

# A Comparative Clinical Study To Evaluate The Efficacy Of Avapeedaka Snehapana In Fixed And Increasing Dose With Trinapanchamoola Ghrita In Mootrashmari (Urolithiasis)

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Submitted: 10-01-2024

Accepted: 20-01-2024

## ABSTRACT

Mutrashmari is one of the most common conditions of Mutravahasrotas in which stone is formed in urinary tract. The word Ashmari in Sanskrit denotes the stone or calculi and Mutra means urine. Mutrashmari is a dreadful condition and has potential to disturb the anatomy and physiology of the urinary system. Once it is formed in the body it tends to have recurrence thus get difficult to cure. Hence it is included under Ashtamahagada. In modern medical system it is correlated with urinary calculi or Urolithiasis based on their signs and symptoms. Factors such as diet, water, climate, geographical conditions are also play a major role in causing Mutrashmari.

Ayurveda basically aims at prevention of formation of Mutrahmari along with expulsion of existing calculi. In Ayurveda texts administration of oral medication in different forms such as Ghrita, Kshara, Kashaya and other Shamanousadhi, ShodhanaKarma and ShastraKarma are emphasized for management of Mutrashmari. Snehapana is the basic principle in the management which is to be adopted in primary stage of Mutrashmari. In the present study TrinapanchamoolaGhrita having properties such as Ashmaribhedana, AshmariPatana and Mutrala activities has been taken up as indicated in Vangasena for Ashmari.

**KEY WORDS:** Mutrashmari, Snehana, AvapeedakaSnehapana, urolithiasis.

## I. INTRODUCTION

Purusha is made up of Sneha Sara(essence). Sneha is responsible for holding Prana(life). Hence, Snehana plays major role in treating majority of the diseases. Among all the varieties of Snehanapana, AvapeedakaSnehanais a special type of Snehapana which is administered in Yojana Dwayapatternin Uttama Matra<sup>1</sup>. AvapeedakaSnehanais a procedure in which Sneha is consumed before food and after digestion

of food. This treatment modality is specially indicated in AdhonabhigataVikaras, Mootravegaavarodhajanya Vikaras<sup>2</sup>.

Mutrashmari is one of the most common disorders of MutravahaSrotas, having Lakshanas like Mahati Vedana, SarudhiraMutrata, Vedana in Nabhi, Basti Pradesha, Mootradhara Sanga, Mutradaha and Mutrakrichra<sup>3</sup>. In contemporary medicine, Mutrashmari can be corelated with Urolithiasis. Treatment modalities are flush therapy when stone is up to 5mm size; in larger stones-surgery<sup>4</sup>. However, it is better to opt for medical management before going for surgical intervention. Snehapana is considered as the first line of management in Mutrashmari<sup>5</sup>. Hence AvapeedakaSnehanain fixed and in increasing dose with TrinapanchamooladiGhrita<sup>6</sup> was opted in the present study.

## II. MATERIALS AND METHODS

### SOURCE OF DATA

Subjects were selected randomly from the OPD and IPD of Government Ayurveda College and Hospital, Mysore and Hitech Panchakarma Hospital, Mysore who fulfilled the inclusion criteria of the study irrespective of their sex, religion etc.

### SOURCE OF THE DRUG

Formulation TrinapanchamooladiGhrita mentioned in Vangasena, manufactured by S.N. Pandit and son's Co. Pvt. Ltd, Mysuru, (a GMP certified pharmacy) was procured for the purpose of study.

### DIAGNOSTIC CRITERIA

Diagnosis was made on the basis of ultrasonography and CT of Kidney, Ureter, Bladder (KUB) and signs and symptoms of Mutrashmari - Shula(pain) in NabhiandBastiPradesha, Mutradaha (burning micturition), Mutrakruchra (dysuria), SarudhiraMutrata (urine mixed with blood).

### INCLUSIVE CRITERIA

1. Subjects who fulfilled the diagnostic criteria.
2. Subjects of 18-50 years of age group irrespective of gender, caste, religion were included.
3. Subjects with or without clinical features of Mutrashmari diagnosed with presence of urinary calculi (solitary or multiple) by radiological investigation measuring up to 5mm anywhere in (KUB) kidney, ureter, and bladder were included in the study.

### EXCLUSIVE CRITERIA

1. Subjects unfit for Snehapana.
2. Subjects having obstructive urolithiasis, urethral stricture, CA ureter, Renal failure, Severe hydronephrosis, acute urinary tract infection, retention of urine due to any other Pathology.
3. Subjects with other systemic illness which interfere with intervention.
4. Pregnant and lactating women.

### STUDY DESIGN

A comparative Clinical study with pre and post-test design.

### PLAN OF STUDY

#### A. Sample size & Grouping:

40 subjects were randomly divided into 2 groups, A & B with 20 subjects in each group. For Group A AvapeedakaSnehapana was given in fixed dose and for group B it was in increasing dose.

#### B. Sampling method

Purposive sampling method was followed.

#### Study duration

The study duration was 15 days

### INTERVENTION-

#### AVAPEEDA SNEHAPANA

#### PURVAKARMA:

Deepana Pachana - Chitrakadi Vati 250mg before food three times a day with SukhoshnaJala till attainment of NiramaLakshanas.

Dose assessment -

### SUBJECTIVE PARAMETERS-

#### 1. Shula:

- Snehapana was started with Hrisiyasi Matra of 30ml for both groups to know the Agni and Koshta.
- Time taken for digestion of Hrisiyasi Matra was noted.
- On the basis of the above data, Uttama MatraSneha was calculated

### PRADHANA KARMA:

- On the next morning, in KshudhitaAvastha and AnannaKala, after ascertaining the JeernaharaLakshanasSneha was administered.
- The calculated UttamaMatra of TrinapanchamoolaGritha was divided in to two doses. 1/4<sup>th</sup> dose (Hrisva Matra) was given as PragbhaktaSneha. After attainingSnehaJeernaLakshana, LaghuBhojana(ganji, khichadi) was given. After the digestion of this food, the remaining dose, i.e 3/4<sup>th</sup> (Uttama Matra) was given as Ahara JeernantikaSneha
- Anupana- UshnaJalapana was advised throughout the procedure.

### Group – A (Fixed dose)

- The fixed dosage of Uttamamatra was repeated for the consequent days till AdhasthaSnehaDarshana/Snehodwega/shamanaoflakshanas (Shula, Mutradaha, Mutrakrichra, Saraktamutrata)

### Group –B (Increasing dose)

- Uttama Matra (24hrs) Sneha was calculated everyday based on time taken for digestion of previous day Sneha and was administered in increasing dose up to AdhasthaSnehaDarshana / Snehodwega / shamanaoflakshanas (Shula, Mutradaha, Mutrakrichra, Saraktamutrata)

### PASCHATA KARMA:

PeyadiSamsarjana Krama was advised for 2-3 days.

### ASSESSMENT CRITERIA

In the present study the assessment was carried out in the following schedule:

1. Pre-test assessment was done on 0 day before the commencement of intervention.
2. Post test assessment was done on 15<sup>th</sup> day after the completion of intervention.

**table no.1: grading of the Shula in Basti / Nabhi Pradesha**

Grade	Symptoms
0	No Pain in Basti / Nabhi Pradesha
1	Mild Pain (Occasionally present in Basti / Nabhi Pradesha but not disturb day to day activities)
2	Moderate Pain (Present in Basti / Nabhi Pradesha and disturb day to day activity)
3	Severe Pain (Present in both Basti and Nabhi Pradesha)

**2. Saraktamutrata(Haematuria):**

**table no.2: grading of Saraktamutrata**

Grade	Symptoms
0	No symptoms
1	Mild (presence of 1-9 RBC in urine)
2	Moderate (presence of 10-20 RBC in urine)
3	Severe (presence of more than 20 RBC in urine)

**3. Mutradaha:**

**table no.3: grading of Mutradaha**

Grade	Symptoms
0	No symptoms
1	Mild (burning sensation during urination)
2	Moderate (frequent burning sensation during urination more than 50%)
3	Severe (continuous burning sensation during urination)

**4. Mutrakrichrata:**

**table no.4: grading of Mutrakrichrata**

Grade	Symptoms
0	No symptoms
1	Mild (pain during urination)
2	Moderate (frequent pain during urination more than 50%)
3	Severe (continuous pain during urination)

**5. Mutradharasanga**

**table no.5: grading of Mutradharasanga**

Grade	Symptoms
0	No symptoms
1	Mild (occasionally obstructed flow of urine during urination)
2	Moderate (frequent obstructed flow of urine during urination more than 50%)
3	Severe (continuous obstructed flow of urine during urination)

**OBJECTIVE PARAMETERS:  
 According To Sonological Findings-**

**table no.6: scoring of the number of stones**

Score	No. Of Stones
1	Single
2	Double
3	Multiple

**table no.7: scoring of the size of stone**

Score	Size of stone
1	less than 5mm
2	5mm
3	More than 5mm

**table no.8: scoring of the site of stone**

Score	Site of stone
1	Renal
2	Ureter
3	Bladder
4	Renal + ureter

**OVERALL ASSESSEMENT OF CLINICAL IMPROVEMENT:**

The sum of the point of all the parameters of assessment before, after treatment was taken into consideration to assess the total effect of the treatment as follows: -

**table no.9: overall assessment**

Marked improvement	> 75%
Moderate Improvement	50-75%
Mild improvement	25-50%
No improvement	< 25%

The Results were analyzed statistically by using, Paired “t” test, ANOVA Repeated measures as inferential statistics and mean, standard deviation as Descriptive statistics using SPSS for windows software.

**OBSERVATIONS**

In the present study it was observed that Mutrashmariwas common in the age group of 20-50 years, males(57.5%) were more affected than females(42.5%), it was mostly observed in people who were more exposed to sunlight(77.5%) and those who had a habit of holding the urge to micturate, incidence was more in middleclass population(85%) and was more in people with mixed diet habits(82.5%).Pain (52.5%) and

Mutradaha(45%) were the most predominant symptoms observed in the study and other symptoms such as Mutrakrichra(37.5%), Saraktamutrata(2.5%) and Mutradharasanga(22.5%) were observed in very less proportion of the study population.

In the present study, majority of subjects had calculi ranging between 5mm in diameter and single in number.

**III. RESULTS**

10 subjects in Group A and 11 subjects in Group B were presented with different grades of pain where both the groups showed statistically significant result on pain with P value 0.004 and 0.002

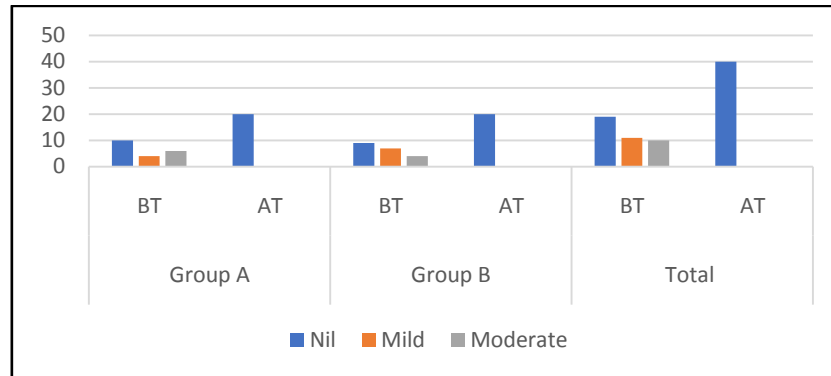


figure n0.1: results on Shulain the subjects of Mutrashmari

In Group A, 9 subjects had Mutradahawhere as in Group B, 9 subjects were presented with Mutradahaand the results were statistically significance with P value 0.003

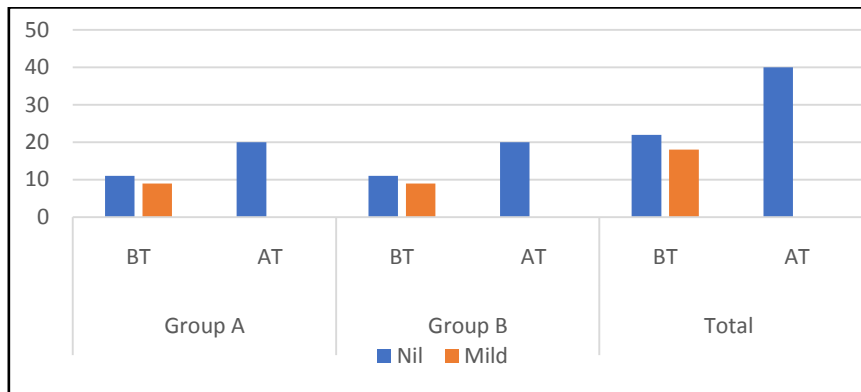


figure n0.2: results on Mutradahain the subjects of Mutrashmari

1 subject had mild Saraktamutrata in GroupB, the result was clinically significant but statistically nonsignificant. No subject in Group A presented with Saraktamutrata.

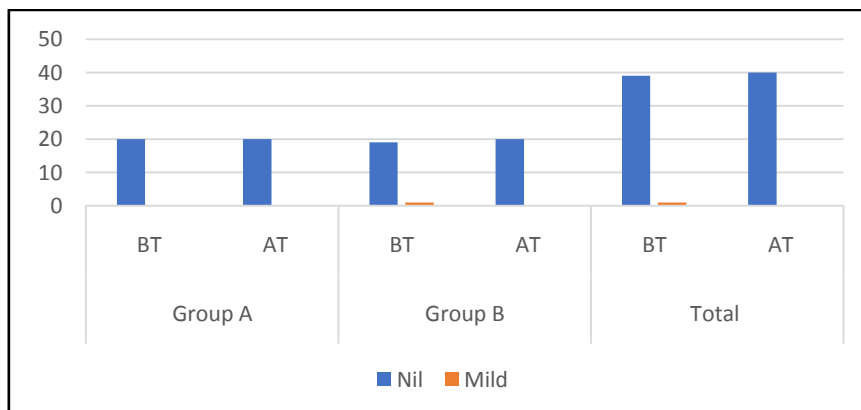


figure n0.3: results on SaraktaMutrata in the subjects of Mutrashmari

9 subjects in Group A and 6 subject in Group B were presented with mild and moderate degree of Mutrakrichra, the results were statistically significant with the P value 0.005 and 0.020 respectively.

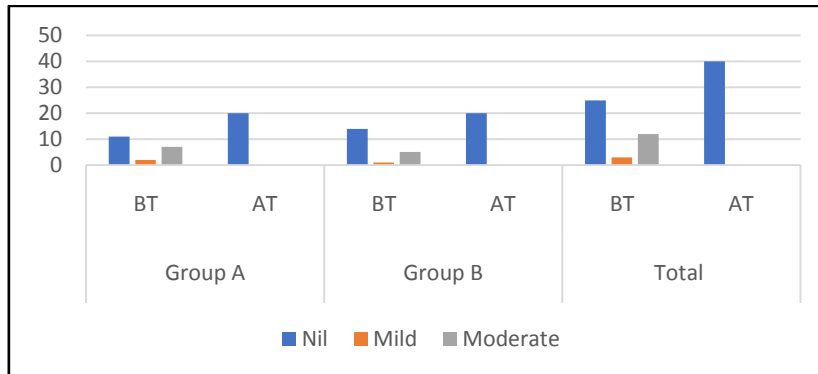


figure n0.4: results on Mutrakrichrain the subjects of Mutrashmari

4 subjects in Group A and 5 subject in Group B were presented with mild degree of Mutradharasanga, the results were statistically significant with the P value 0.46 and 0.025 respectively.

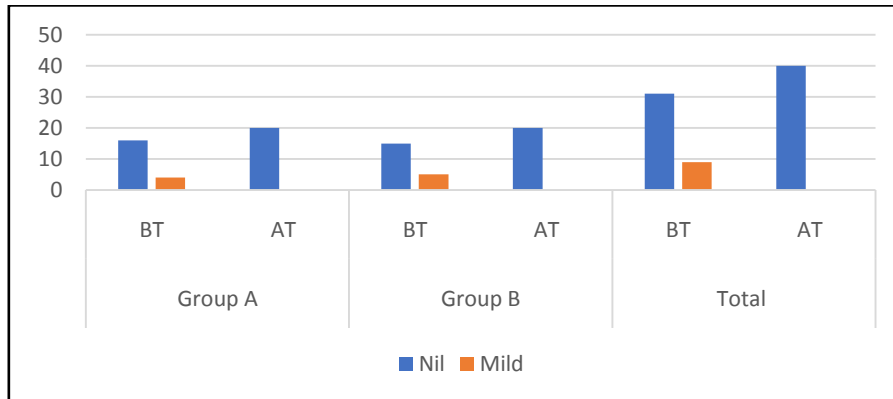


figure n0.5: results on MutradharaSangain the subjects of Mutrashmari

**Result on objective parameters**

**Number of stones:**

In Group A, before intervention, 10(50%) subjects had single calculus, 5(25%) subjects had double calculi, and 5(25%) subjects had multiple calculi. After intervention 7(35%) subjects had single calculus and 1(5%) subject had double calculi and 12(60%) subjects had no calculi. Group A showed statistically highly significant with p value of 0.000.

In Group B, before intervention, 14(70%) subjects had single calculus, 2(10%) subjects had double calculi, and 4(20%) subjects had multiple calculi. After intervention 9(45%) subjects had single calculus and 11(55%) subjects had no calculi. Group B showed statistically highly significant with p value of 0.000.

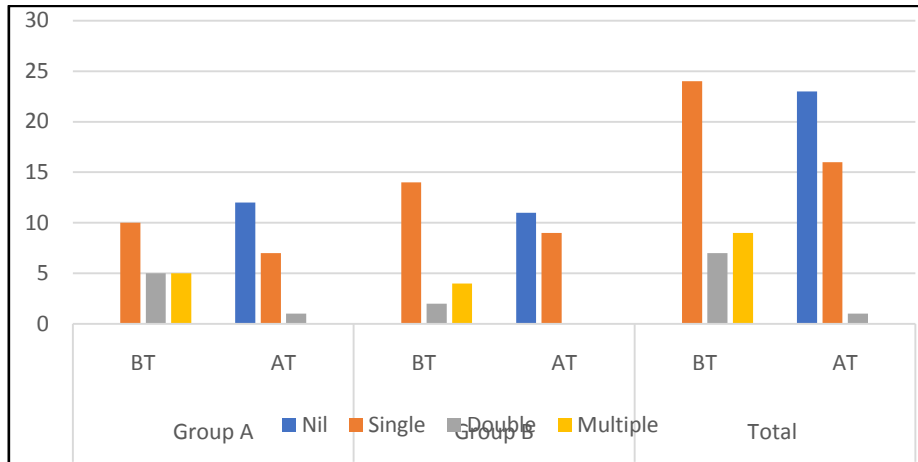


figure n0.6: result on the number of stones

**Size of stones:**

In Group A, before intervention, 11(55%) subjects were detected with size of calculi < 5mm, 9(45%) subjects with size of calculi 5mm were detected. After intervention, in 12(60%) subjects there was no calculi detected, whereas 7(35%) subjects with the calculi of size < 5mm and 1(5%) subject with 5mm calculi. Group A showed highly significance with p value of 0.000.

In Group B, before intervention, 2(10%) subjects were detected with size of calculi < 5mm, 14(70%) subjects with 5mm, and 4(20%) subjects were detected with >5mm calculi. After intervention, in 11(55%) subjects there was no calculi detected, whereas 6(30%) subjects with the calculi of size < 5mm and 3(15%) subjects with 5mm calculi. Group B showed highly significance with p value of 0.000.

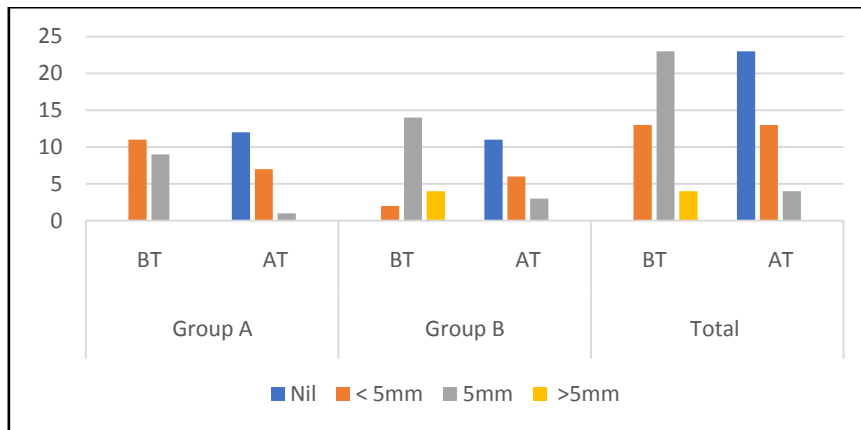


figure n0.7: result on the size of stones

**Site of stones:**

In Group A, before intervention, 17(85%) subjects had stone in kidneys, 1(5%) subject was diagnosed to have ureteric calculi and 2(10%) subject had stone in both kidney and ureter. After intervention, in 12(60%) subjects calculi were expelled, 5(25%) subjects had calculi in kidney and 3(15%) subjects had in ureter. Group A was statistically significant with p value of 0.001.

In Group B, before intervention, 16(80%) subjects had stone in kidneys, 1(5%) subject was diagnosed to have ureteric calculi, 1(5%) subject bladder calculi, and 2(10%) subject had stone in both kidney and ureter. After intervention, in 11(55%) subjects calculi were expelled, 5(25%) subjects had calculi in kidney and 4(20%) subjects had in ureter. Group B was statistically significant with p value of 0.014.

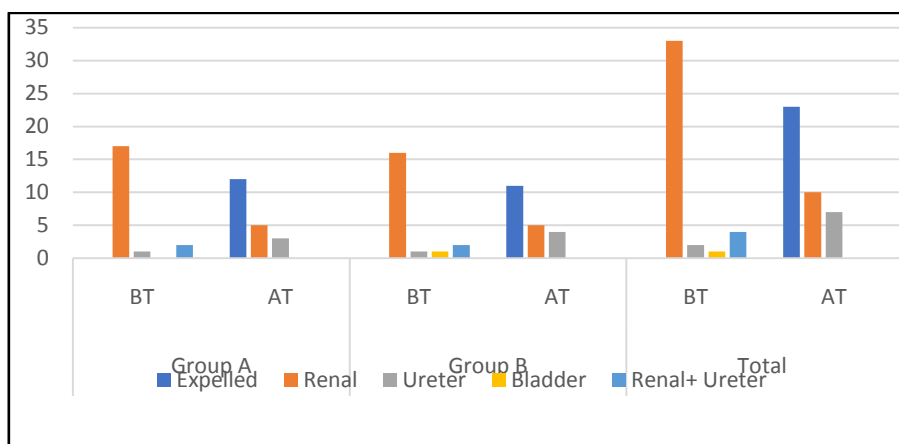


figure n0.8: result on the site of stones

#### IV. DISCUSSION:

##### Procedural effect,

- AvapeedakaSnehapana is administered in 2 kala at a stretch i.e., Pragbhakta (before food) in Hrusvamatra and AharaJeernanthaavastha (after the digestion of food) in Uttamamatra respectively.
- As Ashmari is one among MutravegavarodhajanyaVikara and it is KaphajaVikara associated with Apana and VyanaVataDushti.
- PragbhaktaSneha does Anulomana of Apanavayu and Shamana of ApanaVata
- AharaJeernanthaSneha act on the VyanaVata which is SarvaDehachari and does the Shamana of Vyadhi. After Aharapaka, Vataadhikya occurs naturally and the second dose of Sneha will mitigate this Vata.

##### Drug effect,

- TrinapanchamoolaGhrita having Madhura, Kashay Rasa Pradhana, Laghu Snigdha Guna,

Sheeta Veerya, Madhura Vipaka and Tridosahara. It aids, Ashmarighna, Mutrala, Mutavirechaniya and Basti Shodhana properties.

- Madhura and Kashaya Rasa having Aap and Prithvi Mahabhuta predominant, which helps the calculus to move downwards due to heaviness of Prithvi and downward moving tendency of Aap.
- SnigdhaGuna and MadhuraVipaka increases the urine output and helps in easy passing of stone
- Mutrala and Mutravirechaniya properties of the drugs causing increased urinary output and are considered to be the best diuretics which helps in flushing out the disintegrated calculi.
- Ashmarighna property break the formed stones, expel it from the body.
- BastiShodhana property prevents formation of stones and thereby reduces the chance of recurrence.

table no.10: phytoconstituents and its action

Drug	Phytoconstituent	Action
Kusha	Flavanoid, Cylindrin, Glycosides	Diuretic, Anti-inflammatory, Anti-urolithiatic, Analgesic,
Kasha	Tannin, Galactose, Rhamnose	Anti-lithiatic activity
Nala	Rhamnose, Bufotenine, Tryptamine, rhyzomes	Diuretic, Anti-inflammatory, Anti-spasmodic effect, Hypotensive
Darbha	Cylindrin, arundoin, fernenon	Diuretic, Anti-inflammatory
Kandekshu	Sucrose, Glutamine, Riboflavin	Diuretic, Analgesic activity, Anti-inflammatory
Gokshura	Furosemide, Campesterol, Rhamnose, Beta-sitosterol, Stigmasterol	Diuretic, Anti-urolithic activity, Analgesic, Anti-inflammatory, Anti-spasmodic



## V. CONCLUSION:

In the present study, statistically there is no significant difference between the groups with p value 0.000. Group A showed complete remission in 12 subjects and marked improvement in 7 subjects and moderate improvement in 1 subject whereas Group B showed complete remission in 11 subjects, marked improvement in 6 subjects and moderate improvement in 1 subject. From the above data it can be concluded that, both the groups are equally effective in reducing the size of stones and relieving the symptoms. Till date there is no recurrence of Mutrashmari or symptoms of Mutrashmari are observed in the subjects involved in the study. With the obtained result it can be concluded that AvapeedakaSnehapana with TrinapanchamooladiGhrita can be administered safely and effectively in the management of Mutrashmari.

Ashmariroga Adhikara 52-54<sup>th</sup> verse, Pg No.477.

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