



A RANDOMIZED COMPARATIVE CLINICAL STUDY ON EFFECTIVENESS OF SHALI TUSHA PINDA SWEDA AND KOLAKULATHADI PINDA SWEDA IN THE MANAGEMENT OF VATA KAPHAJA GRIDHRASI

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ABSTRACT

Swedana is one of the principal therapeutic measures in Ayurveda, especially indicated in Vata and Kapha dominant disorders. Acharya Charaka and later classics have emphasized Swedana as a prime line of treatment in Gridhrasi. Vata Kaphaja Gridhrasi is characterized by pain radiating from Sphik to Kati, Uru, Janu, Janga and Pada, closely resembling sciatica in modern medicine. It presents with symptoms such as Shoola, Stambha, Gourava, Toda and restriction of movements, leading to significant functional impairment. This randomized comparative clinical study was conducted to evaluate the effectiveness of Shali Tusha Pinda Sweda and Kolakulathadi Pinda Sweda in the management of Vata Kaphaja Gridhrasi. A total of 34 patients selected from OPD and IPD of MVR Ayurveda Medical College, Parassinikkadavu, were randomly divided into two groups of 17 each. Group A received Shali Tusha Pinda Sweda and Group B received Kolakulathadi Pinda Sweda for 45 minutes daily for 7 consecutive days. Assessment was carried out before treatment, after treatment and at 15th day follow-up using subjective and objective parameters. Statistical analysis showed highly significant improvement in both groups, with no statistically significant difference between the groups. The study concludes that both Shali Tusha Pinda Sweda and Kolakulathadi Pinda Sweda are equally effective in providing sustained relief in Vata Kaphaja Gridhrasi.

Key words: Swedana Karma, Shali Tusha Pinda Sweda, Kolakulathadi Pinda Sweda, Vata Kaphaja Gridhrasi

INTRODUCTION

Swedana is defined as the process by which the sweat or perspiration is produced in the body using various methods. It helps to liquefy the vitiated Dosha that have spread throughout the microchannels of the body and direct it towards Koshta. It is Poorva and Pradhana karma for the cure of numerous ailments and it is one among the Shadupakrama.¹ The treatment protocol mentioned in classics for Gridhrasi include Snehana, Swedana, Virechana, Basti and Agnikarma. Among these Acharya Charaka mentioned Swedana karma as prime mode of treatment for many diseases, particularly Vata and Kapha dominant disease.

Swedana karma is mainly classified as Sagni sweda and Niragni sweda. Pinda sweda is a type of Sagni sweda coming under Ushma sweda according to Ashtanga samgraha.² It is of 2 varieties such as Snigdha pinda sweda and Rooksha pinda sweda according to Charaka samhitha³. Use of Tusha as Rooksha pinda sweda is mentioned in Charaka samhitha for Vatakaphaja vikara⁴. It can be done as Snigdha or Rooksha according to the condition. Kolakulathadi choorna is mentioned for Pradeha in Vata vikaras⁵ which is also widely practiced as Rooksha pinda sweda. Shali Tusha pinda sweda is a variety of Rooksha pinda sweda that is affordable and widely accessible and has Lekhana and Rooksha property, which calms the Kapha and further alleviates Vata.

Gridhravat gati, the reason for the name Gridhrasi, describes how a person with the illness walks with a vulture-like gait and has stiff, slightly bent legs. Due to its direct relation to the locomotor system, this disorder has an impact on daily activities. Acharya Charaka described Swedana as one which removes Stambha, Gourava, Sheeta and Swedakaraka⁶. A comparison between Shali Tusha pinda sweda and Kolakulathadi pinda sweda is selected for this study in the management of Vatakaphaja Gridhrasi.

Sciatica refers to radiating pain along the course of the sciatic nerve from the lower back or buttock to one or both legs or an associated lumbosacral nerve root. This happens when one or more of the nerve roots that make up the sciatic nerve are either compressed or inflamed. Ayurveda provides many or better options for treating this intensely painful illness. Kapha being Seetha and Snigdha guna pradhana, can be managed with Ushna and Rooksha pradhana upakramas respectively. In this case Rooksha swedana can be considered as a best option. Ushna veerya and Lekhana properties of Shali Tusha choorna with its cost effectiveness would be helpful in lowering the signs and symptoms of Vata kaphaja Gridhrasi without posing any risks.

Gridhrasi is one among the most prevalent disorders of the locomotor system that affects modern life, costs a fortune in medical care, and reduces productivity. Due to its prevalence, Gridhrasi holds a significant position among the painful conditions. As per studies annual incidence of 1% to 5%, lifetime incidence of 10% to 40% is reported.⁷ In modern medicine, the disease sciatica is managed only with potent analgesics or surgical interventions which have their own limitation and side effects. Good treatment modes have been stated in Ayurveda to correct the uncomfortable condition, and it is believed that these treatment modalities offer alleviation for a considerable amount of time.

SELECTION OF PARTICIPANTS

Participants were selected from the OPD and IPD of MVR Ayurveda Medical College, Parassinikkadavu, during the study period. Patients of either sex belonging to the age group of

20–70 years and fulfilling the diagnostic criteria of Vata Kaphaja Gridhrasi were screened and enrolled for the study after obtaining informed consent.

Diagnostic Criteria:

Diagnosis was based on the classical signs and symptoms of Gridhrasi described in Ayurvedic texts, such as radiating pain from Sphik to Kati, Uru, Janu, Janga and Pada, along with features of Vata Kaphaja predominance like Shoola, Stambha, Toda, Gourava and restricted movements. Clinical features comparable to sciatica in modern medicine, including radiating leg pain and positive Straight Leg Raise (SLR) test, were also considered.

Inclusion Criteria:

- Patients fulfilling the diagnostic criteria of Vata Kaphaja Gridhrasi
- Age between 20 and 70 years
- Both sexes
- Patients fit for Swedana procedure

Exclusion Criteria:

- Patients suffering from Vataja Gridhrasi without Kapha association
- History of spinal trauma, fractures, or malignancy
- Inflammatory arthritis, infective spinal pathology or neurological deficits
- Patients unfit for Swedana therapy
- Pregnant women and severely debilitated patients

A total of 34 eligible patients were enrolled and randomly allocated into two groups of 17 each using simple random sampling. Group A received Shali Tusha Pinda Sweda and Group B received Kolakulathadi Pinda Sweda.

MATERIALS AND METHODS

OBJECTIVES

Primary Objectives

1. To evaluate the effectiveness of Shali Tusha Pinda Sweda in the management of Vata Kaphaja Gridhrasi.
2. To evaluate the effectiveness of Kolakulathadi Pinda Sweda in the management of Vata Kaphaja Gridhrasi.

Secondary Objective

1. To compare the effectiveness of Shali Tusha Pinda Sweda and Kolakulathadi Pinda Sweda in the management of Vata Kaphaja Gridhrasi.

STUDY DESIGN

A randomized comparative clinical study.

STUDY SETTING

- Institution: MVR Ayurveda Medical College, Parassinikkadavu, Kannur
- Study Period: 2024–2025
- Procedure Duration: 7 consecutive days
- Follow-up: 15th day after completion of treatment

STUDY POPULATION

Participants were selected from the OPD and IPD of MVR Ayurveda Medical College, Parassinikkadavu, within the age group of 20–70 years, satisfying the diagnostic, inclusion and exclusion criteria.

SAMPLE SIZE

A total of 34 patients were selected and equally divided into two groups:

- Group A – 17 patients
- Group B – 17 patients

$$n = \frac{(Z\alpha + Z\beta)^2 2S^2}{d^2}$$

where $Z\alpha$ = The standard normal variate for TYPE 1 error = 1.96

$Z\beta$ = The standard normal variate for TYPE 2 error = 0.84

S = Pooled variance = 1.8

d = Effect size = 1.7

$$\text{Therefore, } \frac{(Z\alpha + Z\beta)^2 2S^2}{d^2} = \frac{(1.96+0.84)^2 \times 2 \times 3.24}{(1.7)^2} = 16.4$$

SAMPLING METHOD

Simple random sampling with equal allocation into two groups, irrespective of sex.

INTERVENTION

Table no: 1

SL NO.	PARTICULARS	GROUP A	GROUP B
1	Procedure	Shali Tusha Pinda Sweda	Kolakulathadi Pinda Sweda
2	Sample size	17	17
3	Medicine	Shali Tusha	Kolakulathadi Choorna

4	Quantity	As per requirement	As per requirement
5	Duration	45 minutes	45 minutes
6	Course	7 days	7 days

Table no: 2 Procedure

Sl.No	Shali Tusha Pinda Sweda	Kolakulathadi Pinda Sweda
Purvakarma	Preparation of Pottali using Shali Tusha	Preparation of Pottali using Kolakulathadi Choorna
Pradhana karma	The Pottali containing Shali Tusha was heated to a tolerable temperature and applied over the affected region with gentle rubbing and tapping movements. The Pottali was reheated intermittently and the procedure was continued for 45 minutes.	The Pottali containing Kolakulathadi Choorna was heated to a tolerable temperature and applied over the affected region with gentle rubbing and tapping movements. The Pottali was reheated intermittently and the procedure was continued for 45 minutes.
Paschat karma	The Pottali was removed after the procedure and the area was cleaned with a dry cotton cloth. The patient was advised to take rest.	The Pottali was removed after the procedure and the area was cleaned with a dry cotton cloth. The patient was advised to take rest.

SCORING OF ASSESSMENT CRITERIA

The assessment parameters were graded using standardized scoring methods. All parameters were evaluated before treatment (BT), after treatment (AT) and at follow-up (AF).

SUBJECTIVE PARAMETERS

All parameters were recorded at BT, AT and AF to evaluate both the immediate and sustained effects of the interventions.

RUK (Pain)- VAS scale (0 – 10)

Grade 0 - No pain (Scale reading – 0)

Grade 1 - Trivial pain (Scale reading -1)

Grade 2 - Mild pain (Scale reading 2-4)

Grade 3- Moderate pain (Scale reading 5-7)

Grade 4 - Severe pain (Scale reading 8-10)

TODA

Grade 0-No pricking sensation

Grade 1 –Trivial pricking sensation

Grade 2 -Mild pricking sensation

Grade 3 -Moderate pricking sensation

Grade 4 –Severe pricking sensation

STAMBHA

Grade 0 – No stiffness.

Grade 1 – Sometimes for 5- 10 minutes

Grade 2 - Daily for 10-30 minutes.

Grade 3- Daily for 30- 60 minutes

Grade 4 – Daily more than 1 hour

SPANDANA

Grade 0 – No twitching

Grade 1 – Occasionally discontinuous twitching

Grade 2 - Occasionally continuous twitching

Grade 3- Persistent continuous twitching

GOURAVA

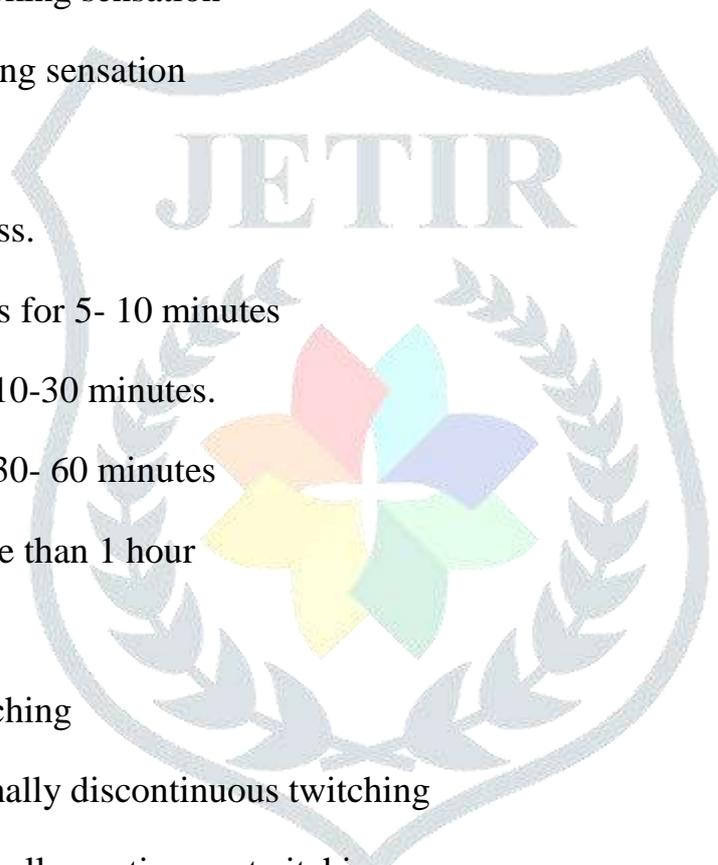
Grade 0 Absent

Grade 1 Present

TANDRA

Grade 0 Absent

Grade 1 Present



AROCHAKA

Grade 0 Absent

Grade 1 Present

OBJECTIVE CRITERIA**WALKING TIME**

Time taken to walk 20 meters in a straight way in medium speed

Grade 0 Up to 20seconds

Grade 1 21-30seconds

Grade 2 31-40seconds

Grade 3 41-50seconds

Grade 4 51-60seconds

Grade5 More than 60seconds

SAKTHYUTKSHEPA NIGRAHANA (SLR)

Grade 0 upto 60 degree without pain

Grade 1 upto 40 degree without pain

Grade 2 upto 20degree without pain

Grade 3 can't lift due to pain

DATA COLLECTION METHOD

Primary data for the study were collected from the OPD and IPD of MVR Ayurveda Medical College, Parassinikkadavu. Detailed clinical evaluation was carried out using a structured case proforma. Information regarding demographic profile, history of present illness, associated symptoms and relevant personal history was obtained through direct interview and clinical examination.

All subjective and objective parameters were recorded at three stages – before treatment (BT), after completion of treatment on the 7th day (AT) and at follow-up on the 15th day (AF). Observations were documented systematically for each participant to assess both immediate and sustained therapeutic effects. The collected data were tabulated and preserved for further statistical analysis.

STATISTICAL ANALYSIS

All the data were tabulated and statistical analysis was done with the following statistical tests using the SPSS 27 version software. Assessments of subjective and objective parameters are done by using Friedman Test, Wilcoxon Signed Ranks Test and Mann-Whitney U Test.

Table no 3: Mann–Whitney U Test Results between Group A and Group B at Each Treatment Stage

Signs & Symptoms	BT – Z value	BT – P value	AT – Z value	AT – P value	AF – Z value	AF – P value
Pain (VAS)	-1.267	0.205	-0.646	0.518	-0.742	0.458
Stambha	-1.483	0.138	-1.782	0.075	-1.787	0.074
Toda	-1.357	0.169	-0.108	0.914	-1.000	0.317
Spandana	-0.232	0.816	-1.000	0.317	0.000	1.000
Tandra	-0.361	0.718	0.000	1.000	0.000	1.000
Gourava	0.000	1.000	0.000	1.000	0.000	1.000
Arochaka	-0.383	0.702	0.000	1.000	0.000	1.000
Walking Time	-0.857	0.392	-0.378	0.705	-1.593	0.111
SLR	-0.361	0.718	-0.687	0.492	-0.477	0.633

DISCUSSION

Shali Tusha Pinda Sweda and Kolakulathadi Pinda Sweda are forms of Ruksha Swedana indicated in Vata-Kaphaja conditions where Kapha avarana of Vata produces pain, stiffness, heaviness and restricted movements. Swedana is the prime line of treatment to relieve Stambha, Gourava and Sheeta and to restore the normal movement of Vata. The Ruksha nature of Pinda Sweda counteracts Kapha while facilitating Vata Anulomana.

In the present study, both Group A and Group B showed highly significant improvement in all subjective and objective parameters after treatment and at follow-up. Inter-group comparison revealed no statistically significant difference between the groups, indicating that both procedures are equally effective in the management of Vata-Kaphaja Gridhrasi.

Effect on Pain (Ruk – VAS)

Pain in Gridhrasi is primarily due to vitiated Vata obstructed by Kapha. Both groups showed significant reduction in pain scores after treatment and at follow-up. The Ushna and Swedana effects reduce Kapha obstruction, improve circulation and relieve muscle spasm, thereby normalizing Vata gati. Absence of inter-group difference indicates equal analgesic efficacy of both procedures.

Effect on Stambha

Stambha reflects Kapha dominance and srotorodha. Significant reduction in stiffness was observed in both groups. Swedana liquefies morbid Doshas and opens obstructed channels,

while the Ruksha quality absorbs excess Kleda. Both Shali Tusha and Kolakulathadi formulations effectively restore mobility and reduce rigidity.

Effect on Tandra and Arochaka

Tandra and Arochaka are manifestations of Kapha predominance and impaired Agni. Both groups showed marked improvement, indicating effective Kapha shamana and enhancement of metabolic activity. Swedana promotes Laghuta and improves appetite by stimulating Dhatvagni.

Effect on Walking Time and Functional Parameters

Improvement in walking time reflects functional recovery. Both groups demonstrated significant improvement due to reduction in pain, stiffness and heaviness. The thermal and mechanical effects of Pinda Sweda increase tissue extensibility and improve neuromuscular coordination, thereby enhancing gait and mobility.

From an Ayurvedic perspective, both therapies effectively break the samprapti of Vata-Kaphaja Gridhrasi by removing Kapha avarana and re-establishing normal Vata movement. Shali Tusha Pinda Sweda acts predominantly through its Ruksha and Lekhana properties, while Kolakulathadi Pinda Sweda acts through Ushna and Vata-Kapha hara qualities.

The sustained improvement at follow-up highlights the lasting benefit of Ruksha Pinda Sweda in Vata-Kaphaja disorders. Shali Tusha Pinda Sweda, being simple, economical and easily available, provides an equally effective and practical therapeutic option.

CONCLUSION

The present study demonstrates that both Shali Tusha Pinda Sweda and Kolakulathadi Pinda Sweda are effective in the management of Vata-Kaphaja Gridhrasi. Significant improvement was observed in all subjective and objective parameters in both groups after treatment and at follow-up. Inter-group comparison revealed no statistically significant difference between the two interventions, indicating that both procedures are equally efficacious.

From an Ayurvedic perspective, both therapies act by relieving Kapha-avarana of Vata through their Ushna and Ruksha properties, thereby reducing pain, stiffness, heaviness and functional disability. The sustained improvement observed at follow-up highlights the long-term therapeutic benefit of Ruksha Pinda Sweda in Vata-Kaphaja disorders.

Shali Tusha Pinda Sweda, being simple, economical, easily available and safe, offers a practical and effective alternative to classical formulations without compromising therapeutic outcomes. Hence, it can be confidently adopted in routine Panchakarma practice for the management of Vata-Kaphaja Gridhrasi and similar musculoskeletal conditions characterized by stiffness and heaviness.

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