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AN ETIOPATHOLOGICAL & DIAGNOSTIC STUDY OF 'MOOTRA-ASHMARI' WITH SPECIAL REFERENCE TO 'UROLITHIASIS' AND ITS UPSHAYATMAKA PARIKSHANA BY 'SHUNTHYADI KWATHA: A CASE STUDY

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ABSTRACT

Mootra-Ashmari is one of the most common disorder of *Mootravaha Srotasa. Mootra-Ashmari* is termed as renal calculi/urolithiasis in modern medical sciences. Now a day's everybody is in state of hurry. This in turns ends with abnormal food habit, less intake of water, lots of perspiration which increases chance of getting stone. The consumption of food materials like milk (High in calcium), Leafy vegetables, tomatoes (High in oxalate), meat and non-veg food (High in protein content) increases the incidence of renal calculus. Urolithiasis is a pathological disorder of the urinary system that presents an important problem to all health-care systems because it causes urine crystalloids to aggregate anywhere in the urinary tract, from the kidney to the bladder. Urolithiasis affects about 12% of the world population at some stage in their lifetime. It affects all ages, sexes, and races but occurs more frequently in men than in women ratio of 4:3. Fifty percent of patients with renal calculus present between the ages of thirty and fifty. In India, approximately 5-7 million patients suffer from stone disease and at least 1/1000 of the Indian population needs hospitalization due to kidney stone disease. The recurrence rate is 50 to 80%. An alarming rise within the incidence of urolithiasis and motivation started by WHO to explore the possibility of cure through traditional system has created a momentum for further research in the light of ayurvedic resources.

KEYWORDS: *Mootra-Ashmari*, Urolithiasis, *Shunthyadi Kwatha*.

INTRODUCTION

Sushruta states that the body is composed of the three fundamental pillars, or *Tristambha*, which are *Dosha, Dhatu,* and *Mala*. The production of *Malas* results from the digestion and metabolism of food, and they are then eliminated from the body via the appropriate channels. *Mootra* belongs to the *Drava Mala*, for which our bodies have a particular excretory system known as "*Mootravaha srotasa*."

Mootra-Ashmari is a disease of urinary tract which causes problems in many ways including passage of urine. The waste material when not dissolve completely in urine and obstruct urinary path then *Mootra-Ashmari* may occur which is termed as renal calculi in modern medical sciences. As per *Sushruta Samhita*, *Ashmari* is included in *Ashtamahagada* due to its fatal nature. Description of *Ashmari* is found in almost all *Samhitas* of *Ayurveda* for eg. either as a type of *Mootraghata* (*Acharya Charaka*) or as a separate disease (*Acharya Sushruta*).

The process of urinary calculi formation as described by *Acharya Sushruta* is as follows-

तत्रासंशोधनशीलस्यापथ्यकारिणः प्रकुपितः श्लेष्मा मूत्रसम्पृक्तोऽनुप्रविश्य बस्तिमश्मरीं जनयति || (सु.नि.3/4) ||

When an individual who neglects to cleanse (*Samshodhana*) the internal channels of his organs or is in the habit of taking *Mithya Aahara-Vihara* like *Apathyakari* then vitiated *Shleshma* mixed with *Bastigatamootra* entered in *Basti* form *Mootra-Ashmari*.

Here, it becomes saturated with the stone forming substances and provides rise to the formation of concretion or gravels to pass through the urine. So, an abundance of vitiated *Shleshma Dosha* should be taken in to consideration because the underlying cause of *Mootra-Ashmari*.

According to *Sushruta-* Common symptoms of *Mootra-Ashmari* are *Mahati Vedana* in *Nabhi, Basti Sevani* and *Mehana* during urination, *Mootradharasanga,* haematuria, *Mootravikirana*, *Gomedakaprakasha* like clear urine, urine mixed with gravel. Pain occurs during running, crossing, swimming, riding and walking.

Urolithiasis is formation of urinary calculi at any level of the urinary tract. Renal calculi are characterised clinically by colicky pain (renal colic) as they pass down along the ureter and manifest by haematuria. Modern science also emphasizes on involvement of varied factors like heredity, age, sex, metabolic disorders, sedentary life style, hydration status, mineral content of water, nutritional deficiency etc for urinary stone formation.

NEED OF THIS RESEARCH WORK
- ❖ To find out the role of different etiological factors & investigations to evaluate the disease *Mootra-Ashmari* in the present era.
- ❖ To avoid the incidence of recurrence after surgical removal of stone and in search of an effective conservative treatment, the present work has designed and has been undertaken.
- ❖ There was no any valuable and effective output yet carried out on *Shunthyadi Kwatha*, which is described in *Bhaishajya Ratnavali* in the context of *Mootra-Ashmari.*
- ❖ Hence, this research work is planned to understand the role of *Shunthyadi Kwatha* in *samprapti vighatana* of *Mootra-Ashmari.*

By considering of these factors the study is needed for understanding the etiological factors, its symptoms, its *Samprapti* and its *Upshayatmaka Parikshana* by *Shunthyadi Kwatha* because it's the properties of *Kaphavatashamaka, Shothaghna, Ashmaribhedana, Shoolnashaka, Mootrala, Agnideepaka, Pachaka.*

AIMS AND OBJECTIVES
- ❖ To study the literatures pertaining to *Mootra-Ashmari* and Urolithiasis in different *Ayurvedic Samhitas* and modern medical sciences.
- ❖ To study the concept of etiopathogenesis of *Mootra-Ashmari*.
- ❖ To evaluate role of USG in diagnosis of *Mootra-Ashmari*.
- ❖ To evaluate *Upshayatmaka* role of '*Shunthyadi kwatha'* in *Mootra-Ashmari* (Urolithiasis).

PLAN OF STUDY
- Conceptual study
- Clinical study
- Observation and result
- Discussion
- Summary
- Conclusion

Conceptual study
1. Review of literature
In this part, historical review about *Mootra- Ashmari* had been collected from classical text of *Ayurveda*, previous research work done, scientific journal, periodic magazines, monographs and other available source. Similarly modern review regarding the Urolithiasis have been gathered from the Modern Texts and various other online media. After thorough analysis, the data has been gathered and compiled in an organized manner.

2. Disease review
This section includes the detailed description about *Mootra- Ashmari* from both the *Ayurvedic* point as well as Modern point of view.

3. Drug review
Includes the brief description of the drugs involved in the formation of *Shunthyadi kwatha.*

CLINICAL STUDY
MATERIALAND METHOD MATERIAL
Source of data
In this study patients of the Mootra-ashmari were registered from OPD and IPD of Roga Nidana evum Vikriti Vigyana and other department of Government Ayurvedic P.G. College and Hospital Varanasi. The section of present data was sustained by laboratory findings.

Method of collection of data
Total 60 patients were randomly selected and special proforma was made with details of history taking, physical signs symptoms as mentioned in our classics and allied science. Patient was analyzed and selected accordingly.

Diagnostic criteria
For the purpose of diagnosis, a standard research proforma has been prepared on thebasis of Principles of Ayurveda and Modern science. Description of signs and symptoms, examination and investigations were included to reach to the final diagnosis of the disease.

Inclusion criteria
Patients having sign and symptoms of MootraAshmari as described in Ayurvedic literatures and also having sign and symptoms of Urolithiasis as per as modern medical sciences, aged 18-65, male or female, with Pain in the renal angle & loin region, radiating towards groin, and Patient who are not interested to undergo for surgery and those who are unfit for surgical intervention.

Exclusion criteria
Patients with impaired renal function or any severe complications, having staghorn renal stone, severe haematuria, >10 mm stone size, known cases of malignancy, ARF, CRF, severe hypertensive, congenital anomaly of kidney, and patients with immediate surgical requirement had been excluded from the study.

Assessment criteria
SUBJECTIVE CRITERIA
On the basis of sign and symptoms- Grading of Parameters

Parameters	Grade 0	Grade I	Grade II	Grade III
Vedana (**Pain**)	No pain	Mild pain	Tolerant pain	Intolerable pain
Sashoola mootrata (**Dysuria**)	Absence of pain during urination	Mild pain during urination	Moderate pain during urination	Severe pain during urination
Sarudhira mootrata (**Haematuria**)	No haematuria	Smoky colour urine	Blackish colour urine	Bright red colour urine
Mootradaaha (**Burning micturition**)	No burning micturition	Occasional Burning micturition	Regular burning micturition	Severe burning micturition
Size of Calculus	No Calcification	Papillary Calcification	3 to 4 mm Micro renal calculi	>4 mm and multiple renal calculi

OBJECTIVE CRITERIA
INVESTIGATION
1. LABORATORY
❖ CBC
❖ Urine routine and microscopic examination
❖ Blood Urea
❖ RBS
❖ S.Creatinine, S.Uric acid.

2. RADIOLOGICAL
❖ Plain x-ray (K.U.B.).

3. SONOLOGICAL
❖ Ultrasonography (K.U.B.).

Assessment of therapy
Trial drug was given to the patient and the changes in subjective parameters were recorded at 15 days interval. Total effect of therapy in each patient was evaluated after completion of treatment.

| 1.	Marked improvement	>75% Relief in sign and symptoms
2.	Moderate improvement	51%-75% Relief in sign and symptoms
3.	Mild improvement	25-50% Relief in sign and symptoms
4.	No improvement	<25% Relief in sign and symptoms

OBSERVATION AND RESULT
REGISTERED PATIENTS WISE DISTRIBUTION (N= 60)
DISTRIBUTION OF CASES ACCRODING TO AGE
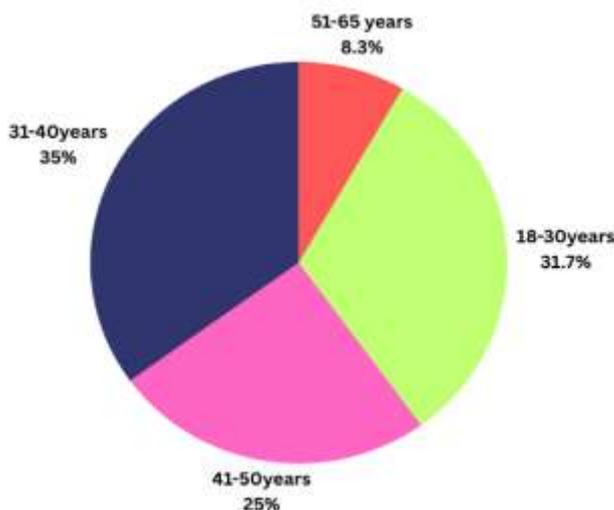
The above values show that the majority 35% patients, under the 31-40 year age group, 31.7% patients in the 18-30 year age group, 25% patients in the 41-50 years age group and 8.3% patients between 51-65 years. So, *Mootra-Ashmari* is more common in middle age group.

**DISTRIBUTION OF CASES ACCRODING TO GENDER**
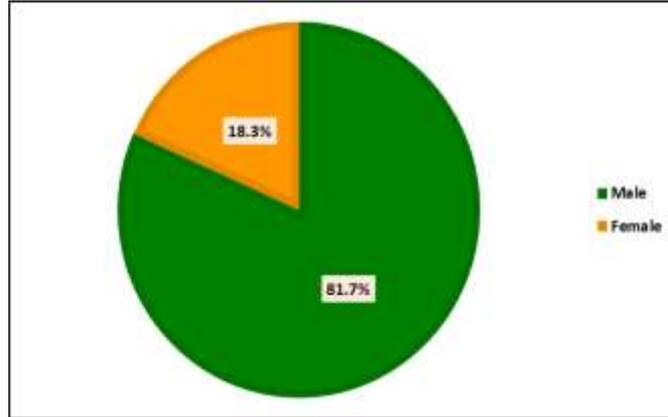
The occurrence of *Mootra-Ashmari* seen more in males
81.7% than in females 18.3%.

DISTRIBUTION OF CASES ACCRODING TO RELIGION
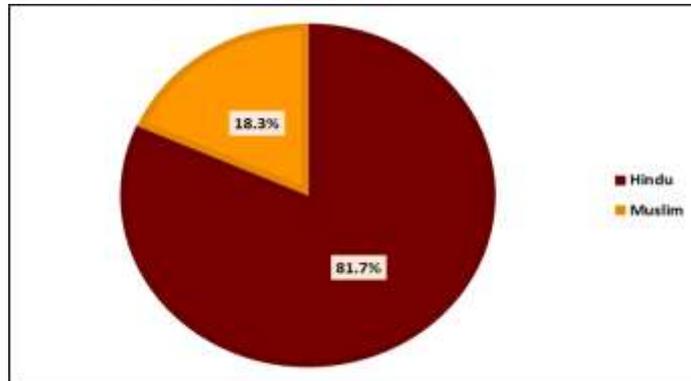
From the above table, maximum patient belongs to
Hindu religion i.e., 81.7% whereas 18.3% belongs to
Muslim religion.

DISTRIBUTION OF CASES ACCRODING TO MARITAL STATUS
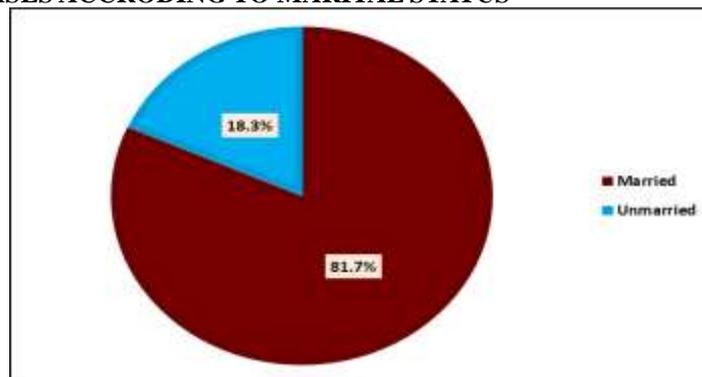
From the above table, maximum patients are married
81.7%, while 18.3% are unmarried.

DISTRIBUTION OF CASES ACCRODING TO SOCIO ECONOMIC STATUS
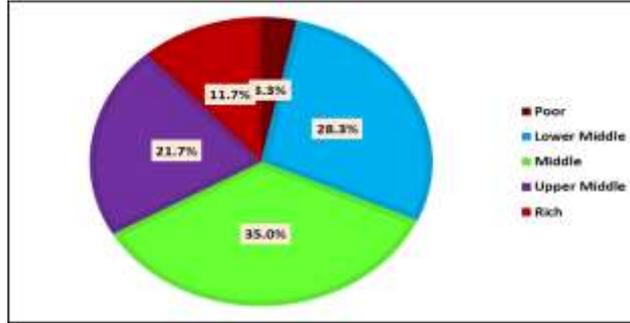
The largest group of patients belong to the middle class, with 35.0%, followed by lower middle class with 28.3%, upper middle class accounting for 21.7%, the rich category with 11.7%, while 3.3% are categorized as poor.

DISTRIBUTION OF CASES ACCRODING TO OCCUPATION
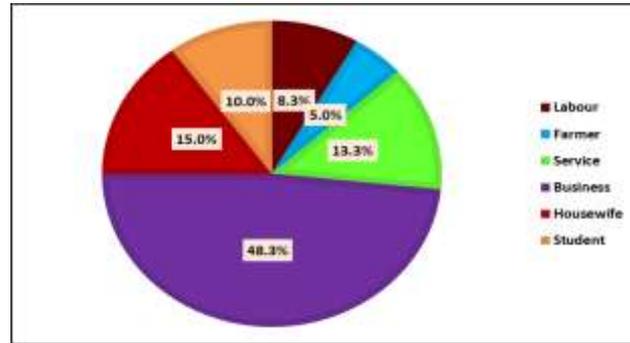
The above data shows that maximum number of cases are that of 48.3% businessman, next number is that of housewife which is 15%, 13.3% serviceman.

**DISTRIBUTION OF CASES ACCRODING TO HISTORY OF WORKING HRS**
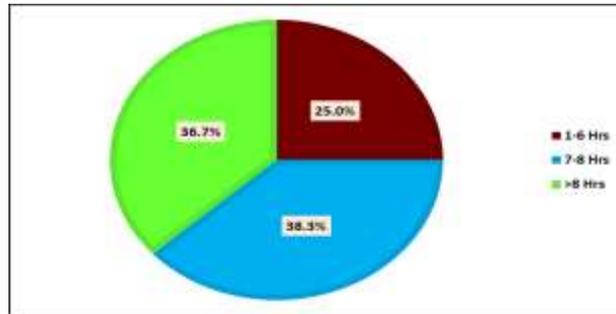
The distribution of working hours among patients shows that 38.3% patients work between 7-8 hrs/day, 36.7% report working for >8 hours, while 25.0% work between 1-6 hours daily.

**DISTRIBUTION OF CASES ACCRODING TO AGNI**
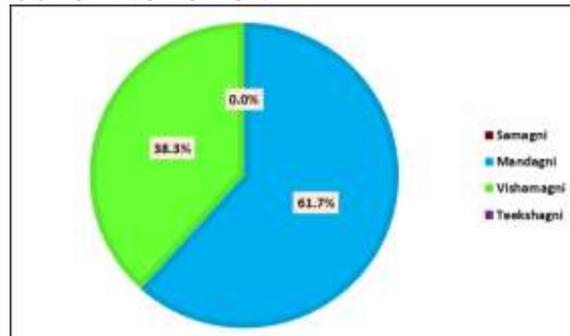
The assessment of Agni among the patients reveals that the majority 61.7% patients have Mandagni, while 38.3% exhibit Vishamagni.

**DISTRIBUTION OF CASES ACCRODING TO EDUCATION**
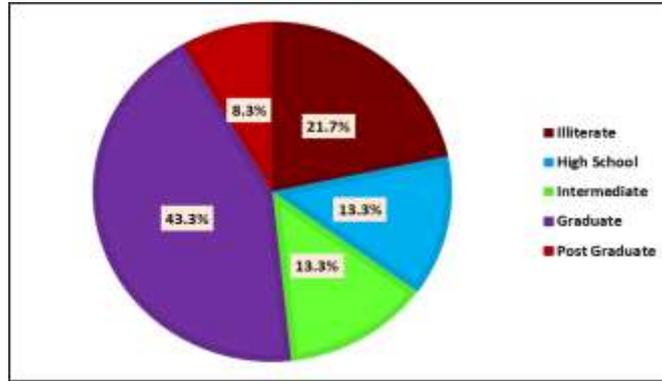
Above graph shows that 21.7% patients are illiterate, while 13.3% have completed high school, 13.3% have reached the intermediate level, 43.3% are graduates and 8.3% have completed postgraduate education.

DISTRIBUTION OF CASES ACCRODING TO HABITAT
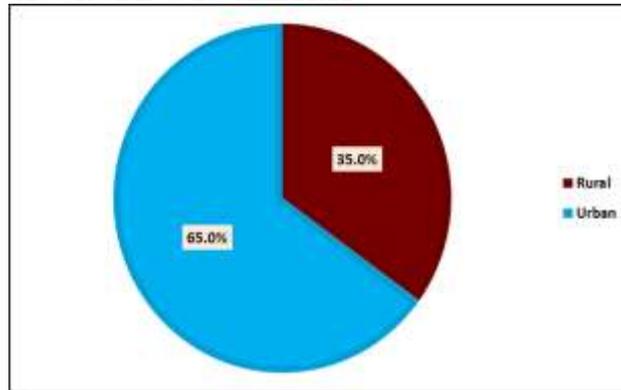
Above graph shows that majority of patients, 65.0%, reside in urban areas, while 35.0% come from rural regions.

DISTRIBUTION OF CASES ACCRODING TO KOSHTHA
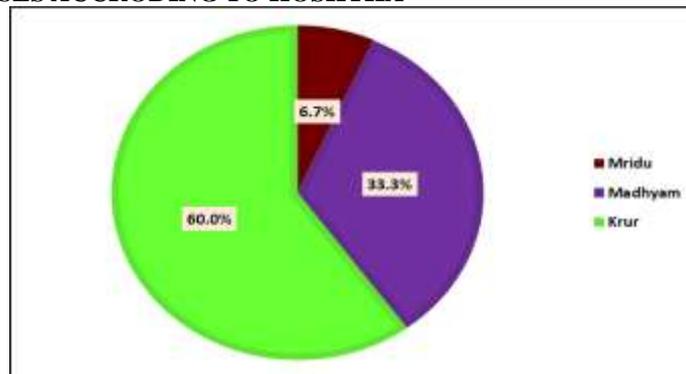
Above graph shows that 60.0% patients are classified as Krur Kostha, followed by 33.3% in the Madhyam category, and a smaller group of 6.7% identified as Mridu.

DISTRIBUTION OF CASES ACCRODING TO COURSE COMPLETION
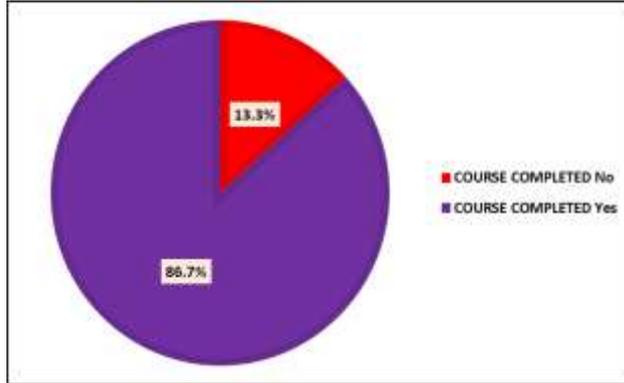
Above graph shows that majority of patients 86.7% reported having completed their course, 13.3% patients indicated that they had not completed their course.

DISTRIBUTION OF CASES ACCRODING TO TREATMENT HISTORY & HISTORY OF PAST ILLNESS & FAMILY HISTORY
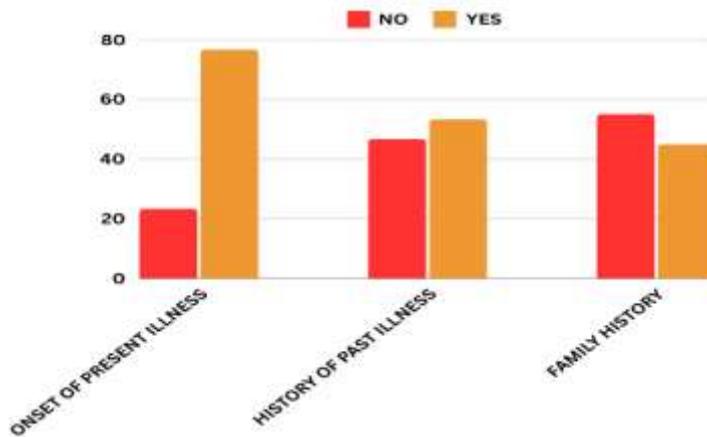
Above graph shows that onset of present illness 76.7% patients reported, 53.3% reported having a history of past illnesses, 45% indicated that there was a family history of illness.

DISTRIBUTION OF CASES ACCRODING TO DIET

53.3% followed a vegetarian diet, while 46.7% adhered to a mixed diet.

**DISTRIBUTION OF CASES ACCRODING TO WATER INTAKE**
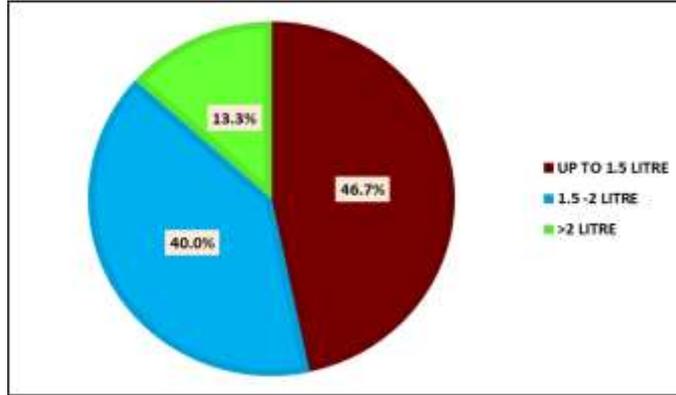
Regarding water intake, 46.7% patients reported consuming up to 1.5 litres, while 40.0% consumed between 1.5-2 litres Additionally, 13.3% indicated an intake of more than 2 litres.

DISTRIBUTION OF CASES ACCRODING TO FREQUENCY OF WATER INTAKE & OTHER LIQUID INTAKE
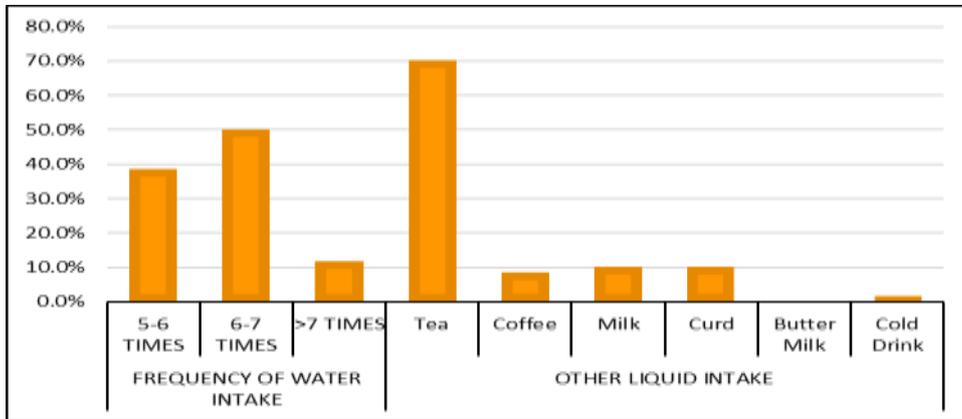
In terms of water intake frequency 38.3% patients reported drinking water 5 to 6 times a day, while 50.0% indicated they consume it 6 to 7 times daily, 11.7% reported drinking water more than 7 times a day. Regarding other liquid intake, 70.0% consumed tea, followed by 8.3% patients who preferred coffee.

DISTRIBUTION OF CASES ACCRODING TO ADDICTION
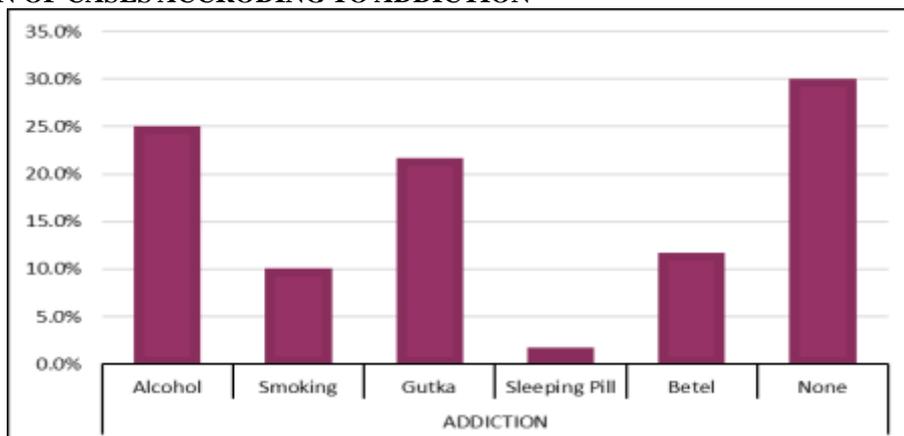
Regarding addiction, 25.0% reported consuming alcohol, while 10.0% indicated smoking as their addiction. Additionally, 21.7% reported using gutka, and 1.7% mentioned taking sleeping pills. Furthermore, 11.7% were addicted to betel. Notably, 30.0% reported having no addictions.

DISTRIBUTION OF CASES ACCRODING TO BOWEL
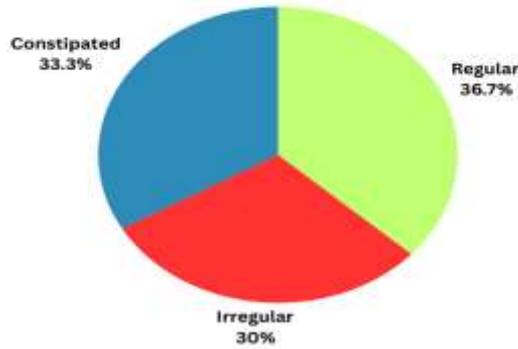
In terms of bowel habits, 22 patients (36.7%) reported having regular bowel movements, while 18 patients (30.0%) described their habits as irregular. Additionally, 20 patients (33.3%) indicated experiencing constipation.

DISTRIBUTION OF CASES ACCRODING TO URINE
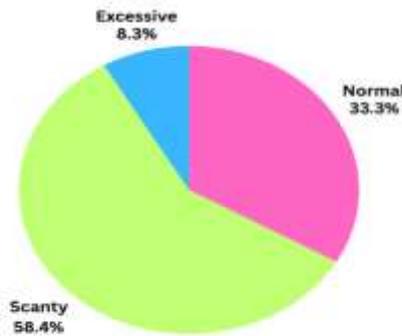
Regarding urine, it was noted that 20 patients (33.3%) have normal, 35 patients (58.33%) have scanty urine, 5 patients (8.33%) have excessive urine.

DISTRIBUTION OF CASES ACCRODING TO FREQUENCY OF MICTURITION
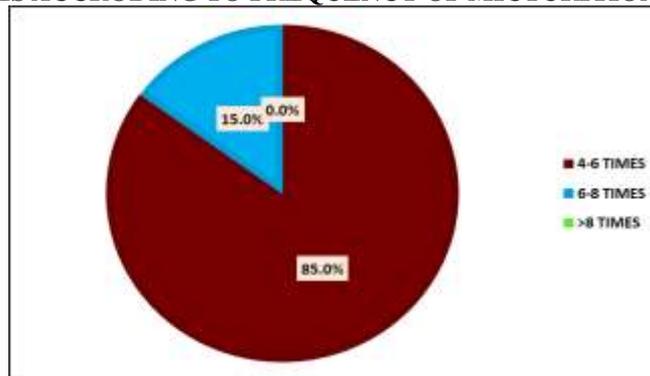
Regarding the frequency of micturition, the majority of patients, 85.0% reported urinating 4 to 6 times a day. In contrast, 15.0% indicated a frequency of 6-8 times.

DISTRIBUTION OF CASES ACCRODING TO BUILT
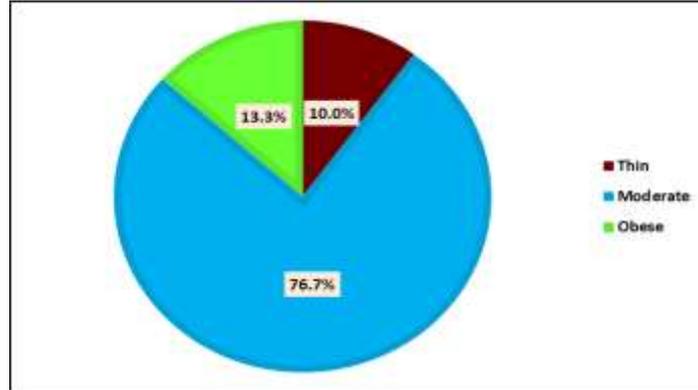
In terms of body build, the majority of patients were classified as having a moderate build, with 76.7%, 13.3% were identified as obese, while 10.0% were categorized as thin.

DISTRIBUTION OF CASES ACCRODING TO DOMINANT RASA
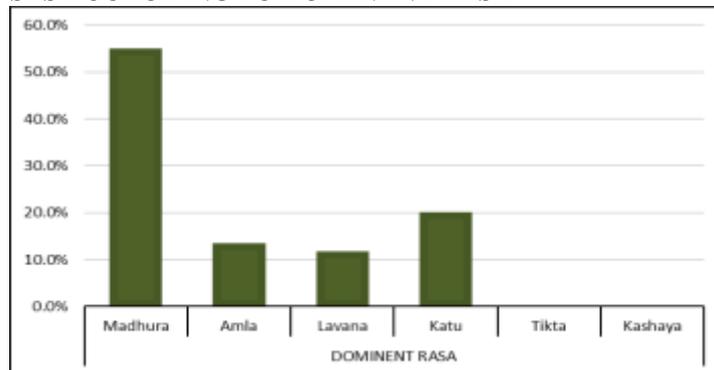
Regarding the dominant rasa among patients, 55.0% identified Madhura as their predominant taste. This was followed by Katu with 20.0% patients, Amla with 13.3% patients, and Lavana with 11.7% patients.

DISTRIBUTION OF CASES ACCRODING TO PRAKRITI
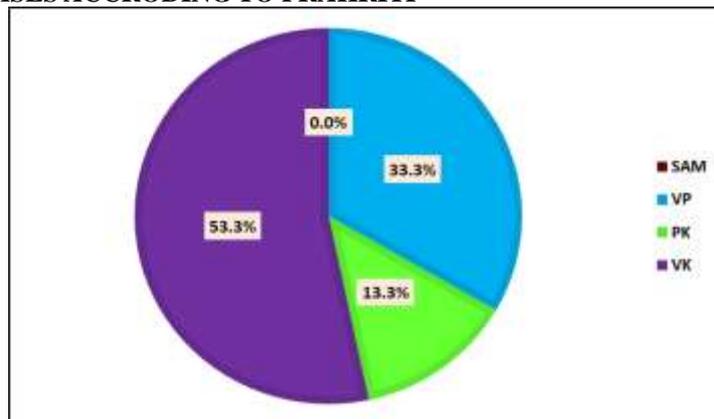
Above graph shows that 33.3% patients were classified as Vata-Pitta (VP) prakriti, while 13.3% patients were classified as under Pitta-Kapha (PK) prakriti. The majority 53.3% patients were identified as Vata-Kapha (VK) prakriti.

DISTRIBUTION OF CASES ACCRODING TO VYAYAMA SHAKTI
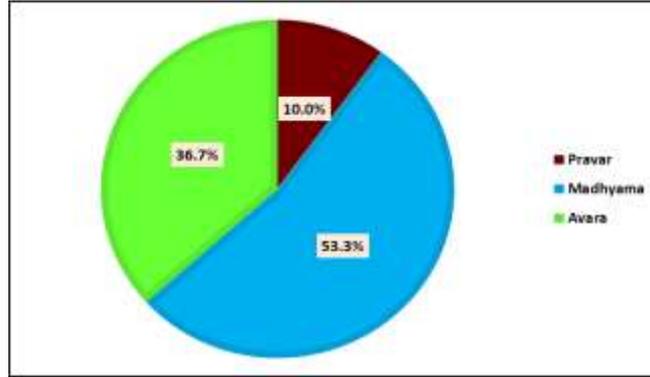
Above graph shows that 10.0% patients were classified as Pravar, the majority 53.3% patients were categorized as Madhyama, 36.7% were noted to have Avara.

DISTRIBUTION OF CASES ACCRODING TO AHARA SHAKTI
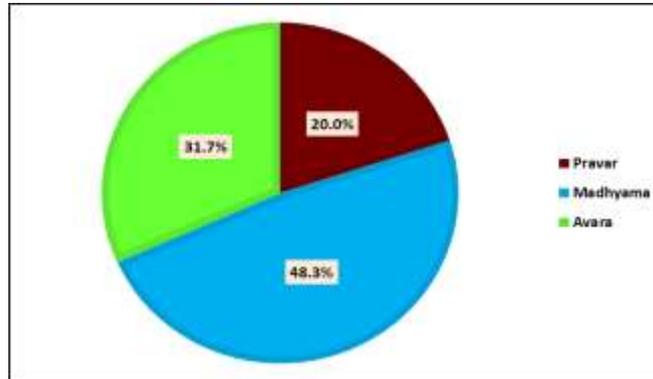
The evaluation of Aahara Shakti showed that 20.0% patients fell into the Pravar category, The largest group, comprising 48.3%, was classified as Madhyama, 31.7% were categorized as Avara.

DISTRIBUTION OF CASES ACCRODING TO SROTODUSHTI PAREEKSHA
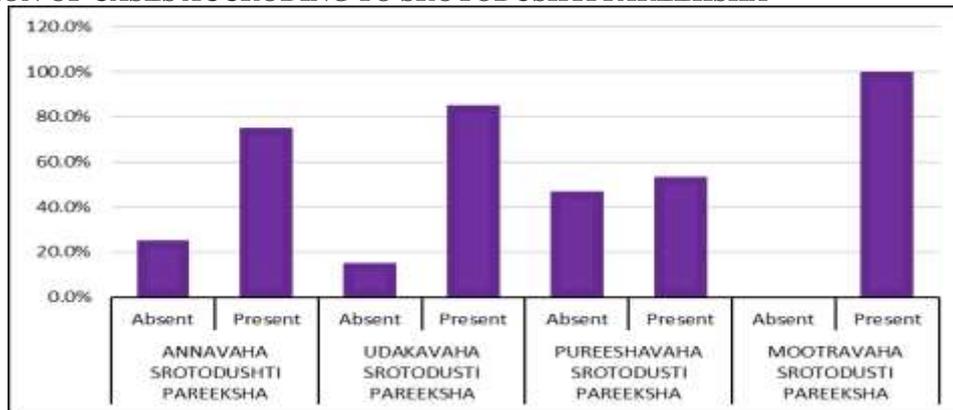
For the Annavaha Srotodushti, a majority of 75.0% patients showed Present indicators. In the case of Udakavaha Srotodushti, 85.0% patients indicating Present conditions. Regarding Pureeshavaha Srotodushti, 53.3% patients were Present. For Mootravaha Srotodushti, there were no patients reported as Absent, with 60 patients (100.0%) confirming Present status.

DISTRIBUTION OF CASES ACCRODING TO AAHARAJA NIDANA
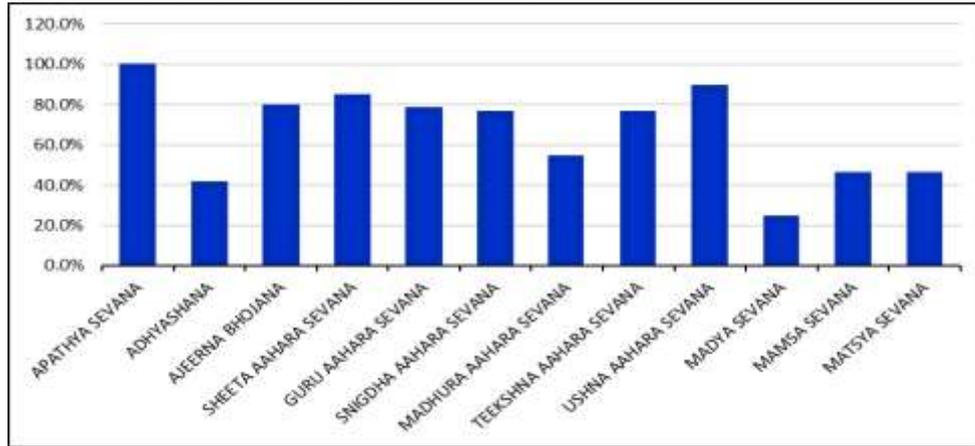
Above graph shows that all patients (60 patients, 100.0%) reported engaging in apathya sevana, 41.7% practicing adhyashana, 80.0% reported experiencing ajeerna bhojana, 85.0% consumed sheeta aahara, 78.3% engaged in the consumption of guru aahara, intake of snigdha aahara was reported by 76.7%, while 55.0% opted for madhura aahara, 76.7% consumed teekshna aahara, and 90.0% reported eating ushna aahara. The consumption of madya was less common, with 25.0% partaking, while 46.7% reported consuming both mamsa and matsya.

DISTRIBUTION OF CASES ACCRODING TO VIHARAJA NIDANA & AUSHADHA NIDANA
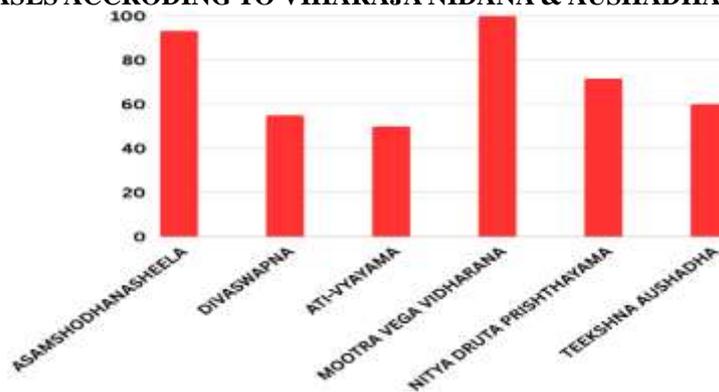
The examination of Viharaja Nidana indicated that a significant majority of patients 93.3% exhibited Asamshodhanasheela, 55.0% reported engaging in Divaswapna, while 50.0% engaged in Ati-Vyayama, all patients (60 individuals, 100.0%) indicated practicing Mootra Vega Vidharana. 71.7% were found to be involved in Nitya Druta Prishtahayama. 60.0% reported using Teekshna Aushadha.

DISTRIBUTION ACCORDING TO X-RAY FINDING
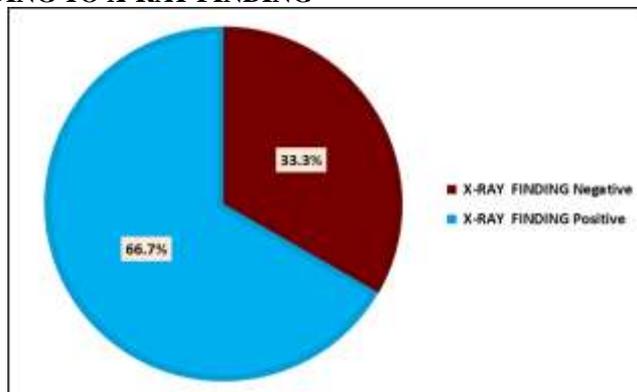
The evaluation of X-ray findings revealed that 40 patients (66.7%) exhibited positive results.

DISTRIBUTION ACCORDING TO SITE OF STONE
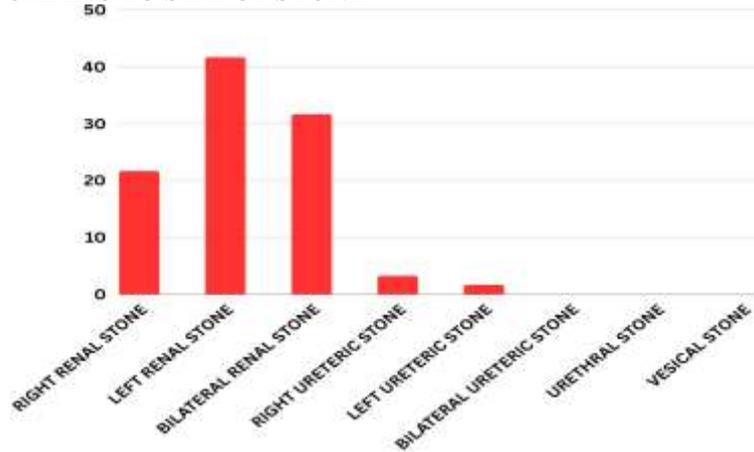
Above graph shows that site of stone revealed that 41.7% patients had left renal stones, while 31.7% had bilateral renal stones, 21.7% were found to have right renal stones, 3.3% with right ureteric stones and 1.7% with a left ureteric stone.

BEFORE TO AFTER TRIAL CHANGES IN NO. OF STONES
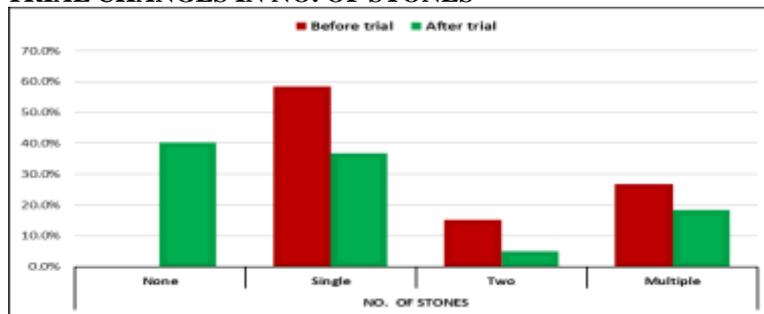
Before the trial, there were 58.3% with a single stone, while 15.0% had two stones, and 26.7% had multiple stones. Notably, after the trial, 40.0% reported having no stones, indicating a substantial improvement. The number of patients with a single stone decreased to 36.7%, while those with two stones dropped to 5.0% and multiple stones decreased to 18.3%. The results are **statistically significant**, as indicated by a chi-square value of 30.9 with a p-value of <0.001.

DISTRIBUTION ACCORDING TO PRESENCE OF HYDRONEPHROSIS
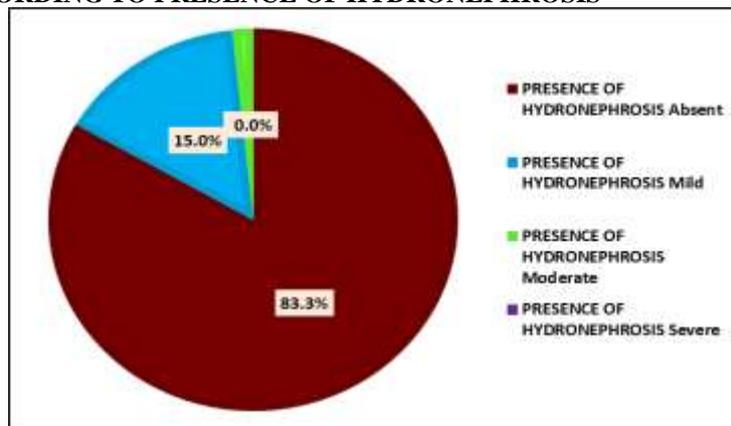
83.3% classified as having an absent presence of hydronephrosis. 15.0% demonstrated mild hydronephrosis, while 1.7% was noted to have moderate hydronephrosis.

DISTRIBUTION ACCORDING TO CHRONICITY
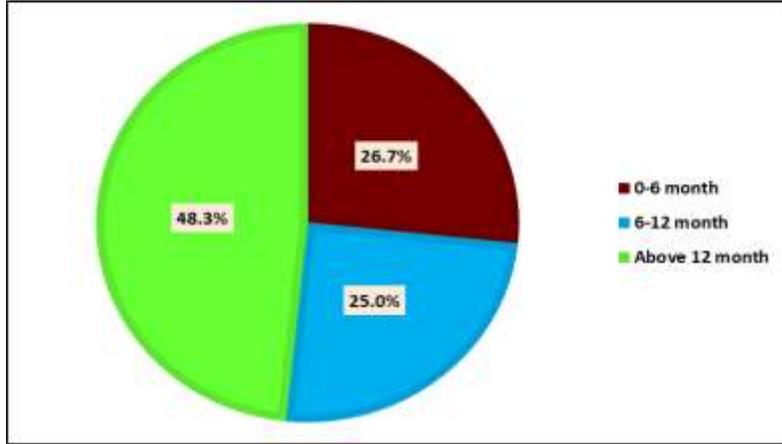
48.3% of patients were suffering from Mootra-Ashmari above 12 months duration, followed by 26.7% of patients having 0-6 months chronicity, while 15 patients (25.0%) reported a duration of 6 to 12 months.

SUBJECTIVE PARAMETERS
BEFORE TO AFTER TRIAL CHANGES IN SUBJECTIVE PARAMETERS

Subjective Parameter	Before trial		After trial		% change	Wilcoxon test	
	Mean	SD	Mean	SD		z-value	p-value
VEDANA	1.38	0.78	0.45	0.59	67.47	6.33	**<0.001**
MOOTRADAHA	0.90	0.57	0.18	0.39	79.63	5.73	**<0.001**
SARUDHIR MOOTRATA	0.30	0.46	0.15	0.36	50.00	2.71	**0.007**
SASHOOLA MOOTRATA	0.23	0.50	0.08	0.28	64.29	3.00	**0.003**
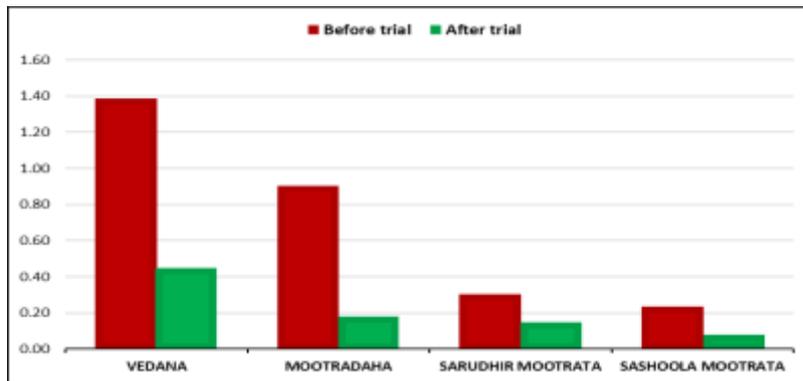
EFFECT OF THERAPY ON SIZE OF STONES
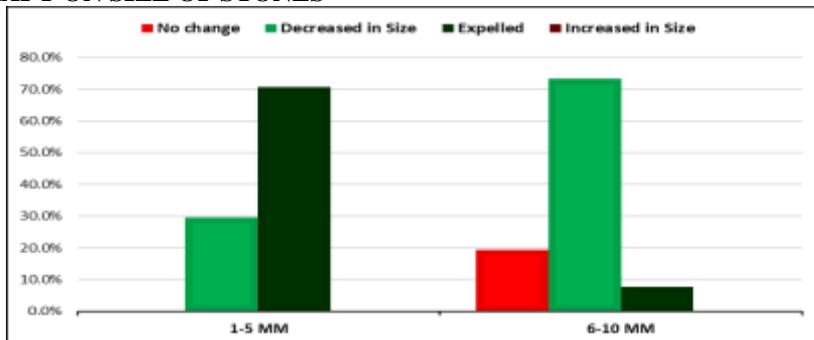
Among those with stones sized 1-5 mm (34 patients = 56.7%), 29.4% experienced a decrease in size, and 70.6% had the stone expelled. For patients with stones sized 6-10 mm (26 patients = 43.3%), 19.2% showed no change, 73.1% exhibited a decrease in size, and 7.7% had the stone expelled. The results were **statistically significant**, with a chi-square value of 25.8 and a p-value < 0.001, indicating a strong association between stone size and treatment outcomes.

EFFECT OF THERAPY ON ASSOCIATED SYMPTOMS

Parameters	Chi sq.	P value	Significance
MOOTRADHARA SANGA	62.2	<0.001	significant
GOMEDA PRAKASHAM	11.4	<0.001	significant
DHAVANA, PLAVANA, LANGHANA, PRISTHAYANA, ADHVAGAMANA VEDANA	56.4	<0.001	significant
INCREASED FREQUENCY OF MICTURITION	18.5	<0.001	significant
NAUSEA & VOMITING	2.81	0.093	Non- significant

EFFECT OF THERAPY ON DOSHA

	PARAMETERS	Chi sq.	P value	Significance
FEATURES OF VATAJA ASHMARI	ATYARTH PEEDA	80	<0.001	Highly Significant
	DANTA KHADANA	43.6	<0.001	Highly Significant
	NABHI PEEDA	73.5	<0.001	Highly Significant
	VISHARDHITA	6.99	0.008	Significant
	VATA, MOOTRA, PUREESHENA KRICHCHHRENA NIRHARANA	50.8	<0.001	Significant
FEATURES OF PITTAJA ASHMARI	CHOOSHYATA	4.14	0.042	Significant
	DAHYATA	23.8	<0.001	Highly Significant
	USHNA VATA	43.2	<0.001	Significant
FEATURES OF KAPHAJA ASHMARI	BHEDANA	40.6	<0.001	Significant
	NISTODA	46.5	<0.001	Highly Significant
	BASTI SHEETATA	2.81	0.094	Non-Significant
	BASTI GURUTA	50.7	<0.001	Significant
	DAALANA	14.2	<0.001	Significant

EFFECT OF THERAPY ON LABORATORY INVESTIGATION

Parameters	chi sq.	P value	Significance
HB%	0.10	0.752	Non- significant
TLC /CUMM	3.23	0.199	Non- significant
RBCs million/cumm	0.00	1.000	Non- significant
NEUTROPHILLS %	5.88	0.053	Towards Significance
LYMPHOCYTES %	5.01	0.082	Non- significant
EOSINOPHILLS %	0.41	0.816	Non- significant
MONOCYTES %	1.08	0.298	Non- significant
BASOPHILLS %	0.00	1.000	Non- significant
RBS mg/dl	1.29	0.255	Non- significant
BLOOD UREA LEVEL mg/dl	0.34	0.843	Non- significant
SR.CREATININE mg/dl	0.34	0.559	Non- significant
SR.URIC ACID mg/dl	0.56	0.453	Non- significant

EFFECT OF THERAPY ON URINE EXAMINATION

parameters	Chi sq.	P value	Significance
PH	0.00	1.000	Non- significant
SPECIFIC GRAVITY	4.22	0.121	Non- significant
EPITHELIAL CELLS	1.03	0.309	Non- significant
PUS CELLS/HPF	2.91	0.088	Towards significance
RBCs	4.91	0.027	Significant
CRYSTAL/CAST CELLS	4.04	0.044	Significant

OVERALL EFFECT OF THERAPY
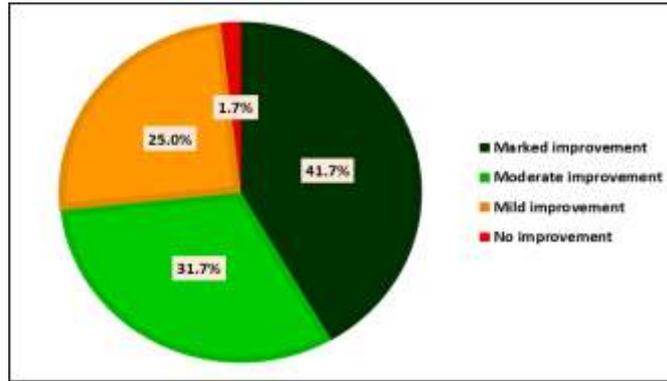
Marked Improved: A total of 41.7% (25 patients) reported a marked improvement in their condition.

Moderate Improved: The majority, comprising 31.7% (19 patients), experienced a moderate level of improvement.

Mild Improved: About 25% (15 patients) noted a mild improvement in their condition.

No Improvement: Lastly, 1.7% (1 patients) reported no improvement in their condition.

The study's Discussion part addresses the significance, relevance, and analyses of the therapeutic effect on the choosen issue using findings and observations in order to concentrate on the aims and objectives, and research question.

Age: The distribution of patients according to age is as follows: the majority, 21 patients (35%), under the 31-40year age group. This is followed by 19 patients (31.7%) in the 18-30year age group, and 15 patients (25%) aged 41-50 years. A smaller proportion is seen in older age groups, with 5 patients (8.3%) between 51-65 years. This distribution shows a greater percentage of patients in the middle-aged followed by younger age group. Though Ashmari occurs at any age but from the present and previous data regarding age, it can be said that, middle age group are more prone to the disease Ashmari.

Gender: Maximum 49 patients (81.7 %) patients were males and 11 patients (18.3 %) patients were females, indicating a significant gender imbalance in the study, with a much higher proportion of male patients compared to females. Here, it can be said that urolithiasis is more frequently found in males.

Religion: The distribution of patients by religion shows that the majority were Hindu, comprising 49 patients (81.7%), while 11 patients (18.3%) were Muslim. No patients belong to other religious groups. Ashmari has no relation with religion, the data presented here shows only the geographical dominance of Hindus in the region.

Marital Status: The majority were married, with 49 patients (81.7%), while 11 patients (18.3%) were unmarried. This indicates a predominantly married patients group in the study. It has been already determined that middle age of life are more prone for the disease and by this age most of the individuals get married.

Socio Economic Status: The largest group of patients belong to the middle class, with 21 patients (35.0%). This is followed by lower middle class with 17 patients (28.3%), and upper middle class accounting for 13 patients (21.7%). A smaller percentage falls under the rich category with 7 patients (11.7%), while only 2 patients (3.3%) are categorized as poor. The majority of middle class individuals lead hectic lives, less conscious of their health and have irregular dietary habits, which vitiates Agni and Doshas and results in disease.

Occupation: The majority, 29 patients (48.3%), are engaged in business. Housewives make up 9 patients (15.0%), followed by those in service roles, accounting for 8 patients (13.3%). Students represent 6 patients (10.0%), while laborers and farmers constitute 5 patients (8.3%) and 3 patients (5.0%), respectively. Occupation may play role in Ashmari formation. Businessman who busy in their business often neglect to drink enough water, the suppression of natural urges and they are typically affected with irregular eating habits. The only likely explanation for housewifes sedentary lifestyles and irregular eating patterns, which lead to oversaturation of the urine and ultimately result in formation of stones.

History of Working Hours: 23 patients (38.3%) work between 7-8 hours per day. A significant portion, 22 patients (36.7%), report working for more than 8 hours, while 15 patients (25.0%) work between 1-6 hours daily. Continuous work periods without breaks may be connected to poor eating habits, neglect to drink enough water, dehydration, and the suppression of natural urges, all of which raise the possibility of kidney stones development.

Agni: The majority, 37 patients (61.7%), have Mandagni, while 23 patients (38.3%) exhibit Vishamagni. Mandagni causes formation of Aama which further leads to

formation of Ashmari, as all diseases occur due to vitiation of Agni.

Education: In this study maximum 43.3%, patients were from the group of graduate educated, followed by 21.7% are illiterate, 13.3% have completed high school and another 13.3% have reached the intermediate level. 8.3% have completed postgraduate education. There is no direct relation between education and disease.

Habitat: The data on habitat reveals that the majority of patients, 39 (65.0%), reside in urban areas, while 21 patients (35.0%) come from rural regions. The majority of urban areas patients have sedentary lifestyles and irregular eating patterns, which lead to oversaturation of the urine and ultimately result in formation of stones.

Koshtha: Maximum no of patients 60 % were having Krur Kostha followed by 33.33% of the patients were having Madhyam Koshtha and a smaller group of 6.7 % patients identified as Mridu. Krura Koshtha condition may be associated with Ashmari formation due to predominance of Vata and Kapha Dosha.

Course Completion: In terms of course completion, a majority of patients, 52 patients (86.7%), reported having completed their course, while a smaller group of 8 patients (13.3%) indicated that they had not completed their course.

Onset of present illness & History of Past Illness & Family History: Onset of present illness was occasional in maximum 46 patients (76.7%) and gradual in 14 patients (23.3%). It is because of maximum patients were suffered from renal stone in this study, and renal stones may remain silent for long time or occasionally causes dull ache pain which can be ignored by many patients. So, patient visit hospital when pain aggravate. Past history of stone was absent in 46.7 % patients whereas present in 53.3% patients. It indicates recurrence of stones even after surgical treatment in some patients. It shows that Ashmari has tendency of recurrence. Family history, 33 patients (55.0%) reported no relevant family history, while 27 patients (45.0%) indicated that there was a family history of Ashmari so it can be said that heredity also may have some role to formation of stone.

Diet: 32 patients (53.3%) followed a vegetarian diet, while 28 patients (46.7%) adhered to a mixed diet. While it is accurate that non-vegetarians are more likely to produce stones, However, this research suggests that vegetarians may have also higher risk of Ashmari development because of the geographical prevalence of vegetarians in this location.

Water Intake, & Frequency of Water intake: 28 patients (46.7%) reported consuming up to 1.5 litres, while 24 patients (40.0%) consumed between 1.5-2 litres Additionally, 8 patients (13.3%) indicated an intake of more than 2 litres. In terms of water intake frequency, 23 patients (38.3%) reported drinking water 5 to 6 times a day, while 30 patients (50.0%) indicated they consume it 6 to 7 times daily. Additionally, 7 patients (11.7%) reported drinking water more than 7 times a day. A healthy individual should consume 10–12 glasses, or more than 3 liters, of water each day. Less water intake is not sufficient for a normal person, which increase the concentration of urine and results in oversaturation of the urine, which forms Ashmari.

Other Liquid Intake: Regarding other liquid intake, 42 patients (70.0%) consumed tea, followed by 5 patients (8.3%) who preferred coffee, and 6 patients (10.0%) each for milk and curd. Notably, no patients reported consuming buttermilk, and only 1 patient (1.7%) mentioned drinking cold drinks. Due to their high oxalate content, tea and coffee raise the possibility of stone formation. Studies has since proven that tea and coffee really contain very little oxalate, and that the caffeine in tea also functions as a natural diuretic, encouraging the body to eliminate extra water. Drinking a lot of tea without drinking enough water can lead to dehydration, which raises the risk of stone formation and oxalate concentration in the urine. **Addiction:** Regarding addiction, Notably, 18 patients (30.0%) reported having no addictions. 15 patients (25.0%) reported consuming alcohol, 13 patients (21.7%) reported using gutka, 7 patients (11.7%) were addicted to betel, while 6 patients (10.0%) indicated smoking, and 1 patient (1.7%) mentioned taking sleeping pills. Alcohol can cause dehydration, because it is a diuretic. Dehydration can increase the concentration of the urine, which can increase the risk of kidney stones. Both cigarette smoking and betel chewing are independent risk factors for the development of calcium urolithiasis. Chronic use of gutkha is associated with decreased glomerular filtration rate, creatinine clearance, and microalbuminuria, which causes more concentrated urine result in urolithiasis.

Bowel & Urine Habit: In terms of bowel habits, 22 patients (36.7%) reported having regular bowel movements, 20 patients (33.3%) indicated experiencing constipation, while 18 patients (30.0%) described their habits as irregular. It depends upon lifestyle factors, dietary habits, the Nidana Sevana etc. Regarding urine, it was noted that 20 patients (33.3%) have normal, 35 patients (58.33%) have scanty urine, 5 patients (8.33%) have excessive urine. A maximum no. of 35 patients (58.33%) were habituate to passing scanty urine (less quantity of urine) as a result of taking less water and engaging in strenuous physical activity. Ashmari formation results from the crystalloids not being eliminated by urine as a result of insufficient micturition.

Frequency of Micturition: Regarding the frequency of micturition, the majority of patients, 51 (85.0%) reported urinating 4 to 6 times a day. In contrast, 9 patients (15.0%) indicated a frequency of 6 to 8 times, while none reported urinating more than 8 times a day. The

quantity of water taken determines the frequency of micturition; if less water is taken in, there may be a higher probability of stone formation.

Built: The majority of patients were classified as having a moderate build, with 46 patients (76.7%), 8 patients (13.3%) were identified as obese, while a smaller proportion, 6 patients (10.0%), were categorized as thin. Obesity is risk factor for stone formation. Ashmari formation results from Nidana Sevana mostly Kaphaja Aahar taken by obese patients. But in this study majority of moderate build. Moderate build is not related with Ashmari formation.

Dominant Rasa: Regarding the dominant rasa (taste) among patients, 33 patients (55.0%) identified Madhura (sweet) as their predominant taste. This was followed by Katu (spicy) with 12 patients (20.0%), Amla (sour) with 8 patients (13.3%), and Lavana (salty) with 7 patients (11.7%). Notably, no patients reported Tikta (bitter) or Kashaya (astringent) as their dominant rasa. Madhura Rasa Sevana is more frequently mentioned as Nidana for Ashmari, this information may have a significant role in the formation of Ashmari.

Prakriti: In the analysis of the variable Prakriti, it was found that 0 patients (0.0%) were categorized as Sam. A total of 20 patients (33.3%) were classified as Vata-Pitta (VP), while 8 patients (13.3%) Pitta-Kapha (PK). The majority, 32 patients (53.3%), were identified as Vata-Kapha (VK). This data show the majority of Vata-Kapha (VK) Prakriti.

Vyayama Shakti: 6 patients (10.0%) were classified as Pravar, indicating a high capacity for physical activity. In contrast, the majority, 32 patients (53.3%), were categorized as Madhyama, reflecting an average level of physical strength. Additionally, 22 patients (36.7%) were noted to have Avara, indicating a lower capacity for exercise. However, Vyayama Shakti can not be correlated directly with Ashmari formation.

Aahara Shakti: The evaluation of Aahara Shakti showed that 12 patients (20.0%) fell into the Pravar category, indicating a strong capacity for dietary intake. The largest group, comprising 29 patients (48.3%), was classified as Madhyama, reflecting an average ability to manage dietary needs. Additionally, 19 patients (31.7%) were categorized as Avara, suggesting a lower capability in dietary intake. However, Aahara Shakti does not play any role in Ashmari formation.

Srotodushti Pareeksha: **The Annavaha Srotodushti**, 15 patients (25.0%) were categorized as Absent, while a majority of 45 patients (75.0%) showed Present indicators. **Udakavaha Srotodushti**, 9 patients (15.0%) were marked as Absent, with 51 patients (85.0%) indicating Present conditions. **Pureeshavaha Srotodushti**, 28 patients (46.7%) were noted as Absent, whereas 32 patients (53.3%) were Present. **Mootravaha**

Srotodushti, there were no patients reported as Absent, with 60 patients (100.0%) confirming Present status. Irregular Aahara taking and low intake of water, dehydration causes Srotodushti, which leads to stone formation.

General Examination: **Temperature**, the majority were Afebrile (57 patients, 95.0%), with only a small number being Febrile (3 patients, 5.0%). Fever is a symptom of renal stone. But mostly were afebrile. **Icterus**, 51 patients (85.0%) were classified as Absent, while 9 patients (15.0%) were present. **Pallor**, 58 patients (96.7%) showed Absent, in contrast to 2 patients (3.3%) who were present. **The presence of oedema** indicated that 54 patients (90.0%) were Absent, with 6 patients (10.0%) being present. **Heart rate** measurements revealed that 8 patients (13.3%) had a rate of <70/min, while the majority, 27 patients (45.0%), fell within the 70-76/min range. Additional heart rate categories included 15 patients (25.0%) in the 77-86/min range, and 10 patients (16.7%) with rates between 87-100/min, with none exceeding 100/min. Finally, **blood pressure** assessments showed that 4 patients (6.7%) had readings of <110/70 mmHg, whereas 48 patients (80.0%) recorded values between 110/70 - 130/90 mmHg. Only 7 patients (11.7%) were in the 130/90 to 140/100 range, and 1 patients (1.7%) exceeded 140/100 mmHg.

DISCUSSION ON ETIOLOGICAL FACTORS
Aaharaja Nidana, Viharaja Nidana, Aushadha Nidana: The distribution of patients based on **Aaharaja Nidana Sevana**, it indicates that all patients i.e. 100% were found Apathaya Sevana, followed by 90% of patients were found Ushna Aahara Sevana, 85% patients were used to take Sheeta Ahara, 80% patients were found Ajeerna Bhojana, 78.3% patients were used to take Guru Aahara, 76.7% patients were preferred Snigdha & Teekshna Aahara, 55% patients were preferred Madhura Ahara, 46.7% were habituate to take Mamsa & Matsya Sevana, 41.7% patients were found Adhyashana and 25% were habituate to take Madya. The distribution of patients based on **Viharaja Nidana Sevana** majority of patients 100.0% indicated practicing Mootra Vega Vidharana, 93.3% patients exhibited Asamshodhanasheela, 71.7% patients were found to be involved in Nitya Druta Prishtahayama, 55.0% patients reported engaging in Divaswapna, 50.0% patients engaged in Ati-Vyayama. In the assessment of **Aushadha Nidana** (medicinal factors), 60.0% patients reported using Teekshna Aushadha.

These are all included in Ayurveda under the Nidanas of Ashmari and play a specific part in the formation of stone by vitiating Doshas and Srotovaigunya.

According to Sushruta, Asamshodhana and Apathya Sevana are the main causes of Ashmari, and these have been found in nearly all of the patients participated in this study.

RESULTS
EFFECT OF THERAPY ON HAEMATOLOGICAL TEST
All the patients taken for the study were examined for haematological test before and after treatment. The p value for **haemoglobin** is 0.752, **TLC** (p value= 0.199), **RBCs** (p value= 1.0), **lymphocytes** (p value= 0.082), **eosinophils** (p value= 0.816), **monocytes** (p value= 0.298), **basophil** (p value=1.000) indicating **no statistically significant** changes in their percentages throughout the clinical trial.

Neutrophils (p value=0.053) suggesting a trend **towards significance** in the changes observed, although it did not reach conventional significance levels. Because of decrease of stone size and no changes of stone size in some patients.

EFFECT OF THERAPY ON BIOCHEMICAL PARAMETERS
All the patients taken for the study were examined for biochemical parameters before and after treatment. **Random blood sugar** (p value= 0.255), **blood urea level** (p value= 0.843), **serum creatinine level** (p value= 0.559), **serum uric acid level** (p value= 0.453) indicating **no statistically significant** changes in their percentages throughout the clinical trial.

EFFECT OF THERAPY ON URINE EXAMINATION
All the patients taken for the study were examined for urine examination before and after treatment. **PH** (p value= 1.000), **specific gravity** (p value= 0.121), **epithelial cells** (p value= 0.309) indicating **no statistically significant** changes in their percentages throughout the clinical trial.

Pus cells (p value= 0.088) suggesting a trend **towards significance**, although it did not reach conventional levels of statistical significance. **Red blood cells** (p value= 0.027) indicating a **statistically significant** reduction in the presence of RBCs in the urine following the trial. **Crystal or cast cells** (p-value 0.044) indicated a **statistically significant** result, suggesting that the trial had a positive effect on reducing the presence of crystal or cast cells in urine. Because of decrease of stone size and no changes of stone size in some patients.

RADIOLOGICAL TEST
X-ray finding: According to X-ray finding for presence of stone 40% patients was positive and 20% patients showed negative finding. It indicates that only radio-opaque stones can be detected by X-ray and it is not suitable for diagnosing stones which are radiolucent.

EFFECT OF THERAPY ON USG FINDINGS
Site of Stone: The analysis of the site and type of stone revealed that 25 patients (41.7%) had left renal stones, while 19 patients (31.7%) had bilateral renal stones. Additionally, 13 patients (21.7%) were found to have right renal stones. There were also 2 patients (3.3%) with right ureteric stones and 1 patient (1.7%) with a left ureteric stone. Notably, there were no cases of urethral stones or vesical stones, bilateral ureteric stones. This distribution highlights a higher prevalence of stones in the renal area compared to the ureteric region. The above data indicates that the kidneys are more prone to stone formation. Due to the fact that the kidneys are the primary organs involved in the production and excretion of urine, stones typically develop there before entering the ureter with urine and finally goes to bladder & urethra. Only larger stones that are unable to move through the urinary system can be retained at a certain level of the urinary passage, these stones are referred to as ureteric, vesical, or urethral stones depending on the level or location. Individual organs may experience autonomous stone production in specific particular circumstances.

Effect of therapy on size of stones: The size of stone estimated by ultrasonography. Majority of the patients 56.7% were having stone size 1-5 mm, followed by 43.3% of 6-10 mm. Among those with stones sized 1-5 mm (34 patients = 56.7%), 0 patients (0.0%) showed no change in stone size, 10 patients (29.4%) experienced a decrease in size, and 24 patients (70.6%) had the stone expelled. None of the patients in this group showed an increase in size. For patients with stones sized 6-10 mm (26 patients = 43.3%), 5 patients (19.2%) showed no change, 19 patients (73.1%) exhibited a decrease in size, and 2 patients (7.7%) had the stone expelled. Again, no patient experienced an increase in size. The results were **statistically significant**, with a chi-square value of 25.8 and a p-value < 0.001, indicating a strong association between stone size and treatment outcomes. Majority of decrease in stone size was found better in both larger & smaller stone size. That might be happening because Shunthyadi Kwatha mainly effects stones through its Lekhana and Ashmaribhedana properties, which reduce their size and subsequently cause the Mootrala property to expel the smaller stones through the urinary tract. Additionally, enhanced Apana Vayu function helps in the removal of stones from the sites by urine flow; however, larger stones were not able to move through urine. The rate of breakdown was about the same for both the larger and smaller stones. It suggests that, in comparison to bigger stones, smaller stones have a less compact structure and are more easily broken. Some bigger stones measuring between 6-10 mm showed no changes, as a result of their ongoing Nidana Sevana and disregard for their dietary guidelines.

Number of Stones: In present study 58.3% patients were suffered from single stone and other 26.7% patients were suffered from multiple stone whereas 15% patients were having double stones. The increasing number of stones indicates towards the continuous Nidana Sevana of Ashmari and chronic nature of disease. After the trial, 24 patients (40.0%) reported having no stones, indicating a substantial improvement. The number of patients with a

single stone decreased to 22 (36.7%), while those with two stones dropped to 3 (5.0%), and multiple stones decreased to 11 (18.3%). The results are statistically significant, as indicated by a chi-square value of 30.9 with a p-value of <0.001, highlighting the effectiveness of the intervention in reducing the overall number of stones.

Hydronephrosis: In maximum 83.3% patients hydronephrosis was absent, mild degree of hydronephrosis was found in 15% patients and moderate hydronephrosis in 1.7% patients. When there is an obstruction in the urine's flow, it can cause hydronephrosis. However, in the current study, the majority of patients did not have hydronephrosis because their stones were smaller than 6 mm in size.

EFFECT OF THERAPY ON SUBJECTIVE PARAMETERS WITH ASSOCIATED SYMPTOMS
Vedana (pain), the mean score reduced from 1.38 ± 0.78 before the trial to 0.45 ± 0.59 after the trial, showing a 67.47% reduction, with a Wilcoxon test result of z=6.33 and p<0.001, indicating **high statistical significance**. **Mootradaha** (burning sensation during urination), the mean score decreased from 0.90 ± 0.57 to 0.18 ± 0.39, representing a 79.63% improvement. This change was also **highly significant** (z=5.73, p<0.001). In **Sarudhir Mootrata** (blood in urine), the mean score went down from 0.30 ± 0.46 to 0.15 ± 0.36, with a 50.00% reduction, and the Wilcoxon test yielded z=2.71, p=0.007, showing **significant improvement**. **Sashoola Mootrata** (painful urination), the mean score decreased from 0.23 ± 0.50 to 0.08 ± 0.28, reflecting a 64.29% reduction, with **significant** statistical support (z=3.00, p=0.003). The analysis of Subjective Parameter before and after the trial showed **significant improvements across all measured aspects**. These findings indicate that the trial had a **considerable positive impact on the subjective symptoms. Mootradhara Sanga (interrupted urine flow)** 73.3% patients presented with it. However, following the trial, the results showed a **remarkable improvement**: after trial 58 patients (96.7%) reported the absence of Mootradhara Sanga. A p-value of less than 0.001, indicating that the intervention was **highly significant** in addressing interrupted urine flow among patients. **Gomeda Prakasham (turbid urine)**: 20 patients (33.3%) presented with it. After the intervention, there was a notable shift: 55 patients (91.7%) were now without the condition and only 5 patients (8.3%) remaining affected. This change was **statistically significant**, as indicated by a chi-square value of 11.4 and a p-value of less than 0.001. **Sarudhir Mootrata (haematuria):** 18 patients (30.0%) were affected from Sarudhir Mootrata. After the trial, the situation improved, with 51 patients (85.0%) showing no symptoms, and only 9 patients (15.0%) remaining affected. This change was **statistically significant**, with a chi-square value of 3.87 and a p-value of 0.049. *Dhavana* (pain during running), *Plavana* (pain during swimming), *Langhana* (pain during crossing),

Pristhayana (pain during riding), *Adhvagamana Vedana* (pain during walking): 40 patients (66.7%) experienced pain. Following the trial, the situation drastically changed, with 59 patients (98.3%) now free from symptoms and only 1 patient (1.7%) still reporting pain. This substantial reduction in symptoms was **statistically significant**, as indicated by a chi-square value of 56.4 and a p-value of <0.001. **Increased frequency of micturition:** 35 patients (58.3%) reported such symptoms. After the trial, the situation **improved markedly**, with 48 patients (80.0%) now reporting an absence of increased frequency, and only 12 patients (20.0%) still experiencing this issue. The analysis showed a **statistically significant** difference, with a chi-square value of 18.5 and a p-value of<0.001. This is happening because of Shunthyadi Kwatha mainly effects on symptoms through its Ashmaribhedana, Lekhana, mootrala, shoolaprashamana, and Mootrakrichchhahara properties, which subside the symptoms.

Nausea and vomiting: 5 patients (8.3%) experienced these symptoms. Following the trial, the number of patients without nausea and vomiting increased to 59 (98.3%), with only 1 patient (1.7%) still affected. The statistical analysis indicated **no significant** difference, with a chi-square value of 2.81 and a p-value of 0.093. There is no any role of Shunthyadi Kwatha in nausea and vomiting.

Symptoms of Ashmari according to Dosha
Regarding symptoms of Vaataja Ashmari: **Atyartha Peeda** was found in 80% patients. Following the trial, every patients —60 patients (100.0%)—was free of severe pain. The statistical analysis revealed a **highly significant** difference, with a chi-square value of 80.0 and a p-value of <0.001. **Danta Khadana (grinding teeth due to pain)** was found in 53.3% patients. Following the trial, every patients —60 patients (100.0%)—was free of Danta Khadana. The analysis revealed a chi-square value of 43.6 and a p-value of <0.001, indicating a **highly significant**. **Nabhi peeda (navel pain)** was found in 78.3% patients. After the trial, 98.3% no longer reported any nabhi peeda, with only 1 patient (1.7%) still experiencing symptoms. The chi-square value of 73.5 and a p-value of <0.001 indicate a **highly significant** reduction in nabhi peeda. **Vishardhita (passes flatus with sound)** 11 patients (18.3%) were experiencing Vishardhita. After the trial, the results indicated a marked change, with 58 patients (96.7%) now reporting an absence of symptoms, leaving only 2 patients (3.3%) still affected. The chi-square value of 6.99 and a p-value of 0.008 indicate a **significant** reduction in Vishardhita. **Vaata-Mootra and Pureeshena Krichchhrena Nirharana** was found in 80% patients. After the trial, there was a remarkable improvement, with 51 patients (85.0%) no longer facing these issues, leaving only 9 patients (15.0%) still affected. The chi-square value of 50.8 and a p-value of <0.001 indicate that the intervention had a **statistically significant**.

Regarding symptoms of Pittaja Ashmari: Chooshyata (pulled bladder) was found in 4 patients (6.7%) experienced the condition. Following the trial, all 60 patients (100.0%) were free from symptoms of chooshyata. The chi-square value of 4.14 and a p-value of 0.042 indicate that the intervention had a **statistically significant**. **Dahyata (burning at bladder)** 24 patients (40.0%) indicated its presence. After the intervention, 58 patients (96.7%) were free from symptoms of dahyata, with only 2 patients (3.3%) still experiencing the condition. The chi-square value of 23.8 and a p-value of <0.001 indicate a **highly significant**. **Ushna Vata (burning micturition)** 47 patients (78.3%) indicated its presence. After the trial, the situation improved significantly, with 49 patients (81.7%) now reporting the absence of ushna vata, and only 11 patients (18.3%) still experiencing it. The chi-square value of 43.2 and a p-value of <0.001 highlight a **statistically significant.**

Regarding symptoms of Kaphaja Ashmari: Bhedana (a punctured pain) 34 patients (56.7%) indicated its presence. Following the intervention, there was a remarkable improvement, with 58 patients (96.7%) now reporting the absence of bhedana, and only 2 patients (3.3%) still experiencing it. The chi-square value of 40.6 and a p-value of <0.001 indicate a **statistically significant. Nistoda (pricking pain)** 37 patients (61.7%) indicated its presence. After the trial 58 patients (96.7%) now reporting the absence of Nistoda and only 2 patients (3.3%) continuing to experience it. The chi-square value of 46.5 and a p-value of <0.001 signify a **highly significant. Basti Sheetata** 5 patients (8.3%) noted its presence. Following the intervention, the results improved, with 59 patients (98.3%) indicating the absence of basti sheetata and only 1 patient (1.7%) remaining affected. However, the chi-square value of 2.81 and a p-value of 0.094 suggest that this change did **not reach statistical significance**. **Basti Guruta** 39 patients (65.0%) indicated its presence. After the intervention, a remarkable change was observed, with 58 patients (96.7%) now reporting the absence of basti guruta, and only 2 patients (3.3%) still affected. The chi-square value of 50.7 and a p-value of <0.001 indicate that this change is **statistically significant**. **Daalana (tearing pain)** 19 patients (31.7%) indicated its presence. After the trial, the results were striking, with 57 patients (95.0%) now reporting the absence of daalana and only 3 patients (5.0%) still affected. The chi-square value of 14.2 and a p-value of <0.001 demonstrate that this change is **statistically significant**.

While all three Doshas were shown to be involved, the findings also show that Vaata Dosha predominates in more patients than the other Doshas and is thought to be the cause of pain.

Chronicity: 48.3% of patients were suffering from Mootra-Ashmari above 12 months duration, followed by 26.7% of patients having 0-6 months chronicity, while 15 patients (25.0%) reported a duration of 6 to 12 months.

The size and site of the disease determine its symptoms, which arise episodically and are temporarily eased by medicine. Thus, the condition always progresses toward chronicity.

Discussion on Shunthyadi Kwatha & probable mode of Action
The primary cause of Ashmari is the accumulation of Kapha Pradhana Doshas in Mootravaha Srotasa as a result of the Agnimandya and Aama formation. Afterwards, Aama causes Srotovarodha, especially Mootravahasrotas. Ashmari is then caused by vitiated Kapha alone or in combination with Vatta and Pitta. Ashmari might thus result from a diet and way of life that increases Kapha. Excessive intake of Guru, Sheeta, Snigdha, Madhura Aahara, daytime sleeping patterns, and furthermore can raise Kapha and cause Ashmari to develop. Therefore, the drug used to cure Ashmari, such as Samprapti Vighatana, should have the ability to stop the process and treat the pathology that leads to Ashmari creation.

Most of the ingredients of *Shunthyadi Kwatha* have *Kaphavatashamaka,* Shothaghna, Ashmaribhedana, Shoolnashaka, Mootrala, Agnideepaka, Pachaka, so it should act on Samprapti Vighatana of Ashmari. According to 'Bhaisajya Ratnavali' the content of Shunthyadi Kwatha is Shunthi, Agnimantha, Pashanbheda, Shigru, Varuna, Gokshuru, Gambhari, Aaragvadha fruit pulp with Prakshepa Dravya- Hingu churna, Yavakshara, Saindhava Lavana. In this study, selection of Shunthyadi Kwatha is done on the basis of the fact that these Ayurvedic herbo-mineral preparations acts on the root cause of disease, due to its Katu Rasa, Ushna Veerya, properties act as **Shothaghna, Shoolaghna, Ashmaribhedana, Chhedana.** By virtue of these properties, they may act as **"Ashmaghna"** due to Lekhana (Scraping) Karma and stop the further growth of the stones by blocking the main etiological factor i.e. Kapha Dosha. Some drugs are having Madhur Rasa, Sheeta Veerya and hence they act as **'Mootrala'**. It helps in dissolution of Ashmari by Laghu Ruksha Guna and Vaata-Kapha Shamaka property.

Prakshepa Dravya: *Yava Kshara* has Lekhana and Chhedana properties, *Saindhav Lavana* has Kapha Vilayana, Kapha Chhedana, which helps in dissolution of Ashmari. Hingu has Kapha Vatashamaka, Chhedaniya, Deepaneeya, Anulomana, Pachana properties, which helps in pain relief, dissolution of Ashmari, enhanced Apana Vayu function helps in the removal of stones from the sites by urine flow. *Yava Kshara* has alkaline PH, which neutralize acidic media and prevent stone formation.

Therefore, in total the compound may acts as **'Ashmaribhedana'** as well as **'Mootrala'** and thus it may reduce the size of stone and may flush it out during the process of micturition.

CONCLUSION

❖ Regarding sign & symptoms of *Mootra-Ashmari, Shunthyadi Kwatha* showed significant results in *Vedana, Mootradaha, Sarudhira Mootrata, Sashoola Mootrata, Mootradhara Sanga, Gomeda Prakasham, Dhavana, Plavana, Langhana, Pristhayana, Adhvagamana,* and increased frequency of micturition where as insignificant results in nausea and vomiting were observed. It indicates effectiveness of *Shunthyadi Kwatha* in improving symptoms of *Mootra-Ashmari* due to its *Shoolaprashamana, Bastishodhana, Paachana,* and *Mootrala Karma.*

❖ Regarding symptoms of *Vataja, Pittaja, Kaphaja Ashmari Shunthyadi Kwatha* showed significant results in *Atyarth Peeda, Danta Khadana, Nabhi Peeda, Vishardhita, Vata-Mootra-Pureeshena Krichchhrena Nirharana, Chooshyata, Dahyata,Ushna Vata, Nistoda, Basti Guruta* and *Dalana.* where as insignificant results in *Basti Sheetata* were observed.

❖ Regarding size of stones, expulsion rate is better in small sized stones and decrease in size is better in larger sized stones, This suggests that *Shunthyadi Kwatha* helps in expulsion of stones by *Mootrala* and *Bastishodhana Karma,* as well as in the breaking down of stones through the actions of *Ashmaribhedana Karma*, which in turn causes the expulsion of small stones through the influence of Mootrala.

❖ The overall evaluation of the data indicates that *Shunthyadi Kwatha* showed a marked to moderate improvement rate. This was associated to the physiology of *Mootravaha Srotasa* being improved by the correction of *Agni, Aama Pachana, Bastishodhana, Mootrala Karma, Ashmaribhedana Shoolaprashamana, Kapha Chhedana, Kapha Vilayana, and Anulomana*, as well as the contents of *Shunthyadi Kwatha*, which included *Shunthi, Agnimantha, Pashanbheda, Shigru, Varuna, Gokshuru, Gambhari, Aaragvadha* fruit pulp with *Prakshepa Dravya of Yava Kshara, Hingu, and Saindhava Lavana.*

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