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CLINICAL EVALUATION OF GOKSHUR KSHEERAPAKA AND SHATAVARI KSHEERAPAK IN THE MANAGEMENT OF PITTAJAMUTRAKRICHCHRA: A RANDOMIZED CONTROLLED STUDY

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ABSTRACT

Urinary tract infections (UTIs) represent a significant global health burden, ranking as the second most prevalent infection after respiratory tract disorders, with an estimated 40– 50% of the female population experiencing at least one episode during their lifetime. While contemporary medicine offers a diverse range of pharmacological interventions, their utility is increasingly constrained by the emergence of multi-drug resistant (MDR) strains, significant side effects, high recurrence rates, and the economic burden of long- term therapy. In response to these challenges, the Ayurvedic corpus offers a rich repository of botanical interventions for the management of *Mutrakrichchra* (dysuria), a clinical entity that closely correlates with UTIs. The present study was designed to evaluate the safety and clinical efficacy of two specific Ayurvedic formulations— *Gokshur Ksheerapaka*[1] and *ShatavariKsheerapaka*—aiming to identify a therapeutic agent that offers high patient acceptability without the complications associated with conventional antibiotics. A randomized controlled clinical trial was conducted involving a total of 68 patients diagnosed with *Mutrakrichchra* secondary to urinary tract infection. Participants

were stratified into two cohorts: Group I (Trial Group, n=34) and Group II (Control Group, n=34). The trial intervention consisted of 40 ml of *GokshurKsheerapaka* administered twice daily, while the control cohort received *ShatavariKsheerapaka* in an identical dosage for a cumulative duration of 14 days, with an intermediate assessment on the 7th day. Therapeutic outcomes were evaluated through a comprehensive analysis of subjective clinical parameters recorded at baseline and post-treatment. The resulting data were subjected to rigorous statistical analysis to determine the relative efficacy of the two interventions in the management of urinary distress.

INTRODUCTION

Urinary Tract Infection (UTI) represents a significant clinical challenge globally, with a notably high prevalence rate in the Indian subcontinent, estimated between 21.8% and 31.3%. Within the Ayurvedic paradigm, this condition is categorized under *Mutrakrichchra*, a term derived from the cardinal feature of "*DukhenMutra Pravrutti*"[3] or difficult and painful micturition. While contemporary medical science attributes the etiology of UTIs primarily to bacterial proliferation—most notably *Escherichia coli*— Ayurveda offers a more comprehensive perspective, identifying the underlying pathology as a vitiation of the *MutravahaSrotas* (urinary channels).[9] This vitiation is not merely an isolated infectious event but is deeply rooted in systemic imbalances triggered by specific dietary indiscretions and lifestyle irregularities that compromise the integrity of the urinary system.

NIDANA & SAMPRAPTI[8]

The etiological framework of *PittajaMutrakrichchra*, as described by AcharyaCharaka, emphasizes the role of *Ativyayama* (excessive physical exertion), the intake of *TeekshnaAushadha* (potent or irritant medications), consumption of *Rooksha Anna* (dry foods), and excessive alcohol intake in disrupting urinary homeostasis. In the contemporary clinical context, these traditional factors are further exacerbated by modern lifestyle stressors, including the frequent consumption of spicy, preservative-rich, and *Vidahi* (burning) foods.

Furthermore, behavioral habits such as inadequate hydration and *Vegadharana*—the habitual suppression of the urge to urinate—play a pivotal role in the disease's progression. These factors collectively lead to the provocation of *Pitta Dosha*, which subsequently localizes in the *Basti* (bladder). This localization results in inflammatory changes within the *Mutramarga*, disrupting the physiological process of detoxification and culminating in the symptomatic

manifestation of the disease.

Lakshana

The clinical presentation of *PittajaMutrakrichchra* is characterized by a distinct symptomatic profile that reflects the presence of vitiated *Pitta* in the urinary tract. Patients typically present with *SadahaMutrapravrutti*, characterized by intense burning during micturition, often accompanied by *Saruja* (significant pain or discomfort).

The inflammatory nature of the condition is further evidenced by changes in the physical characteristics of the urine, frequently observed as *Peeta* or *Haridra Varna Mutra* (dark yellow or greenish discoloration). Additionally, the irritation of the bladder mucosa leads to *MuhurmuhuMutrapravrutti*, manifesting as increased urinary frequency and urgency, which closely parallels the clinical features of acute cystitis in modern urology.

Objectives of The Study

The primary objective of the present clinical research was to systematically evaluate and compare the therapeutic efficacy of two classical Ayurvedic formulations—*Gokshur Ksheerapaka* (Trial Group) and *Shatavari Ksheerapaka* (Control Group)—in the management of *Pittaja Mutrakrichchra*. While contemporary urological protocols primarily rely on antimicrobial interventions, this study sought to explore the clinical utility of *Ksheerapaka* as a holistic alternative. The research hypothesis was founded on the synergistic *Mutrala* and *Pitta-Shamana* properties of these formulations, which aim to restore urinary homeostasis without the secondary complications often associated with conventional antibiotic therapy. Furthermore, the study aimed to provide objective evidence regarding the superior clinical potency of *GokshurKsheerapaka* in resolving lower urinary tract inflammation, thereby establishing a scientifically validated, natural therapeutic protocol for symptomatic relief and infection control in *Pittaja Mutrakrichchra*.[2]

AIM AND OBJECTIVE

Aim: To evaluate efficacy of Gokshur ksheerapaka and shatavari ksheerapaka in management of Pittaja Mutrakrichchra

Objectives Primary Objective

1. To determine the efficacy of Gokshurk sheerapaka in pittaja mutra Krichchra.
2. To compare efficacy of Gokshurk sheerapaka and shatavariksheerapaka

inpittajamutrakrichchra.

Other Objective

1. To review clinical literature of pittaja mutrakrichchra.
2. To review urinary tract infection in detail.
3. To observe adverse effect of gokshur ksheerpaka in pittaja mutrakrichchra if any

MATERIAL AND METHOD

The present research was designed as an Open-Label Randomized Controlled Clinical Trial, conducted over an 18-month duration at the Kayachikitsa Outpatient Department (OPD). The study protocol was executed through a rigorous three-tier methodology comprising a Conceptual Study, Pharmaceutical Standardization, and Clinical Evaluation.

I. Conceptual and Literary Review

A comprehensive literary review was performed to establish a robust theoretical framework for the study. The Ayurvedic review involved the systematic compilation of classical references pertaining to *Pittaja Mutrakrichchra* from the *Brihatrayi* (Major Triad) and *Laghutrayi* (Minor Triad). Extensive documentation was maintained regarding the *Rasa-Panchaka* (*Rasa, Guna, Virya, and Vipaka*) and the pharmacotherapeutic properties of the trial interventions, namely *Gokshur* (*Tribulusterrestris*), *Shatavari* (*Asparagus racemosus*), and *Godugdha* (Cow's milk). Simultaneously, contemporary medical literature and digital databases were consulted to integrate current advancements in the pathophysiology, diagnostic criteria, and epidemiological trends of Urinary Tract Infections (UTI).

II. Pharmaceutical Standardization and Quality Control[16]

To ensure therapeutic consistency and safety, a stringent quality control protocol was implemented. The raw botanical ingredients[17] were identified and authenticated through pharmacognostic evaluation. Following authentication, the finished formulations—*GokshurKsheerapaka* and *ShatavariKsheerapaka*—underwent laboratory analysis at a reputed facility. This standardization process verified that the interventions met all predefined pharmaceutical parameters, ensuring the purity and potency of the drugs throughout the clinical trial.

III. Clinical Evaluation and Randomization

The clinical phase involved the systematic application of the interventions on a human subject population. A total of 68 patients presenting with the clinical features of *PittajaMutrakrichchra* were enrolled from the Kayachikitsa OPD. The selection process was conducted randomly and was strictly inclusive, admitting patients irrespective of gender, religion, or socio-economic status, provided they met the specific inclusion and exclusion criteria.

The study population was stratified through a randomization process into two equal cohorts of 34 patients each:

- **Group A (Trial Group):** Subjects were administered *Gokshur Ksheerapaka*.
- **Group B (Control Group):** Subjects were administered *Shatavari Ksheerapaka*.

Selection of drugs

GokshurKsheerpaka

गोक्षुरः शीतलः स्वादुर्बलकृद्वस्तिशोधनः।मधुरो दीपनो वृष्यः
पुष्टिदश्चाश्मरीहरः॥प्रमेहश्वासकासार्शःकृच्छ्रहृद्रोगवातनुत्॥ *(भावप्रकाश, गुडूच्यादि वर्ग, ७१–७२)*

गोक्षुरको मूत्रकृच्छ्रानिलहराणाम्। *(चरक संहिता, सूत्र स्थान, २५/४०)*[1]

ShatavariKsheerpaka

यो हि त्रिदोषसम्भूतं मूत्रकृच्छ्रं निवारयेत्।पिबेच्छतावरीमूलं शीतनीयं च चूर्णितम्॥[4] *(हारित संहिता)*

शतावरी गुरुः शीता तिक्ता स्वाद्वी रसायनी।मेधाऽग्निपुष्टिदा स्निग्धा नेत्र्या गुल्मातिसारजित्॥शुक्रस्तन्यकरी बल्या
वातपित्तास्रशोथजित्। *(भावप्रकाश, गुडूच्यादि वर्ग, १८६–१८७)*[5]

वरीसिद्धं पिबेत् क्षीरं ससितं कृच्छ्रशान्तये। *(सहस्रयोग, सूत्रस्थान)*

Godugdh[21]

गायंदुग्धंविशेषेणमधुरंरसपाकयोः।

दोषधातुमलस्रोतःकिञ्चित्यछेदकरंगुरुवशीतलंस्तम्यकृत्प्रिग्धंवातपित्तासनाशनम्।

जरासमस्तरोगाषांशान्तिकृत्सेविनांसदा।।

(भा.प्र)

DRUGS, DOSAGE AND DURATION

1. Test Drugs and Formulation

- **Group A (Trial Group):** *Gokshur Ksheerapaka* (Prepared from *Tribulus terrestris*).
- **Group B (Control Group):** *Shatavari Ksheerapaka* (Prepared from *Asparagus racemosus*).

2. Method of Preparation (SOP)

क्षीरमष्टगुणंद्रव्यात्क्षीरान्नीरंचतुर्गुणम् ।क्षीरावशेषंकर्तव्यंक्षीरपाकेत्वयंविधिः ॥

(शार्ङ्गधरसंहिता, मध्यमखण्ड, २/१६१)

Both formulations were prepared fresh daily following the standard *Ksheerapaka Kalpana* ratio (1:8:32) as described in *Sharangdhara Samhita*:[6]

Ingredients: 1 part of the coarse drug powder, 8 parts of Cow's milk, and 32 parts of potable water.

Procedure: The drug, milk, and water were mixed in a stainless steel vessel and boiled over a mild flame (*Mandagni*). Constant stirring was maintained until the water content evaporated completely, leaving only the medicated milk portion (approx. 1/5th of the total initial volume).

1.] Gokshur ksheerapaka

1. Fine powder of durg will be taken in 5 gms quantity.
2. 40 ml of milk will be taken
3. 160 ml of water will be taken
4. All will be mixed together and heated
5. Heat only till 40 ml of milk remains
6. Keep for some time to cool then one can consume.

2.] Shatavariksheerapaka

1. Fine powder of durg will be taken in 5 gmsquantity.
2. 40 ml of milk will be taken
3. 160 ml of water will be taken
4. All will be mixed together and heated
5. Heat only till 40 ml of milk remains

6. Keep for sometime to cool then one can consume.

Filtration: The mixture was strained through a clean muslin cloth and served lukewarm.

3. Dosage and Administration[14]

The following protocol was strictly followed for both groups to ensure uniformity:

- **Dose:** 40 ml of the prepared *Ksheerapaka*.
- **Route:** Oral (*Abhyantara*).
- **Time of Administration:** Twice daily (*Bid*), specifically *Abhakta* (on an empty stomach) or before meals (*Before Food*).
- **Anupana (Vehicle):** Self-contained in the *Ksheerapaka* form.

4. Duration and Follow-up

- **Total Duration of Treatment:** 14 days.
- **Follow-up Schedule:** Patients were assessed at intervals of **14 days** (Day 0, Day 14) to record changes in subjective and objective parameters.
- **Observation Period:** Symptoms like *Sadaha* (burning) and *Saruja* (pain) were monitored throughout the course to evaluate the speed of recovery.

Method of selection of study patient's criteria Inclusion Criteria

1] Patients presenting with complain of sadaha, saruja, muhurmuhu and peeta mutrapravrutti

2] Age Group – 18 to 60 years.

3] Patients Irrespective of Gender, Caste, Religion, Socio economic Status

Exclusion Criteria[11]

1.] Urinary tract infection associated with renal calculi which need sur gical intervention

2.] Surgical conditions like Bph, Phimosis and paraphimosis, renal transplant

3.] Traumatic causes

4.] Ckd, AKI

5.] Lactose intolerance

6.] Neurological diseases causing urine retention

7.] Indwellingcatherter or other drainage device.

Criteria for Withdrawal

1] Patients who are not able to tolerate the treatment or symptoms aggrevates

2] Any adverse drug reaction occurs

3] Patients itself wants to discountinue the treatment

4] Patients with irregular follow up or who take medications irregular

Grouping and Randomization of Patients

All 68 patients were selected for the clinical study into two groups Randomly

Group A – (Trial Group) – 34 patients were treated with trial Drugs i.e. Gokshurk sheerapaka

Group B - (Control Group) - 34 patients were treated with another trial drugs i.e. Shatavari ksheerapaka

Intervention

Patients assessed on 0th day of treatment with follow up on 7th, 14th of treatment. Data recorded in a special case sheet proforma.

The patient having full right to quit the study at any time.

The data mentioned confidentially and subjected to statistical Analysis

Table No. 1.

Parameters	Group A (Trial)	Group B (Control)
Drug	GokshurKsheerapaka	ShatavariKsheerapaka
Dose	40 ml	40 ml
Frequency	Twice Daily (Morning & Evening)	Twice Daily (Morning & Evening)
Time	Apankal	Apankal
Duration	14 Days	14 Days
Follow-up	Every 7^{th}, 14^{th} Day	Every 7^{th}, 14^{th} Day

Methods of measurement[15]

The assessment was carried out initially before the intervention of medicine (on the 0th day of treatment), and subsequently on the 7th, and 14th days of treatment. The data obtained were compared to evaluate the results.

INVESTIGATION

Urine Examination – Routine and Microscopic.

Table no. 2: Methods of Assessment.

Sr.No.	Clinical Result	Definition / Percentage of Relief
1	Completely Cured	No evidence of disease; 100% improvement.
2	Marked Improvement	Significant improvement; ≥ 75% to 99% relief.
3	Moderate Improvement	Intermediate improvement; ≥ 50% to 74% relief.

4	Mild Improvement	Minor improvement; ≥ 25% to 49% relief.
5	No Change	Disease remains at baseline; < 25% relief.

Assessment will be done on the basis of subjective parameters and objective parameters as follows.

Subjective and Objective Criteria

A. Table no. 3-Subjective Criteria.

Parameter	Grade 0 (Normal)	Grade 1 (Mild)	Grade 2 (Moderate)	Grade 3 (Severe)
Mutradaha (Burning Sensation)	No burning sensation.	Mild/rare burning at the start of micturition.	Tolerable burning during the act of micturition.	Intolerable burning at the start, during, and persisting after the act.
Muhurmuhur (Frequency)	6–8 times per day (Normal frequency).	9–10 times per day; rarely frequent.	11–12 times per day; often frequent and controllable.	More than 12 times per day; frequent and uncontrollable.
Saruja (Painful Micturition)	No pain.	**VAS 1–3:** Mild pain at the start of micturition.	**VAS 4–6:** Tolerable pain during micturition.	**VAS 7–10:** Intolerable pain during and persisting after micturition.
Peetamutrata (Urine Color)	Pale yellow (Normal).	Mild yellow discoloration.	Distinct yellow discoloration.	Deep yellow/Dark discoloration.

B. Table no. 4: Objective Criteria.

Parameter	Grade 0	Grade 1	Grade 2	Grade 3
RBCs	Absent	Present (Occasional)	—	—
Pus Cells	Absent	0–3 / hpf	4–7 / hpf	8–10 / hpf

Data Collection

- **Primary Data:** Case Record Form
- **Secondary Data:** Books, Samhitas, journals, web sources
- **Tool:** Case Record Form

Data Analysis

- Data presented using tables and charts
- Statistical analysis using appropriate methods (no blinding)

Table no. 5: Group A patients treated with GokshurKsheerapaka.

Sr.No.	Category	Details
1	Drug Name & Type	Gokshur Ksheerapaka
2	Dosage & Timing	40ml (Matra) taken during apanKaal (2 times daily before food)
3	Duration	for a Kalavadhi of 14 days

In Group B Group B patients treated with Shtavari Ksheerpaka.

Table no. 6: ShatavariKsheerapaka administration details.

No.	Parameter	Description
1	Drug Name & Type	ShatavariKsheerapaka
2	Dosage & Timing	40ml administered during apaanKaal (2 times daily before food)
3	Duration	Taken with KoshnaJal (Luke-warm water) for a period of 14 days

OBSERVATION AND RESULTS

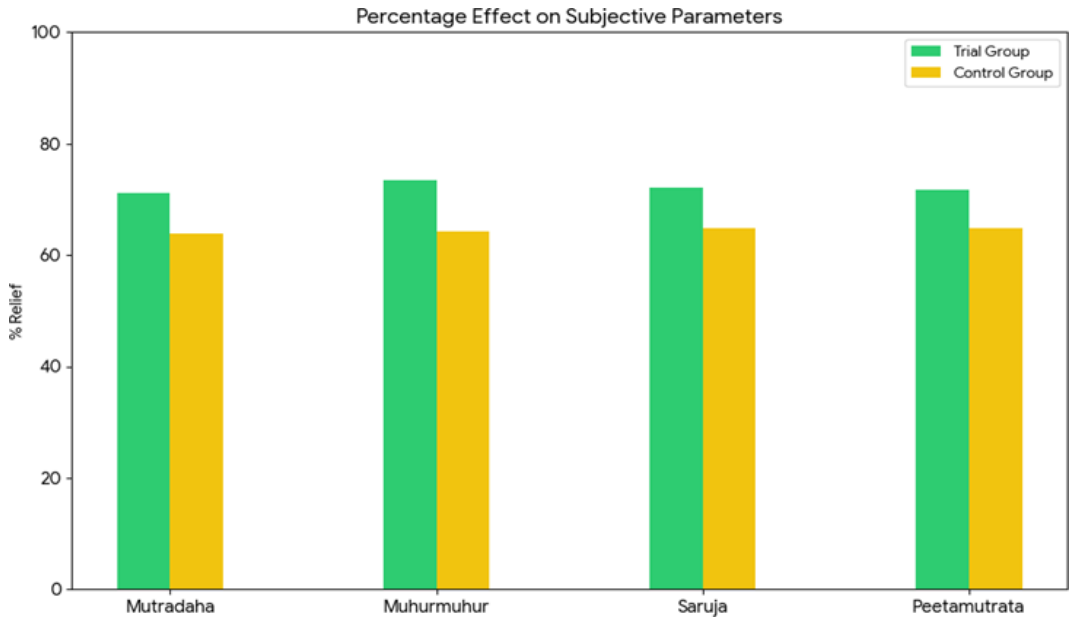
The study was conducted on **68 patients**, divided into **Group A (Gokshur Ksheerapaka)** and **Group B (Shatavari Ksheerapaka)**. The data was analyzed using measures of central tendency, **Wilcoxon Signed Rank Test** for ordinal data, and **Paired t-test** for quantitative data. Inter-group comparison was done via **Mann-Whitney U Test** and **Independent t-test**.[19]

I. Demographic Profile

- **Gender:** A female predominance was observed (**66.18%**), likely due to anatomical susceptibility to UTIs.
- **Age:** The most affected age group was **31–40 years (41.18%)**, followed by **21–30 years (33.82%)**.
- **Prakruti: Vata-Pitta (27.94%)** and **Kapha-Pitta (27.94%)** were the most common constitutions, indicating a higher vulnerability of *Pitta*-predominant individuals.
- **Diet & Agni: 79.41%** of patients followed a mixed diet. **44.12%** presented with *Manda Agni*, which correlates with the formation of *Ama* (endotoxins).

II. Clinical Efficacy (Subjective Parameters)

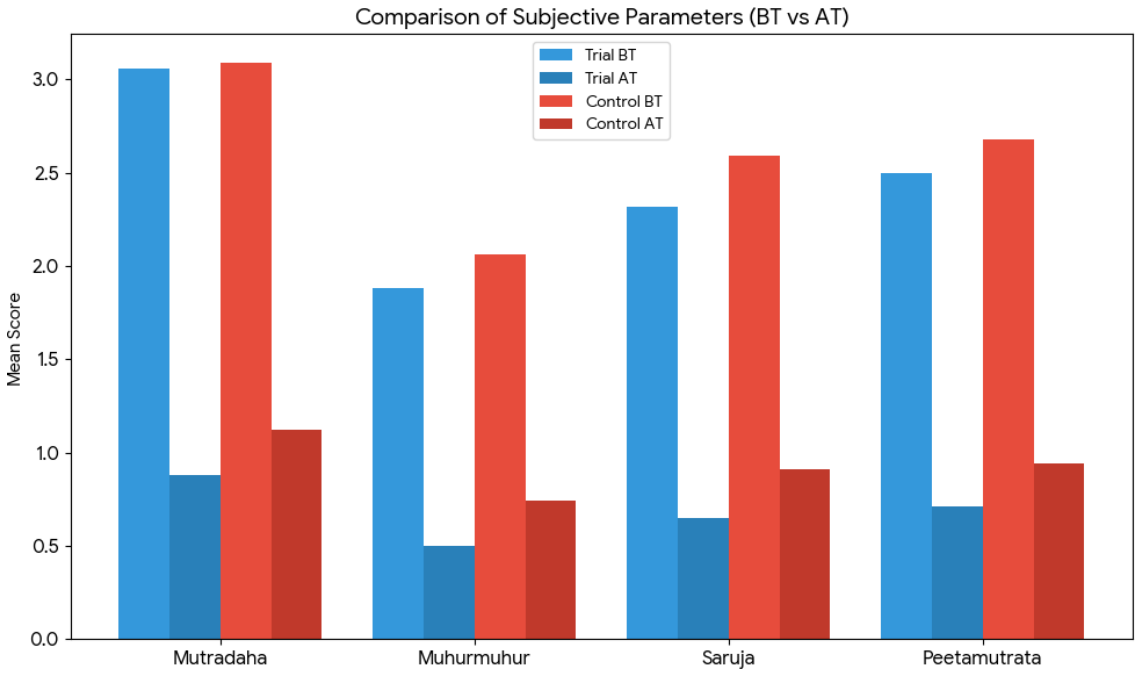
Both groups showed statistically significant improvement ($p < 0.05$) in all cardinal symptoms of *Pittaja Mutrakrichchra*.



Graph no. 1.

Table no. 7.

Clinical Parameter	Trial Group (Green)	Control Group (Yellow)
Mutradaha (Burning Micturition)	**71.15%**	63.75%
Muhurmuhur (Frequency)	**73.40%**	64.08%
Saruja (Painful Micturition)	**71.98%**	64.86%
Peetamutrata (Yellowish Urine)	**71.60%**	64.93%



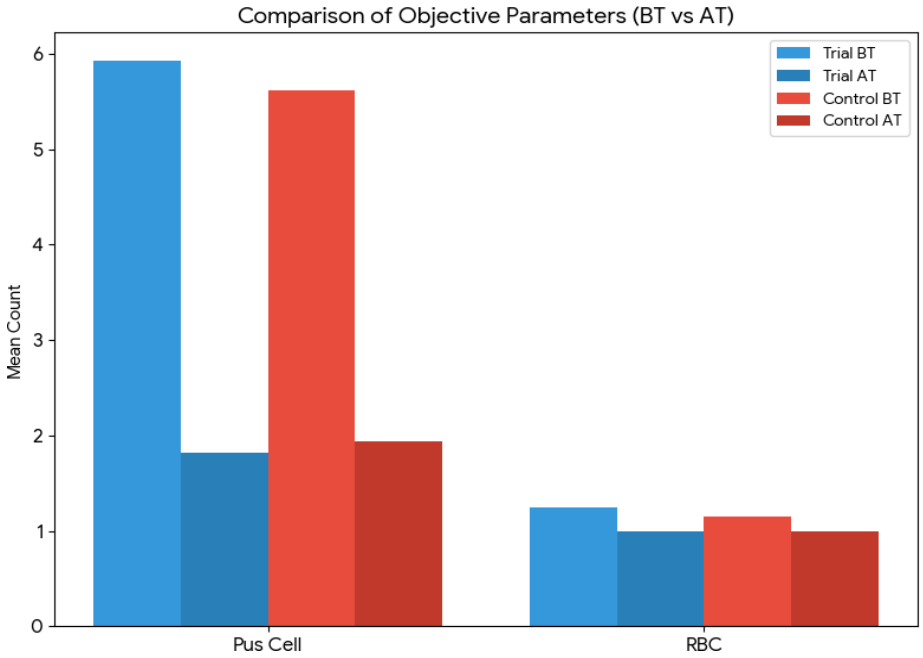
Graph no.2.

Table no. 8.

Parameter	Group	BT Score	AT Score	Percentage Relief
Mutradaha (Burning)	**Trial**	3.05	0.88	**71.15%**
	Control	3.09	1.12	**63.75%**
Muhurmuhur (Frequency)	**Trial**	1.88	0.50	**73.40%**
	Control	2.06	0.74	**64.08%**
Saruja (Pain)	**Trial**	2.32	0.65	**71.98%**
	Control	2.59	0.91	**64.86%**
Peetamutrata (Color)	**Trial**	2.50	0.71	**71.60%**
	Control	2.68	0.94	**64.93%**

III. Effect on Objective Parameters

Microscopic urine examination revealed significant reductions in infection markers in both groups.



Graph no. 3.

2. Reduction in Objective Parameters (Pus Cells & RBCs)[12]

This graph visualizes the "Before Treatment" (BT) vs. "After Treatment" (AT) mean values, demonstrating the significant drop in infection markers.

Pus Cell Trend: Trial Group showed a higher reduction (**69.23%**) compared to the Control Group (**65.45%**).

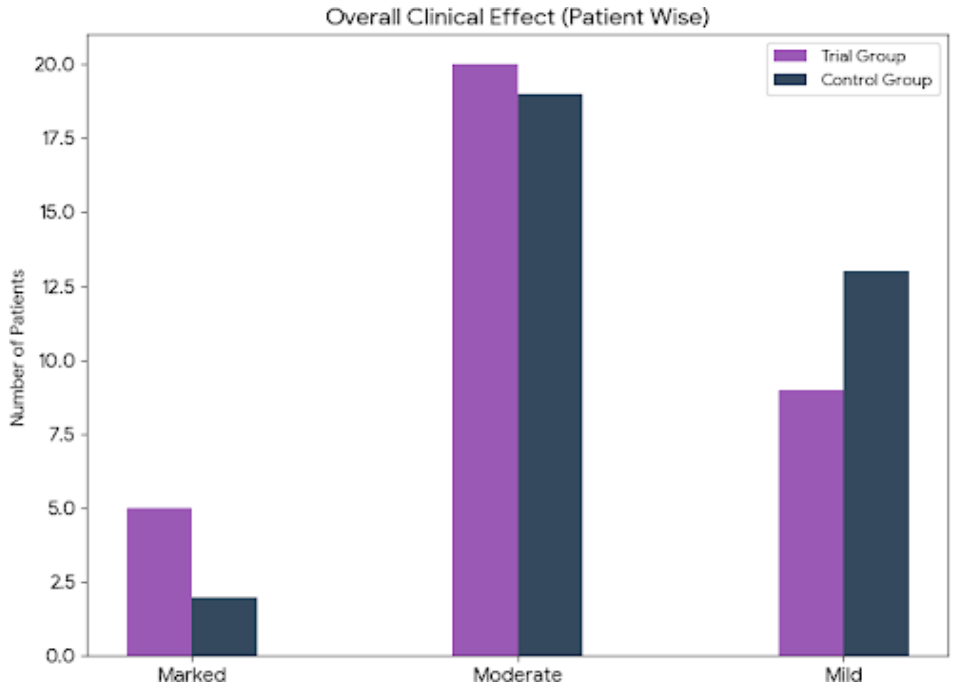
RBC Trend: Significant clearance was noted in both, though baseline values were lower.

Table no. 9.

Clinical Parameter	Trial Group (Relief %)	Control Group (Relief %)
Mutradaha	71.15%	63.75%
Muhurmuhur	73.40%	64.08%
Saruja	71.98%	64.86%
Peetamutrata	71.60%	64.93%

IV. Overall Effect of Therapy

The Trial Group (Gokshur) demonstrated a marginally higher average efficacy compared to the Control Group (Shatavari).



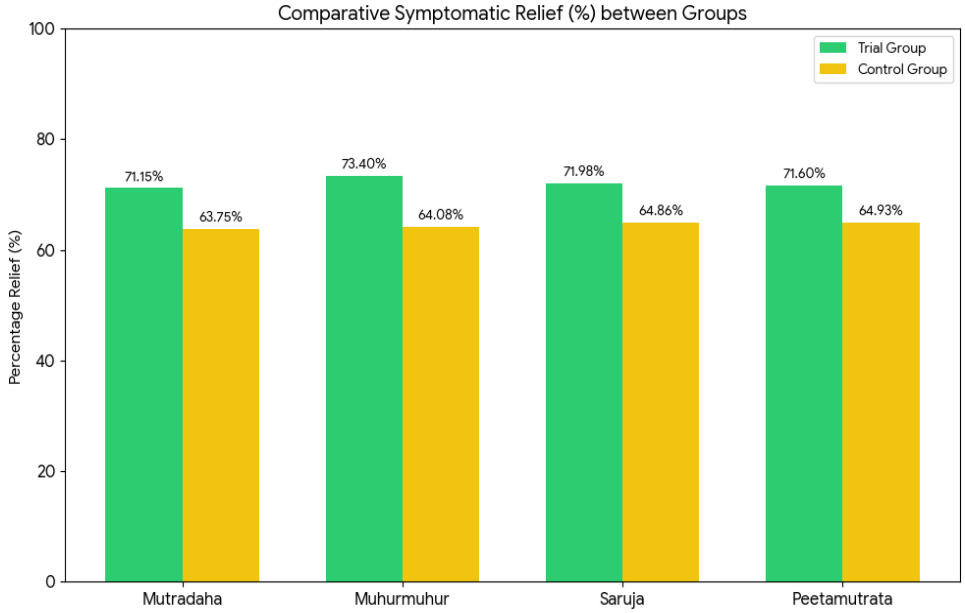
Graph no.4.

Table no. 10.

Effect	Trial Group (N=34)	Control Group (N=34)
Marked Improvement	5 (14.71%)	2 (5.88%)
Moderate Improvement	20 (58.82%)	19 (55.88%)
Mild Improvement	9 (26.47%)	13 (38.24%)
No Change	0 (0.00%)	0 (0.00%)

1. Comparative Symptomatic Relief (%)

This graph compares the percentage of relief across all subjective parameters. It clearly shows **Gokshur Ksheerapaka (Trial)** consistently outperforming **Shatavari Ksheerapaka (Control)**.



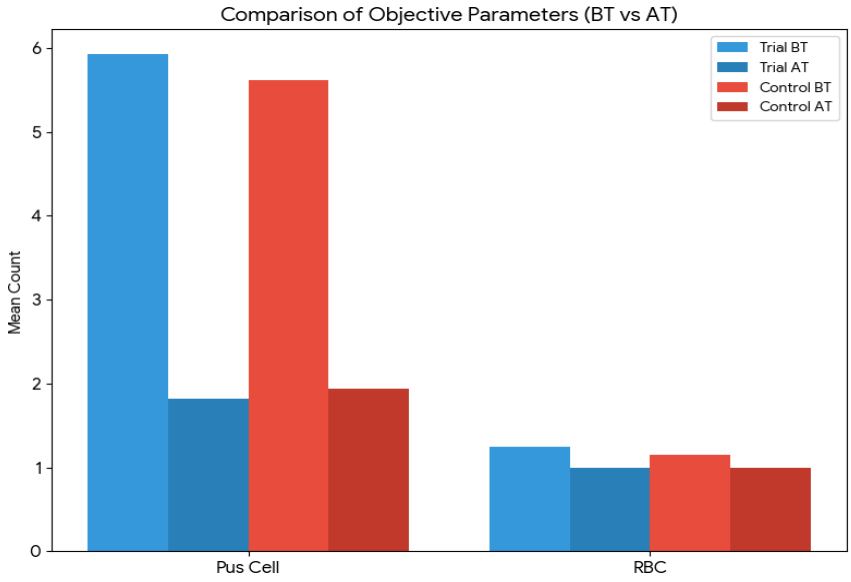
Graph no. 5.

Table no. 11.

Parameter	Trial Group Relief (%)	Control Group Relief (%)	Difference
Mutradaha (Burning)	**71.15%**	63.75%	+7.40%
Muhurmuhur (Frequency)	**73.40%**	64.08%	+9.32%
Saruja (Pain)	**71.98%**	64.86%	+7.12%
Peetamutrata (Color)	**71.60%**	64.93%	+6.67%

3. Overall Clinical Result (Patient-Wise)

This bar summary shows the distribution of improvement across the 68 patients.



Graph no. 6.

Trial Group: 14.71% achieved **Marked Improvement**

Control Group: 5.88% achieved **Marked Improvement**.

Combined: 100% of patients showed at least "Mild Improvement," with zero cases of "No Change."

DISCUSSION

The present study was conducted to evaluate the comparative efficacy of **GokshurKsheerapaka** and **ShatavariKsheerapaka** in the management of **PittajaMutrakrichchra**. The results demonstrate that while both treatments provided significant relief, GokshurKsheerapaka showed a marginally higher percentage of clinical improvement.

1. Demographic and Predisposing Factors

Gender: A higher prevalence was observed in females (**64-67%**) across both groups. This is attributed to the shorter anatomical structure of the female urethra, which facilitates ascending infections. Lifestyle factors such as *Vegavidharana* and decreased water intake were noted as significant triggers.

Age: The most affected age groups were **21-30** (32-35%) and **31-40** (35-47%). This demographic represents the active working population who are prone to irregular diet, travel-induced dehydration, and occupational *Mutravegavidharana*.

Diet and Lifestyle: A **mixed diet** was consumed by over **76-82%** of participants. High consumption of spicy, non-vegetarian food leads to *Pitta Prakopa*. Additionally, occupations involving excessive sun exposure (*Atapseven*) and physical exertion (*Ativyayam*), such as farming, were linked to fluid imbalances.

Prakruti and Agni: Patients with **Vata-Pitta** and **Kapha-Pitta** *Prakruti* were most susceptible. A majority (**38-50%**) exhibited **Manda Agni**[10], which leads to *Ama* formation, the foundational step in the pathogenesis (*Samprapti*) of the disease.

2. Clinical Efficacy: Subjective Parameters

Mutradaha (Burning Micturition): Both interventions showed significant results. However, the Trial Group (*Gokshur*) achieved a higher relief percentage of **71.23%** compared to **63.73%** in the Control Group. The *Sheet Virya* and *MadhurVipaka* of both drugs effectively

neutralize the *Tikshna* and *Ushna* qualities of *Pitta*.

Muhurmuhur Mutra Pravruti (Frequency): The Trial Group showed a higher relief rate of **73.44%**. The *Vata-Shamaka* and *Srotas-Shodhaka* properties of *Gokshur* help reduce the *Sankocha* (spasms) of the bladder, normalizing frequency.

Saruja (Pain): Relief was recorded at **72.03%** for the Trial Group and **64.84%** for the Control Group. Both drugs act as *Vedanasthapaka* due to their *Snigdha* and *Guru* qualities which pacify *ApanaVata*.

Peetamutrata (Yellow Discoloration): Significant reduction (**71.60%**) in the Trial Group indicates a potent *Pitta-Shamaka* effect, clearing the turbidity and discoloration of urine.

3. Clinical Efficacy: Objective Parameters

Pus Cells: The Trial Group showed a reduction of **69.23%**, significantly lowering the mean score from **5.93 to 1.82**. This confirms the antimicrobial and anti-inflammatory properties of *GokshurKsheerapaka*.

RBC Cells: A relief of **19.05%** was observed in the Trial Group. The *Sheet Virya* and *Rakta-Stambhak* (hamostatic) nature of the drugs help soothe the mucosal lining of the *Basti* (bladder) and reduce hematuria.

4. MODE OF ACTION: GOKSHUR KSHEERAPAKA

Gokshura possesses *Madhura Rasa*, *MadhuraVipaka*, and *ShitaVirya*, which directly counteract the *Ushna* and *Tikshna* qualities of aggravated *Pitta*.

Inflammation Control: The *ShitaVirya* and *Madhura Rasa* effectively soothe the urinary tract, reducing inflammation and the *Mutradaha*.

Diuretic Effect:[13] It exhibits a potent *Mutral* action that facilitates the easy flow of urine and flushes out toxins or irritants from the *MutravahaSrotas*.

Urinary Cleansing: Its *BastiShodhaka* properties help restore the normal physiological function of the urinary channels.

Vata Management: By acting as a *Vata-Pitta Shamaka*, it relieves *ruja* and difficulty in urination caused by *Vata* obstruction.

The presence of steroidal saponins helps reduce mucosal inflammation and soothes the internal lining of the urinary tract.[20]

Antioxidant Support: Flavonoids and alkaloids provide antioxidant effects that protect the renal tissues from damage caused by *Pitta* dominance.

Renal Support: The naturally occurring potassium salts and nitrates in Gokshur help the renal system effectively flush out metabolic waste.

The milk base (*Ksheerapaka*) acts as a nourishing medium that enhances the bioavailability and delivery of these active phytochemicals.

5. Mode of Action: ShatavariKsheerapaka

Pitta-Vata Pacification: Shatavari combines *Madhura* and *Tikta Rasa* to balance the *Vata* and *Pitta* doshas, effectively reducing systemic heat.

Digestive Stimulation: The *Tikta Rasa* acts as a *Deepana* and *Pachana* agent, helping to break down undigested toxins (*Sama-Pitta*).

Metabolic Correction: By improving appetite and digestion, it ensures the proper formation of stool and urine, preventing the accumulation of metabolic waste.

Cooling Action: Its *SheetaVirya* (cooling potency) is instrumental in calming the *Pitta*dosha and increasing the volume of urine flow.

The *MadhurVipaka* of Shatavari promotes the smooth passing of both urine and stool, preventing strain on the pelvic floor.

Tissue Protection: Bioactive compounds like *Shatavarins* (steroidal saponins) provide anti-inflammatory and antioxidant protection to the urinary tract.

Mucosal Soothing: The mucilaginous properties of Shatavari soothe the mucous membranes, directly reducing irritation and urgency.

Immunomodulation:[18] Flavonoids and polysaccharides within the herb support the healing of the damaged urinary lining and boost local immunity.

Hydration and Nourishment: The milk used in the preparation provides a *Snigdha*

(unctuous) quality that counteracts the *Rooksha* (dry) nature of *Vata* and the *Tikshna* nature of *Pitta*.

6. Role of Ksheerapaka

The use of **Godugdha** as a medium is critical in *Pittaja* disorders. It provides *Snehan* and *Sheeta* properties, which act as a *Anupana* to transport the lipid-soluble active principles of the herbs directly to the target tissues while neutralizing the "burning" nature of the disease.

CONCLUSION OF DISCUSSION

Both drugs are effective in breaking the *Samprapti* of *Pittaja Mutrakrichchra*. However, for rapid symptomatic relief and significant reduction in bacteriuria (Pus cells), **Gokshur Ksheerapaka** emerges as a more potent choice. For chronic cases involving weakness of the bladder or recurrent irritation, **Shatavari Ksheerapaka** may be preferred for its regenerative (*Rasayana*) benefits.

CONCLUSION

The clinical study concludes that both **Gokshur Ksheerapaka** and **Shatavari Ksheerapaka** are highly effective, safe, and reliable Ayurvedic interventions for the management of **Pittaja Mutrakrichchra** (Lower Urinary Tract Infection).

Based on the statistical analysis and clinical observations of 68 patients, the following conclusions are drawn:

- **Individual Efficacy:** Both the Trial and Control groups showed highly significant results ($p < 0.001$) in reducing subjective symptoms such as *Mutradaha* (burning), *Saruja* (pain), and *Muhurmuhur* (frequency), as well as objective parameters like Pus cells and RBCs.
- **Comparative Superiority: GokshurKsheerapaka** demonstrated a marginally higher therapeutic index with a **72.13% overall symptomatic relief** compared to **64.43%** in the Shatavari group. Its superior action in reducing micturition frequency (**73.44%**) and clearing pus cells (**69.23%**) highlights its potent *Mutrala* (diuretic) and *Vastishodhana* (bladder cleansing) properties.
- **Safety Profile:** No adverse drug reactions or side effects were reported during the 14-day trial, confirming that *Ksheerapaka Kalpana* (medicated milk decoction) is an ideal, soothing vehicle for administering these drugs in *Pitta*-dominant conditions.
- **Clinical Application:** The study validates the ancient Ayurvedic claim of Gokshura being the drug of choice (*Agrya dravya*) for urinary disorders. While both drugs are

effective, **Gokshur Ksheerapaka** is more suitable for acute infective conditions requiring rapid clearance, whereas **Shatavari Ksheerapaka** serves as an excellent cooling and regenerative agent.

The Role of Pathya (Wholesome Diet)

The inclusion of specific dietary items played a crucial role in the recovery phase:

Hydration and Cooling: The consumption of *Trapusha* (Cucumber), *Kushmanda* (Ash gourd), and *Narikela* (Coconut) provided natural diuretic effects and systemic cooling.

Nutritional Support: *PuranaRaktaShali* (Aged red rice) and *Mudga* (Green gram) ensured easy digestion without producing *Vidaha* (internal burning), thereby preventing further irritation of the urinary tract (*MutravahaSrotas*).

Specific Dravyas: Items like *Gokshura* and *Amalaki* acted as *Rasayanas*, supporting the rejuvenation of the bladder epithelium.

Impact of Apathya (Unwholesome Diet)

The study observed that the avoidance of *Apathya* was non-negotiable for clinical success. **Pitta Provokers:** Eliminating *Lavana* (salt), *Amla* (sour), and *Vidahi* (spicy) foods prevented the further acidification of urine and vascular congestion in the renal system.

Incompatible Habits: Avoiding *Madya* (alcohol) and *Matsya* (fish) was essential to reduce the *Kledaka* (excessive moisture/toxin) burden on the kidneys.

Table no. 12: Pathya-Apathya.

Varga (Category)	Wholesome Items (Pathya)
ShookaDhanya (Cereals)	PuranaRaktaShali (Aged red rice), PuranaYava (Aged barley).
ShamiDhanya (Pulses)	Mudga (Green gram).
Mansa Varga (Meat)	JangalaPashu-Pakshi Mansa (Meat of animals from arid regions).
ShakaVarga (Vegetables)	Patola (Pointed gourd), Tanduleya (Amaranth), Trapusha (Cucumber).
PhalaVarga(Fruits)	Narikela (Coconut), Kushmanda (Ash gourd), Kharjura (Dates), Ela (Cardamom), Amalaki, Haritaki.
IkshuVarga (Sugar derivatives)	MadhuraIkshu (Sweet sugarcane), Sita (Sugar candy/Rock sugar).
GorasaVarga (Dairy)	Godugdha (Cow's milk), Takra (Buttermilk), Ghrita (Ghee).
Anya Dravyas (Other items)	Gokshura, Kumari (Aloe vera), Guvaka (Betel nut), TalasthiMajja (Palmyra fruit pulp), SheetalaAnnapana (Cooling food/drinks),

	Nadijala (River water), Karpura (Camphor), Kshara.
Varga (Category)	**Wholesome Items (Pathya)**
Varga (Category)	Unwholesome Items (Apathya)
Rasa (Taste)	Lavana (Salty), Amla (Sour), Kashaya (Astringent - in excess).
Anna (Food Habits)	Shushka (Dry food), Rooksha (Unctuous-less), Pistanna (Pastry/Heavy flour), Viruddhashana (Incompatible food), Vishamashana (Irregular meals), Vidahi (Burning/Spicy foods).
ShookaDhanya (Cereals)	Tila (Sesame), Sarshapa (Mustard).
ShamiDhanya (Pulses)	Masha (Black gram).
KritannaVarga (Prepared Food)	TilabrastaPeenyaka (Oil cakes).
MamsaVarga (Meat)	Matsya (Fish/Seafood - due to Vidahi nature).
MadyaVarga (Alcohol)	All types of Madya (Alcoholic beverages).
Anya Dravyas (Others)	Hingu (Asafoetida), Tambula (Betel leaves with lime), Ati-tikshnaAhara (Highly pungent food), Shaluka (Lotus root), Kapitya (Wood apple), Jambu (Black plum).

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