

A COMPARATIVE CLINICAL STUDY OF MUTRAKRICCHAHARA KWATHA AND TRUNAPANCHMULA KWATHA

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ABSTRACT: Mutrakruccha is the disease of Mutravaha Strotas characterized by difficulty in micturation. In ayurved Mutrakruccha have been classified into 8 types according to doshas. Symptoms of pittaja mutrakruccha are peet mutra (yellowish discolouration of urine), Sadaha Mutrapravrutti (burning micturation), muhurmuhr mutra pravrutti (increased frequency), sarakta mutrapravrutti (hematuria) are similar to urinary tract infection. In modern medicine urinary tract infection is treated but the effect is temporary & patients come with recurrence. In this study patient was treated with Mutrakrucchra kwatha and Trunpanchmula kwatha are compound drug combination which may produce addictive effect rather than single drug. Mutrakrucchra kwatha which is specially mentioned in Pittaja Mutrakruccha adhikar. having Mutral, Pittashamak, Bastivishodhan, Doshnashank property, while Trunpanchmula having antiinflammantory property. And both drugs are easily available and economically affordable. In this paper we will discuss A Comparative Clinical Study of Mutrakricchahara Kwatha and Trunapanchmula Kwatha.

KEYWORDS: Mutrakruccha, Mutravaha, Strotas, Kwatha, Pittaja Mutrakruccha, Pittashamak, Anup Mansa, Micturition.

INTRODUCTION: Mutrakruccha is categorized into eight categories in Ayurveda based on Doshas. Mutravaha strotas is impacted by this disease, which causes trouble micturating. Hetu was described by Madhav Nidan as Madhyapan, Anup Mansa, Vyayam, Ruksha Ahara Adhyashana, Ajeerna, Atiprasang, Nityadrut Prushthayam, and others. These hetu are similar to the causes of UTI, which are unsanitary food, alcohol, exercise, spicy oily food, reduced water intake, frequent sexual intercourse, usage of diaphragm with spermicide, and holding natural urges.

Mutrakricchahara means "difficulty in micturation." Mutrakruccha is a Mutravaha strotas disease that mostly deals with shoola (pain) and Mutrakrucchata (dysuria) One of the major diseases encountered in day-to-day life by general practitioner is urinary tract infection. The world-wide prevalence of urinary tract infection according to WHO is 150 million. person per year and still is

increasing. In Maharashtra, the frequency of UTI is 33.54%. It affects people of all ages, but UTI is four times more common in girls than in males. 40%-60% of people have had an infection at some point in their lives. UTI affects approximately 40% of women and 12% of men at some point in their lives. E. coli bacteria cause 90% of UTIS. [1]

PHYSIOLOGY OF URINE FORMATION (MUTROTPATTI): Doshas also maintain a person's health by regulating the physiological factors in the body, while Dhatus bear and nourish the body. These three main roots of the body are kept in a dynamic state of equilibrium to maintain good health. Any disruption in their relative a majority in the body will lead to disease. Malas is a component of the body, just like Dosha and Dhatu.

Purisha, Mutra, and Sweda must be properly eliminated in order to maintain a person's health because they can neither stay in the body nor nourish it; rather, they pollute it. They carry and partially support the body. Additionally significant are their production and elimination. The word "kitta" derives from "Kitta Gatou," which means to move or to refer to a material that is not ingested permanently. The Malas is produced as trash when all Agnis act on Ahara and are then expelled from the body. Jala and Agni make up the Mutras Panchabhautic combo. One of the Dravamala generated during Annapachana is characterized as Mutra, and its manufacturing takes place in Pakvashaya.

The idea of urine generation is unique to Ayurveda, which indicates that the Mutra is created as a result of food digestion and is produced in the Pakvashaya region. Four different ways are used to generate Mala from the food consumed. Food is said to be divided into two portions, Sarabhaga and Kittabhaga, once digestion is complete by the digestive enzyme Pachaka Pitta under the effect of Samana Vayu. The component of the food that is processed by the digestive fluids and assimilated in the body is known as "Rasa," whereas its Sara Hina, or non-nutrient portion, is known as "Kitta." [2]

The amount that is not absorbed is made up of both liquid and solid components. The Samana Vayu has an effect on the liquid portion of the Pakvashaya by the Maldhara kala. The liquid portion that is ingested and circulates throughout the body is eventually transported to Vrikka, where it oozes and is referred to as Mutra. Two Gavinis transport it from Vrikka to Basti. It is kept there till it is eliminated through Mutrapraseka. The feaces, which are expelled through the anal canal, are the solid portion.

CHARACTERISTIC OF NORMAL URINE:

1. Rasa – Katu and Lavana; slightly acidic in nature.
 2. Gandha – Na Ati Gandham i.e., characteristic aromatic odour.
 3. Sparsha – Ushna; when freshly passed it is slightly warm.
 4. Rupa – A pale yellow, vishada; a clear transparent liquid having no turbidity.
 5. Pramana (Quantity) – Four Anjalis. According to modern science 1500 – 2000 ml/day. Quantity depends upon the amount of fluid intake. In children normal urine output is > 1 ml/kg/hour.
- Dhatukarma of Mutra – Kledavahana, or the transportation of fluid, is its purpose. Mutra fills the Basti (bladder), and this Mutra removes extra fluid from the body.

PATHOPHYSIOLOGICAL DESCRIPTION OF URINARY TRACT SYMPTOMS:

1. Polyuria– Increased urinary solute excretion or pure water diuresis can also cause an excessively high urine volume (>3 liters/day). Accurate intake documentation is crucial for polyuria assessment. In cases of primary or psychogenic polydipsia, a higher urine production is a proper reaction to a higher water intake. In these patients, plasma sodium content will often be low to normal. In the absence of an excessive intake, polyuria with increased free water clearance is a sign of reduced urine concentrating ability, as seen in diabetes insipidus.
2. Frequency– More frequently than a patient might anticipate, frequency describes micturition. One of the most typical urologic symptoms is this one. The typical adult will urinate five to six times a day, about 300 cc at a time. It might be a side effect of polyuria. Urinary frequency is mostly brought on by two factors. decreased bladder capacity, resulting in a reduction in the amount of pee produced every void. polyuria, which causes increased urine production and results in normal voiding volumes. identification of reduced bladder capacity and reduced volume per void.
3. Urgency– It is the sudden, urgent urge to void. Similar to pain during urination, an inflammatory lesion of the lower urinary tract is typically the cause. Without underlying urologic disease, anxiety can also produce urinary urgency.
4. Dysuria – Inflammation typically contributes to uncomfortable urination. Typically, this pain is felt in the urethral meatus rather than over the bladder. While discomfort at the conclusion of micturition is typically of bladder origin, pain at the beginning of urination may suggest urethral disease. Frequency and urgency are usually present in dysuria. Burning sensation is a common description for pain that is less severe. A general bacterial infection is the usual cause.
5. Oliguria – Oliguria is defined as a daily volume below 300 ml. An essential finding is a low measured urine volume, which might be caused by either decreased production, restriction of urine flow, or both.
6. Hesitancy – It refers to a delay in micturition's onset. Normally, the moment the urinary sphincter is relaxed, urination starts.
7. Hematuria – Hematuria can either be visible and reported by the patient (macroscopic hematuria) or microscopic and found during urine dipstick testing. It suggests that there is bleeding somewhere along the renal tract. Red blood cells can occasionally be seen in the urine of healthy people (up to 12500 RBC/ml), according to microscopy. ^[3]

REVIEW OF LITERATURE (AYURVEDIC REVIEW) :

CHARAK SAMHITA: Sutrasthana - The eight different varieties of Mutragata roga are listed in the 18th chapter, "Ashtodariya Adhyaya," and a detailed description is provided in both Chikitsasthana and Siddhisthana.

Chikitsasthana - In the 26th chapter, "Trimarmiya Chikitsa Adhyaya," Acharya Charaka identified the urinary bladder as one of the essential organs and listed the eight forms of Mutraghata, including those brought on by Dosha, Ashmari, and Sharkara, as well as their respective causes and treatments. 8 Siddhisthana - In the 9th chapter of Trimarmiya Siddhi, Acharya Charaka lists

all 13 urinary disorders, their pathologies, symptoms, and treatments, along with a thorough explanation of Basti and Uttara Basti in each case. [4]

KASHYAPA SAMHITA: In the 10th chapter of Chikitsa Sthana, Mutraghata, the etiopathogenesis of dysuria induced by each Dosha, its characteristics, and the distinction between Prameha and Mutraghata were discussed. They also talked about how to deal with dysuria. They discuss variations between Prameha and Mutraghata as well as the etiopathogenesis, clinical characteristics, and treatment principles of Sharkara and Ashmari. Prameha has recently become irritable, whereas Mutraghata has an abrupt onset.

The following symptoms of Mutraghata are listed by Acharya Kashyapa: Basti Sprushati Panina (touches the urinary bladder), Dashati Oshtho (bite the lips), Romaharsha (horripilation), Angaharsha (shivering of body parts), Mutrakale ch Vedana (pain during urination). [5]

SANGRAHA KALA (400 A.D -1600 A.D): Ashtang Sangraha & Ashtang Hridaya – Both of Acharya Vagbhata 's writings, Ashtanga Sangraha (5th century AD) and Ashtanga Hridayam (6th century AD), contain descriptions of Mutraghata and Mutraghata. Under Mutra Apravruttijanya Vyadhi, Mutraghata is classified. Along with their new ideas, they detailed the Nidana, Bheda, Samprapti, Lakshana, Sadhya-Asadhyata, and Chikitsa about Mutraghata and Mutraghata as they were described in Charaka and Sushruta Samhita. They list the Vivara Ashraya, including Payu, Basti, Bastishira, Medhra, Kati, and Vrishna. [6]

UPASHAYA AND ANUP SHAYA: The medication, food, or routine is what relieves the disease's indications and symptoms. When a physician is unable to identify the disease, Nidana, Poorvaroop, Roopa, and Samprapti can assist in making the diagnosis. Upashaya and Anupshaya can also be of assistance. Upashaya – Ahara – Shali rice, which is aged and crimson, Barley, nut milks, Ghrita, sugarcane, milk, cow's milk curd wild animal and bird meat, Mudga pulse water, Kushmanda fruit patola leaves, untamed ginger juice from citrus fruits, cucumber, green coconut pulp, and decreasing cardamom, River water that is fresh. Vihara- Sleep, happiness, a comfortable bed, avoiding anxiety, engaging in sexual activity and physical activity, regular oil massages, and the use of perfumes and florals.

ANUPASHAYA: Ahara: Fish, Masha, Kharjura, Shaluka, Kapitha, Jambu, Bisa, Betel nuts, Salty Edibles, Sesame Seed Kalka, Sesame Oil, and Mustard Oil, among other foods.

Vihara: Excessive of exercise, suppression of a natural inclination, wind exposure, hard work, riding horses or elephants. [7]

OBJECTIVES:

- Conceptual study of Pittaj Mutrakruccha in light of Ayurved and modern perspective.
- To observe the side effect of Mutrakricchahara kwatha and Trunapanchamula kwatha during the trial.
- To assess overall wellbeing effect of the drug.

RESEARCH METHODOLOGY: This study was Randomised clinical study. Patients were screened for signs and symptoms of pittaja mutrakruccha. Total 40 patients were recruited 20 in each group. Mutrakrucchara kwatha was given to group A as a trial drug and Trunapanchmula kwatha was given to group B as control drug for the study. During the patient enrollment, eligibility

screaming, primary data collection, physical examination was done. Informed consent was collected from the patients. After the day of recruitment, patients were followed up on 4 TH ,7TH ,15TH day for assessing the subjective and objective parameters.

RESULT AND DISCUSSION:

Ayurvedic review: Vyutpatti of Mutrakruccha: Two words—"Mutra" and "Krucchra"—combine to form the term "Mutrakrucchra.

According to Acharya Charaka, a Vyadhi is referred to be a Mutrakrucchra Vyadhi if the patient experiences pain and difficulties urinating. Pain is more than just blockage in this Vyadhi. Although obstruction exists, the pain is more intense when urinating.

Paryaya: There are various synonyms for the word "Mutrakruccha" including Mutropaghata, Kruccha Mutrata, Jalamaya, and Kruccham.

Nidan can be differentiated under 3 headings

- Aharaj
- Viharaj
- Aushadhi janya

Samprapti: Nidana Sevana causes the Doshas to get vitiated, causing them to enter the Basti and create Strotorodha, Sankocha, and Kshobha at the Mutra Marga, which leads to Basti Pradesh Shotha and causes discomfort and difficulties urinating. Additionally, the Apana Vayu Dushti results in Sanga in Mutravaha strotas, which also causes discomfort when urinating and generates Mutraghata. ^[8]

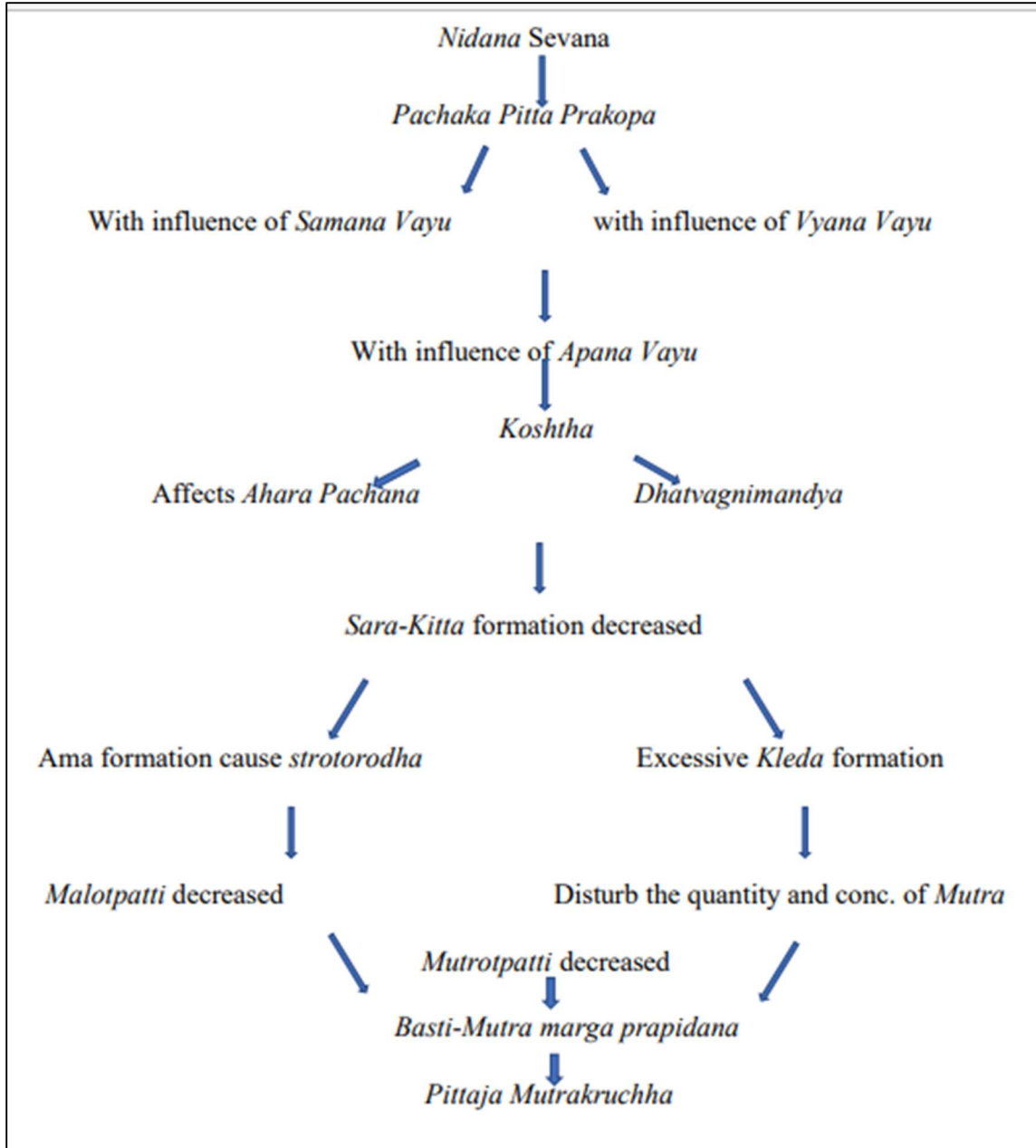


Figure 1: Flowchart

STATISTICAL STUDY

Type of study: Randomized clinical trial.

Special proforma of case paper was designed. Screening of the patients were done and then selected and enrolled as per inclusion criteria. Informed consent was taken.

Sample size: total sample size: Group A – 20 Group B – 20

TABLE NO -1 WORK PLAN

Particulars	Group A	Group B
No. of Patients	20	20
Medicine	<i>Mutrakricchahara kwatha</i>	<i>Trunapanchmula</i>
Dose	50 ml twice in a day	50 ml twice in a day
Prakshep Dravya	6gm <i>Madhu</i> + 62.5 mg of Rasasindur twice in a day	6gm <i>Madhu</i> twice in a day
Time	<i>Apankal</i>	<i>Apankal</i>
Route Of Administration	Oral	oral
Duration	7days	7 days
Anupan	<i>Sukoshna Jala</i>	<i>Sukoshna Jala</i>

SAMPLE SIZE –

Total: 20 Patients

$$N = \frac{[Z^2 \times P \times (1 - P)]}{D^2}$$

(1.3% of prevalence, N =19.7)

patients were selected for clinical trial for each group using sample size formula. ^[9]

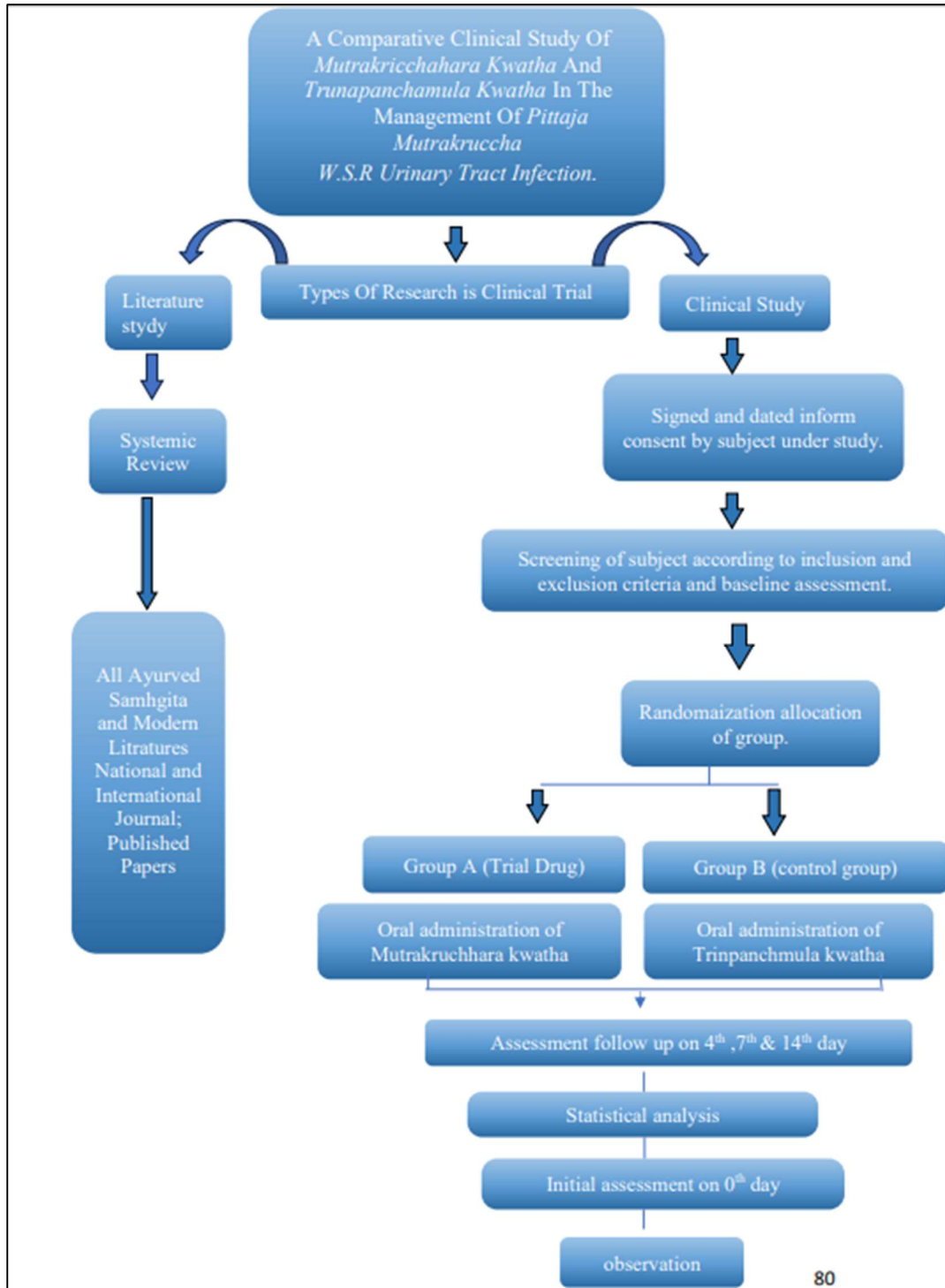


Figure 2: Trail Design

OBSERVATION

AGE WISE DISTRIBUTION:

The age limit for selection criteria in this study was 16-50 years. The majority of patients (21 patients - 52%) were between the ages of 40 and 50. the primary cause for in this age group madhyam ayu When Pitta is prominent, postmenopausal hormonal imbalance occurs.

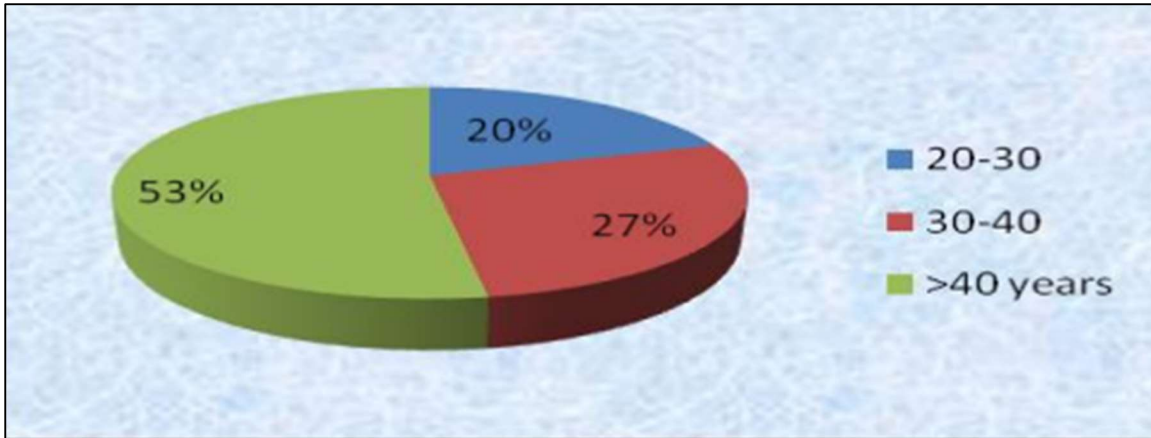


Figure 3: Age wise Distribution

Table 2: Age wise Distribution

Age	No of pts
16-30	8
30-40	11
>40 years	21

The prevalence of Pittaja Mutrakruccha is more in age group between 40-50.

EFFECT OF GROUP A ON PEETA MUTRATA IN PITTAJA MUTRAKRUCCHA:

On Peeta Mutrata, there was no statistically significant difference between groups A and B, but group A improved more than group B, thus we may conclude that group A is more effective than group B. Pittashaman and Pitta hara are done by Mutravirechana property because both kwathas have Pitta shamaka and Pitta hara medications as a result of their madhur Rasa, Madhur Vipaka, and Sheeta Virya. ^[10]



Figure 4: Group A on Peeta Mutrata in Pittaja Mutrakruccha

Table 3: Group A on Peeta Mutrata in Pittaja Mutrakruccha

Parameter		Mean		x	% of improvement	Negative rank	Positive rank	Tie	z	P VALUE
		BT	AT							
Peeta Mutrata	0 th day-4 th day	1.95	1.55	0.40	20.51%	8	0	12	-2.828	0.005
	0 th day-7 th day	1.95	1.1	0.85	43.59%	17	0	3	-4.123	0
	1 st day-14 th day	1.95	1	0.95	48.72%	19	0	1	-4.359	0

The mean grade of Peeta Mutrata on 0th day was 1.95 which was decreased to 1.55 at 4 th day. The mean increment in score was 20.51% which is significant as observed by “Wilcoxon Test” (as p value<0.05) thus it can be said that there is significant increment on peeta Mutrata in Pittaja Mutrakruccha.

also, here 43.59% improvement found at 7th day of treatment which is increased to 48.72% at 14th day of treatment on peetaMutrata in PittajaMutrakruccha. i.e., Group A was effective on Peeta Mutrata in PittajaMutrakruccha. [11]

EFFECT OF GROUP B ON PEETA MUTRATA IN PITTAJA MUTRAKRUCCHA:

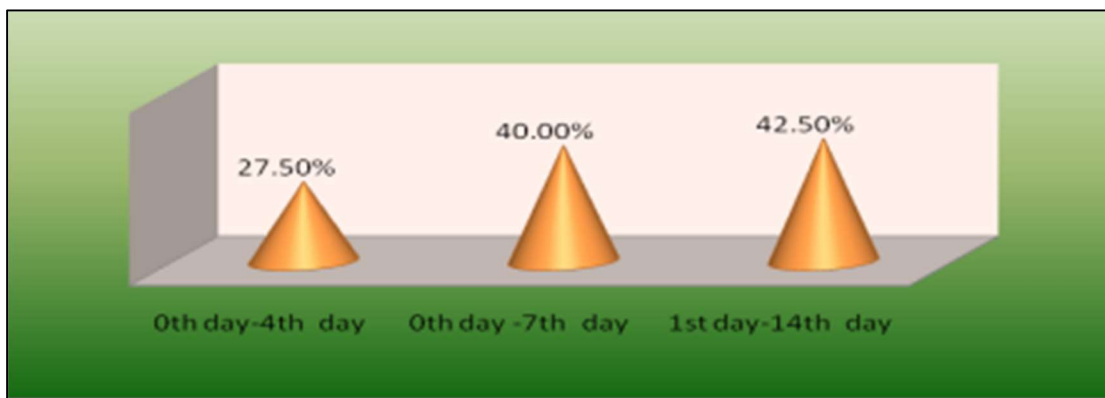


Figure 5: Group B On Peeta Mutrata in Pittaja Mutrakruccha

Table 4: Group B On Peeta Mutrata in Pittaja Mutrakruccha

Parameter		Mean		x	% of improvement	Negative rank	Positive rank	Tie	z	P VALUE
		BT	AT							
Peeta Mutrata	0 th day-4 th day	2	1.45	0.55	27.50%	11	0	9	-3.317	0.001
	0 th day-7 th day	2	1.2	0.80	40.00%	16	0	4	-4	0
	1 st day-14 th day	2	1.15	0.85	42.50%	17	0	3	-4.123	0

The mean grade of Peeta Mutrata on 0th day was 2 which was decreased to 1.45 at 4th day. The mean increment in score was 27.50% which is significant as observed by “Wilcoxon test” (as p value<0.05) thus it can be said that there is significant increment on Peetamutrata in PittajaMutrakruccha.

also, here 40% improvement found at 7th day of treatment which is increased to 42.50% at 14th day of treatment on peetaMutrata in PittajaMutrakruccha. i.e., Group B was effective on Peetamutrata in PittajaMutrakruccha. [12]

COMPARISON OF GROUP A & GROUP B ON PEETA MUTRATA IN PITTAJA MUTRAKRUCCHA.

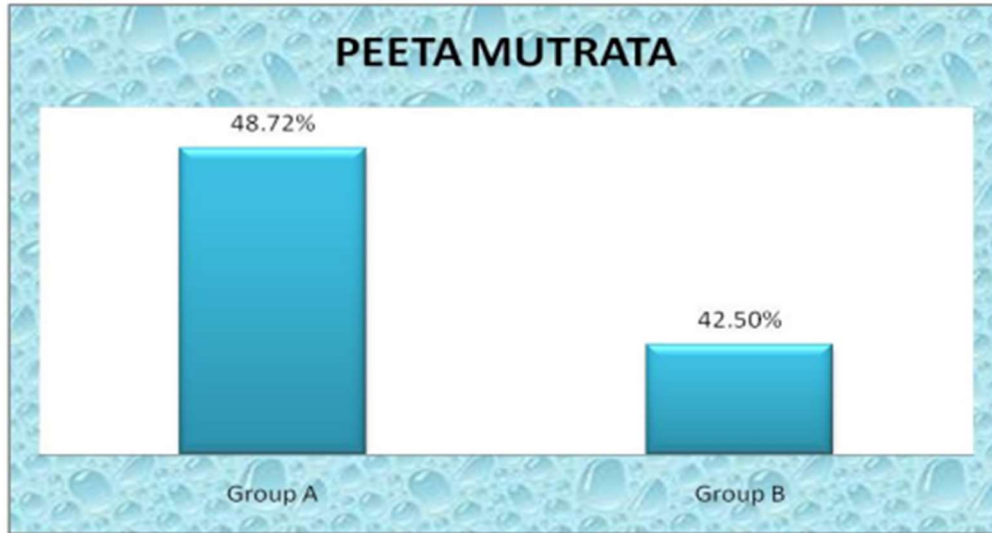


Figure 6: Group a And Group B On Peeta Mutrata in Pittaja Mutrakruccha

TABLE 5: GROUP A AND GROUP B ON PEETA MUTRATA IN PITTAJA MUTRAKRUCCHA

parameter	Group	% of improvement	Mann whitney u	z	P VALUE
<i>Peeta Mutrata</i>	Group A	48.72%	170	-1.778	0.075
	Group B	42.50%			

As p value > 0.05 we found that there was no statistically significant difference between Group A and Group B on Peeta Mutrata in Pittajamutrakruccha. But as percentage of improvement seen from above table, we get percentage of improvement in Group A was more than Group B hence we can say that Group A is more effective as compared to Group B on Peeta Mutrata in PittajaMutrakruccha. [13]

URINE CULTURE:

Microbiological studies of urine showed that the most common causative organism was Escherichia coli, which was present in 10 patients (27%), klebsiella present in 2 patient (5%), enterococcus present in 1 patient. No growth found in 27patient (68%).

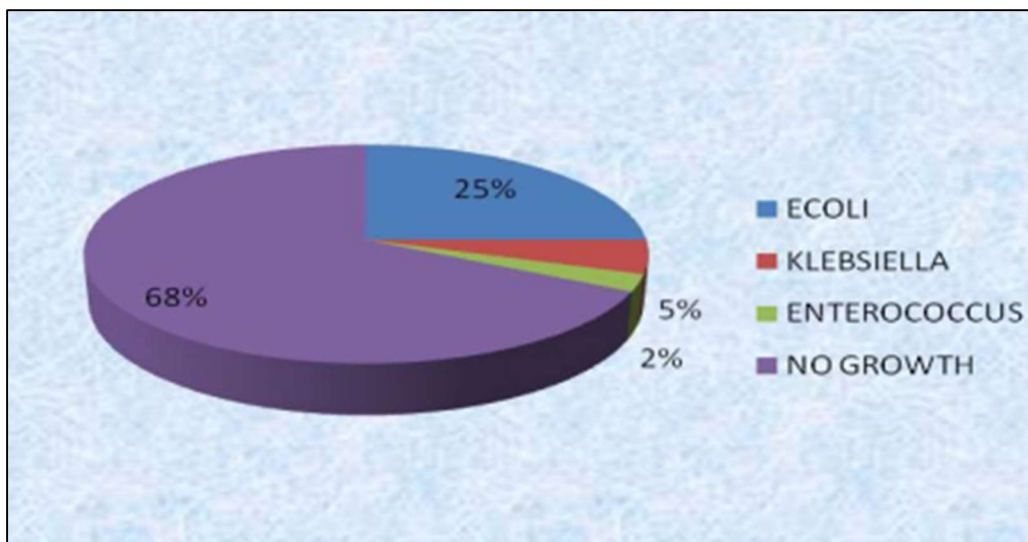


Figure 7: Urine Culture

Table 6: Urine Culture

URINE CULTURE	Group A	Group B	Total
ECOLI	5	5	10
KLEBSIELLA	1	1	2
ENTEROCOCCUS	1	0	1
NO GROWTH	13	14	27

E. coli is most common causative organism in this study ^[14]

CONCLUSION: Mutrakrucchahara kwatha having more significant improvement in lakshanas like peeta Mutrata, sadaha, saruja, muhur muhur Mutra pravritti, Whereas Trunapanchmula kwatha also having significant improvement in lakshanas of Pittaja Mutrakruccha, but Mutrakricchahara kwatha having better improvement in comparison with Trunpanchmula in Pittaja Mutrakruccha. Pittaja Mutrakruccha is pakwashaya shoola yukta daha pradhan madhyama rogamargaja samanyaja Vyadhi. Pittaja Mutrakruccha is similar to a lower urinary tract infection. Because the Trunapanchmula Kwatha and Mutrakricchahara Kwatha contain Pittavatashamaka and Mutravirechaniya medicines, they operate as both shodhana and shamana. Both kwatha are simple formulations that are cost effective for patients. During the trial, Mutrakricchahara Kwatha and Trunapanchmula Kwatha had no adverse effect.

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