

# Role of Mutravaha Srotas Dushti in the Management of Recurrent Urinary Tract Infections: An Integrative Ayurvedic Approach with Clinical Correlation

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**Abstract:** Recurrent urinary tract infections (rUTIs) represent a significant global health burden, particularly among women, with increasing antimicrobial resistance posing major therapeutic challenges. Contemporary management relies heavily on repeated antibiotic therapy, which often leads to dysbiosis, recurrence, and drug resistance. Ayurveda describes urinary disorders under the spectrum of Mutrakrichra, Mutraghata, and Mutravaha Srotas Dushti, offering a holistic pathophysiological understanding and personalized therapeutic strategies. This article explores the conceptual framework of Mutravaha Srotas dysfunction in recurrent UTIs, correlates classical Ayurvedic descriptions with modern uropathogenesis, and proposes an integrative management protocol. Emphasis is placed on doshic involvement, srotorodha (microchannel obstruction), agnimandya (metabolic impairment), and immunomodulation. Herbal formulations such as Gokshura, Punarnava, Chandraprabha Vati, and Yavakshara are reviewed for their pharmacological relevance. An integrative protocol combining dietary regulation, herbal therapy, and lifestyle modification is proposed for long-term recurrence prevention. The study highlights the need for controlled clinical trials to validate Ayurvedic interventions as adjunct or alternative therapy in rUTIs.

**Keywords:** Mutravaha Srotas; Recurrent UTI; Mutrakrichra; Ayurvedic Urology; Integrative Medicine; Gokshura; Chandraprabha Vati; Antibiotic Resistance; Urinary Inflammation; Herbal Immunomodulation

## I. INTRODUCTION

Recurrent urinary tract infection (rUTI) is defined as  $\geq 2$  infections within six months or  $\geq 3$  infections within one year. It predominantly affects women due to anatomical predisposition. Globally, nearly 50–60% of women experience at least one UTI in their lifetime, and up to 30% develop recurrence.

The increasing prevalence of antibiotic-resistant strains such as Escherichia coli has complicated management strategies. Frequent antibiotic exposure alters microbiota and increases resistance risk.

Ayurveda offers a systemic understanding of urinary pathology through the concept of Mutravaha Srotas—the channels responsible for urine formation and excretion. Disorders of this system are classified under:

Mutrakrichra (dysuria)

Mutraghata (urinary retention/obstruction)

Ashmari (urolithiasis)



Prameha (metabolic urinary disorders)

This paper attempts to bridge classical Ayurvedic concepts with modern clinical understanding of rUTIs.

## II. REVIEW OF LITERATURE

### 2.1 Modern Perspective

#### **Pathogenesis involves:**

Bacterial colonization (commonly uropathogenic E. coli)

Ascension via urethra

Biofilm formation

Incomplete eradication

Immune dysregulation

#### **Risk factors:**

Sexual activity

Diabetes

Poor hydration

Hormonal changes

Catheterization

Incomplete bladder emptying

Recurrent infections often result from intracellular bacterial reservoirs.

### 2.2 Ayurvedic Perspective

According to:

Charaka Samhita

Sushruta Samhita

Ashtanga Hridaya

Mutravaha Srotas originate from:

Basti (urinary bladder)

Vankshana (pelvic region)

Dushti (vitiation) causes:

Daha (burning)

Shoola (pain)

Picchila mutra (turbid urine)

Raktamutra (hematuria)

Doshic involvement:

Pitta → inflammation, burning

Kapha → turbidity, recurrence

Vata → pain, retention tendency

Chronic recurrence indicates:

Srotorodha (channel obstruction)

Ama formation

Ojas depletion (immunity compromise)



### III. CONCEPTUAL CORRELATION

Modern Concept	Ayurvedic Correlation
Bacterial infection	Krimi involvement
Inflammation	Pittaja Mutrakrichra
Recurrent episodes	Kapha avarana
Immune compromise	Ojas kshaya
Biofilm	Srotorodha

The concept of biofilm parallels srotorodha—micro-obstruction preventing complete elimination.

### IV. PATHOPHYSIOLOGY IN AYURVEDIC TERMS

#### 1. Nidana (etiology):

Amla, lavana excessive intake  
Suppression of natural urges  
Inadequate hydration  
Excessive sexual activity  
Agnimandya

#### 2. Dosha Prakopa:

Pitta aggravation → inflammatory process  
Kapha association → recurrent accumulation  
Vata aggravation → pain and dysuria

#### 3. Srotodushti:

Sanga (obstruction)  
Atipravritti (frequency)

#### 4. Vyakti:

Burning urination  
Frequency  
Lower abdominal pain

### V. INTEGRATIVE MANAGEMENT PROTOCOL

#### 5.1 Acute Phase Management

Chandraprabha Vati 500 mg TDS  
Gokshuradi Guggulu 500 mg TDS  
Yavakshara 250 mg BD  
Ushira + Chandana phanta  
Increased hydration

#### 5.2 Chronic/Recurrent Phase

Rasayana therapy  
Guduchi Ghana Vati  
Punarnava Mandur  
Shilajit (if indicated)  
Panchakarma (Basti therapy in Vata dominance)



## **VI. IMPORTANT AYURVEDIC HERBS**

Gokshura (*Tribulus terrestris*)  
Mutrala (diuretic)  
Anti-inflammatory  
Anti-microbial properties  
Reduces recurrence  
Punarnava (*Boerhavia diffusa*)  
Anti-edematous  
Nephroprotective  
Anti-inflammatory  
Chandraprabha Vati  
Broad spectrum urinary support  
Anti-microbial  
Metabolic regulator

## **VII. PROPOSED CLINICAL STUDY DESIGN**

Study Type: Randomized Controlled Trial  
Sample Size: 100 patients

Groups:

Group A: Conventional antibiotics  
Group B: Ayurvedic protocol  
Group C: Integrative therapy

Outcome Measures:

Recurrence rate  
Urine culture negativity  
Symptom score  
CRP levels  
Quality of life  
Duration: 6 months follow-up

## **VIII. DISCUSSION**

Antibiotic resistance is a growing global concern. Ayurveda's emphasis on:

Correcting agni  
Enhancing immunity  
Preventing srotorodha  
Addressing root cause  
offers sustainable long-term management.

Herbal formulations demonstrate:

Anti-inflammatory effects  
Diuretic activity  
Immunomodulation  
Anti-biofilm potential  
Integration may reduce recurrence frequency and antibiotic dependency.



### **IX. LIMITATIONS**

Need for large multicentric trials  
Standardization of formulations  
Need for biomarker-based evaluation  
Variation in prakriti among individuals

### **X. CONCLUSION**

Mutravaha Srotas Dushti provides a comprehensive Ayurvedic framework to understand recurrent urinary tract infections. Integrative management combining classical formulations, dietary regulation, and immune modulation may provide sustainable and resistance-free therapeutic outcomes. Further controlled studies are warranted to validate efficacy and global applicability.

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