



Clinical study of the efficacy of ShwadanshtraBala Vati in Mutraroga W.S.R to mild urinary tract infections in pregnancy.

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Background: This study aims to discover a safe, efficient, and natural substitute for antibiotics. It will focus on finding an alternative that is effective in treating infections while minimizing risks and side effects., (It is essential to eliminate any potential side effects that may affect both the mother and the fetus. We need to take proactive measures to ensure the safety and well-being of both individuals.) in pregnancy. In today's world, embracing Ayurvedic medicine alongside modern medicine can prove to be highly beneficial for patient health. As per modern science Garbhini mutraroga can be correlated to urinary tract infections in pregnancy. Clinical Study were conducted on pregnant women having complaints and laboratory finding suggestive of mild urinary tract infection using shwadanshtrabala vati. Rasaratna Samucchaya mentions the use of Shwadanshtra (Gokshur) and Bala in treating Garbhini Mutraroga. **Aim:** Study the efficacy of Shwadanshtrabala vati in Mutraroga w.s.r to mild urinary tract infections in pregnancy. **Methodology:** The study was conducted on 30 patients, Gokshur vati and Bala vati 500 mg each twice a day for 7 days, with warm water. This study was conducted at Bharati Ayurveda hospital, during 2022-2023. It was a randomized, open clinical trial study. Patients with raised pus cells, total leucocyte count and neutrophil count, and symptoms of UTI were included in this study. **Results:** Total 30 patients evaluated in this study. Out of which 30 were recruited and 30 patients completed. The herbal medicine was tolerated well in trial group patients. **Conclusions:** In this study, it is proved that Shwadanshtrabala Vati could be the choice of herb in mild urinary tract infections in pregnancy. Thus, it is worth noting that Ayurvedic formulations have demonstrated their potential as a safe and effective natural alternative to antibiotics in managing mild cases of urinary tract infection during pregnancy. **Keywords:** Garbhini mutraroga, uti in pregnancy, Gokshur, bala, shwadanshtrabala vati, Antibiotics.

INTRODUCTION

Throughout a woman's life, Ayurveda provides various forms of care, including menstrual (Rajaswala), antenatal (Garbhini Paricharya), and postnatal (Sutika Paricharya) care to ensure the safe delivery of a healthy baby, it's important to provide comprehensive care at every stage - from antenatal to intranatal and postnatal. This includes Garbhini Paricharya and Sutika Paricharya, which are

vital components of the overall process. During pregnancy, a woman's body undergoes both structural and functional changes that affect not only her reproductive organs but also various other systems in her body.

Some of these changes can cause discomfort for the pregnant woman.⁽¹⁾

- Pregnancy can be a challenging time for women, as it often leads to maternal illnesses caused by the changes in the body. However, with constructive measures, these illnesses can be managed. It is important to be aware of the increased likelihood of conditions like urinary tract infections (UTIs) and take proactive steps to prevent them. By following healthy habits and seeking medical care, when necessary, women can ensure a safe and healthy pregnancy.

- A pregnant woman experiencing symptoms such as burning during urination, frequent urination, urgent need to urinate, pain during urination, and pain in the lower abdomen is diagnosed with Garbhini Mutraroga, which can be associated with urinary tract infection.

- The Mutraroga have been prevalent since the Vedic period. Our ancient acharyas possessed detailed knowledge regarding their management and etiopathogenesis. Although Mutraroga is not specifically mentioned in the explanation of Garbhini Vyadhi, Acharya Kashyapa believed that the root cause of physical and psychological ailments in pregnant women is the same as in non-pregnant individuals. This means that the imbalances of Doshas and Dushya are consistent in both groups.

In today's medical field, antibiotics play a significant role in treatment. However, it is important to note that while they can be life-saving in some cases, they can also have harmful effects.⁽²⁾ It is important to limit the use of antibiotics during pregnancy, as they can have negative effects on both the mother's and the fetus microbiomes and organ development.⁽³⁾

Additionally, the widespread use of antibiotics has led to antibiotic resistance, highlighting the need for research on new Drugs that are equally effective but have fewer side effects.

Symptoms of urinary tract infections during pregnancy, such as burning during urination, frequent urination, urgent need to urinate, and mild pain in the suprapubic region, are like those of Mutrakrichha Vyadhi as described by Acharya Charaka⁽⁴⁾ and Acharya Sushruta⁽⁵⁾ under Mutravahastrotodushti Vikar.⁽¹⁾

MATERIALS

- To create high-quality tablets, the process begins with the careful preparation of Gokshur-phala and Bala-moola powders. These powders were expertly ground to a fine consistency and precisely measured to ensure accuracy.

- Once measured, each powder was skillfully mixed with water and formed into small, uniform granules over the course of a day. These granules were then meticulously passed through a sieve multiple times until they reach the desired level of texture and consistency.

- After the granules have been expertly prepared, they were carefully Dried in a specialized tray Dryer at a precise temperature of 55 degrees Celsius. This ensures that the granules are fully Dried without any moisture remaining.
- Once they are scorched, they were skillfully shaped into small tablets. Finally, a rotary tableting machine was used to create a 500mg tablet each of the highest quality and consistency. In accordance with the API guidelines, the tablets were analyzed for factors such as hardness and disintegration time once they were prepared.

Treatment details

DRUG DOSAGE

MORNING	1 tablet Gokshur (500mg) & 1 tablet Bala (500mg)
NIGHT	1 tablet Gokshur (500mg) & 1 tablet Bala (500mg)

TREATMENT DETAILS

A)	Dose	1 tablet of each Drug(500mg)/twice a day.
B)	Form	Vati
C)	Time	8AM --- 8PM
D)	Anupan	warm water
E)	Kala	Apana
F)	Follow up	After 5 days
G)	Route of Administration	Orally
H)	Duration	7 days

METHODOLOGY

- This is a single arm open clinical study.
- Sample size: 30 patients.
- Place: Bharati Ayurveda Hospital OPD.
- Consent: written consent as per guideline in local language taken from each patient.

A) SELECTION CRITERIA

Inclusion Criteria

- Antenatal patients of all age groups complaining of painful micturition, burning micturition, suprapubic pain, frequency of micturition.
- Patient willing for trial
- Both Primi and Multigravida
- Laboratory investigation reports indicating mild UTI (increased TLC count, elevated neutrophil count, and presence of pus cells)

Exclusion Criteria

1. Known case of Renal calculi
2. Impaired renal functions
3. Immuno-compromised patients
4. Pregnancy induced hypertension
5. UTI with fever, moderate and severe UTI

Discontinuation Criteria

1. Noncompliance of the patient.
2. Voluntary withdrawal by the patient.
3. If patient is not regular for follow up then shall be discontinued.
4. Patient not getting relief and will be shifted to other Drugs

B) ASSESSMENT CRITERIA

SUBJECTIVE CRITERIA

Age-wise Distribution

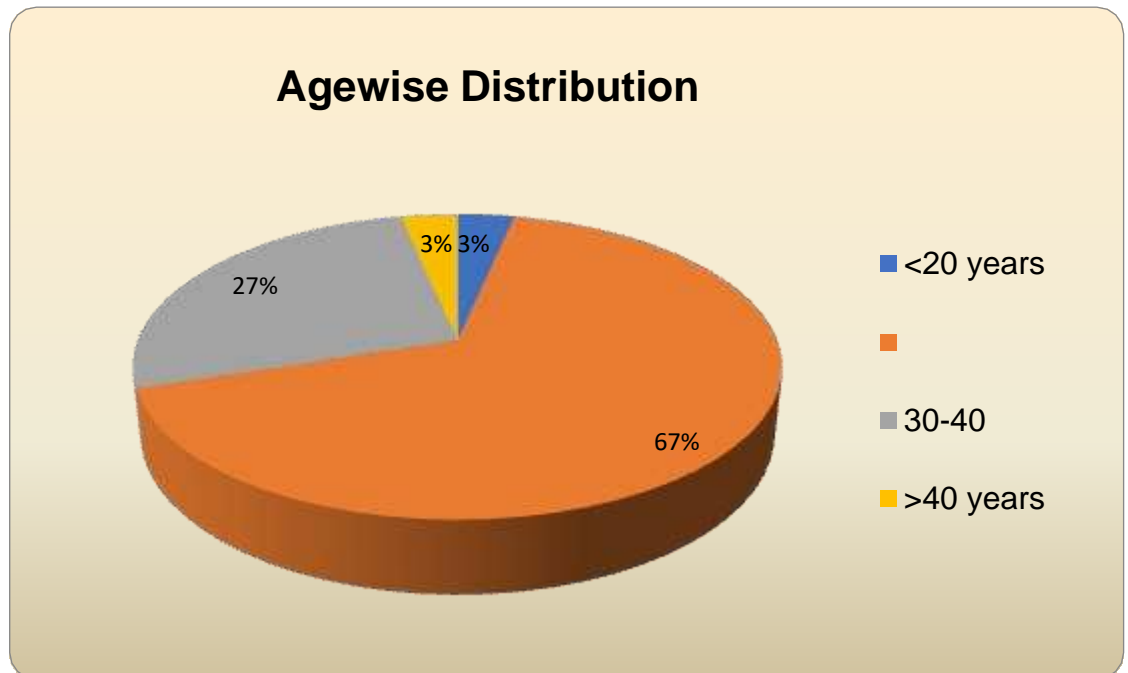
AGE (IN YEARS)	NO OF PTS	PERCENTAGE
18-20 years	1	3
20-30 years	20	67
30-40 years	8	27
>40 years	1	3

Observation-

Out of 30 patients,

- 01 (3%) patients age were in 18-20 year
- 20 (45%) patients age were in 23-28 year
- 08(27%) patients were found in 28-33 year
- 01(2.5%) patient was in 33-38 year.

It has been noted that among the patients registered for the clinical study, most of them, specifically 20 patients (67%), belonged to the age range of 20 to 30 years.



GRAPH NO 1. Age-wise Distribution

PARITY

Parity-wise Distribution

PARITY	NO OF PTS	PERCENTAGE
PRIMI	15	50
2 ND PARA	10	34
3 RD PARA	4	13
4 TH PARA	1	3

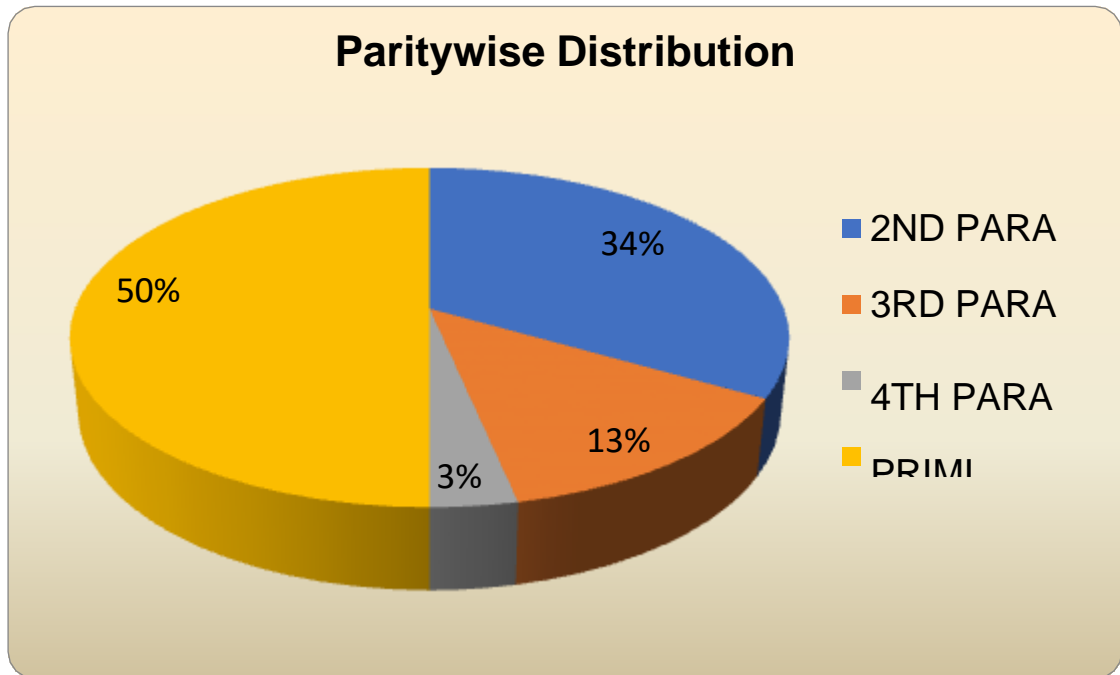
Observation-

Out of 30 patients,

- 15 (50%) patients were primi patients.

- 10 (34%) patients were in 2nd parity.
- 04 (13%) patients were in 3rd parity.
- 01 (03%) patients were in 4th parity.

It has been noticed that the majority of patients registered for the clinical study were primi patient



GRAPH NO 2. Parity-wise Distribution

TRIMESTER

Trimester-wise Distribution

TRIMESTER	NO OF PTS	PERCENTAGE
FIRST	2	7
SECOND	21	70
THIRD	7	23

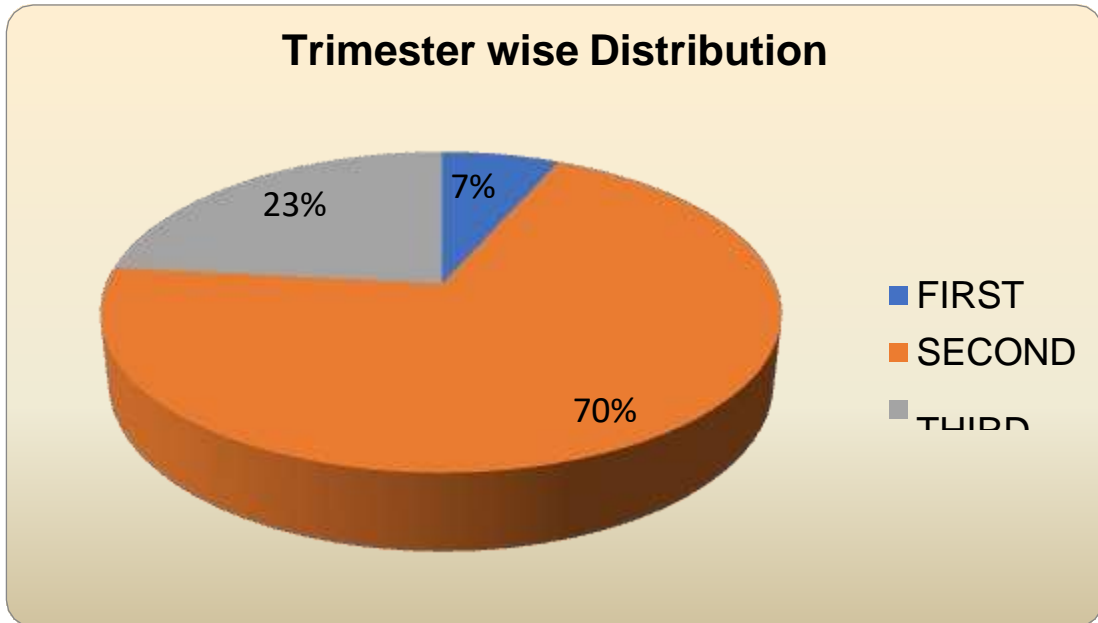
Observation-

Out of 30 patients,

- 02 (07%) patients were in the first trimester.
- 21 (70%) patients were in the second trimester.
- 04 (13%) patients were in the third trimester.

Based on observations, it has been noted that a significant number of patients are in

their second trimester.



GRAPH NO 3. Trimester-wise Distribution

SYMPTOMATIC/ASYMPTOMATIC

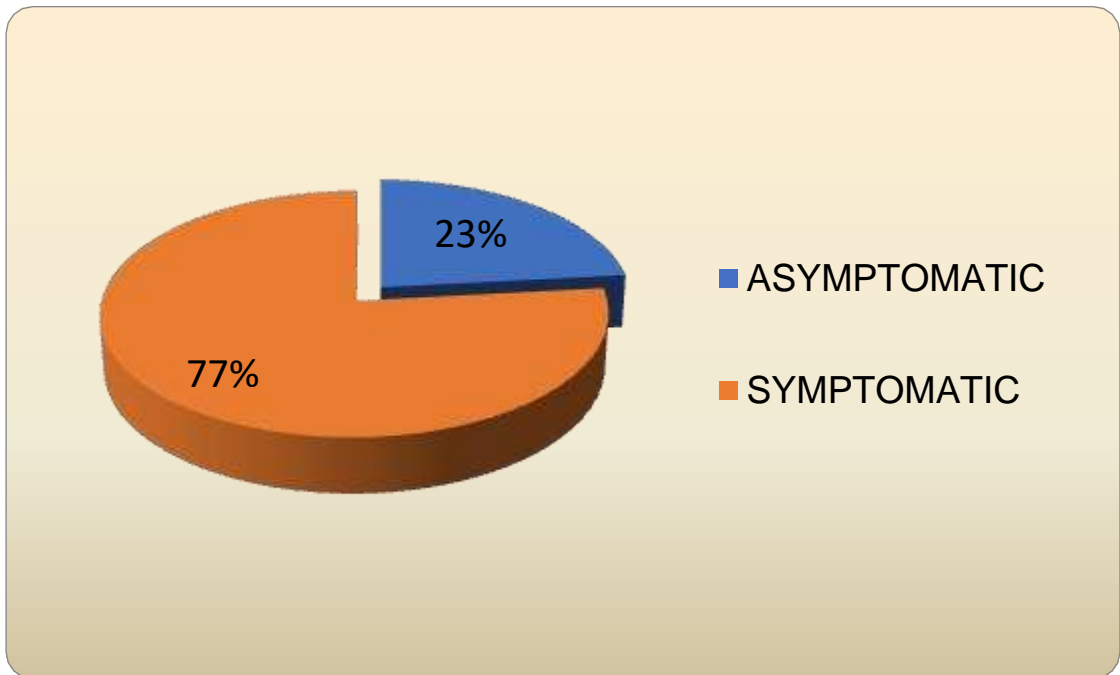
Symptomatic/Asymptomatic

SYMPTOMATIC/ ASYMPTOMATIC	NO OF PTS	PERCENTAGE
ASYMPTOMATIC	7	23
SYMPTOMATIC	23	77

Observation-

Out of 30 patients

- 07 (23%) patients were asymptomatic patients.
- 23 (77%) patients were symptomatic patients.



GRAPH NO 4. Symptomatic/Asymptomatic

PAINFUL MICTURITION

Painful micturition

Sr no.	Painful micturition	Grades	Before treatment	Percentage	After treatment	Percentage
1.	Absent	0	11	36.6	29	96.65
2.	Painful micturition (occasionally)	1	8	26.6	1	3.3
3.	Occurs during each episode of micturition	2	11	36.6	00	00
4.	Continuous (irrespective of micturition)	3	00	00	00	00

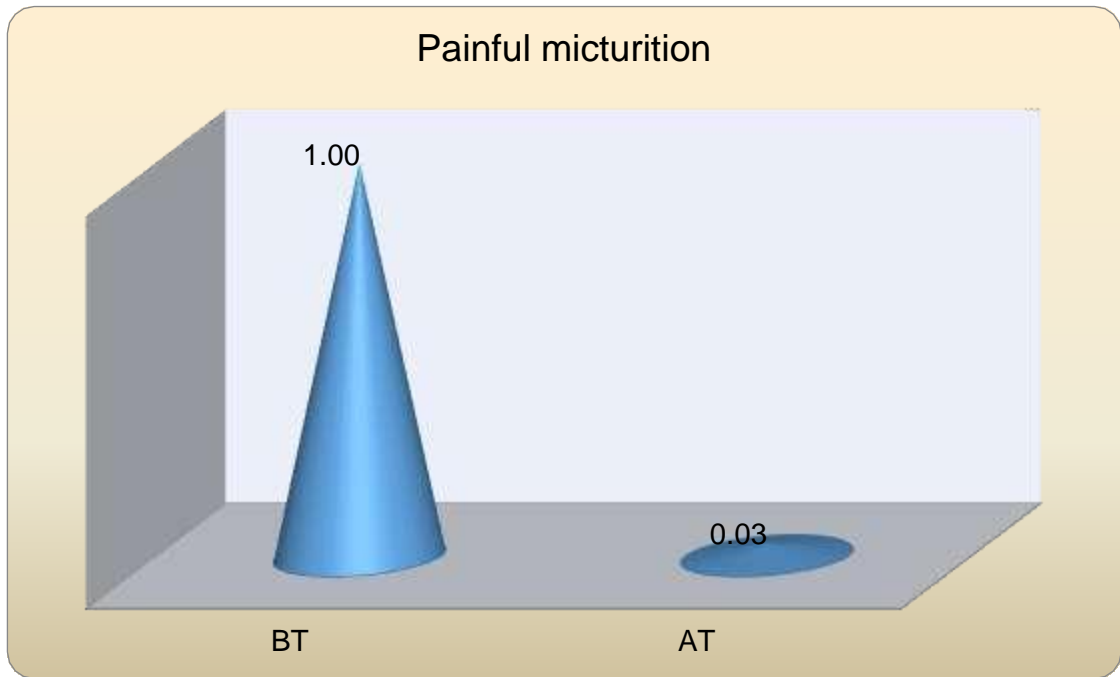
Observation-

Out of 30 patients studied,

- Before treatment
 - 11 (36.6%) patients were in grade 0
 - 08 (26.6%) patients were in grade 1
 - 11 (36.6%) patients were in grade 2
 - 00 patients were in grade 3
- After treatment
 - 29 (96.65%) patients were in grade 0
 - 01 (03.3%) patients were in grade 1
 - 00 patients were in grade 2
 - 00 patients were in grade 3

STATISTICAL ANALYSIS

Effect Of Shwadanshtrabala Vati on Painful Micturition in Mutraroga W.S.RTo Mild Urinary Tract Infections in Pregnancy.



GRAPH NO 5. Statistical analysis- Painful micturition

Statistical analysis- Painful micturition

Parameter	Mean		X	% of improvement	Negative rank	Positive rank	Tie	z	P VALUE
	BT	AT							
Painful micturition	1	0.03	0.97	96.67%	19	0	11	-3.94	0

Before treatment, the average grade for Painful Micturition was 1. After treatment, it decreased to 0.03, showing a mean improvement in score of 96.67%. This improvement is significant based on the "Wilcoxon test" (as the p value is less than 0.05), indicating that there is a significant improvement in Painful Micturition for Mutraroga with respect to mild urinary tract infections during pregnancy i.e., Shwadanshrabala vati was found to be effective for treating painful urination in cases of mild urinary tract infections during pregnancy.

BURNING MICTURITION

Burning micturition

Sr no.	Burning micturition	Grades	Before treatment	Percentage	After treatment	Percentage
1	Absent	0	7	23.3	29	96.6
2	Occasionally during micturition	1	8	26.6	1	3.3
3	Occurs more than once with micturition	2	13	43.3	0	0
4	Continuous (irrespective of micturition)	3	2	6.6	0	0

Observation-

Out of 30 patients studied,

- Before treatment
 - 07 (23.3%) patients were in grade 0
 - 08 (26.6%) patients were in grade 1

13 (43.3%) patients were in grade 2

02 (06.6%) patients were in grade 3

- After treatment

29 (96.65%) patients were in grade 0

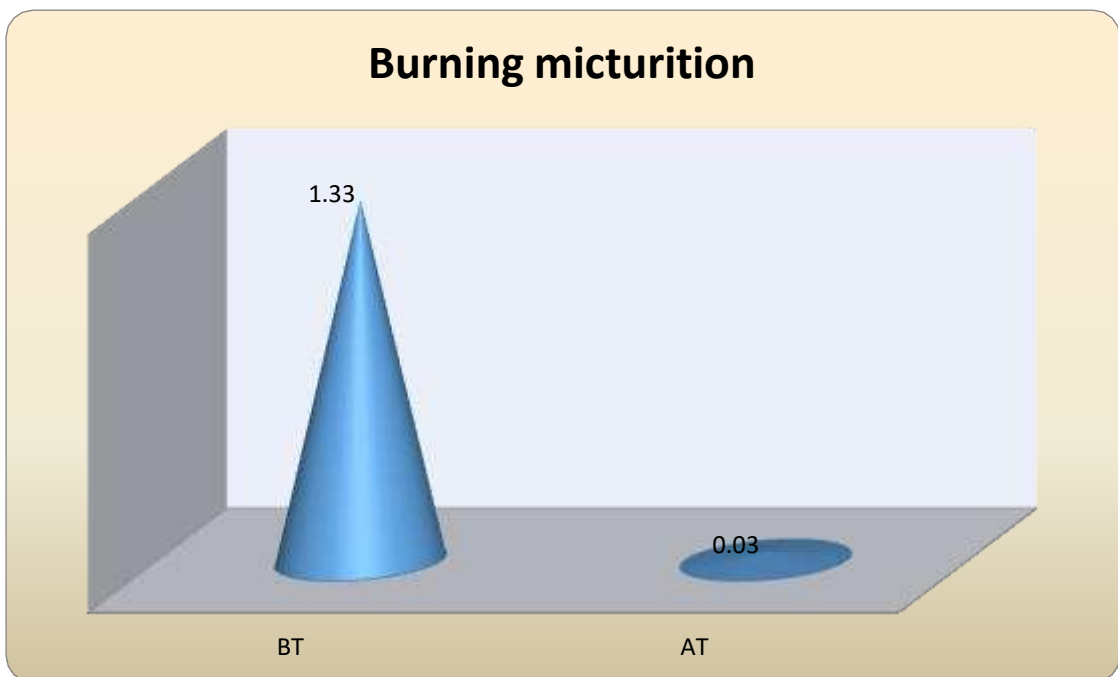
01 (03.3%) patients were in grade 1

00 patients were in grade 2

00 patients were in grade 3

STATISTICAL ANALYSIS

Effect Of Shwadanshrabala Vati on Burning Micturition in Mutraroga W.S.RTo Mild Urinary Tract Infections in Pregnancy.



GRAPH NO 6. Statistical analysis- Burning micturition

Statistical analysis- Burning micturition

Parameter	Mean		x	% of improvement	Negative rank	Positive rank	Tie	z	P VALUE
	BT	AT							
Burning micturition	1.33	0.03	1.30	97.50%	23	0	7	-4.3	0

Before treatment, the average Burning micturition grade was 1.33, but it decreased to

0.03 after treatment. The score improved by an average of 97.5%, which is considered significant based on the "Wilcoxon test" results (with a p value of <0.05).

Therefore, it can be concluded that there was a significant improvement in Burning micturition related to mild urinary tract infections in pregnancy

i.e., Shwadanshrabala vati was effective on Burning micturition in Mutraroga w.s.r to mild urinary tract infections in pregnancy.

SUPRAPUBIC PAIN

Suprapubic pain

Sr no.	Suprapubic pain	Grades	Before treatment	percentage	After treatment	percentage
1	Absent	0	11	36.6	27	90
2	Mild	1	11	36.6	2	6.6
3	Moderate	2	8	26.6	1	3.3
4	Severe	3	0	0	0	0

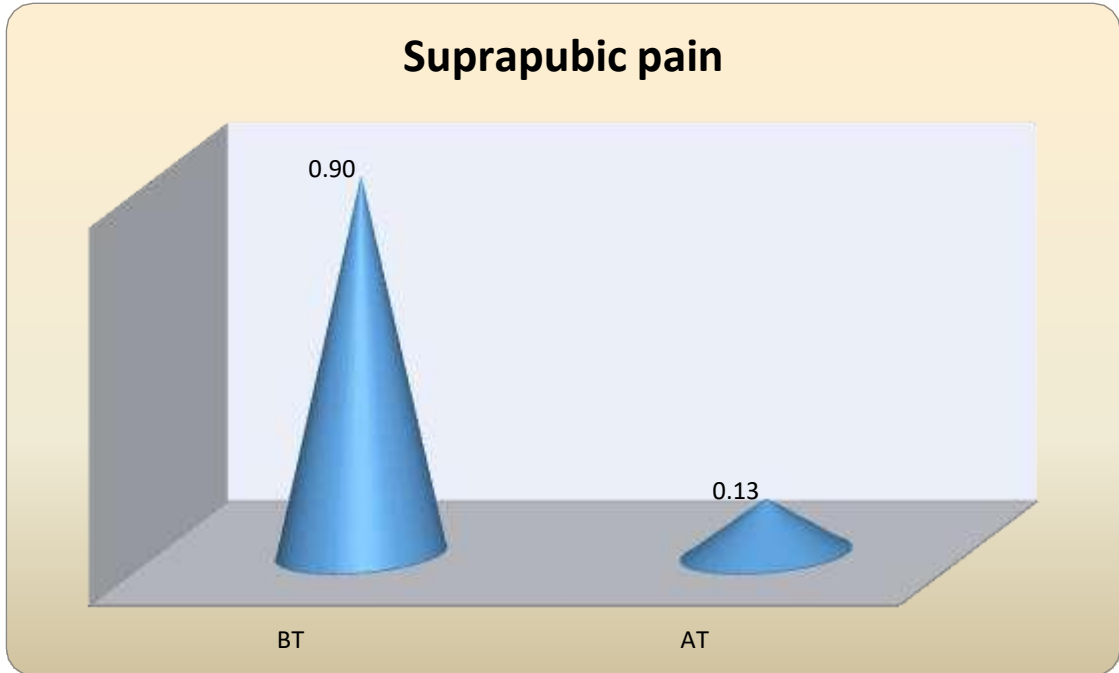
Observation-

Out of 30 patients studied,

- Before treatment
 - 11 (36.6%) patients were in grade 0
 - 11 (36.6%) patients were in grade 1
 - 08 (26.6%) patients were in grade 2
 - 00 patients were in grade 3
- After treatment
 - 27 (90%) patients were in grade 0
 - 02 (06.6%) patients were in grade 1
 - 01 (3.3%) patients were in grade 2
 - 00 patients were in grade 3

STATISTICAL ANALYSIS

Effect Of Shwadanshtrabala Vati On Suprapubic Pain In Mutraroga W.S.R To Mild Urinary Tract Infections In Pregnancy.



GRAPH NO 7. Statistical analysis- Suprapubic pain

Statistical analysis- Suprapubic pain

Parameter	Mean		X	% of improvement	Negative rank	Positive rank	Tie	z	P
	BT	AT							VALUE
Suprapubic pain	0.9	0.13	0.77	85.19%	18	1	11	-3.69	0

Before treatment, the average score for Suprapubic pain was 0.9. However, after treatment, it decreased to 0.13, indicating a significant improvement of 85.19%, as confirmed by the "Wilcoxon test" (with a p-value of less than 0.05). This suggests that there is a significant improvement in Suprapubic pain among individuals with mild urinary tract infections during pregnancy.

i.e., shwadanshtra Bala vati was effective on Suprapubic pain in mutraroga w.s.r to mild urinary tract infections in pregnancy.

FREQUENCY OF MICTURITION

Frequency of micturition

Sr no.	Frequency of Micturition	Grades	Before treatment	Percentage	After treatment	Percentage
1	5 to 7 times/day	0	9	30	27	90
2	8 to 10 times/day	1	12	40	2	6.6
3	11 to 13 times/day	2	9	30	1	3.3
4	More than 13 times/day	3	0	0	0	0

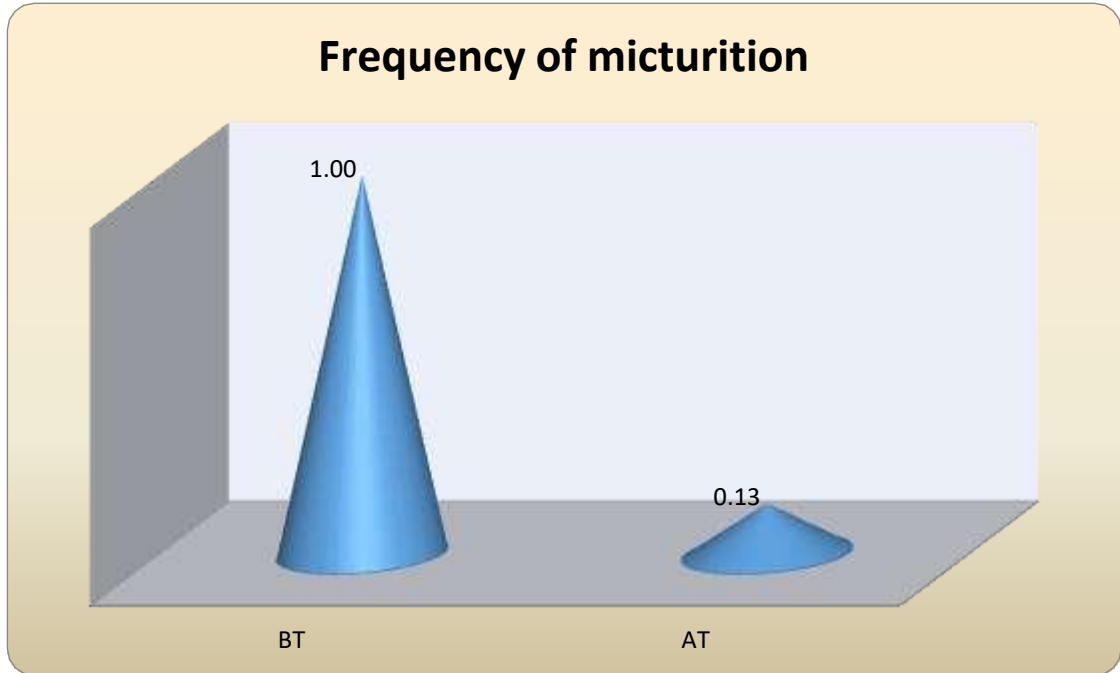
Out of 30 patients studied,

- Before treatment
 - 09 (30%) patients were in grade 0
 - 12 (40%) patients were in grade 1
 - 09 (30%) patients were in grade 2
 - 00 patients were in grade 3

- After treatment
 - 27 (90%) patients were in grade 0
 - 02 (06.6%) patients were in grade 1
 - 01 (03.3%) patients were in grade 2
 - 00 patients were in grade 3

STATISTICAL ANALYSIS

Effect Of Shwadanshrabala Vati On Frequency Of Micturition In Mutraroga W.S.R To Mild Urinary Tract Infections In Pregnancy.



GRAPH NO 8. Statistical analysis- Frequency of micturition

Statistical analysis- Frequency of micturition

Parameter	Mean		x	% of improvement	Negative rank	Positive rank	Tie	z	P VALUE
	BT	AT							
Frequency of micturition	1	0.13	0.87	86.67%	21	1	8	-3.64	0

Before treatment, the average frequency of urination was 1, but after treatment, it decreased to 0.13. The improvement in score averaged 86.67%, which was determined to be significant based on the results of the Wilcoxon test (as the p-value was less than 0.05). Therefore, it can be concluded that there was a significant improvement in the frequency of urination for women with mild urinary tract infections during pregnancy. i.e., Shwadanshrabala vati was effective on Frequency of micturition in mutraroga w.s.r to mild urinary tract infections in pregnancy.

OBJECTIVE CRITERIA

HAEMOGRAM

1. TOTAL LEUCOCYTE COUNT

Total leucocyte count

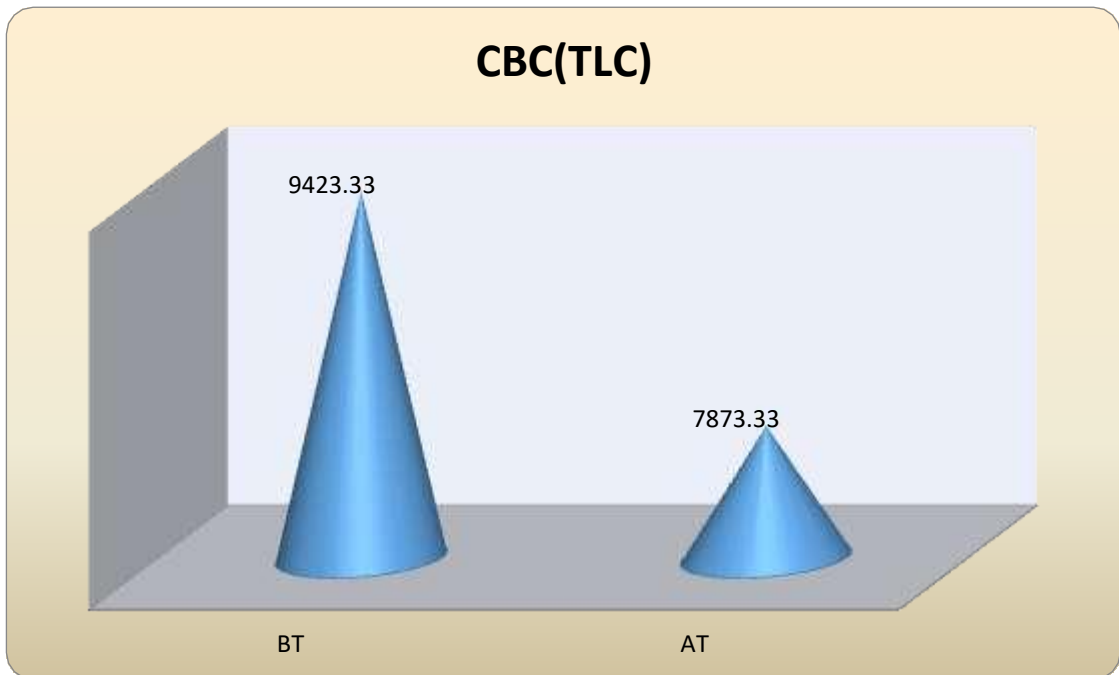
PATIENTS	BEFORE TREATMENT	AFTER TREATMENT
AVERAGE TLC	9,423.33/cumm	7,873.33/cumm

Observation-

The total leucocyte count (TLC) serves as a crucial diagnostic tool for detecting urinary tract infections in pregnant women. As part of a recent study, patients who exhibited elevated TLC were recruited for further analysis. Following treatment, the study revealed a noteworthy reduction in the average TLC levels observed among the participants.

STATISTICAL ANALYSIS

Effect Of Shwadanshtrabala Vati On Cbc(Tlc)In Mutraroga W.S.R To Mild Urinary Tract Infections In Pregnancy.



GRAPH NO 9. Statistical analysis- Total leucocyte count

Statistical analysis- Total leucocyte count

Parameter	Mean		x	% of improvement	t	P VALUE
	BT	AT				
Cbc(tlc)	9423.33	7873.33	1550.00	16.45%	4.741	0

Before treatment, the average CBC (TLC) grade was 9423.33, but it decreased to 7873.33 after treatment. There was a significant improvement of 16.45% in the score, as determined by a "paired t test" with a p value of less than 0.05. This suggests that there is a notable improvement in CBC (TLC) for mutraroga with mild urinary tract infections during pregnancy.

i.e., Shwadanshrabala vati has shown effectiveness in treating mild urinary tract infections during pregnancy as indicated by CBC (TLC) results.

2. NEUTROPHIL COUNTNeutrophil count

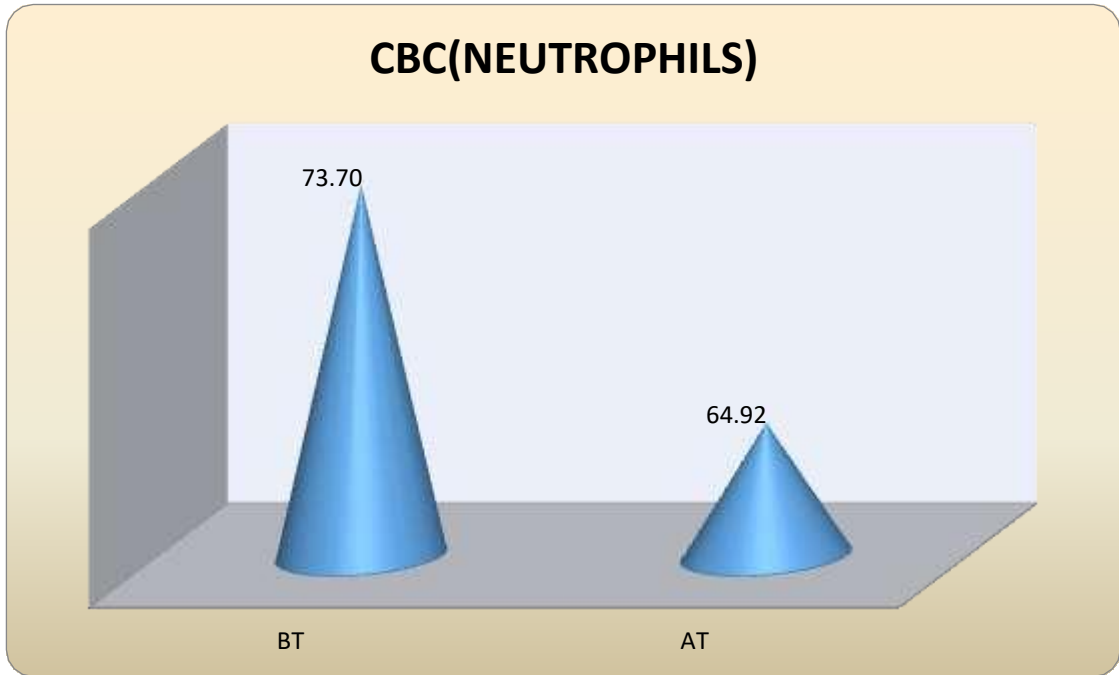
PATIENTS	BEFORE TREATMENT	AFTER TREATMENT
AVERAGE NEUTROPHIL COUNT	73.70%	64.90%

OBSERVATION-

The neutrophil count is a valuable diagnostic tool for identifying urinary tract infections during pregnancy. This study focuses on patients with increased neutrophil counts and examines the effects of treatment on reducing these counts. Results show that neutrophil counts are decreased after treatment.

STATISTICAL ANALYSIS

EFFECT OF SHWADANSHTRABALA VATI ON CBC(NEUTROPHILS)IN MUTRAROGA W.S.R TO MILD URINARY TRACT INFECTIONS INPREGNANCY.



GRAPH NO 10. Statistical analysis- Neutrophil count

Statistical analysis- Neutrophil count

Parameter	Mean		X	% of improvement	t	P VALUE
	BT	AT				
CBC (neutrophils)	73.70	64.92	8.78	11.91%	7.309	0

Before treatment, the average grade of CBC (neutrophils) was 73.70. After treatment, this decreased to 64.92, indicating a significant improvement of 11.91% as observed through a "paired t-test" (with a p-value of less than 0.05). This suggests that there is a noteworthy improvement in CBC (neutrophils) in mutraroga with regards to mild urinary tract infections during pregnancy.

i.e. Shwadanshtrabala vati was effective on CBC (neutrophils) in mutraroga w.s.r to mild urinary tract infections in pregnancy.

PUS CELLS

Pus Cells

Patients	Before treatment	Percentage	After treatment (relieved)	Percentage of patients with reduced pus cells
Pus cells	30 patients	100	26	86.6%

The identification of urinary tract infections can be facilitated by the presence of pus cells in urine. In fact, the detection of pus cells in urine is a reliable indicator of an ongoing infection in the urinary tract. This research encompasses even the slightest cases of urinary tract infections, and the standard for assessing the presence of an infection is the detection of more than 5 pus cells in the urine.

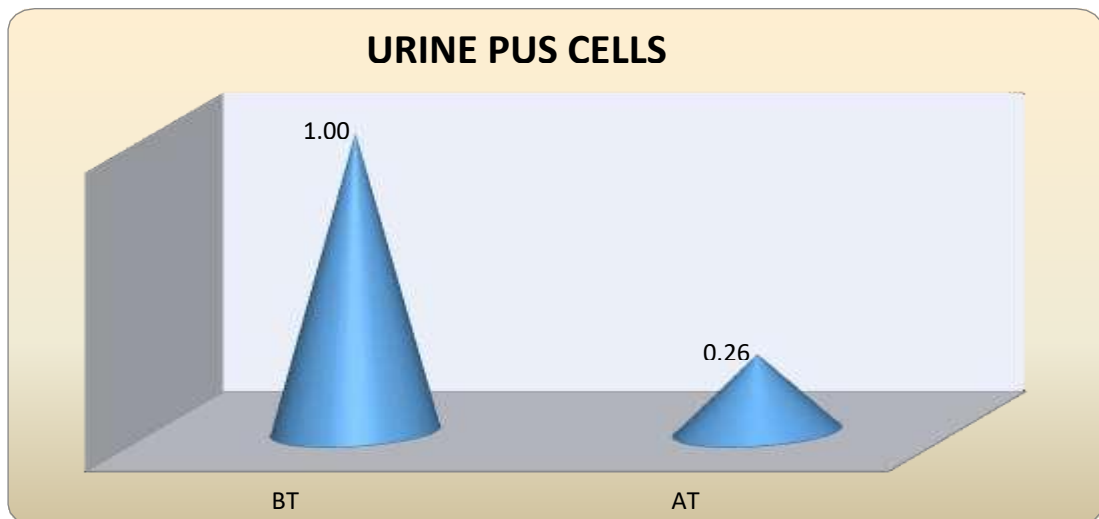
Observation-

According to the findings of the research, it was observed that each of the 30 patients examined had an increased number of pus cells in their urine prior to undergoing treatment. However, after receiving the prescribed treatment, a significant decrease in pus cells was observed in 26 of the patients, which accounted for approximately 86.6% of the total sample population.

Regrettably, 4 of the patients still exhibited an elevated number of pus cells even after receiving treatment, necessitating additional medical intervention to manage the condition.

STATISTICAL ANALYSIS

Effect Of Shwadanshtrabala Vati On Urine Pus Cells In Mutraroga W.S.R To Mild Urinary Tractinfections In Pregnancy.



GRAPH NO 11. Statistical analysis- Urine pus cells

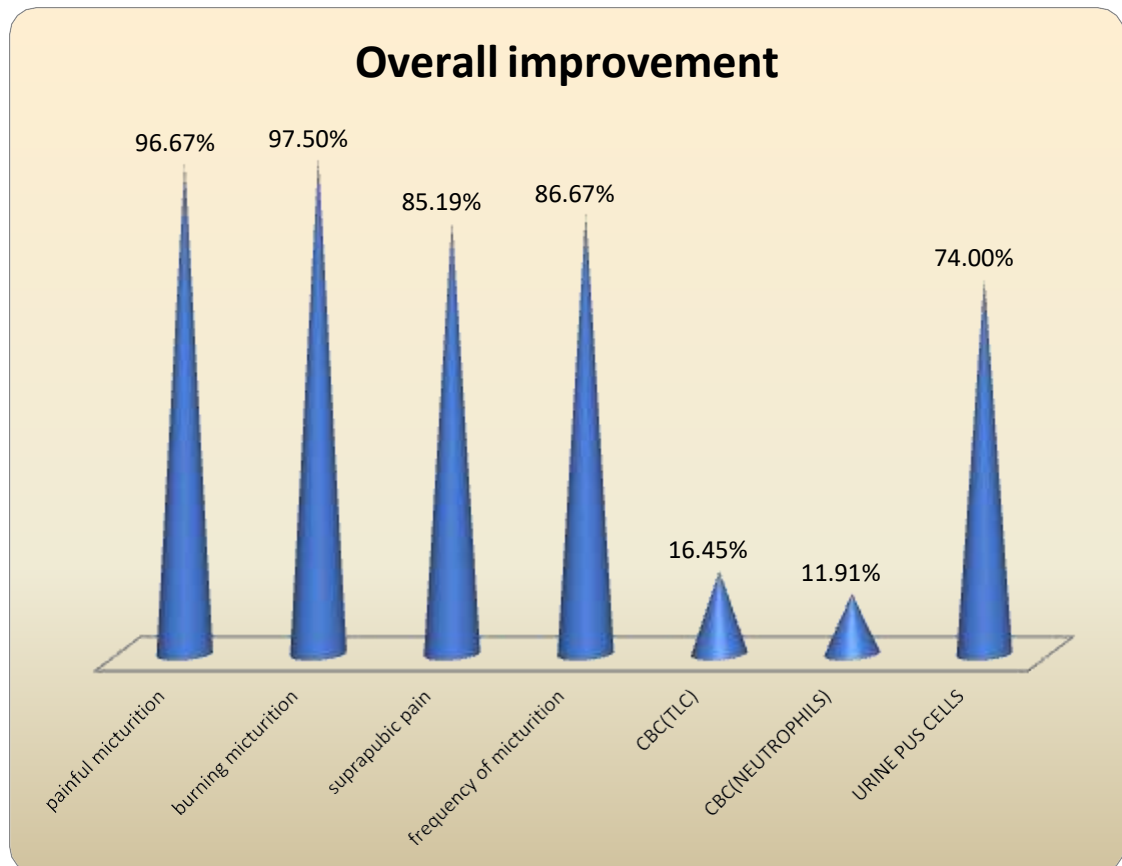
Statistical analysis- Urine pus cells

Parameter	Mean		x	% of improvement	Negative rank	Positive rank	Tie	z	P VALUE
	BT	AT							
URINE PUS CELLS	1	0.26	0.74	74.00%	26	4	0	-4.017	0

Before treatment, the average grade of pus cells in urine was 1, but after treatment, it decreased to 0.26. The improvement in the score was 96.67%, which was statistically significant based on the Wilcoxon test (with a p-value of less than 0.05). This suggests that there was a significant improvement in urine pus cells for individuals with mild urinary tract infections during pregnancy who were treated for Mutraroga.

i.e. Shwadanshrabala vati was effective on URINE PUS CELLS in mutraroga w.s.r to Mild urinary tract infections in pregnancy.

OVERALL IMPROVEMENT



GRAPH NO 12.-Overall Improvement

DISCUSSION

Age

As per a recent demographic survey conducted in India, it has been observed that the average age range for getting married lies between 20-30 years old. This finding is also supported by the fact that most individuals in this age group, which is 20-30 years old, tend to get married. Furthermore, the study has also revealed that urinary tract infections are more prevalent in this age group, which is a cause of concern.

Parity

The research conducted indicated that among a group of 30 patients, a greater proportion of women experiencing their first pregnancy (primigravida patients) were observed.

Trimester

During pregnancy, various physical changes occur in a woman's body that can impact the renal vasculature. These changes include the enlargement of the uterus, increased plasma volume, increased renal flow, and hormonal fluctuations. As a result, physiological hydronephrosis can occur, leading to urine stagnation and the multiplication of bacteria, which can ultimately increase the likelihood of urinary tract infections.

However, ancient texts on pregnancy care, such as Garbhini paricharya, offer insights into natural remedies that can help alleviate these issues. For instance, herbs like Gokshur possess potent medicinal properties and are often recommended for use during the 5th and 6th months of pregnancy. In addition to herbal remedies, dietary modifications can also help prevent complications arising from renal vasculature changes.

In clinical study comprising 30 patients, it was discovered that 21 (70%) of the participants were in their second trimester of pregnancy- a time when most of these changes in renal vasculature occur. By being proactive and utilizing natural remedies and dietary adjustments, women can mitigate the risk of urinary tract infections and other complications associated with renal vasculature changes during pregnancy.

Symptomatic/asymptomatic UTI

During pregnancy, urinary tract infections (UTIs) can develop with or without symptoms. Nonetheless, expectant mothers are more prone to experiencing UTIs that come with symptoms. It is crucial to address asymptomatic UTIs promptly because if left untreated, they can progress to symptomatic UTIs, which can have adverse effects on both the mother and the foetus. An observation done on current study found that out of 30 patients, 23 of them had symptomatic UTIs.

Painful micturition

When a woman who is expecting develops a urinary tract infection, she may experience painful urination due to bacterial colonization in the urine and tissue

invasion of the urinary tract. Additionally, the pressure on the ureter caused by the growing uterus can contribute to this discomfort. This pain is considered a sign of Vata dushti, and saruja mutrata is caused by vitiated Apana Vayu. However, the use of Gokshur and Bala, which possess madhur guna, Vataghana, bruhana, and mutral karma, can help alleviate the discomfort caused by this condition. After undergoing treatment, it has been observed that nearly 96.6% of women experience a reduction in their symptoms.

Burning Micturition

Experiencing a burning sensation during urination is a distinctive symptom of urinary tract infections, which can occur during pregnancy. This occurrence can be attributed to the relaxation of the renal vasculature due to the hormone progesterone. Additionally, it affects the renal tissue, increasing vesicoureteral reflux and urine stagnation.

This condition sadaha mutrata is also aggravated by pitta dushti. However, a study group discovered that the cooling properties of Gokshur and Bala, known as sheeta virya, can act as pitta shamak and reduce burning micturition.

Supra Pubic Pain

Pain in the lower abdomen, particularly around the bladder region, could be due to a urinary tract infection (UTI). UTIs are caused by bacteria, typically *Escherichia coli* (*E. coli*), which can enter the bladder through the urethra. When this happens, the body's immune response is triggered, which can cause inflammation, leading to pain and discomfort.

One of the main triggers of inflammation during a UTI is endotoxin, which is released when the bacteria in the bladder are killed off. Endotoxin can cause a range of symptoms, including pain, fever, and fatigue. However, there are natural compounds found in certain plants that can help reduce the production of endotoxin and provide relief from UTI-related pain.

Gokshur and Bala are two plants that have been found to have analgesic and anti-inflammatory properties that can help reduce suprapubic pain caused by UTIs. Beta-Amyrin, found in Gokshur, has been shown to have analgesic effects, while alkaloids and flavonoids in Bala have both analgesic and anti-inflammatory properties. These compounds work by calming Apana Vayu, a type of energy that governs the lower abdomen, and reducing inflammation caused by Vataghana properties.

In a recent study, participants who took Gokshur and Bala supplements experienced reduced suprapubic pain and discomfort associated with UTIs. These natural compounds provide a safe and effective alternative to traditional pain medication for those looking to manage UTI symptoms.

Frequency of Micturition

It is not uncommon for pregnant women to experience frequent urination as a symptom of urinary tract infections. This is often due to the mechanical compression of the ureters, as well as the effects of progesterone. Specifically, progesterone can cause a reduction in contractions and pressure within the ureters, which can lead to an increased need to urinate. However, it is worth noting that a recent study has found that the use of Gokshur and Bala - two substances with a basti-shodhan property - may help to reduce the frequency of micturition

Total Leucocyte Count

During the course of the study, it was observed that the total leukocyte count (TLC) showed a decrease after the treatment regimen was administered. This reduction in TLC levels can be attributed to the fact that the colonization of organisms in the bladder and subsequent infections can cause an inflammatory response, leading to an increase in TLC. On the other hand, the phytochemical components present in the herbal remedies of Gokshur and Bala have been found to stimulate the non-specific immune response. This, in turn, helps to reduce the TLC levels in the body.

Neutrophil Count

In situations where the body is subjected to a considerable microbial challenge, it must rely on a variety of immune functions and host defences to safeguard the underlying tissues. One such defence mechanism involves the recruitment of neutrophils, which play a crucial role in both the antibacterial defence and tissue damage of the urinary tract. When bacteria stimulate epithelial cells to secrete cytokines and express cytokine receptors, neutrophils are called upon to target and eliminate the infection.

Recent scientific research has shown that Gokshur exhibits COX-2 inhibitory activity, which effectively suppresses the expression of proinflammatory cytokines and mediators related to inflammation. This makes it a potent anti-inflammatory agent. Furthermore, Bala contains flavonoids that also possess anti-inflammatory properties.

In a recent study, the administration of these substances resulted in a notable reduction in neutrophil count, indicating the potential therapeutic benefits they offer for managing infections and inflammation. These findings have significant implications for the development of more effective treatments for infections and inflammatory conditions.

Pus Cells

Detecting the presence of pus cells in urine is a crucial diagnostic measure for identifying urinary tract infections in pregnant women. Pus cells, also known as

leukocytes, are white blood cells that have died and accumulated in response to an infection. These cells serve as a fundamental indicator of the body's immune system response and play a pivotal role in identifying the severity of the infection. During pregnancy, changes in renal anatomy and physiology can lead to the proliferation of bacteria and white blood cells, leading to a higher concentration of pus cells in the urinary tract.

Clinical study, which consisted of 30 participants, aimed to assess the effectiveness of treatment in reducing the levels of pus cells in pregnant women with urinary tract infections. The results revealed that 26 patients experienced a decrease in their pus cell levels after undergoing treatment. The treatment consisted of antibiotics and other medications, depending on the severity of the infection. The patients were monitored for a week, and their urine samples were evaluated for the presence of pus cells.

However, four patients required further management due to an increase in their pus cell levels. These patients were given a different course of antibiotics, and their condition was closely monitored. In some cases, hospitalization was necessary to manage the infection and prevent any complications.

In conclusion, detecting the presence of pus cells in urine helps in identifying urinary tract infections in pregnant women. Early diagnosis and treatment can significantly reduce the risk of complications and ensure a healthy pregnancy. It is essential to monitor the patient's condition closely and provide appropriate management to prevent the infection from spreading and causing harm to the mother and the baby.

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