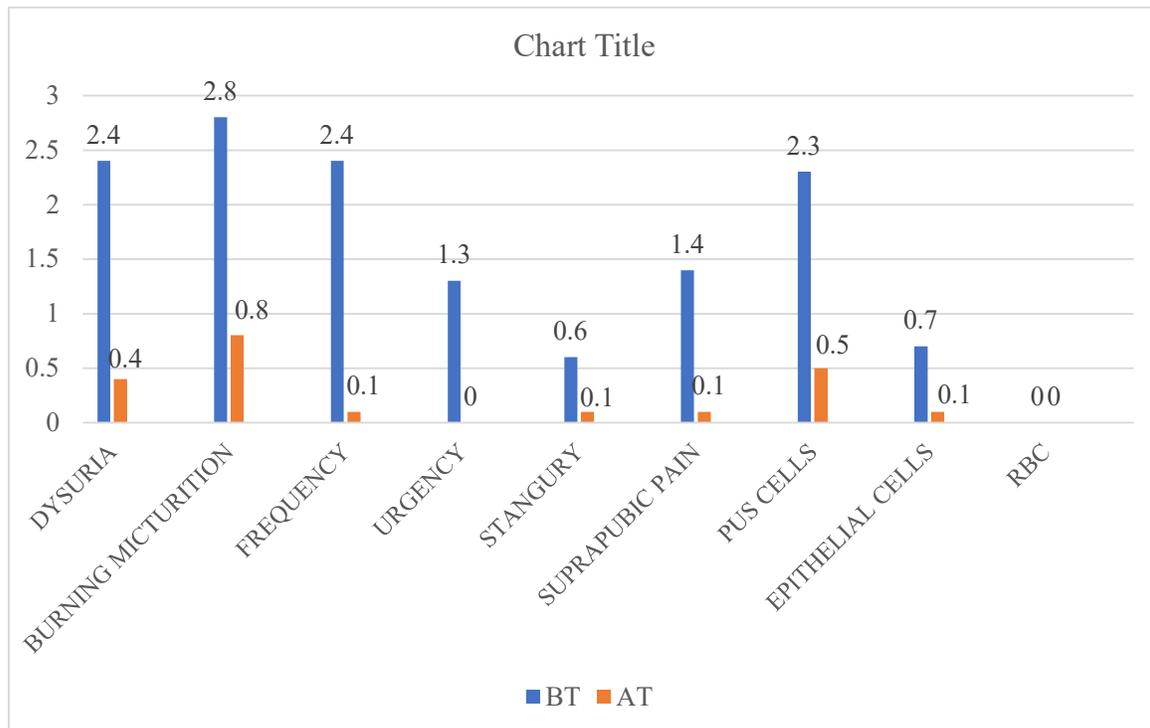


Chart 1: Mean value of subjective and objective parameters before and after treatment.

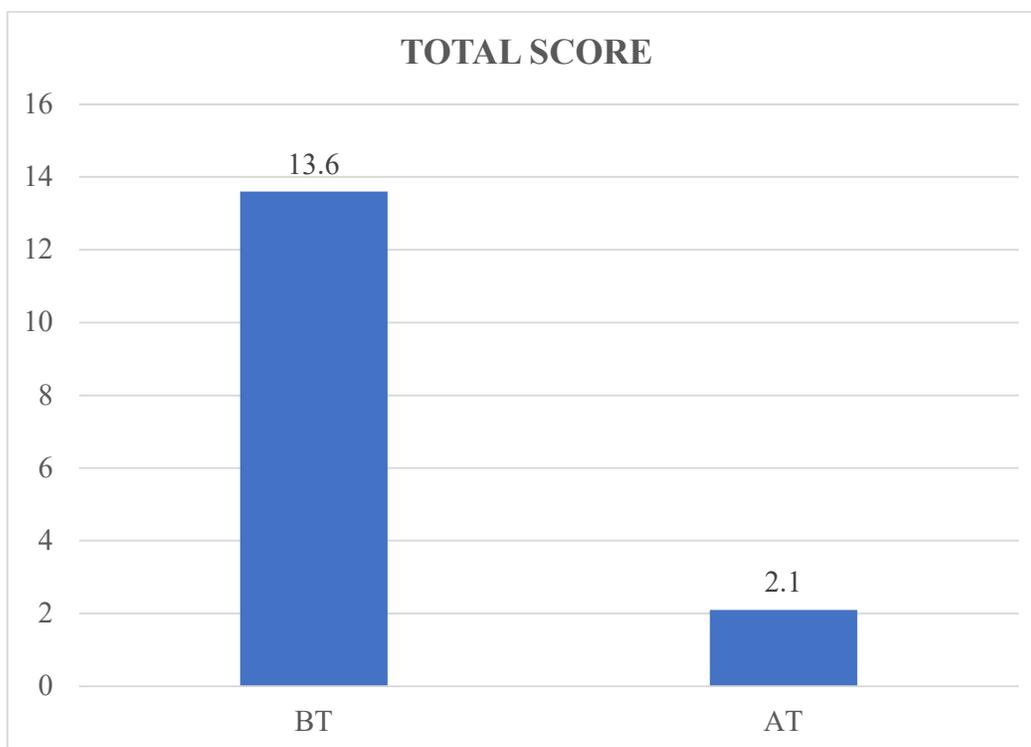


Chart 2: Total Mean score before and after treatment

Total mean score decreased from 13.6 before treatment to 2.1 after completing the treatment. No. of pus cells were observed to be significantly decreased in post treatment values, with mean being 2.3 in before treatment assessment to 0.5 in after treatment. Mean grading of dysuria decreased from 2.4 to 0.4 post treatment. Patient got remarkable results in improvement of burning micturition (2.8 to 0.8), frequency (2.4 to 0.1), urgency (1.3 to 0) and strangury (0.6 to 0.1).

DISCUSSION:

1. ***Duralabha (Fagonia cretica Linn.)-***
Tikta-Kashaya-Madhura Rasa (taste), *Laghu-Sara Guna* (properties), and *Sheeta Virya* (potency) are all possessed by

Dhanvayasa. Along with *Tikta*, *Madhura*, and *Kashaya Rasa*, *Rajnighantu*, *Nighantu Ratnakar*, and A.P. I suggested *Katu Rasa*. *Ushna Virya* of *Dhanvayasa* was also described by *Raj Nighantu*. Its karma is seen as *Pittahara*, *Medohara*, *Vatahara*, and *Kaphahara*. *Dhanvayasa* is also known by the synonym *Duralabha*. According to the ayurvedic references, the plant *Dhanvayasa* can be used in the *Vikaras* of *Atisara*, *Grahani*, *Daha*, *Jvara*, *Visamjvara*, *Trishna*, *Prameha*, *Moha*, *Murccha*, *Raktapitta*, *Raktavikara*, *Kustha*, *Vatarakta*, *Gulma*, *Bhrama*, *Chardi*, *Kasa*, and *Mutraghata*.

Its thrombolytic, neuroprotective, antioxidant, synergistic, cytotoxic, antitumor, analgesic, antipyretic, antiallergic, antimicrobial, and wound-healing properties are revealed by contemporary research [7].

2. **Pashanbheda (*Bergenia ciliata*)-**

High levels of antifungal, antiviral, antiplasmodial, and antibacterial activity have been found for *B. ciliata*. It possesses strong anti-inflammatory, anti-tussive, anti-ulcer, antioxidant, and anti-neoplastic properties, according to pharmacological research. It has been observed that a wide range of secondary metabolites from *B. ciliata*, including phenols, alcohols, terpenoids, and fatty acids, belong to various families of chemicals [8].

3. **Dhanyaka (*Coriandrum sativum*)-**

The use of coriander as a diuretic is supported by the aqueous extract of coriander seed, which has both saluretic and diuretic properties. The plant extract's mode of action seems to be comparable to furosemide's [9].

4. **Yasthimadhu (*Glycyrrhiza glabra*)-**

A wide range of metabolites, including steroids, tannins, flavonoids, phenol, tannins, and saponins, were detected by phytochemical screening of

Glycyrrhiza glabra root; in contrast, carbohydrate and alkaloids were detected in methanolic and ethyl acetate extracts but not in aqueous root extract. Flavanoids have antimicrobial properties. *Glycyrrhiza galbra* was found effective against *E. coli* [10].

5. **Haritaki (*Terminalia chebula*) -**

The results of our previous research demonstrated that the fruit extract from *T. chebula* exhibited potent antibacterial (synergistic) activity. These findings further emphasize the value of an ethnomedical approach as a possible source of bioactive compounds for the treatment of *E. coli*- caused urinary tract infections [11]. *T. chebula* extract exhibited broad range antibacterial activity [12]. Gram negative bacteria are effectively inhibited by the antibacterial properties of *T. chebula* leaf methanol extracts [13].

6. **Kantakari (*S. xanthocarpum*)-**

Solasodine a compound found in *Kantakari* exhibits anti-pyretic effect [14]. Stigmasterol [15], carpesterol [16] and diosgenin [17] showed anti-inflammatory effect.

CONCLUSION

This case series clarifies *Duralabhadi Kashaya Ghanavati's* possible efficacy in treating urinary tract infections (UTIs) in

female patients. Based on a methodical study of cases, it is clear that administering *Duralabhadi Kashaya Ghanavati* has a positive effect on reducing the symptoms related to urinary tract infections. The reported cases show a significant decrease in the frequency, urgency, dysuria and intensity of UTI episodes, indicating that this traditional Ayurvedic formulation may be a beneficial supplement or substitute for traditional treatments. However, more investigation is necessary to confirm these results and clarify the precise mechanisms underlying *Duralabhadi Kashaya Ghanavati's* therapeutic effects, including randomized controlled studies.

Author Contribution:

Dr. Priya H Patel collected data, conducted data analysis, and wrote research paper. Development of study design and corrections in the research paper: Dr. Rita Makim.

Ethics Approval:

Research ethics approval was obtained from the Ethical Institutional Committee. Approval from the Head of the department of organization obtained prior to data collection.

Informed consent:

Participation information sheet was provided before study. The written consent was obtained from each participant.

Conflict of interest:

Authors have no relevant financial or non-financial interests to disclose.

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