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A Randomised Controlled Clinical Study to Evaluate the Efficacy of *Meshashringadi Kashaya* in *Gridhrasi* w.s.r. to Sciatica

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ABSTRACT

Background: *Gridhrasi* is one among the 80 types of *Naanatmaja Vatavyadhi*. *Lakshanas* of *Gridhrasi* are *Stambha, Ruk, Toda* in *Sphik, Kati, Prushtha, Uru, Jaanu, Jangha, Paada* i.e. radiating pain from hip or gluteal region to either to thigh, knee, calf or till to the region of foot. The *Lakshanas* mentioned in *Gridhrasi* are similar to as that of *Sciatica*.

Sciatica is a crippling disease, in which the patient experiences shooting pain and paraesthesia along the course of the sciatic nerve roots which are involved.

This clinical study has been opted, to find out the therapeutic efficacy of *Meshashringadi Kashaya* in comparison with the efficacy of *Sahacharadi Kashaya* in case of *Gridhrasi*, as per the references available in ayurvedic classical literatures.

Materials and Methods: A randomised controlled clinical study was conducted among 60 subjects, they were randomly allocated into two equal groups, Group A and Group B. Group A subjects received *Meshashringadi Kashaya* and Group B subjects received *Sahacharadi Kashaya*. The effect of these interventions were assessed through the grading scales of Subjective and Objective parameters.

Result: The statistical analysis within the group has shown a highly statistical significant results with $P < 0.001$ for all parameters in both the groups, i.e. in Group A and in Group B. On statistical comparison between the two groups, it was found that there is no statistical significant difference between the therapeutic effect of *Meshashringadi Kashaya* and *Sahacharadi Kashaya* in case of *Gridhrasi*.

Key Words *Gridhrasi, Sciatica, Meshashringadi Kashaya, Sahacharadi Kashaya, Eranda Taila*

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INTRODUCTION

In this present era, especially in developing countries, due to the advancement of busy, professional and social life, people are changing their life style either directly or indirectly by over

exertion, heavy weight lifting, sitting-standing-sleeping in an improper posture, or by experiencing the jerky movements during travelling, sports or trauma; which are making

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them to prone for getting affected by several disorders mainly related to locomotor system.

Gridhrasi is a *Nanatmaja Vata Vyadhi*. It is of two types that is *Vataja* and *Vata-Kaphaja Gridhrasi*¹. *Vataja Gridhrasi* is characterized by *Stambha* (Stiffness), *Toda* (Pricking pain), *Spandana* (Twitching or Trembling Sensation) and *Ruk* (Severe pain) from *Sphik Pradesha* (Gluteal region), radiates down to the *Kati* (Pelvic), *Prushtha* (back), *Uru* (Thigh), *Jaanu* (Knee), *Jangha* (Calf), *Paada* (Foot) and *Vata-Kaphaja Gridhrasi*¹ presents with *Tandra*, *Gaurava* and *Aruchi* in addition.

As per the characteristic of pain, *Gridhrasi* can be correlated to an ailment called Sciatica. It is a debilitating condition, clinically presented with excruciating/shooting pain in the distribution of the sciatic nerve or its component nerve roots. The pain is often worsened with flexion-twisting-bending of lumbar spine.

Involvement of *Kandara* in the manifestation of *Gridhrasi* has been emphasised by *Acharya Sushruta*² and *Vagbhata*³. *Acharya Dalhana* explains *Kandara* as *Mahasnayu*⁴. *Acharya Chakrapani* mentions that *Kandara* may also be considered as *Sthula Snayu*⁵. '*Sakthikshepanigrahanat*'² is the cardinal diagnostic feature of *Gridhrasi*, this we can correlate to SLR Test.

In developing countries, low back pain is the most common cause of inability to work. In general an estimated 5% -10% of patients with low back pain have sciatica, whereas the reported lifetime prevalence of low back pain ranges from

49% to 70%. The annual prevalence of disc related sciatica in the general population is estimated at 2.2%⁶.

Hence, an effort is made in this study to compare and evaluate the therapeutic efficacy of 50ml of *Meshashringadi Kashaya* in Group A and 50ml of *Sahacharadi Kashaya* in Group B along with 10 drops of *Eranda Taila* as *Sahapana* per day for both of the *Kashaya* formulations.

AIM

To evaluate the therapeutic effect of *Meshashringadi Kashaya* in *Gridhrasi*.

OBJECTIVE OF THE STUDY

To compare the therapeutic effect of *Meshashringadi Kashaya* and *Sahacharadi Kashaya* in *Gridhrasi*.

MATERIALS AND METHODS

- **Institutional Clinical Ethical Committee Approval Number: ICEC/AAMC//AS/15, Date: 24/07/2021**
- **CTRI REG. NUMBER: CTRI/2022/07/043874 [Registered on: 08/07/2022]**
- a) **Selection of the patient:**
 - Selection of patients was done irrespective of gender, religion, occupation, marital status, socio-economic status and educational status, fulfilling the diagnostic, inclusion and exclusion criteria of *Gridhrasi*.
 - Data were collected using a separate case proforma prepared with the details of history

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taking, physical examination, necessary investigations and parameters of signs and symptoms were scored on the basis of standard method and which were analysed statistically.

b) Sample size and Grouping: A minimum of 60 patients were randomly divided into two groups; Group A and Group B comprising minimum of 30 patients in each group.

c) Study design: Parallel Group - Randomised controlled clinical study.

d) Blinding: Single Blind

e) Sampling method: Lottery method

❖ **Diagnostic criteria:**

1. Patients with *Lakshana* of *Gridhrasi* characterized by radiating pain from *Sphik* and *Kati* to *Prushtha*, *Uru*, *Jaanu*, *Jangha* and *Paada* along with or without the presence of *Stambha*, *Toda*, *Tandra*, *Gourava* and *Aruchi*.

2. Positive SLR Test.

❖ **Inclusion Criteria:**

- Patients of age group between 18-60 years of either gender.

- Patients fulfilling the diagnostic criteria.

❖ **Exclusion Criteria:**

- Congenital, Infective and Neoplastic Conditions of Spine.

- Patients who have lost the control over micturition and defecation.

- Sciatica associated with Diabetic neuropathy.

- Sciatica developed due to any post-surgical complications.

- Patients with any other systemic disorders which interferes the treatment.

- Pregnant women and Lactating mothers.

❖ **Intervention:**

Group A: Patients were administered orally with *Meshashringadi Kashaya* 50ml per day, before food along with 10 drops of *Eranda taila* as *Sahapana* for 30 days.

Group B: Patients were administered orally with *Sahacharadi Kashaya* 50ml per day, before food along with 10 drops of *Eranda taila* as *Sahapana* for 30 days.

❖ **Observational period:**

Treatment period: 30 days

Follow up: 7 days after completing the course of treatment i.e. 38th day

Total study duration: 37 days (30+7)

Days of assessment: Observation was done-at baseline on zero day (Before Treatment), on 16th day (During Treatment), 31st day (After Treatment) and follow up on 38th day (After Follow-Up).

❖ **Assessment Criteria:**

Assessment of the condition was done based on detailed case proforma adopting standard scoring methods of subjective and objective parameters.

1. **Subjective Parameters:**

Ruk, *Toda*, *Stambha*, *Tandra*, *Gourava*, *Aruchi* and VAS score; grading's of these subjective parameters have been mentioned in table number 1.

2. **Objective Parameters:**

a) **SLR test:** This was observed and assessed by mentioning the degree.

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Table 1 Grading's of Subjective Parameters

PARAMETERS	GRADE 0	GRADE 1	GRADE 2	GRADE 3	GRADE 4
RUK "Ruk Shoolam" [Hemadri-Ayu.Ras.-A.H Su 12/49]	No Pain	Painful, walks without limping	Painful, walks with limping but without support	Painful, can only walk with support	Painful, unable to walk
STAMBHA "Stambha Nishkriyatwam" [Arunadatta-Sarv.sund- A.H Su 12/50]	No stiffness	Mild, occasionally, lasting for <1 hr, not interfering with ADL	Moderate, occasionally, lasting for >1 hr, interfering with ADL	Moderate, often lasting for >2 hrs, interfering with ADL	Severe, often lasting for >3 hrs, interfering with ADL
TODA "Toda Vicchinna Shoolam" [Arunadatta-Sarv.sund.- A.H Su 12/49]	No pricking sensation	Occasionally pricking, lasting for <1 hr, not interfering with ADL	Mild pricking, lasting for >1 hr, interfering with ADL	Moderate pricking, lasting for >2 hrs, interfering with ADL	Severe pricking, lasting for >3 hrs, interfering with ADL
TANDRA "Tandra Aalasyam " (Dalhana, Ni.S - Su.Sam.Sutra 4/55)	Nil	Lasting for >2 hrs, but not interfering with ADL	Lasting for 2-4 hrs, interfering with ADL	Lasting for 4-6 hrs, interfering with ADL	Lasting for >6 hrs, interfering with ADL
GAURAVA "Gauravam - Gurutwam " (A.D:S-A.H.Su 12/53)	No heaviness	Occasionally feeling of heaviness <1 hr	Feeling of heaviness but not affecting ADL >1 hr	Feeling of heaviness interfering with ADL >2 hrs	Feeling of heaviness for longer duration > 3hrs
ARUCHI "Na Anne Roochir Bhavati Tam Bishajo Vikaaram Bhaktopaghatamiha Panchvidham Vadanti " (S.S.U 57/3)	Willing towards all Bhojana Padartha	Unwilling towards some specific Ahara but less than normal	Unwilling towards some specific Rasa's i.e; Katu/ Amla/ Madhura	Unwilling for food but could take the meal	Totally unwilling for meal

b) 50 foot walk test: This was observed and assessed by mentioning the time taken to cover the distance of 50 foot in the form of seconds.

❖ **Method of Administration of Medicine :**

- 30packets of *Kwatha Choorna* (750gms) containing 25gms of prepared *Kwatha Choorna* and 15ml of *Eranda Taila* was provided to each patient for 30 days of interventional period.

- Patients were advised to prepare fresh *Kashaya* with the ratio 1:16 reduced to 1/8th as per guidelines of 'Acharya Sharangadhara' *Kashaya* preparation method. i.e. 12.5gms of *Kwatha Choorna* added to 200ml of water boiled on low flame until it reduced to 25ml of *Kashaya*. And also advised them to add 5drops of

Eranda Taila which was provided to them. This dosage was advised to intake two times in a day after reaching to a lukewarm state, before having food in the morning and evening for 30days.

❖ **Method of Statistical Analysis :**

Statistical tool used here is Sigma Stat Version 4.0, comparative analysis of the overall effect of the treatment in both the groups has been done statistically with 'Mann Whitney U Rank Sum Test'. Within the group comparison has been done statistically with 'Repeated measures of analysis of variance' test followed by 'post hoc - Tukey test'.

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RESULTS

Total 65 subjects were registered in the study, out of which 2 subjects were excluded and 3 subjects were dropped out (1 from Group A and 2 from Group B) and the rest 60 subjects completed the study.

A. Demographic and Clinical characteristics:

Among the 60 patients, 40% belonged to the age group 31yrs to 40yrs, 28.33% belonged to age group 18yrs to 30yrs and to the age group 41yrs to 50yrs, 3.333 % belonged to the age group 51yrs to 60yrs; and 65% were Males and 35% were Females; and other observations have been enclosed in table number 2.

Table 2 Observations of Demographic profile, lifestyle, habits, *Prakriti* etc of the patients

OBSERVATIONS	TOTAL	GROUP A	GROUP B
AGE (IN YEARS)			
18yrs – 30yrs	17 (28.33%)	09(30.00%)	08(26.66%)
31yrs – 40yrs	24 (40.00%)	13(43.33%)	11(36.66%)
41yrs – 50yrs	17 (28.33%)	07(23.33%)	10(33.33%)
51yrs – 60yrs	02 (3.333%)	01(3.333%)	01(3.333%)
GENDER			
Male	39 (65%)	21 (70%)	18 (60%)
Female	21 (35%)	09 (30%)	12 (40%)
RELIGION			
Hindu	41 (68.333%)	22 (73.33%)	19 (63.33%)
Muslim	13 (21.66%)	04 (13.33%)	09 (30.00%)
Christian	06 (10.00%)	04 (13.33%)	02 (6.666%)
MARITAL STATUS			
Married	49 (81.66%)	24 (80%)	25 (83.33%)
Unmarried	11 (18.33%)	06 (20%)	05 (16.66%)
EDUCATION			
Illiterate	05 (8.333%)	03 (10.00%)	2 {6.66%}
Primary	07 (11.66%)	02 (6.66%)	5 (16.66%)
High School	15 (25.00%)	08 (26.66%)	7 (23.33%)
Higher Secondary	13 (21.66%)	07 (23.33%)	6 (10.00%)
Graduate	13 (21.66%)	07 (23.33%)	6 (30.00%)
Post Graduate	07 (11.66%)	03 (10.00%)	4 (13.33%)
OCCUPATION			
Business	07 (11.66%)	03 (10.00%)	04 (13.33%)
Labor	04 (6.66%)	03 (10.00%)	01 (3.33%)
Home maker	05 (8.33%)	03 (10.00%)	02 (6.66%)
Driver	10 (16.66%)	05 (16.66%)	05 (16.66%)
Tailor	13 (21.66%)	05 (16.66%)	08 (26.66%)
Officials	06 (10.00%)	03 (10.00%)	03 (10.00%)
Teacher	06 (10.00%)	04 (13.33%)	02 (6.66%)
Farmer	04 (6.66%)	02 (6.66%)	02 (6.66%)
Student	05 (8.33%)	02 (6.66%)	03 (10.00%)
SOCIO-ECONOMIC STATUS			
Poor	10 (16.66%)	06 (20.00%)	04 (13.33%)
Middle	39 (65.00%)	19 (63.33%)	20 (66.66%)
Higher	11 (18.33%)	05 (16.66%)	06 (20.00%)
HABITAT			
Urban	22 (36.66%)	11 (36.66%)	11 (36.66%)
Semi-urban	21 (35.00%)	09 (30.00%)	12 (40.00%)
Rural	17 (28.33%)	10 (33.33%)	07 (23.33%)
DIET			

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Veg	27 (45%)	13 (43.33%)	14 (46.66%)
Mixed	33 (55%)	17 (56.66%)	16 (53.33%)
OBSERVATIONS	TOTAL	GROUP A	GROUP B
HABITS			
Tea/coffee	39 (65.00%)	20 (66.66%)	19 (63.33%)
Alcohol	03 (5.00%)	02 (6.66%)	01 (3.33%)
Smoking	05 (8.33%)	02 (6.66%)	03 (10.00%)
None	13 (21.66%)	06 (20.00%)	07 (23.33%)
SLEEP			
Sound	28 (46.66%)	16 (53.33%)	12 (40%)
Disturbed	32 (53.33%)	14 (46.66%)	14 (60%)
KOSHTHA			
Mridu	10 (16.66%)	4 (13.33%)	6 (20%)
Madhyama	26 (43.33%)	12 (40.00%)	14 (46.66%)
Krura	24 (40%)	14 (46.66%)	10 (33.33%)
AGNI			
Manda	23 (38.33%)	11 (36.66%)	12 (40.00%)
Vishama	30 (50.00%)	16 (53.33%)	14 (46.66%)
Teekshna	07 (11.66%)	03 (10.00%)	04 (13.33%)
PRAKRITI			
Vata-Pitta	26 (43.33%)	14 (46.66%)	12 (40.00%)
Pitta-Kapha	13 (21.66%)	5 (16.66%)	8 (26.66%)
Vata -Kapha	21 (35%)	11 (36.66%)	10 (33.33%)
VYAYAMA SHAKTI			
Pravara	09 (15%)	06 (20%)	3 (10%)
Madhyama	23 (38.33%)	13 (43.33%)	10 (33.33%)
Avara	28 (46.66%)	11 (36.66%)	17 (56.66%)
TYPES OF GRIDHRASI			
Vataja	35 (58.33%)	19 (63.33%)	16 (53.33%)
Vata-Kaphaja	25 (41.66%)	11 (36.66%)	14 (46.66%)
SYMPTOMS OF GRIDHRASI			
Ruk	60 (100%)	30 (100%)	30 (100%)
Stambha	44 (73.33%)	21 (70%)	23 (76.66%)
Toda	36 (60%)	17 (56.66%)	19 (63.33%)
Tandra	21 (35%)	11 (36.66%)	10 (33.33%)
Gourava	26 (43.33%)	12 (40%)	14 (46.66%)
Aruchi	19 (31.66%)	8 (26.66%)	11 (36.66%)
RADIATION OF PAIN			
Left	25 (41.66%)	11 (36.66%)	14 (46.66%)
Right	20 (33.33%)	10 (33.33%)	10 (33.33%)
Both	15 (25%)	9 (30%)	6 (20%)

B. Effect of Intervention :

On statistical analysis within the groups, both trial as well as standard drug have shown a highly statistical results with $P < 0.001$ for all 12

parameters in group A and group B respectively, this same has been mentioned in table number 3 for group A and table number 4 for group B.

Table 3 Effect of Trial Drug (*Meshashringadi Kashaya*) in Group A

Sl. No.	Parameters	BT (Day 0)	DT (Day 16 th)	AT (Day 31 st)	AFU (Day 38 th)	P value of Group A
1.	Ruk	2.533±0.507	2.30±0.466	1.333±0.479	0.567±0.626	$P < 0.001$
2.	Stambha	1.167±1.020	1.10±0.995	0.633±0.615	0.200±0.484	$P < 0.001$

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3.	Toda	1.100±0.960	0.967±0.890	0.50±0.509	0.100±0.305	P<0.001
4.	Tandra	0.500±0.777	0.467±0.730	0.167±0.379	0.100±0.305	P<0.001
5.	Gaurava	0.633±0.850	0.633±0.850	0.267±0.521	0.033±0.033	P<0.001
6.	Aruchi	0.300±0.535	0.300±0.535	0.200±0.407	0.033±0.183	P<0.001
7.	VAS score	5.40±1.133	4.333±1.241	2.733±1.015	1.333±1.028	P<0.001
8.	SLR Right Leg – Active	27.70±22.035	30.700±24.230	34.767±27.366	40.500±31.795	P<0.001
9.	SLR Right Leg – Passive	27.70±22.035	30.767±24.311	34.700±27.292	40.500±31.795	P<0.001
10.	SLR Left Leg – Active	28.60±27.967	31.200±30.900	35.667±35.667	42.00±40.767	P<0.001
11.	SLR Left Leg – Passive	28.667±28.033	31.267±31.100	35.667±35.667	42.00±40.767	P<0.001
12.	50 ft walk test	42.433±3.664	39.967±3.459	36.967±3.899	33.267±3.956	P<0.001

Table 4 Effect of Standard Drug (*Sahacharadi Kashaya*) in Group B

Sl. No.	Parameters	BT (Day 0)	DT (Day 16 th)	AT (Day 31 st)	AFU (Day 38 th)	P value of Group B
1.	Ruk	2.4±0.498	2.133±0.434	1.167±0.461	0.233±0.430	P<0.001
2.	Stambha	1.1±1.029	0.933±0.907	0.5±0.630	0.066±0.254	P<0.001
3.	Toda	0.9±0.995	0.833±0.950	0.433±0.568	0.066±0.254	P<0.001
4.	Tandra	0.433±0.679	0.433±0.679	0.233±0.504	0.033±0.183	P<0.001
5.	Gaurava	0.867±1.008	0.8±0.925	0.3±0.466	0.033±0.183	P<0.001
6.	Aruchi	0.5±0.731	0.4±0.563	0.133±0.346	0.033±0.183	P<0.001
7.	VAS score	5.2±1.095	4±1.083	2.3±0.596	0.633±0.850	P<0.001
8.	SLR Right Leg – Active	22.833±22.387	25.233±24.663	28.933±28.033	34.167±32.960	P<0.001
9.	SLR Right Leg – Passive	22.833±22.387	25.267±24.583	28.933±28.033	34.167±32.960	P<0.001
10.	SLR Left Leg – Active	21.177±22.081	22.950±24.375	26.138±28.018	30.839±31.884	P<0.001
11.	SLR Left Leg – Passive	21.210±22.146	22.980±24.481	26.166±28.018	30.839±31.884	P<0.001
12.	50 foot walk test	44.200±4.021	41.433±3.812	37.433±3.857	33.067±3.912	P<0.001

On comparative statistical analysis between the two groups, it has been found that there is no statistical significant difference between the effect of trial drug and standard drug, and the P value with respect to each parameter has been enclosed in the table number 5.

Table 5 Statistical results of comparison between two groups

PARAMETERS	'P' value of BT-AT	Remarks
Ruk	P = 0.792	NS
Stambha	P = 0.810	NS
Toda	P = 0.354	NS
Tandra	P = 0.350	NS
Gaurava	P = 0.298	NS
Aruchi	P = 0.028	SS (Gp B > Gp A)
VAS score	P = 0.328	NS
SLR Right Leg – Active	P = 0.662	NS
SLR Right Leg – Passive	P = 0.668	NS
SLR Left Leg – Active	P = 0.795	NS
SLR Left Leg – Passive	P = 0.866	NS
50 ft walk test	P = 0.033	SS (Gp A > Gp B)

DISCUSSION

• In this present study, two different Ayurvedic medicines were selected in the form of *Kashaya*

formulation along with *Eranda Taila* as *Sahapana*; one for trial group-*Meshashringadi Kashaya* and another for standard group-*Sahacharadi Kashaya*.

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- Majority of *Dravya* involved in these two formulations are having *Ushna Veerya*; *Vata-Kaphahara* or *Kapha-Vata Shamaka* property, *Vedanasthapaka*, *Shothahara*, *Balya*, *Deepana* helps to subside the *Lakshana* of *Gridhrasi*. *Eranda Taila* has been selected as *Anupana* for both of these two *Kashaya* as per reference found in classical literature.
- The *Eranda Taila* has *Madhura Rasa*, *Kashaya Anurasa*; *Ushna Veerya*; *Teekshna-Sookshma Guna* and has *Madhura Vipaka*. It

causes *Sroto Shodhana* by means of *Adhobhagadoshahara* in turn leading to *Vata-Kaphahara Karma*. It increases the *Bala* and *Arogya* as well as helps for *Vayah-Sthapana*⁷.

- The ingredients of ***Meshashringadi Kashaya*** are *Meshashrunji*, *Vidanga*, *Gokshura*, *Ashwagandha*, *Erandamoola*, *Bilwa*, *Bruhati* and *Kanthakari*⁸. *Rasapanchaka* and pharmacological properties of these drugs have been enlisted in table number 6 and 7.

Table 6 Ingredients and its botanical name of *Meshashringadi Kashaya*

SL No.	DRUG NAME	BOTANICAL NAME	FAMILY	PART USED
1.	<i>Meshashrunji</i> ²⁹	<i>Gymnema sylvestre</i>	<i>Asclepiadaceae</i>	Leaf
2.	<i>Vidanga</i> ³⁰	<i>Embelia ribes</i>	<i>Myrsinaceae</i>	Fruit
3.	<i>Gokshura</i> ³¹	<i>Tribulus terrestris</i>	<i>Zygophyllaceae</i>	Root
4.	<i>Ashwagandha</i> ³²	<i>Withania somnifera</i>	<i>Solanaceae</i>	Root
5.	<i>Eranda</i> ³³	<i>Ricinus communis</i>	<i>Euphorbiaceae</i>	Root
6.	<i>Bilwa</i> ³⁴	<i>Aegle marmelos</i>	<i>Rutaceae</i>	Root
7.	<i>Bruhati</i> ³⁵	<i>Solanum indicum</i>	<i>Solanaceae</i>	Root
8.	<i>Kanthakari</i> ³⁶	<i>Solanum surattense</i>	<i>Solanaceae</i>	Root

Table 7 Pharmacological properties of *Meshashringadi Kashaya*

DRUG NAME	RASA	GUNA	VEERYA	VIPAKA	KARMA
<i>Meshashrunji</i> ²⁹	<i>Kashaya</i> <i>Tikta</i>	<i>Laghu</i> , <i>Ruksha</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphahara</i> , <i>Vatahara</i> , <i>Deepana</i> , <i>Vedanahara</i>
<i>Vidanga</i> ³⁰	<i>Katu</i> , <i>Tikta</i>	<i>Laghu</i> , <i>Ruksha</i> , <i>Teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata-Kaphapaha</i> <i>Deepana</i> , <i>Ruchya</i> , <i>Vata-Kapha Artinut</i>
<i>Gokshura</i> ³¹	<i>Madhura</i>	<i>Guru</i> , <i>Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Rujahara</i> , <i>Deepana</i> <i>Brumhana</i> , <i>Vataghna</i>
<i>Ashwagandha</i> ³²	<i>Tikta</i> , <i>Kashaya</i>	<i>Laghu</i> , <i>Snigdha</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vata-Kaphapaha</i> <i>Balya</i> , <i>Rasayana</i> , <i>Shophahara</i> , <i>Vatahara</i>
<i>Eranda</i> ³³	<i>Madhura</i>	<i>Snigdha</i> , <i>Guru</i>	<i>Ushna</i>	<i>Madhura</i>	<i>Vatasamshamana</i> , <i>Angamarda Prashamana</i> , <i>Adhobhaaga Doshaharam</i> , <i>Shoola-Shophahara</i>
<i>Bilwa</i> ³⁴	<i>Madhura</i>	<i>Laghu</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Tridoshaghna</i> , <i>Vatanut</i>
<i>Bruhati</i> ³⁵	<i>Katu</i> , <i>Tikta</i>	<i>Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata-Kaphapaha</i> , <i>Deepana</i> , <i>Paachana</i> , <i>Ruchya</i> , <i>Shoolajit</i>
<i>Kanthakari</i> ³⁶	<i>Tikta</i> , <i>Katu</i>	<i>Laghu</i> , <i>Ruksha</i> , <i>Teekshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kapha-Vata Shamaka</i> <i>Ruchya</i> , <i>Deepana</i> , <i>Pachana</i> , <i>Artinut</i>

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• **Madhura Rasa** of Gokshura-Erandamoola-Bilwa; **Madhura Vipaka** of Gokshura-Ashwagandha-Erandamoola-Bilwa; **Snigdha and Guru Guna** of Gokshura-Eranda; **Snigdha Guna** of Ashwagandha; **Ushna Veerya** of Meshashruni-Vidanga-Ashwagandha-Erandamoola-Bruhati-Kanthakari. These helps for **Vatashamana** in **Vataja Gridhrasi**.

• **Katu and Tikta Rasa** of Vidanga-Bruhati-Kanthakari; **Tikta Rasa** of Meshashruni-Ashwagandha; **Laghu, Ruksha, Teekshna Guna** of Vidanga-Kanthakari; **Laghu Guna** of Meshashruni-Ashwagandha-Bilwa-Bruhati; **Ushna Veerya** of Meshashruni -Vidanga-Ashwagandha-Eranda-Bruhati-Kanthakari; **Katu Vipaka** of Meshashruni-Vidanga-Bruhati-Kanthakari; these properties does the **Kaphashamana** in case of **Vata-Kaphaja Gridhrasi**.

Vedanahara, Kaphahara, Vatahara, Deepana Karma of **Meshashruni**; **Deepana, Anulomana, Vatakaphapaha Karma** of **Vidanga**; **Vatahara and Brumhana Karma** of **Gokshura**; **Vatakaphapaha, Balya and Rasayana Karma** of

Ashwagandha; **Vatahara and Amapachana Karma** of **Erandamoola**; **Tridoshaghna Karma** of **Bilwa**; **Kaphahara, Vatahara, Deepana, and Paachana Karma** of **Bruhati**; **Kapha-Vata Shamaka, Deepana and Pachana Karma** of **Kanthakari**; acts synergistically and helps for the **Shamana** of **Ruk-Toda-Stambha**; and improves the **Aruchi** by acting on **Jatharaagni**, also relieves the **Tandra** and **Gaurava** in **Gridhrasi** patients. **Analgesic activity and Anti-inflammatory activity**⁹⁻²² of the drugs of **Meshashringadi Kashaya** might have helped for reduction in pain in **Gridhrasi** patients of Group A.

A. Ingredients of **Sahacharadi Kashaya** are **Sahachara, Suradaru and Naagara**²³; these **Dravya** are having **Deepana, Paachana and Kapha-Vatahara** properties which leads to **Amapachana, Agnideepana** and **Shophahara** in total which helps in relieving the Pain (**Ruk**) and other associated symptoms like **Stambha, Toda** etc. **Rasapanchaka** and pharmacological properties of these drugs have been enlisted in table number 8 and 9.

Table 8 Ingredients and its botanical name of **Sahacharadi Kashaya**

SL No	DRUG NAME	BOTANICAL NAME	FAMILY	PART USED
1.	<i>Sahachara</i> ³⁷	<i>Barleria prionitis</i>	<i>Acanthaceae</i>	Whole plant
2.	<i>Shunthi</i> ³⁸	<i>Zingiber officinale</i>	<i>Zingiberaceae</i>	Rhizome
3.	<i>Suradaru</i> ³⁹	<i>Cedrus deodara</i>	<i>Pinaceae</i>	Heart wood

Table 9 Pharmacological properties of **Sahacharadi Kashaya**

SL No	DRUG NAME	RASA	GUNA	VEERYA	VIPAKA	KARMA
1.	<i>Sahachara</i> ³⁷	Tikta, Madhura	Laghu	Ushna	Katu	Kapha-Vatahara, Kesharanjana
2.	<i>Shunthi</i> ³⁸	Katu	Laghu, Snigdha	Ushna	Madhura	Kapha-VataShamaka, Ruchya, Deepaneeya, Pachaneeya, Shophapaha,

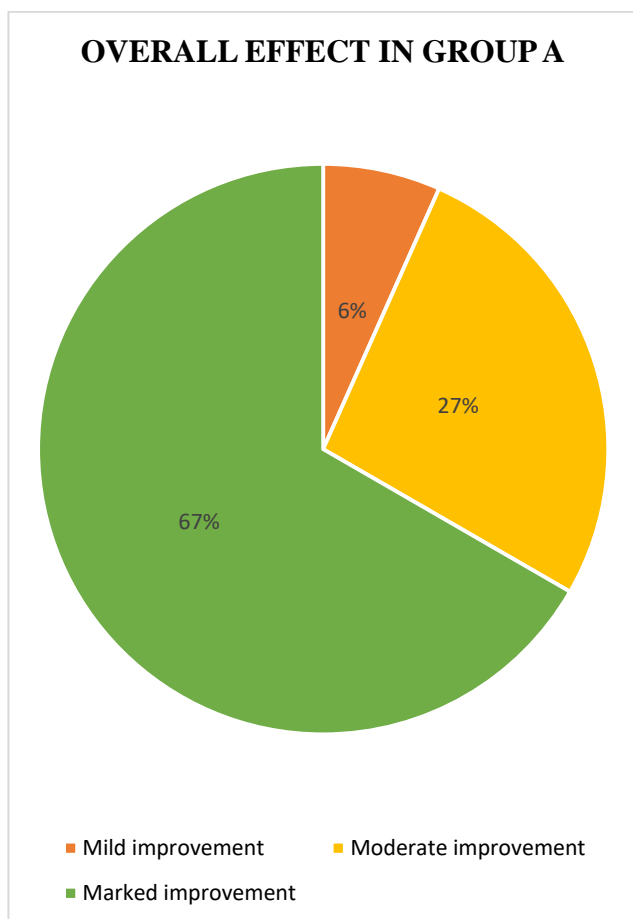
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Shoolaprashamana,

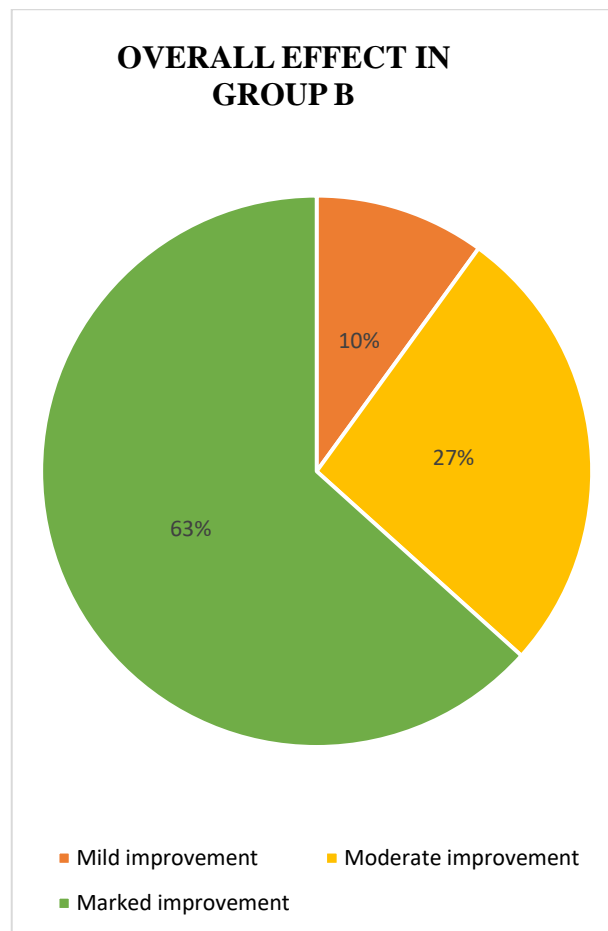
3. Suradaru³⁹ Tikta Laghu, Ushna Katu Kaphahara, Vatahara, Snigdha Shothahara, Vedana Sthapana

- *Barleria prionitis* (Sahachara) roots have been reported to have **Anti-inflammatory activity**²⁴, anti-nociceptive activities²⁵.
 - *Cedrus deodara* (Suradaru/Devadaru) - **Analgesic, Anti-inflammatory activity**²⁶.
 - *Zingiber officinale* (Naagara/Shunthi) rhizomes: **Gingerol, Shogaol - Analgesic and Anti-inflammatory activity**²⁷.
- Research studies have proven that *Sahacharadi Kashaya* possesses the pharmacological actions like **Analgesic, Anti-inflammatory activity, Anti-arthritic Property**²⁸.

OVERALL EFFECT IN GROUP A



OVERALL EFFECT IN GROUP B



Graph 1 Overall Effect in Group A and Group B based on clinically

CONCLUSION

Based on a percentage wise result, **clinically** it has been found that **both the medicines were effective** but *Meshashringadi Kashaya* was more effective with **marked improvement (51% to 75% relief) in 67% subjects of Group A**, whereas *Sahacharadi Kashaya* has shown its marked improvement in 63% subjects of Group B, it has been represented with graphical presentation in the form of pie diagram - graph number 1.

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- Based on **percentage wise relief** obtained on analyzing the therapeutic effect statistically **after treatment**, it has been found that **Sahacharadi Kashaya** was more effective than **Meshashringadi Kashaya** by showing its **marked improvement (51% to 75% relief)** in 6 parameters out of 12, whereas a **Meshashringadi Kashaya** has shown marked improvement in 3 parameters out of 12, this has been enclosed in table number 10.

Table 10 Overall Effect with percentage wise relief in Group A and Group B based on statistical results.

EFFECT OF TREATMENT		No. of parameters in GROUP A (AT)	No. of parameters in GROUP B (AT)	No. of parameters in GROUP A (AFU)	No. of parameters in GROUP B (AFU)
CLASS	GRADING				
0%	No Improvement	0	0	0	0
1-25%	Mild Improvement	3	3	1	1
26-50%	Moderate Improvement	6	3	4	4
51-75%	Marked Improvement	3	6	1	0
76-99%	Significant Improvement	0	0	6	7
100%	Complete Relief	0	0	0	0

- Both clinically as well as statistically, therapeutic effect of **Sahacharadi Kashaya** in **Vata-Kaphaja Gridhrasi** was more compared to **Vataja Gridhrasi**; whereas the therapeutic effect of **Meshashringadi Kashaya** in **Vataja Gridhrasi** was more compared to **Vata-Kaphaja Gridhrasi**, symptom wise results have been mentioned in table number 11.

Table 11 Symptom wise relief in Group A and Group B

Assessment Criteria	AT	AT	AFU	AFU
	Group A	Group B	Group A	Group B
Ruk	47.37 %	51.375 %	77.61 %	90.291 %
Stambha	45.75 %	54.54 %	82.94 %	93.93 %
Toda	54.54 %	51.88 %	90.90 %	92.588 %
Tandra	66.6 %	46.18 %	80 %	92.30 %
Gaurava	57.81 %	65.39 %	94.73 %	96.15 %
Aruchi	33.33 %	73.34 %	88.90 %	93.34 %
VAS score	49.388 %	59.61 %	75.370 %	87.82 %
SLR Right Leg – Active	25.51 %	26.71 %	46.20 %	49.63 %
SLR Right Leg – Passive	25.27 %	26.71 %	46.20 %	49.63 %
SLR Left Leg – Active	24.70 %	23.42 %	46.85 %	45.62 %
SLR Left Leg – Passive	24.41 %	23.36 %	46.50 %	45.35 %
50 ft walk test	12.88 %	15.30 %	21.60 %	25.18 %

- Highly statistical significance was found **within each group with P<0.001**, on analyzing therapeutic effect **before and after trial** in both the groups for all the parameters.
- On **comparison** between the effect of Group A and Group B, it has been found that there was a **statistical significant difference** in 2 parameters out of 12 and was **no statistical significant difference** in 10 parameters out of 12. Finally to conclude, both of the formulations i.e. **Meshashringadi Kashaya** and **Sahacharadi Kashaya** are having equal efficacy in the management of **Gridhrasi**.

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