

Exploring Ayurvedic Formulations: A Comparative Study Of Trunapanchmula Kwatha And Drakshadi Yoga In Treating Pittaja Mutrakrucha W.S.R. To Cystitis

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Abstract

Introduction: Ayurveda is an ancient Indian medical system emphasizing the balance of physical, mental, and spiritual health. Among its many concepts, the proper elimination of waste products, particularly through urine (Mutra), is crucial for maintaining health. Mutrakrucha, or painful urination, closely resembles modern cystitis and can be effectively treated using Ayurvedic herbal formulations. This study aims to evaluate the comparative efficacy of two Ayurvedic formulations, Trunapanchmula Kwatha and Drakshadi Yoga, in managing Pittaja Mutrakrucha.

Methods: A randomized comparative clinical trial was conducted involving 60 participants diagnosed with Pittaja Mutrakrucha. Participants were divided into two groups of 30, receiving either Trunapanchmula Kwatha or Drakshadi Yoga for 15 days. Subjective parameters were assessed using a grading system for urinary symptoms, while objective parameters included routine investigations of blood and urine.

Results: Significant improvements were observed in both groups concerning urgency of urination, painful micturition, and increased frequency of urination, with both treatments showing comparable efficacy. Group A demonstrated an overall symptom relief of 63.93%, while Group B showed 58.29%. However, the differences in efficacy between the two formulations were not statistically significant ($p > 0.05$). Objective parameters also indicated improvements in renal function and urinary symptoms.

Conclusion: Both Trunapanchmula Kwatha and Drakshadi Yoga are effective in managing Pittaja Mutrakrucha, with no significant differences in their therapeutic effects. These findings suggest that Ayurvedic formulations can offer safe and effective alternatives for urinary disorders.

Keywords: Ayurveda, clinical trial, cystitis, Drakshadi Yoga, Mutrakrucha, Trunapanchmula Kwatha, urinary disorders.

Introduction

Ayurveda, the ancient Indian system of medicine, is a holistic science that emphasizes the balance of physical, mental, and spiritual health. It seeks to protect the health of the healthy and alleviate the suffering of the diseased. Central to Ayurvedic philosophy is the balance of three fundamental elements of the human body. Dosha (biological energies), Dhatu (tissues), and Mala (waste products). Proper equilibrium among these elements, along with efficient elimination of waste products, is essential for maintaining a healthy body.

One of the key physiological processes in Ayurveda involves the elimination of waste through urine (Mutra), which is classified as one of the three main excretory products (Trimala). When the natural process of urination is disrupted, it leads to various disorders of the urinary system, known as Mutravaha Srotodusti Vikaras. One such condition is Mutrakrucha, characterized by difficulty and pain during urination, and often associated with infections of the urinary tract. Among the various types of Mutrakrucha, Pittaja Mutrakrucha—closely resembling modern cystitis causes burning, increased frequency of urination, and other distressing symptoms. In modern medicine, cystitis, commonly caused by bacterial infection, is treated with antibiotics, antispasmodics, and other medications, though recurrence and side effects are common. In contrast, Ayurvedic texts describe herbal remedies such as **Trunapanchmula Kwatha** and **Drakshadi Yoga**, which are traditionally used to manage conditions like Pittaja Mutrakrucha. These herbal formulations, known for their diuretic, anti-inflammatory, and cooling properties, offer a potential alternative treatment for urinary disorders, free from harmful side effects. This study aims to evaluate the comparative efficacy of these two formulations in the management of Pittaja Mutrakrucha, with a focus on safety, availability, and effectiveness.

Methodology

Study Design:

A randomized comparative clinical trial was conducted to assess the efficacy of **Trunapanchmula Kwatha** and **Drakshadi Yoga** in managing Pittaja Mutrakrucha, with a particular focus on cystitis. The study involved two groups, with 30 patients each, treated with the two formulations.

GROUP A – 30 Patients were treated with *TrunapanachamulKashay given with Anupan Koshana Jal*.

GROUP B –30 Patients were treated with *Drakshadi Yog givenwith Anupan Koshna Dugdha*.

Selection of Participants

Diagnostic Criteria: All the patients were diagnosed thoroughly on the basis of Ayurvedic Classical signs & symptoms such as Increased frequency of urine (*Varamvar Mutrapravrutti*), Burning sensation during micturition (*Sa-Dah Mutrapravrutti*), Painful micturition (*Sa-Shool Mutrapravrutti*), Hematuria (*Raktavarni Mutrapravrutti*), Pyuria (*Pitavarni Mutrapravrutti*). They were examined on the basis of specially prepared Performa of *Pittaja Mutrakrucha* with a detailed personal history taken. And history of previous treatment if any taken for same. The routine investigations such HB%, Urine culture Routine and Microscopic, Sr. Uria, Sr. Creatine, were also carried out for both groups to exclude any other pathology and for assessment of before the initiation of treatment.

Inclusion Criteria:

- Diagnosed cases of Pittaja Mutrakrucha (cystitis) aged 20-60 years, of either sex.
- Patients with acute cystitis symptoms such as burning urination, increased frequency, and painful micturition.

Exclusion Criteria:

- Patients with obstructive pathology (e.g., BPH, renal or vesical calculus).
- Those suffering from systemic diseases like diabetes, hypertension, or HIV.

Withdrawal Criteria:

- Patients unwilling to continue treatment or those unable to tolerate the medications.

Diagnosis and Assessment:

Subjective criteria: all the diagnostic sign and symptoms were given grading depending upon severity of the disease. Subjective assessment criteria - Symptoms Assessment Score Before Treatment and After treatment

Table No. 1: Methods of measurement of Subjective criteria:

LAKSHANA	GRADE	CRITERIA
<i>Sadaha Mutrapravrutti</i> (Burning Sensation)	0	Absent.
	1	Mild burning during micturition.
	2	Burning during micturition
	3	Burning during and after micturition.
<i>Kruteapi Akruta Samantaha</i> (Increased frequency of urine)	0	Normal Frequency
	1	Every 3-4 hourly
	2	Every 2-3 hourly
	3	Every 1-2 hourly
<i>Sa Shula Mutrapravrutti</i> (Painful micturition)	0	Absent
	1	Pain during micturition only
	2	Continuous pain not disturbing daily act

	3	Continuous pain disturbing daily act
Urgency of Urination	0	Normal frequency
	1	Every 3-4 hourly
	2	Every 2-3 hourly
	3	Every 1-2 hourly
<i>SaraktaMutrapravrutti</i>	0	Absent.
	1	2-4 cells
	2	5-8 cells
	3	8+
<i>PitavarniMutrapravrutti</i>	0	Absent.
	1	1-4
	2	5-10
	3	10+

Table No. 2: Overall assessment Criteria: -

GRADE I (CURED)	75% -100% relief of signs and symptoms
GRADE II (HIGHLY IMPROVED)	50% - 75% relief of signs and symptoms
GRADE III (IMPROVED)	25% - 50% relief of signs and symptoms
GRADE IV (UNCHANGED)	0% - 25% relief of signs and symptoms

Intervention and Follow-up

- Patients in both groups were treated for 15 days and followed up on days 7, 14, 21, and 28.
- The primary outcomes were assessed using a grading system based on subjective symptoms such as burning sensation, frequency of urination, and pain. Objective parameters like pus cells, RBC count in urine, and creatinine levels were also monitored.

Statistical Analysis

- Data were recorded in a structured format and analyzed to determine the comparative efficacy of **Trunapanchmula Kwatha** and **Drakshadi Yoga** in reducing the symptoms of Pittaja Mutrakrucha.
- Both subjective and objective improvements were compared between the two groups using appropriate

statistical tests.

OBSERVATIONS AND RESULTS

A total of 60 patients were registered for the study, with 30 patients treated using Trunapanchamula Kwath and the other 30 patients treated with Drakshadi Yoga. All 60 patients successfully completed the study, and there were no dropouts.

Demographic data:

Gender-Wise Distribution: In the present study, 60 participants were included, with 41.67% being male and 58.33% female. Group A had 43.33% males and 56.67% females, while Group B had 40% males and 60% females. This indicates a higher female participation overall, with more females in both groups compared to males.

Age-Wise Distribution: The highest number of participants (40%) belonged to the 21-30 years age group, making it the dominant age range in the study. This was followed by 30% in the 31-40 years age group, 21.67% in the 41-50 years age group, and the least participation (8.33%) from the 51-60 years group.

Marital Status-Wise Distribution: In terms of marital status, 71.67% of the participants were married, while 28.33% were unmarried. Group A had 73.33% married and 26.67% unmarried participants, whereas Group B had 70% married and 30% unmarried participants, indicating a predominant married population in both groups.

Table No. 3: Demographic Overview Table

Demographic	Group A	Group B	Total
Gender			
Male	13 (43.33%)	12 (40%)	25 (41.67%)
Female	17 (56.67%)	18 (60%)	35 (58.33%)
Age Group			
21-30 years	14 (46.67%)	10 (33.33%)	24 (40%)
31-40 years	8 (26.67%)	10 (33.33%)	18 (30%)
41-50 years	6 (20%)	7 (23.33%)	13 (21.67%)
51-60 years	2 (6.67%)	3 (10%)	5 (8.33%)
Marital Status			
Married	22 (73.33%)	21 (70%)	43 (71.67%)
Unmarried	8 (26.67%)	9 (30%)	17 (28.33%)

Results:

Subjective Parameters (Wilcoxon Signed Ranks Test)

Table No. 4 - A) Urgency of Urination

Group	Day	N	Mean	SD	W	P
Group A	BT	30	1.867	0.94	89	< 0.00001
	AT	30	0.933	0.74		
Group B	BT	30	1.967	0.889	81	< 0.00001
	AT	30	1.1	0.80		

Table 4 shows the results of the Wilcoxon Signed Ranks Test for Urgency of Urination. In Group A, the mean urgency before treatment (BT) was 1.867, which decreased to 0.933 after treatment (AT), indicating significant improvement. Similarly, Group B's mean decreased from 1.967 to 1.1. The p-values for both groups were less than 0.05, indicating a significant reduction in urgency of urination in both groups.

Table No. 5- B) Pittaja Mutrapravrutti:

Group	Day	N	Mean	SD	W	P
Group A	BT	30	2.067	0.784	107	< 0.00001
	AT	30	0.767	0.678		
Group B	BT	30	2.5	0.51	73	< 0.00001
	AT	30	1.73	0.45		

Table 5 presents the Wilcoxon Signed Ranks Test results for Pittaja Mutrapravrutti. Group A showed a significant decrease in mean values from 2.067 to 0.767 after treatment. Similarly, Group B's mean decreased from 2.5 to 1.73. Both groups showed a significant reduction, with p-values less than 0.05.

Table No. 6- C) Increased Urine Frequency

Group	Day	N	Mean	SD	W	P
Group A	BT	30	2.133	0.819	107	< 0.00001
	AT	30	0.733	0.739		
Group B	BT	30	2.2	0.805	126	< 0.00001
	AT	30	1.1	0.712		

In Table 6, both groups experienced significant reductions in urine frequency after treatment. Group A's mean decreased from 2.133 to 0.733, and Group B's mean dropped from 2.2 to 1.1. The p-values for both groups were less than 0.05, indicating significant improvement.

Table No. 7- D) Sarakta Mutrapravrutti

Group	Day	N	Mean	SD	W	P
Group A	BT	30	2.133	0.730	107	< 0.00001
	AT	30	0.767	0.626		
Group B	BT	30	2.3	0.702	126	< 0.00001
	AT	30	1.1	0.661		

Table 7 displays a significant reduction in Sarakta Mutrapravrutti in both groups. Group A's mean decreased from 2.133 to 0.767, while Group B's mean fell from 2.3 to 1.1, with p-values less than 0.05.

Table No. 8- E) Sadaha Mutrapravrutti

Group	Day	N	Mean	SD	W	P
Group A	BT	30	2	0.694	107	< 0.00001
	AT	30	0.6	0.563		
Group B	BT	30	2.033	0.668	126	< 0.00001
	AT	30	0.567	0.568		

The results in Table 8 show a decrease in Sadaha Mutrapravrutti for both groups. Group A's mean reduced from 2 to 0.6, and Group B's mean decreased from 2.033 to 0.567. The p-values were less than 0.05 for both groups.

Table No. 9- F) Sashul Mutrapravrutti:

Group	Day	N	Mean	SD	W	P
Group A	BT	30	2	0.742	107	< 0.00001
	AT	30	0.7	0.595		
Group B	BT	30	2.433	0.678	126	< 0.00001
	AT	30	0.767	0.626		

Table 9 shows a significant reduction in Sashul Mutrapravrutti in both groups. Group A's mean decreased from 2 to 0.7, and Group B's mean fell from 2.433 to 0.767, with p-values less than 0.05.

Statistical Analysis: Comparison Between Group A and Group B (Mann Whitney U Test)

Table No. 10- A) Urgency of Urination

Group	N	Mean	SD	U	P
Group A	30	0.933	0.521	424	0.7039
Group B	30	0.867	0.5074		

Table 10 shows the Mann Whitney U Test for urgency of urination. The p-value was greater than 0.05, indicating no significant difference between Group A and Group B. Therefore, it can be concluded that both treatments were equally effective in reducing urgency of urination.

Table No. 11- B) Pittaja Mutrapravrutti

Group	N	Mean	SD	U	P
Group A	30	1.3	0.7022	450	0.992
Group B	30	1.3	0.7022		

In Table 11, the p-value was greater than 0.05, showing no significant difference between the groups. Hence, both treatments were equally effective in reducing Pittaja Mutrapravrutti.

Table No. 12- C) Increased Urine Frequency

Group	N	Mean	SD	U	P
Group A	30	1.4	0.6746	344.5	0.1211
Group B	30	1.1	0.4025		

Table 12 shows the results of the Mann Whitney test for increased urine frequency. The p-value was greater than 0.05, indicating that there was no significant difference between the groups, and both treatments were equally effective in reducing increased urine frequency.

Table No. 13- D) Sarakta Mutrapravrutti

Group	N	Mean	SD	U	P
Group A	30	1.367	0.668	399.5	0.4593
Group B	30	1.2	0.4842		

Table 13 shows that the p-value was greater than 0.05, indicating no significant difference between the two groups. Both treatments were equally effective in reducing Sarakta Mutrapravrutti.

Table No. 14- E) Sadaha Mutrapravrutti

Group	N	Mean	SD	U	P
Group A	30	1.4	0.563	421.5	0.6744
Group B	30	1.467	0.5713		

In Table 14, the p-value was greater than 0.05, indicating no significant difference between Group A and Group B. Both treatments were equally effective in reducing Sadaha Mutrapravrutti.

Table No. 15- F) Sashul Mutrapravrutti:

Group	N	Mean	SD	U	P
Group A	30	1.3	0.6512	340.5	0.1074
Group B	30	1.667	0.7581		

Table 15 shows the Mann Whitney U test for Sashul Mutrapravrutti. The p-value was greater than 0.05, indicating that there was no significant difference between the groups, and both treatments were equally effective in reducing Sashul Mutrapravrutti.

Objective parameters-

This data provides insights into the paired sample test results of Group A and Group B, the analysis of variance (ANOVA), the % relief in symptoms and patients, and the overall effect of therapy in both groups. Below is an interpretation and summary of the data presented.

Table No. 16: Paired Samples Test (Group A & B)

Paired Samples Test Group A										
Group A	Paired Differences				95% Confidence Interval of the Difference	t	df	Sig. (2-tailed)	Significance	
	Mean	Std. Deviation	Std. Error Mean							
				Lower						Upper
Hb%	B - T- A T	0.6167	0.2601	0.0475	-0.7138 - 0.5195	12.987	29	0.000	Significant	
Sr.creatine mg/dl	B - T- A T	0.3833	0.2984	0.0545	0.2719 0.4947	7.037	29	0.000	Significant	
Sr. Urea mg/dl	B - T- A T	2.700	2.628	0.480	1.719 3.681	5.627	29	0.000	Significant	
Pus cell in urine /HPF	B - T- A T	3.633	1.564	0.286	3.049 4.217	12.721	29	0.000	Significant	

R.B.C in urine/HPF	B T-AT	3.567	1.654	0.302	2.949	4.184	11.809	29	0.000	gnificant
Paired Samples Test Group B										
Paired Differences										
Group B	Mean	Std. Deviation	Std. Error Mean	95%.Confidence Interval of the Difference		T	df	Sig. (2-tailed)	Significance	
				Lower	Upper					
Hb%	B T-AT	0.5367	0.2593	0.0473	-0.6335	0.4398	11.337	29	0.000	gnificant
Sr. creatine mg/dl	BT-AT	0.3833	0.2984	0.0545	0.2719	0.4947	7.037	29	0.000	gnificant
Sr. Urea mg/dl	BT-AT	3.333	1.936	0.353	2.611	4.056	9.432	29	0.000	gnificant
Pus cell in urine /HPF	BT-AT	3.267	1.799	0.328	2.595	3.938	9.945	29	0.000	gnificant
R.B.C in urine/HPF	BT-AT	3.167	1.341	0.245	2.666	3.667	12.932	29	0.000	gnificant

Table No. 17: Analysis of Variance Test of Homogeneity

Analysis of Variance Test of Homogeneity	
	Group A
	Group B

Parameter	ANOVA	Sum of Squares	df	Mean Square	F	Sig.	Sum of Squares	df	Mean Square	F	Sig.	
Hb%	BT	Between Groups	7.544	22	0.343	0.486	0.908	11.014	20	0.551	1.083	0.475
		Within Groups	4.943	7	0.706			4.578	9	0.509		
		Total	12.487	29				15.52	29			
	AT	Between Groups	6.972	22	0.317	0.602	0.829	9.672	20	0.484	1.018	0.517
		Within Groups	3.687	7	0.527			4.278	9	0.475		
		Total	10.659	29				13.90	29			
Sr. creatine mg/dl	BT	Between Groups	4.495	22	0.204	1.407	0.336	2.893	20	0.145	0.497	0.907
		Within Groups	1.017	7	0.145			2.619	9	0.291		
		Total	5.512	29				5.512	29			
	AT	Between Groups	0.775	22	0.035	0.688	0.765	0.688	20	0.034	0.694	0.763
	Within Groups	0.358	7	0.051			0.446	9	0.050			
	Total	1.134	29				1.134	29				
	Between											

Sr. Urea mg/dl	B T	Groups	1009. 533	2 2	45. 888	0.7 34	0.7 31	1324. 883	2 0	66. 244	4.1 81	0.0 16
		Within Groups	437.83	7	62.548			142.58 3	9	15.843		
		Total	1447.3 67	29				1467.4 67	29			
	A T	Between Groups	432.70	22	19.668	0.53 5	0.86 8	1034.8 83	20	51.744	4.28 9	0.01 5
		Within Groups	257.16 7	7	36.738			108.58 3	9	12.065		
		Total	689.86 7	29				1143. 467	29			
Pus cell in urine /HPF	B T	Between Groups	173.30	22	7.877	0.62 9	0.80 9	146.0	20	7.300	0.5 27	0.8 88
		Within Groups	87.667	7	12.524			124.66 7	9	13.852		
		Total	260.9 67	2 9				270.6 67	2 9			
	A T	Between Groups	70.000	22	3.182	0.74 2	0.72 4	49.783	20	2.489	0.3 77	0.9 67
		Within Groups	30.00	7	4.286			59.417 9	9	6.602		
		Total	100.00	29				109.20	29			
	B T	Between Groups	79.133	22	3.597	0.4 26	0.94 1	82.133	20	4.107	2.4 92	0.08 0
		Within Groups										
		Total										

R.B.C in urine/ HPF												
	Within Groups	59.167	7	8.452			14.833	9	148			
	Total	138.30	29				96.967	29				
A T	Between Groups	25.533	22	1.161	1.283	0.389	26.050	20	1.303	2.164	0.117	
	Within Groups	6.333	7	0.905			5.417	9	0.602			
	Total	31.867	29				31.467	29				

- **Hemoglobin (Hb%)**: Both Group A and Group B showed significant improvement ($p < 0.001$), indicating a positive effect of therapy.
- **Serum Creatinine**: Significant changes were observed in both groups with $p < 0.001$, suggesting improvement in kidney function.
- **Serum Urea**: A significant decrease was noted in both groups ($p < 0.001$), indicating a positive effect on kidney health.
- **Pus Cells and RBCs in Urine**: Both Group A and Group B experienced significant reductions in pus cells and RBCs in urine ($p < 0.001$), indicating a decrease in infection and hematuria.

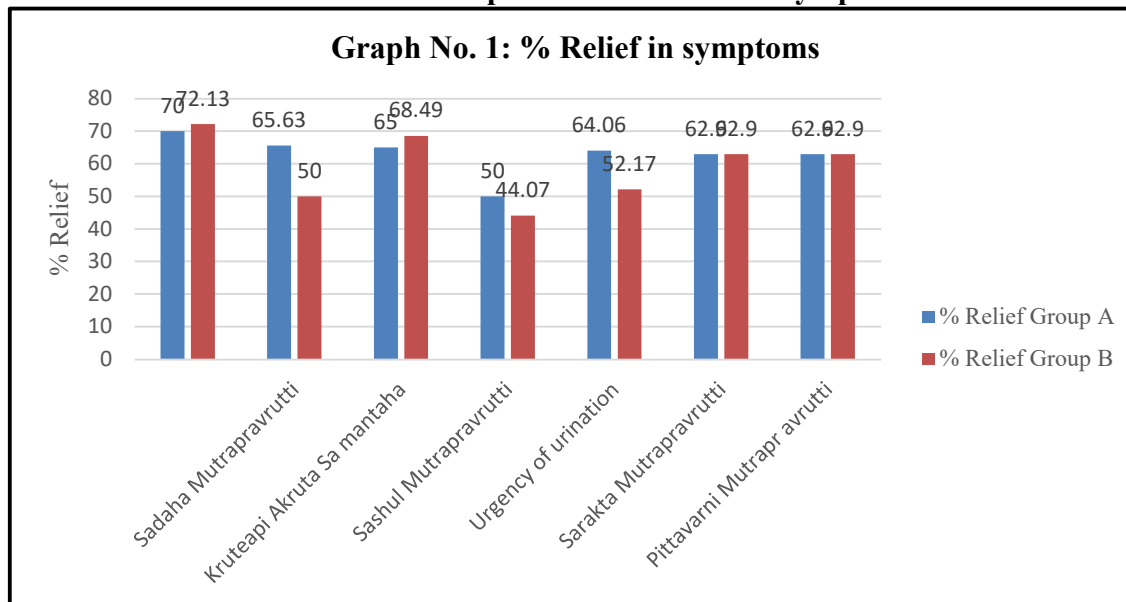
Analysis of Variance (ANOVA)

- For **Hb%, Serum Creatinine, and Pus Cells in Urine**, the differences within groups (pre- and post-treatment) were significant, but the comparison between groups was not statistically significant ($p > 0.05$), indicating that both treatments were similarly effective.
- For **Serum Urea**, a significant difference between groups was observed in the post-treatment ($p < 0.05$), with Group B showing more improvement than Group A.

Table No. 18: % Relief in Symptoms

Sr. No.	Symptoms	% Relief	
		Group A	Group B
1	<i>Sadaha Mutrapravrutti</i>	70	72.13
2	<i>Kruteapi Akruta Samantaha</i>	65.63	50
3	<i>Sashul Mutrapravrutti</i>	65	68.49
4	Urgency of urination	50	44.07
5	Sarakta Mutrapravrutti	64.06	52.17
6	Pittavarni Mutrapravrutti	62.90	62.90
7	Avg. % Relief	63.93	58.29

Graph No. 1: % Relief in symptoms



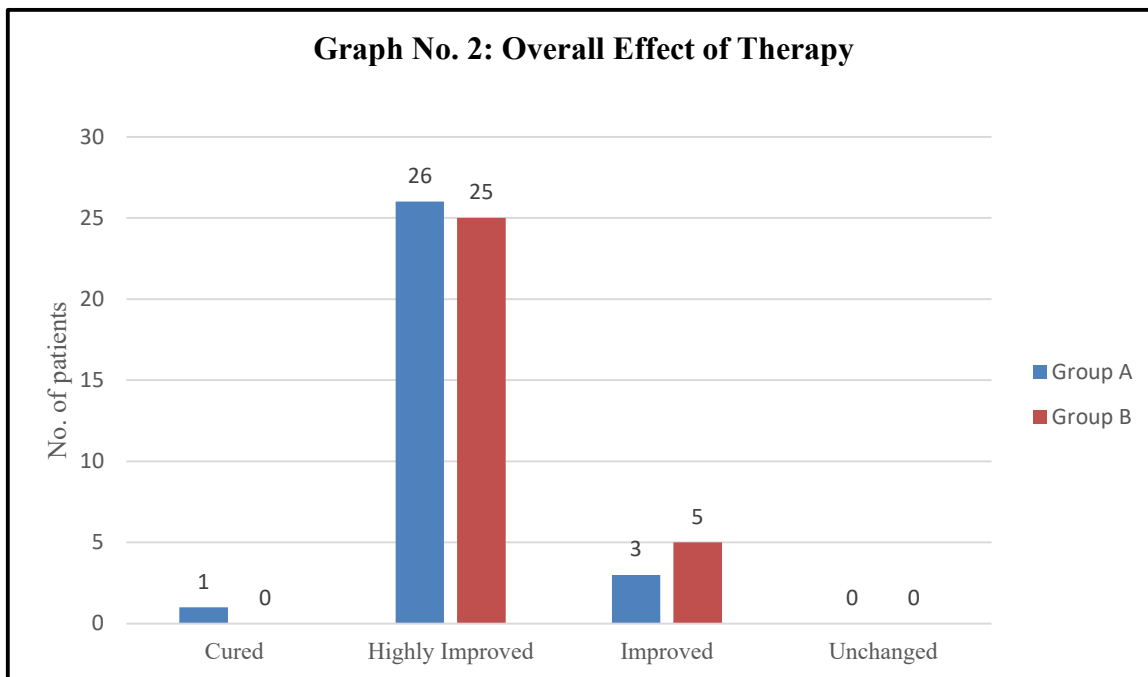
- Group A showed a higher overall percentage relief in symptoms (63.93%) compared to Group B (58.29%).

- Notably, Group B had slightly higher relief in symptoms related to **Sadaha Mutrapravrutti**

(72.13%) and **Sashul Mutrapravrutti** (68.49%), but Group A outperformed in **Kruteapi Akruta Samantaha** (65.63%) and **Urgency of Urination** (50%).

Table No. 19: Overall Effect of Therapy

Sr. No.	Criteria	Improvement Grade	No. of patients	
			Gr. A	Gr. B
1	75% to 100%	Cured	01	00
2	50% to 74%	Highly Improved	26	25
3	25% to 49%	Improved	03	05
4	00% to 24%	Unchanged	00	00



Graph No. 2:

Overall Effect of Therapy

- **Highly Improved** (50% to 74% improvement): Group A had 26 patients, while Group B had 25 patients.
- **Improved** (25% to 49% improvement): Group B had more patients (5) compared to Group A (3).
- **Cured** (75% to 100% improvement): One patient in Group A achieved a complete cure, while no patients in Group B reached this level.

Discussion

The present study aims to evaluate the efficacy of **Trunapanchmula Kwath** and **Drakshadi Yog** in managing **Pittaja Mutrakrucha**, a condition characterized by painful and difficult urination. This disorder predominantly involves **Mutravaha Strotas**, where a vitiation of **Pitta Dosha**, primarily along with **Vata** (especially **Apan Vayu**), affects the bladder (Basti) leading to significant urinary symptoms such as dysuria, urgency, and increased frequency of urination. The symptomatology observed in Pittaja Mutrakrucha bears a close resemblance to modern medical conditions like **Urinary Tract Infections (UTIs)** and **cystitis**.

While modern medicine offers various pharmacological treatments for cystitis, these often come with extensive side effects. In contrast, Ayurvedic treatments such as those evaluated in this study provide safe alternatives with minimal adverse effects, making them appealing for patients seeking holistic and effective remedies. The study's design, which involved 60 patients divided into two treatment groups, allows for a robust comparison of the therapeutic efficacy of the two Ayurvedic formulations.

Symptom Evaluation

Symptom assessment through Wilcoxon Signed Rank Test indicated statistically significant improvement in both groups, particularly concerning urgency, frequency of urination, and burning sensations. The positive response in both treatment arms highlights the effectiveness of both **Trunapanchmula Kwath** and **Drakshadi Yog** in alleviating symptoms of **Pittaja Mutrakrucha**. However, while both treatments showed significant efficacy, the comparison through Mann-Whitney U test revealed no substantial difference in effectiveness between the two formulations, suggesting that both have comparable therapeutic potential.

The observed relief in symptoms such as **Sadaha Mutrapravrutti** and **Sarakta Mutrapravrutti** was slightly more pronounced in the Trunapanchmula Kwath group, indicating a potential edge in its efficacy for these specific symptoms. This aligns with the pharmacological profiles of the ingredients in Trunapanchmula, which possess diuretic and anti-inflammatory properties that are particularly beneficial in treating conditions like cystitis.

Objective Parameters

In evaluating objective parameters, such as **Hemoglobin (Hb%)** and **Sr. Urea levels**, the findings suggest that while both groups exhibited improvements, only the **Sr. Urea levels** demonstrated statistically significant differences. The lack of significant differences in other parameters (like **Sr. Creatinine levels** and urinary cell counts) indicates that both treatments are similarly effective in their overall impact on renal function and inflammatory markers, reinforcing the need for a careful assessment of additional parameters in future studies.

Mode of Action of Trunapanchmula Kwath and Drakshadi Yog in the Management of Pittaja Mutrakrucha with Special Reference to Cystitis

Trunapanchmula Kwath

- **Madhura Rasa (Sweet Taste):** The sweet taste of Trunapanchmula components contributes to its **Pitta-shamaka** (Pitta pacifying) properties. This helps alleviate symptoms associated with Pitta dosha aggravation, such as burning sensations during urination.
- **Sita Veerya (Cooling Potency):** The cooling nature of these herbs provides a soothing effect on the urinary tract, reducing inflammation and pain. This is crucial for managing conditions like cystitis, where heat and inflammation are predominant.
- **Diuretic Activity:** The hydro-alcoholic extract of **Kusa** exhibits significant diuretic activity, which enhances urinary output and promotes the excretion of toxins. This aids in flushing out the urinary tract, thereby reducing the incidence of infections.
- **Anti-inflammatory and Antioxidant Effects:** The ingredients are known for their anti-inflammatory and antioxidant properties, which help mitigate oxidative stress and inflammation in the bladder wall, contributing to symptom relief in cystitis.

Mechanism of Action:

- **Reduction of Pitta and Vata Dosha:** Trunapanchmula Kwath addresses the underlying dosha imbalance by pacifying both Pitta and Vata doshas, which are implicated in the symptoms of Pittaja Mutrakrucha. By restoring dosha balance, the formulation helps normalize urination patterns and reduces discomfort.
- **Promotion of Urinary Health:** The diuretic properties increase urine volume and decrease urinary pH, creating an unfavorable environment for pathogens. This is particularly beneficial in preventing and managing urinary tract infections associated with cystitis.

Drakshadi Yog

Therapeutic Properties:

- **Madhura Rasa (Sweet Taste):** Similar to Trunapanchmula, Drakshadi Yog's sweetness aids in reducing Pitta, which alleviates burning and discomfort associated with urination.
- **Sita Veerya (Cooling Potency):** The cooling effect of Drakshadi Yog helps soothe inflammation in the urinary tract, reducing pain and promoting comfort during urination.
- **Antioxidant and Anti-inflammatory:** The antioxidant properties of Draksha combat oxidative damage, while its anti-inflammatory effects alleviate irritation and inflammation in the bladder, a key concern in cystitis.

Mechanism of Action:

- **Pitta and Kapha Balancing:** Drakshadi Yog is effective in balancing both Pitta and Kapha doshas, addressing the multifactorial nature of urinary disorders. This balance helps improve overall urinary function and decreases the frequency of painful urination.
- **Improvement of Urinary Flow:** The diuretic action of Draksha promotes urinary flow and helps cleanse the urinary tract. This is essential for flushing out harmful bacteria and preventing the recurrence of urinary tract infections.
- **Mucosal Protection:** The soothing properties of the ingredients may protect the mucosal lining of the bladder, reducing inflammation and discomfort. This protective effect is vital in managing chronic conditions like cystitis.

Conclusion

The comparative analysis of Trunapanchmula Kwatha and Drakshadi Yoga in treating Pittaja Mutrakrucha demonstrates both formulations' effectiveness in alleviating urinary symptoms. The statistically significant improvements across subjective and objective parameters indicate their potential as viable alternatives to modern pharmacological treatments, which often carry undesirable side effects. Notably, both groups experienced substantial symptom relief, highlighting the safety and efficacy of Ayurvedic approaches in managing conditions like cystitis. While Group A exhibited slightly greater overall relief, the lack of significant differences between the two treatments suggests that either formulation can be considered a suitable option for patients. Future research with larger sample sizes and longer follow-up periods is warranted to further validate these findings and explore the long-term benefits of Ayurvedic interventions in urinary health.