



## DHANYAK CHOORNA: A NATURAL UTI SOLUTION

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### ABSTRACT

**Background:** Urinary Tract Infections (UTIs) are a common health issue affecting millions of people worldwide. Conventional treatments often involve antibiotics, which can have side effects and contribute to antibiotic resistance. **Objective:** To evaluate the efficacy and safety of Dhanyak Choorna, a traditional Ayurvedic herbal formulation, in the treatment of acute UTIs. **Methods:** This randomized, controlled trial included 100 patients with acute UTIs, who were randomly assigned to receive either Dhanyak Choorna or a standard antibiotic treatment. Symptoms, urine culture, and adverse events were monitored and compared between the two groups. **Results:** The results showed that Dhanyak Choorna was effective in reducing UTI symptoms, with a significant reduction in bacterial load and improvement in urine culture. The herbal formulation was also found to be safe, with minimal adverse events reported. **Conclusion:** Dhanyak Choorna offers a natural and effective solution for the treatment of acute UTIs, providing a promising alternative to conventional antibiotic treatments.

**KEYWORDS:** Dhanyak Choorna, Urinary Tract Infections (UTIs), Ayurvedic medicine, Natural treatment, Antibiotic alternative, Traditional medicine.

### INTRODUCTION

#### Background

Urinary tract infections (UTIs) are a common and debilitating condition affecting millions of people worldwide. Acute UTIs are typically caused by bacterial pathogens, such as *Escherichia coli*, & *klebsiella* bacterial and are often treated with antibiotics.

Urinary tract infection (UTI) is the most common disease. Its prevalence rate in female (47.9%) is more than male (34.1%) in India. However, the increasing prevalence of antibiotic-resistant bacteria and the potential side effects of antibiotic therapy have highlighted the need for alternative treatments.

Dhanyak has antibacterial, anti-inflammatory properties because of its chemical constituents beta-sitosterol, oxalic acid, vitamin c, limonene, citronellol, D-mannitol, flavoid glycosides. As dhanyak is easily available at home so used as ayurvedic home remedy.

#### Classical categorisation

1. Charak samhita - Trushnaprashamana Sheetaprasamana
2. Sushruta and vagbhatt - guduchyadi varga
3. Bhavprakash nighantu - haritakyadi varga

#### Rationale

Despite its traditional use, there is a lack of rigorous, randomized controlled trials evaluating the efficacy and safety of Dhanyak Churna for the treatment of acute UTIs. This study aims to address this knowledge gap by comparing the efficacy of Dhanyak Churna with a standard antibiotic treatment (ciprofloxacin) in patients with acute UTIs.

#### Objectives

##### Primary objective

To compare the efficacy of Dhanyak Churna in reducing symptoms in patients with acute UTIs.

##### Secondary objectives

To assess the impact of Dhanyak Churna on quality of life.

To collect additional information about benefits of Dhanyak to patients.

### METHODOLOGY

#### Study design

This study is a randomized, active-controlled, single-blind trial comparing the efficacy and safety of Dhanyak Churna with ciprofloxacin in patients with acute urinary tract infections (UTIs).

**Study population**

The study will enroll 100 patients with acute UTIs, aged 18-65 years, who meet the inclusion and exclusion criteria.

**Inclusion criteria**

1. Patients aged 18-65 years.
2. Diagnosis of acute UTI confirmed by urine culture and symptoms (e.g., dysuria, frequency, urgency).
3. Written informed consent.

**Exclusion criteria**

1. Pregnant or lactating women.
2. Severe comorbidities (e.g., kidney disease, diabetes).
3. Concurrent use of antibiotics or other treatments for UTI.
4. Known allergy to Dhanyak Churna or ciprofloxacin.

**Intervention**

Patients will be randomly assigned to one of two groups:

Group 1

Dhanyak Churna (Ayurvedic herbal formulation) 2 gms twice daily for 05 days.

Group 2

Ciprofloxacin tablets, 500mg twice daily for 5 days.

**Outcome measures****Primary outcome**

1. Clinical cure rate: Proportion of patients with resolution of UTI symptoms and negative urine culture at the end of treatment (day 5).

**Secondary outcomes**

1. Microbiological cure rate: proportion of patients with eradication of the causative pathogen at the end of treatment (day 5).
2. Symptom severity score: reduction in symptom severity score (e.g., ACSS Scale) from baseline to the end of treatment (day 5).

Outcome	Dhanyak Choorna (n=50)	Antibiotic Treatment (n=50)	p-value
Symptom relief	90%	92%	0.63
Bacterial clearance	92%	95%	0.51
Adverse events	5%	10%	0.25
Cure rate	90%	92%	0.63

**Microbiological outcomes**

The microbiological outcomes of the patients are presented in Table 3. The results showed that Dhanyak Choorna was effective in reducing bacterial load, with a significant reduction in:

- Escherichia coli (E. coli) ( $p < 0.001$ )
- Klebsiella pneumoniae ( $p < 0.01$ )
- Staphylococcus saprophyticus ( $p < 0.05$ )

3. Adverse event reporting: incidence and severity of adverse events during the treatment period.
4. Quality of life assessment: change in quality of life scores (e.g., using the SF-36 questionnaire) from baseline to the end of treatment (day 5).

**Randomization and Blinding**

Patients will be randomly assigned to one of the two groups using a computer-generated randomization schedule. The study will be Single-blinded, with patients unaware and investigators aware of group assignments.

**Sample size calculation**

Based on a previous study, we expect a 20% difference in clinical cure rate between the two groups. Assuming a standard deviation of 15%, a sample size of 100 patients (50 per group) will provide 80% power to detect a significant difference between groups.

**Statistical analysis**

Data will be analyzed using intention-to-treat principles. Continuous variables will be compared using ANOVA test. Categorical variables will be compared using chi-square test. Safety analysis will include adverse event reporting and laboratory test results.

**RESULTS****Demographic characteristics**

The demographic characteristics of the patients are presented in Table 1. The mean age of the patients was  $32.4 \pm 8.5$  years, and 75% were female.

**Clinical outcomes**

The clinical outcomes of the patients are presented in Table 2. The results showed that Dhanyak Choorna was effective in reducing UTI symptoms, with a significant reduction in:

- Dysuria (painful urination) ( $p < 0.001$ )
- Frequency ( $p < 0.01$ )
- Urgency ( $p < 0.05$ )
- Hematuria (blood in urine) ( $p < 0.01$ )

**Safety outcomes**

The safety outcomes of the patients are presented in Table 4. The results showed that Dhanyak Choorna was safe and well-tolerated, with minimal adverse events reported.

**Comparison with antibiotic treatment**

The results of the study showed that Dhanyak Choorna was as effective as antibiotic treatment in reducing UTI symptoms and bacterial load.

**Future scope**

- Discussion of potential future research directions, including:
- Large-scale clinical trials
- Investigation of Dhanyak Choorna's antimicrobial properties
- Exploration of its potential use in preventing and treating other infections

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