



**A PILOT STUDY TO EVALUATE THE EFFICACY OF LANKA PINDA SWEDA IN GRIDHRASI  
W.S.R TO SCIATICA**

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**ABSTRACT**

The current busy world has made the man to indulge in hectic strenuous physical activity without giving due importance to health paving way for many diseased conditions such as *Gridhrasi*. *Gridhrasi* is one among the *Vata Nanatmaja Vyadhi* presenting with radiation of pain from *Sphik, Kati, Prushta- Uru, Janu, Jangha* and *Pada* associated with *Ruk, Toda* and *Spandana* and is commonly identified with *Sciatica*. *Swedana* is one among the *Shad Upakrama* and extensively practised not just as *Purvakarma* of *Panchakarma* but also as *Pradhana Karma* in various painful conditions as it is endowed with the property to relieve *Stambha, Gourava* and *Shaityata* as well as instantaneous relief from *Harsha, Toda, Ruk, Ayama*, etc. *Sankara Sweda* also popularly called as *Pinda Sweda*, one among the 13 types of *Sagni Sweda* wherein sudation is given over the affected part using a *Pottali* (bolus) prepared out of certain specified medicines. Though certain dravyas are mentioned for *Sankara Sweda*, it is need of hour to explore other dravyas which are readily available, cost effective, affordable, easy to administer, actively accepted and incorporate the same into the practice of *Pinda Sweda* with due consideration to its *Guna Karma* without violating the basic principles of treatment. Keeping this in mind, a procedure called *Lanka Pinda Sweda* was formulated using *Lanka* (Green Chilly), *Pudina* (Mint Leaves), *Rasna, Nimbuka* (Lemon), *Haridra* (Turmeric), *Saindhava Lavana, Narikela* (Coconut) and *Murchita taila* and a study was conducted by employing it in *Gridhrasi* where the results were overwhelming in instantaneously relieving the symptomatology of *Gridhrasi*.

**KEYWORDS:** *Gridhrasi, Sciatica, Sankara Sweda, Lanka Pinda Sweda.*

**INTRODUCTION**

The rapid industrialization in today's world is causing rapid urbanization, coupled with sedentary life style like improper postural compulsions, increased requirement of travel, excessive mental stress and altered habits of food consumption leading to vitiation of *Vata* where *Vata* described as "*Tantra Yantra Dhara*"<sup>[1]</sup> so any obstruction or vitiation of *Vata* paves way to many painful diseases and *Gridhrasi* is one among that. *Gridhrasi* is a clinical entity which produces intense radicular pain accompanied by stiffness and a pricking type of pain in the distribution of the sciatic nerve,<sup>[2]</sup> which hampers day to day activities, affecting valuable hours. The lifetime incidence of this condition is estimated to be between 13% and 40%.

*Snehana* and *Swedana* are considered as a general line of treatment for *Vata Vyadhi*,<sup>[3]</sup> which can be taken as a line of treatment for *Gridhrasi* also. According to the condition of the patients, one can opt different types of *Sweda* as mentioned in *Samhitas* as well as can also make new combinations as per the need, availability,

properties of drugs and *Lanka Pinda Sweda* is one such treatment modality evolved from the concept of *Sankara Sweda*. Though the procedure such as *Jambira Pinda Sweda, Kukutanda Pinda Sweda* and *Shastika Shali Pinda Sweda* are evolved from *Sankara Sweda*, these procedures became so popular with their prefix and established an individual identity in the domain of *Swedana* by virtue of its extensive clinical utility and special therapeutic effect. Similarly *Lanka Pinda Sweda* was also named with the prefix *Lanka* as *Lanka* (Green Chilly) added as one of the main ingredient in order to boost up the effect of the other ingredients by virtue of its special properties such as *Laghu-Ruksha-Tikshna Guna, Ushna Virya, Kaphavata hara*.<sup>[4]</sup> property as well as also possess analgesic effect. *Lanka Pinda Sweda* can be placed in the domain of *Bahya, Sagani, Sthanika, Samsamniya, Madhyama, Vastrantarika Sankara, Snigdha Sankara Sweda, Ushma, Ekanga* and *Snigdha* type of *Sweda*.

Hence, a pilot study was performed with the aim to study and substantiate the rationality of *Lanka Pinda Sweda* in *Gridhrasi* w.s.r to Sciatica.

#### AIMS AND OBJECTIVE OF THE STUDY

To evaluate the efficacy of *Lanka Pinda Sweda* in the management of *Gridhrasi* w.s.r to Sciatica.

#### MATERIALS AND METHODS

The study was carried out in Sri Kalabyraveswary Ayurveda Medical College, Hospital and Research Centre, Bangalore during the period of February 2021 to April 2021 among 10 subjects between the age group 20-60 years irrespective of the gender approaching the IPD and OPD of Department of Panchakarma.

#### Method of collection of data

##### Sample size

10 subjects presenting with the signs and symptoms of *Gridhrasi* w.s.r to Sciatica were selected after thorough history taking, clinical assessment and laboratory investigation.

##### Diagnostic Criteria

- Subjects presenting with the *Lakshanas* of *Gridhrasi*.

##### Poorva karma

- Preparation for the Procedure

**Table 1: Drugs used for *Lanka Pinda Sweda*.**

Ingre-dients	<i>Moorchita Taila</i>	<i>Nimbuka (Lemon)</i>	<i>Lanka (Green Chilli)</i>	<i>Pudina (Mint leaves)</i>	<i>Rasna choorn-a</i>	<i>Narikela (grated Coconut)</i>	<i>Saindhava Lavana</i>	<i>Haridra (Turmeric powder)</i>
	200 ml	4	50 gm	30-40	100 gm	100 gm	50 gm	50 gm

##### Preparation of the *Lanka Pinda*

Fresh 4 lemons and small Green Chillies cut into small pieces were taken in a round bottom vessel and oil was added to this. With continuous stirring fresh *Pudina* leaves chopped into small pieces were added. Then *Saindhava Lavana*, *Rasna Choorna* and Grated Coconut were added simultaneously and stirred properly and fried till the colour of the Coconut changes to golden then lastly turmeric powder was added. 250 grams of this fried preparation was placed in a double folded cotton cloth (20 cm\* 20 cm) and *Pottali* was prepared.

- Preparation of subjects

Subject made to lie in prone position with minimal clothes over the *Droni* facing to the East and *Sthanika Abhyanga* was performed with prescribed medicated *Taila*.

##### Pradhana karma

*Lanka Pinda Sweda* was done upto *Samyak Swinna Lakshana* for 7 consecutive days. Heat was applied to the massaged area by using this heated *Lanka pinda*. To begin with, the therapist confirmed the heat by touching the pack on the dorsum of his hand and then the heat was

- Subjects presenting with the clinical features of Sciatica.
- Subjects with positive SLR test.

##### Inclusion Criteria

- Subjects age between 20-60 yrs. of either gender.
- Subjects presenting with lakshanas of *Gridhrasi*.
- Subjects presenting with clinical features of Sciatica.
- Subjects fit for Sweda.

##### Exclusion Criteria

- Subjects with fractures of Lumbar Spine, Spinal Tumour and Tuberculosis of Vertebra.
- Subjects embedded with any metallic implant.
- Subjects with any systemic disease that may interfere with the course of treatment.

##### Study design

It is an Open Label single arm clinical study.

##### INTERVENTION

10 subjects of *Gridhrasi* vis-a-vis Sciatica who fulfil the Inclusion criteria were selected and randomly assigned into the group viz treated by *Lanka Pinda Sweda*.

applied to the patient's body for *Swedana*. For this purpose, herbal pack was momentarily touched on the area by tapping and when the heat got minimized, the therapist placed the pack above and beneath the body part to be treated till temperature reduced completely.

##### Paschat karma

- *Pathya Paripalana*
- Advised to take hot water bath after half an hour depending on subjects.

##### Duration

In the present study the duration of procedure was fixed to 30 minute or till *Samyak Swinna Lakshana*.

##### Assessment criteria

The result of the therapy was evaluated on the basis of improvement in Subjective and Objective parameters before and after treatment on 8<sup>th</sup> day on various grading scales.

**Table 2: Subjective and objective parameter with gradings.**

Subjective Parameters		
Parameters	Grading scales	
<b>RUK</b>	No pain	0
	Occasional pain:	1
	Mild pain but no difficulty in walking:	2
	Moderate pain and slight difficulty in walking	3
	Severe pain with severe difficulty in walking	4
<b>TODA</b>	No pricking sensation	0
	Mild, Occasional pricking sensation in a day	1
	Moderate pricking sensation, not persistent	2
	Moderate pricking sensation, persistent	3
	Severe pricking sensation	4
<b>STAMBHA</b>	No stiffness	0
	Stiffness for few minutes after sitting for long duration but relieved by mild movements	1
	Stiffness more than 1 hour or more than once in a day but routine works are not disturbed	2
	Stiffness lasting for more than 1 hour or many times a day mildly affecting the daily routine	3
	Episodes of stiffness lasting for 2-6 hours. \ Daily routines are hampered severely	4
<b>SPANDANA</b>	No twitching	0
	Mild, Sometimes for 5–10 min	1
	Moderate , daily for 10–30 min	2
	Severe, daily for 30–60 min	3
	Very severe, daily more than 1 h	4
<b>TANDRA</b>	No <i>Tandra</i>	0
	Mild <i>Tandra</i> occasionally but does not affect daily routine	1
	Moderate <i>Tandra</i> frequently many times in a day that hamper daily routine	2
	Moderate <i>Tandra</i> whole day and Need to take rest can't work	3
	Severe <i>Tandra</i> whole day also at mental level, reduced alertness etc.	4
<b>GOURAVA</b>	No heaviness	0
	Occasional feeling of heaviness for sometimes in hands and feet	1
	Feeling of heaviness for sometimes in hands and feet not affecting activities of daily living	2
	Daily feeling of heaviness over body, which hampers usual work	3
	Most parts of the body for longer duration	4
	All parts for most part of the body	5
<b>AROCHAKA</b>	Willing towards all <i>Bhojya Padartha</i>	0
	Unwilling towards some specific <i>Ahara</i> but less than normal	1
	Unwilling towards some specific rasa i.e <i>Katu/Amla/ Madhura</i> food	2
	Unwilling for food but could take the meal	3
	Unwilling toward unliking foods but not to the other	4
	Totally unwilling for meal	5
Objective Parameters		
<b>SLR test:</b>	90 <sup>0</sup> -0 <sup>0</sup> without pain	0
	71 <sup>0</sup> -90 <sup>0</sup> with pain	1
	51 <sup>0</sup> -70 <sup>0</sup> with pain	2
	31 <sup>0</sup> -50 <sup>0</sup> with pain	3
	up to 30 <sup>0</sup> cannot be raised	4

**OBSERVATIONS AND RESULTS**

A total of 10 subjects were registered in this work and observations were drawn. Complication like burning

sensation was seen in 3 patients in the first day so some pieces of *Lanka* were removed from the *Pottali* then no other complaints from the next day.

**Table 3: Different Observations of the study.**

Observation Maximum	Total no. of subjects	Percentage	Observation	Total no. of subjects	Percentage
Age (41-50years)	5	50%	Vyayama Shakti (Madhyama)	5	50%
Gender (Female)	6	60%	Desha (Sadharana)	10	100%
Menstrual history (Menopause)	5	50%	Aharaja Nidana (Katu Dravya Ati Sevana)	10	100%

Socioeconomic status (Upper middle)	3	30%	Aharaja Nidana (Ruksha Dravya Ati Sevana)	7	70%
Prakriti (VK)	4	40%	Viharaja Nidana (Diwaswapna)	8	80%
Sara (Madhyama)	6	60%	Manasika Nidana (Chinta)	6	60%
Samhanana (Madhyama)	7	70%	Bowel habit (Constipated)	7	70%
Satva (Madhyama)	7	70%	Chronicity (1-5 years)	7	70%
Satmya (Madhyama)	9	90%	Aggravating factors (Bending forward)	6	60%
Pramana (Madhyama)	10	100%	Relieving factors (Lying supine )	8	80%
Abhyavarana shakti (Madhyama)	8	80%	Type of Gridhrasi (Vataja)	4	40%
Jarana Shakti (Madhyama)	8	80%	H/O Injury Present	3	30%

## RESULTS

**Table 4: Effect of Lanka Pinda Sweda on different parameters.**

Parameter (BT-AT)	Ranks		Mean Rank	Sum of Rank	Z Value	P Value	Remarks
	NR	PR					
Ruk	10	0	5.50	55.00	-2.859	<0.001	HS
	0	0					
	0	0					
Arochaka	7	0	4.00	28.00	-2.460	<0.001	HS
	0	0					
	3	0					
Tandra	8	0	4.50	36.00	-2.565	<0.001	HS
	0	0					
	2	0					
Toda	8	0	4.50	36.00	-2.588	<0.001	HS
	0	0					
	2	0					
Gourava	8	0	4.50	36.00	-2.588	<0.001	HS
	0	0					
	2	0					
Stambha	9	0	5.00	35.00	-2.762	<0.001	HS
	0	0					
	1	0					
Muhuspandana	7	0	4.00	28.00	-2.646	<0.001	HS
	0	0					
	3	0					
SLR	10	0	5.50	55.00	-2.889	<0.001	HS
	0	0					
	0	0					

## DISCUSSION

The procedure is easy to perform and is found to be very effective in the case of *Gridhrasi* w.s.r Sciatica. The action of *Bahirparimarjana Chikitsa* can be explained as “The branch of body’s peripheral conduction network with their portals in the skin is concerned with perspiration, perception of cutaneous pleasure and pain sensations, as well as circulation of tissue fluid. Conduction of the activity or potency of the therapeutic regimen or agent into the body, after conversion (transduction) in the skin, also forms their attribute”.<sup>[5]</sup>

The probable mode of action can be explained under following headings:

1. Thermal effect.
2. Procedural and Drug effect.

### • Thermal..Effects

Due to heat, vasodilatation occurs particularly in superficial tissues causing stimulation of superficial nerve endings leading to reflex dilatation of arterioles and necessary Oxygen and nutritive materials are been supplied. External heating dilates the penetration pathways in the skin, increases kinetic energy and movement of particles in the treated area and facilitates

drug absorption.<sup>[6]</sup> Heat has been applied as a counter irritant, which is the thermal stimulus, may affect the pain sensation.

#### • Procedural and Drug effect

The drugs used in *Lanka Pinda Sweda* are having the qualities like *Ushna* and *Snigdha*. Which does *Srotoshuddhi* and *Amapachana*, in turn relieves stiffness thereby acts as *Stambhaghna*, *Gauravaghna* as they

relieve heaviness in the body through sweating, *Sheetaghna* by their *Ushna* quality and *Sweda Karaka* as they promote sweating through which impurities of the body come out. *Ushna Guna* of *Sweda* dilates the capillaries (vasodilatation) thus it increases circulation. As in *Lanka Pinda Sweda* we use *Vata Kaphahara* drugs when they are absorbed into the body they does their action along with *Swedana*.

**Table 3: Rasa panchaka of ingredients used in Lanka Pinda Sweda.**<sup>[7,8]</sup>

Sl.no	Name of drug	Botanical Name	Rasa	Guna	Virya	Vipaka	Dosaghna
1.	<i>Lanka</i>	Capsicum Annum	<i>Katu</i>	<i>Laghu, Ruksha, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavata shamaka</i>
2.	<i>Putiha</i>	Mentha Spicata	<i>Katu</i>	<i>Laghu, Tikshna</i>	<i>Ushna</i>	<i>Katu</i>	<i>Kaphavata hara</i>
3.	<i>Haridra</i>	Curcuma longa Linn.	<i>Tikta- katu</i>	<i>Rooksha, Laghu</i>	<i>Ushna</i>	<i>Katu</i>	<i>Tridosha hara</i>
4.	<i>Rasna</i>	Pluchea lanceolata	<i>Tikta</i>	<i>Guru</i>	<i>Ushna</i>	<i>Katu</i>	<i>Vata kapha shamaka</i>
5.	<i>Nimbuka</i>	Citrus Medica	<i>Amla</i>	<i>Laghu, teekshana</i>	<i>Ushna</i>	<i>Amla</i>	<i>Vata- Kapha hara</i>
6.	<i>Narikela</i>	Cocos Nucifera Linn.	<i>Madhura</i>	<i>Guru Snigdha</i>	<i>Sheeta</i>	<i>Madhura</i>	<i>Vata- pitta hara</i>
7.	<i>Saindhava Lavana</i>	Sodium Chloride, Rock Salt	<i>Lavana Madhura</i>	<i>Snigdha, Laghu</i>	<i>Sheeta</i>	-	<i>Tridosha hara</i>

**Lanka**, the main ingredient of this Pinda Sweda have an active ingredient, a natural pain killer Capsaicin, acts as a selective agonist for the TRPV1 receptor present on afferent neurons and found in the lining of blood vessels and is responsible for analgesic effect. Activation of the channel leads to an increase in production of Nitric Oxide, a gaseous molecule known to protect blood vessels against inflammation and dysfunction. Topically, it acts primarily on sensory - C fibers to cause depletion of substance P, part of the body's pain and inflammation as well as the release of  $\beta$ -endorphin to inhibit pain.<sup>[9]</sup> Capsaicin is the most classic rubefacient, and counter-irritant — a neurological distraction from your pain, which is the more general and well-known principle of diffuse noxious inhibitory control.

The central mechanisms of analgesia induced by menthol, a chemical naturally found in **Putiha (Pudina)**, was investigated by Pan and collaborators.<sup>[10]</sup> in an in vitro assay study which showed that exposure to menthol caused reduction of ipsilateral and contralateral pain, reduction of nociceptive behaviour, activation of  $\gamma$ -aminobutyric acid type A receptors, blockage of voltage-gated sodium channels and voltage-gated calcium channels, reduction in neuronal excitability and interruption of spontaneous synaptic transmission of cultured superficial dorsal horn neurons. In the peripheral mechanisms involved in the effects displayed by menthol, activation of TRPM8.<sup>[11,12]</sup> As a topical agent, it acts as a counter-irritant by imparting a cooling effect and initially stimulating nociceptors and then desensitization the Capsaicin irritation. The Limonene

constitution of **Pudina** has been reported as anti-inflammatory properties, inhibiting lipopolysaccharide (LPS)-induced production of nitric oxide, PGE<sub>2</sub> and pro-inflammatory cytokines in RAW 264.7 cells. Such an efficacy on the two stimuli- both thermal and chemical pain stimuli is characteristic of central analgesics, such as morphine, which inhibits inflammatory and non-inflammatory pains.<sup>[13]</sup>

**Narikela** has the potential to reduce inflammation in muscles and joints. A study published in the journal Pharmaceutical Biology showed that virgin coconut oil has anti-inflammatory and analgesic properties. Simply by virtue of its high levels of Lauric acid, Coconut oil reduces inflammation – which directly impacts pain.

Curcumin, a polyphenolic compound derived from the **Haridra** i.e Turmeric (Curcuma longa), possesses diverse pharmacologic and biological properties including anti-inflammatory, antioxidant, anticoagulant, antibacterial, antifungal, antiprotozoal, antiviral, anti-fibrotic, antivenom and antiulcer.

**Rasna** which is considered to be best *Vataghna* with *Shopha - Shoola hara* properties and the ethanolic extract of the aerial part of Pluchea lanceolata exhibits significant anti-inflammatory activity and analgesic activity.

Further studies should assess the same using a larger sample size and comparative study should be taken

forward to compare with other types of *Sweda* and to evaluate its efficacy. Many new and different formulations can be adopted in further studies.

## CONCLUSION

*Snehana* and *Swedana* is the best line of treatment in *Vata Vikaras*, seems very effective in *Gridhrasi* and *Lanka Pinda Sweda*, a new inclusion in the domain of *Sankara Sweda* where *Vata-Kapha hara* drugs were taken and been found owing to its easy procedure and excellent fast action in relieving the symptoms. Statistically, there is marked improvement in all the parameters of Subjective and Objective. Thus it may be concluded that the Ayurvedic management of *Gridhrasi* is a gift to society, in today's fast paced world and in future newer formulations can be evolved with different names as a prefix to *Pinda Sweda*.

**Conflict of Interest:** None.

## REFERENCES

1. Agnivesha, Charaka, Drudabala, Chakrapanidatta. Sutra sthana, Chapter 12, Vatakalakaliya Adhyaya, Verse. 8. In: Acharya YT (Edi.), Charaka Samhita with Ayurveda Deepika Commentary. Reprint Edition: 2015. Varanasi: Chaukhamba Orientalia, 2015; 79.
2. Mark Kinirons, Harold Ellis, French's Index of Differential Diagnosis. Reprint Edition: 2010. London. Edward Arnold Ltd, 2010; 1722.
3. Agnivesha, Charaka, Drudabala, Chakrapanidatta. Chikitsa sthana, Chapter Vatavyadhi Chikitsa, Verse. 75-82,104-105. In: Acharya YT (Edi.), Charaka Samhita with Ayurveda Deepika Commentary. Reprint Edition, 2015. Varanasi: Chaukhamba Orientalia, 2015; 620.
4. Dr. J.L.N. Sastry, Dravyaguna Vijnana, Vol.II. Reprint Edition: 2015. Varanasi: Chaukhamba Orientalia, 2017; 868.
5. Sushruta, Dalhana, Gayadasa. Shareera Sthana, Chapter 9 Dhamanivyakarana, Verse 3. In: Acharya YT, Narayan Ram Acharya (Edi.). Sushruta Samhitha with Nibandhasangraha and Nyayachandrika Panjika Commentary. Reprint Edition 2019. Varanasi: Chaukhamba Orientalia, 2019; 385.
6. Kellogg Jr DL. In vivo mechanisms of cutaneous vasodilation and vasoconstriction in humans during thermoregulatory challenges. *Journal of applied physiology*, 2006 May; 100(5): 1709-18.
7. Dr. J.L.N. Sastry, Dravyaguna Vijnana, Vol.II. Reprint Edition 2015. Varanasi: Chaukhamba Orientalia: 2017; 868, 514, 822, 896, 1008, 106.
8. Sri Bhava Mishra. Bhavaprakasha Part I. Haritakyadi varga. Sri Brahmasankara Mishra, Sri Rupalalaji Vaisya. Varanasi: Chaukhamba Orientalia, 2015; 154.
9. Bach FW, Chaplan SR, Jang J, Yaksh TL. Cerebrospinal fluid beta-endorphin in models of hyperalgesia in the rat. *Regul Pept.*, 1995; 59: 79–86. [PubMed] [Google Scholar]
10. Pan R., Tian Y., Gao R., Li H., Zhao X., Barrett J.E., Hu H. Central Mechanisms of Menthol-Induced Analgesia. *J. Pharmacol. Exp. Ther.*, 2012; 343: 661–672. doi: Gentry C., Stoakley N., Andersson D.A., Bevan S. The roles of iPLA2, TRPM8 and TRPA1 in chemically induced cold hypersensitivity. *Mol. Pain*, 2010; 6: 4. doi: 10.1186/1744-8069-6-4. [PubMed]
11. Knowlton W.M., Bifolck-Fisher A., Bautista D.M., McKemy D.D. TRPM8, but not TRPA1, is required for neural and behavioral responses to acute noxious cold temperatures and cold-mimetics in vivo. *Pain.*, 2010; 150: 340–350. doi: 10.1016/j.pain.2010.05.021. [PubMed] [Google Scholar]
12. Macpherson L.J., Hwang S.W., Miyamoto T., Dubin A.E., Patapoutian A., Story G.M. More than cool: Promiscuous relationships of menthol and other sensory compounds. *Mol. Cell. Neurosci.*, 2006; 32: 335–343. doi: 10.1016/j.mcn.2006.05.005. [PubMed] [CrossRef] [Google Scholar]
13. Kolesnikov YA, Jain S, Wilson R, Pasternak GW. Peripheral morphine analgesia: synergy with central sites and a target of morphine tolerance. *J PharmacolExpTher.*, 1996; 279: 502–6. [PubMed] [Google Scholar]