



## CLINICAL ASSESSMENT OF BASTI KARMA AND RASARAJ RASA IN THE MANAGEMENT OF GRIDHRASI (SCIATICA)

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## ABSTRACT

**Background:** Sciatica is the most common disorder which affects the quality of life of individual. Sciatica is the set of symptoms which is caused by a pinching and /or irritation of one of the three lowest nerve roots that make up the giant sciatic nerve and causing a low back pain and leg pain. Prevalence of sciatica ranges from 2% to 40% worldwide. In *Ayurveda* sciatica has a high resemblance with *Gridhrasi*, which comes under *Samanyaja Vikara* and *Nanatmaja Vatavikara*. **Aim & Objectives:** To study the effect of *Dashmooladi Niruha Basti* with *Rasaraj Rasa* in the management of *Gridhrasi* (Sciatica) and to find out an effective *Ayurvedic* management for *Gridhrasi* (Sciatica). **Material and Methods:** An open clinical study with *Dasmooladi Niruha Basti* with *Rasaraj Rasa* was done in 10 patients of *Gridhrasi* (sciatica). 10 clinically diagnosed patients of *Gridhrasi* (sciatica), registered at the *Kayachikitsa* OPD of Pt. Khushilal Sharma Govt. Ayurvedic Hospital Bhopal. The patients were treated with *Dasmooladi Niruha Basti* along with *Rasaraj Rasa*. Duration of study is 30 days. Assessment was done on the basis of symptomatic relief and change in the degree of SLR test after treatment. **Observation:** *Dasmooladi Niruha Basti* and *Rasaraj Rasa* yielded symptomatic relief and increased the degree of SLR test after treatment. The overall effect of the treatment in all patients suggested that, complete cure was not in any patient. Three patients were markedly improved, and seven patients were moderately improved. None of patients remained un-

changed. **Conclusion:** On the basis of result obtained, it can be concluded that *Dasmooladi Niruha Basti* and *Rasaraj Rasa* can be used as an effective treatment in the management of *Gridhrasi* (sciatica).

**Keywords:** *Gridhrasi, Dasmooladi Niruha Basti, Sciatica, Rasaraj Rasa*

## INTRODUCTION

The complexity of the brain differentiates us from other species and its interactions with the spinal cord and peripheral nerves combine to allow us to perceive and react to the external world while maintaining a stable internal environment. The spinal cord and spinal root may be affected by intrinsic disease or by disorders of the surrounding meninges and bones.<sup>1</sup> Sciatica is caused by impingement of the L<sub>4</sub>, L<sub>5</sub> or S<sub>1</sub> nerve (i.e. from a herniated disk) and manifests as unilateral neuropathic pain extending from the gluteal region down the posterolateral leg to foot.<sup>2</sup> Worldwide 2% to 40% of people have sciatica. Sciatica has been reported to occur in 1 to 10% of the population, most commonly in people age 25 to 45 years. Men are more frequently affected than women. The highest incidence is found in the fifth decade and then decreases with increasing age.<sup>3</sup> Lumbar disc herniation is often precipitated by trauma (usually lifting heavy weights while the spine is flexed), genetic factors may also be important. The onset may be sudden or gradual. Alternatively, repeated episodes of low back pain may precede sciatica by months or years. Constant aching pain is felt in the lumbar region and may radiate to the buttock, thigh, calf and foot. Pain is exacerbated by coughing or straining but may be relieved by lying flat. MRI is the investigation of choice if available, since they are of little value in the diagnosis of disc disease, although they may demonstrate conditions affecting the vertebral body.<sup>4</sup> In *Ayurveda* sciatica in symptomatology can be correlated with *Gridhrasi* which comes under *Samanyaja Vikara*<sup>5</sup> and *Nanatmaja Vatavikara*.<sup>6</sup> It is described in *Brihatrayee* as well as *Laghutrayee*. In *Gridhrasi*, the word *Gridhra* means a bird called as vulture in English. According to *Shabdakalpadruma* the word *Gridhra* refers to a person who is crazy of eating meat. *Gridhrasi* is named so due to resemblance of the abnormal gait of the patient to the gait of bird vulture. Specific causative factors for *Gridhra-*

*siara* not mentioned in the classics, all the *Nidanas* which are causing *Vatavyadhi* are attributed as the etiological factors of *Gridhrasi*. The vitiation of *Vata* takes place in two ways viz. *Dhatukshaya* and *Margavarana*.<sup>7</sup> *Charak* states the *Lakshnas* of *Gridhrasi* as the pain starting from *Sphik* (buttock) and radiating downwards *Kati* (posterior aspect of waist), *Prushta* (back region), *Uru* (posterior aspect of thigh), *Janu* (knee), *Jhangha* (calf), and *Pada* (foot) in order.<sup>8</sup> *Samanaya Lakshnas* of *Gridhrasi* are *Ruk* (pulling pain), *Toda* (piercing pain), *Sthambha* (stiffness) and *Spandana* (twitching) described by *Acharya Charak* (*Ch.Chi.28/56*), *Madhavakar* (*Ma.Ni.22/54*), *Bhavamishra* (*Madhyamkhanda Vatavyadhi*) and *Vangsen* (*Vatavyadhi Adhikara*). *Prashnipratyanguli Vedana* (scoliotic postural deformity) described by *Acharya Sushruta* (*Su.Ni.1/74*) and *Vaghabhatta* (*A.H.Ni.15<sup>th</sup> Chp.Vatavyadhi*). *Vishishta Lakshanas* of *Vataja* and *Vata-Kaphaja Gridhrasi* elaborated by *Madhavakar* (*Ma.Ni.22/55-56*) and other *Acharyas*. Modern management of sciatica includes conservative treatment with analgesia and early mobilization. Adjuvant treatment with local anaesthetic or glucocorticoid and surgery may have to be considered if there is no response to conservative treatment. In this research paper a holistic approach is adopted to evaluate the role of *Dasmooladi Niruha Basti* and *Rasaraj Rasa* in the management of *Gridhrasi*. *Dasmooladi Niruha Basti* as per *Ayurvedic* guidelines and effect of *Rasaraj Rasa* will be observed with respect to its clinical effect in patients.

### Aim and Objectives

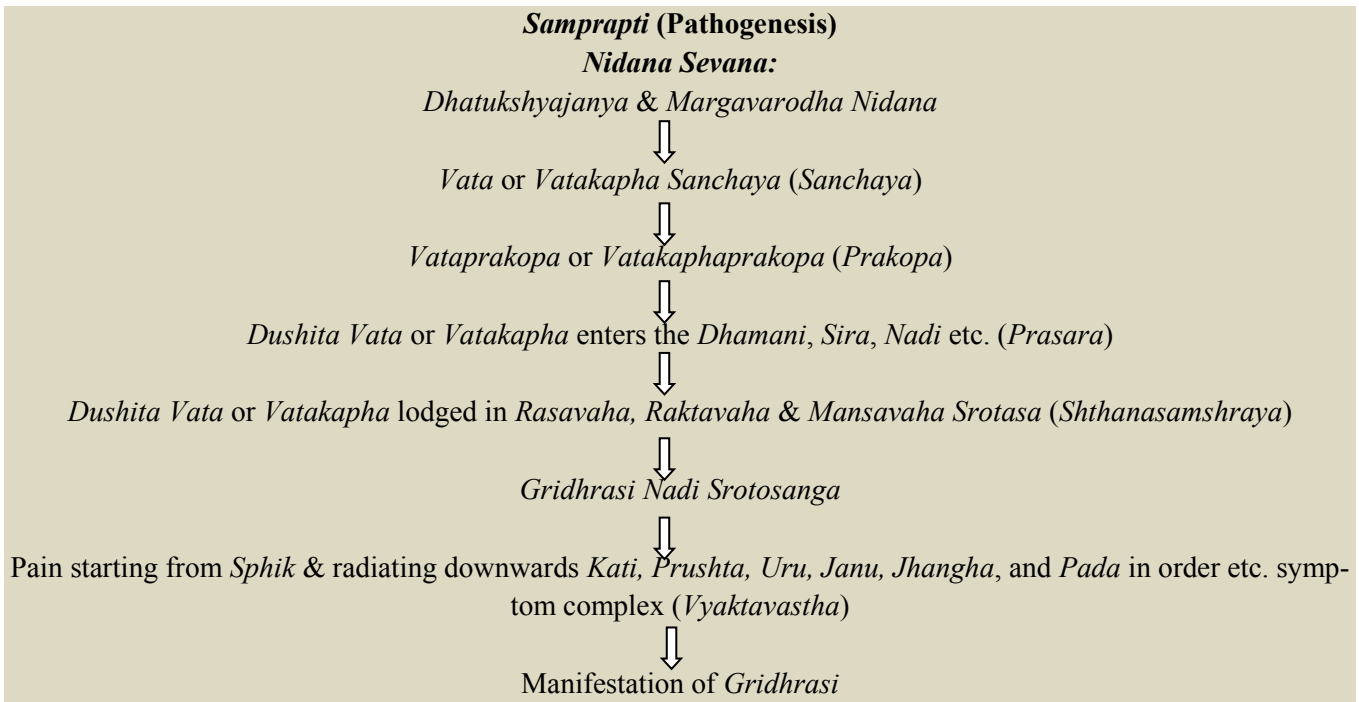
1. To study the effect of *Dasmooladi Niruha Basti* with *Rasaraj Rasa* in the management of *Gridhrasi* (Sciatica).
2. To find out an effective *Ayurvedic* management for *Gridhrasi* (Sciatica).

**Material and Methods**

**Selection and Source of patient:** For this open clinical study, 10 patients of Gridhrasi were registered from OPD of *Kayachikitsa* department and admitted in IPD of Pt. Khushilal Govt. (Auto.) Ayurveda Hospital Bhopal.

**Plan of study:** Patients taking allopathic medicines were stopped during the study period. The drugs required for *Dashmooladi Niruha Basti* were procured

and prepared in *Prakalp* of *Panchkarma* in Pt. KLS Govt. Ayurveda Hospital Bhopal. These registered patients were properly informed regarding the *Basti* procedure, they would undergo and admitted in the hospital indoor ward and treated under direct supervision. The duration of study: 30 days and the Follow up were followed on completion of trial every week for 2 months.



**Treatment Regimen:** These diagnosed cases of *Gridhrasi* admitted in indoor ward of Pt. K. L. S.

Govt. Ayurveda Hospital, Bhopal and undergo following procedures

**Table 1**

S. No.	Treatment	Drug used	Dose	Duration
1.	<i>Sthanik Abhyang (Kati region) and Sthanika Nadi Swedana</i>	<i>Narayan oil &amp; Dashmool Siddha Kwatha</i>	Q. S.	16days
2.	<i>Basti plan (Kaal Basti)</i>	<i>Niruha Basti (Dashmooladi Niruha Basti)<sup>9</sup> Anuvasana Basti (Sahachar Tail)</i>	350ml 75ml	16 days
3.	<i>Shaman medicine</i>	<i>Rasaraj Rasa<sup>10</sup></i>	125mgbd	30 days

**Table 2:** Ingredient of *Dashmooladi Niruha Basti* (Ch. Siddhi 3/35)

S. No.	<i>Kwatha Dravya</i>	Botanical Name
1.	<i>Bilva</i>	<i>Foeniculum vulgare</i>
2.	<i>Shyonak</i>	<i>Oroxylum indicum</i>
3.	<i>Gambhari</i>	<i>Gmelina arborea</i>
4.	<i>Patla</i>	<i>Stereospermum sauveolens</i>
5.	<i>Agnimantha</i>	<i>Premna obtusifolia</i>
6.	<i>Shlaparni</i>	<i>Desmodium gengeticum</i>
7.	<i>Prishnaparni</i>	<i>Urariapicta</i>
8.	<i>Gokshur</i>	<i>Tribulus terrestris</i>
9.	<i>Brihati</i>	<i>Solanum indicum</i>
10.	<i>Kantkari</i>	<i>Solanum xanthocarpum</i>
	<b><i>Kalka Dravya</i></b>	<b>Botanical Name</b>
1.	<i>Shatapushpa</i>	<i>Acorus calamus</i>
2.	<i>Kushtha</i>	<i>Saussurea lappa</i>
3.	<i>Bala</i>	<i>Sida cordifolia</i>
4.	<i>Guduchi</i>	<i>Tinospora cordifolia</i>
5.	<i>Ajwain</i>	<i>Trachyspermum</i>
6.	<i>Madanfala</i>	<i>Randia spinosa</i>
7.	<i>Bela</i>	<i>Jasminum sambac</i>
8.	<i>Nagarmustak</i>	<i>Cyperus rotundus</i>
9.	<i>Pippali</i>	<i>Piper longum</i>
10.	<i>Vacha</i>	<i>Acorus calamus</i>
11.	*Broth of goat flesh	-

\*some patients were not willing for using goat flesh, so it had to be excluded in *Kalka Dravya* of *basti*.

**Table 3**

S.No.	Additive of <i>Basti</i>	Quantity
1.	<i>Kwatha</i>	200ml
2.	<i>Kalka</i>	10gm
3.	<i>Kanji</i>	30ml
4.	<i>Madhu</i> (honey)	50ml
5.	<i>Saindhavalavana</i> (rock salt)	10gm
6.	<i>Tila tail</i> (sesame oil)	50ml

**Table 4:** *Kaal Basti* shchedule<sup>11</sup>

S. No.	Day	<i>Basti</i>	Dose
1.	1 <sup>st</sup>	A	75ml
2.	2 <sup>nd</sup>	A	75ml
3.	3 <sup>rd</sup>	N	350ml
4.	4 <sup>th</sup>	A	75ml
5.	5 <sup>th</sup>	N	350ml
6.	6 <sup>th</sup>	A	75ml
7.	7 <sup>th</sup>	N	350ml
8.	8 <sup>th</sup>	A	75ml
9.	9 <sup>th</sup>	N	350ml

10.	10 <sup>th</sup>	A	75ml
11.	11 <sup>th</sup>	N	350ml
12.	12 <sup>th</sup>	A	75ml
13.	13 <sup>th</sup>	N	350ml
14.	14 <sup>th</sup>	A	75ml
15.	15 <sup>th</sup>	A	75ml
16.	16 <sup>th</sup>	A	75ml

A- Anuvasanabasti

N- Niruhabasti

**Criteria for Inclusion (CCRAS Protocol)**

- Age – 20 to 70 years
- Sex – either sex
- Duration of illness – up to 2 years
- Radiating pain, starting from the gluteal region towards, the foot
- Tenderness of the sciatic nerve course
- Severe pain on squatting
- Sensory change
- Non-involvement of urinary bladder and rectum
- Positive straight leg raising sign

**Criteria for Exclusion (CCRAS Protocol)**

- Age below 20 years and above 70 years
- Duration of disease more than 2 years

- Monoplegia
- Paraplegia
- Hip joint arthritis
- T.B. Spine/Hip
- Pelvic pathology
- Traumatic lesion in lumbo-sacral region

**Assessment Criteria (CCRAS Protocol)**

- Each sign and symptom is graded, and a numerical value is given for assessment of results. The change and relief in symptoms were observed on completion of treatment.
- Overall effect of the therapy will be graded as follows:

Complete remission	100% relief
Marked improvement	75% to < 100% relief
Moderate improvement	50% to <75% relief
Mild improvement	25% to <50% relief
No improvement	<25% relief

- Clinical parameters: (CCRAS Protocol)<sup>12</sup>

**Table 5**

S.No.	Subjective Symptoms	Parameters	Scoring
1.	Pricking pain ( <i>Toda</i> )	Absent	0
		Mild	1
		Moderate	2
		Severe	3
2.	Pulling pain ( <i>Ruk</i> )	Absent	0
		Mild	1
		Moderate	2
		Severe	3
3.	Stiffness ( <i>Stambha</i> )	Absent	0
		Mild	1
		Moderate	2
		Severe	3

4.	Numbness ( <i>Supti</i> )	Absent	0
		Mild	1
		Moderate	2
		Severe	3
5.	Twitching ( <i>Spandan</i> )	No twitching	0
		Sometimes for 5-10 min	1
		Daily for 5-10 min	2
		Daily for 10-30 min	3
		Daily for 30-60 min	4
		Daily more than 1 hour	5
	<b>Subjective Signs</b>		
6.	Tenderness of the sciatic Nerve	No tenderness	0
		Patient says there is tenderness	1
		Patient winces	2
		Winces & withdraws the affected limb	3
7.	Sensory impairment	Absent	0
		Mild	1
		Moderate	2
		Severe	3
8.	Walking speed	Up to 20 seconds	0
		21 to 40 seconds	1
		41 to 60 seconds	2
		Above 60 seconds	3
9.	Posture	No complaint	0
		Patient can walk without difficulty but experienced difficulty from getting up from squatting posture	1
		Difficulty to squat	2
		Difficulty in climbing upstairs	3
		Limping gait	4
		Can stand on both limbs but with pain	5
		Can stand without touching the affected limb on the floor	6
		Can sit on bed without support but with pain and difficulty	7
		Lying in bed with pain affected limb flexed by a supportive pillow	8
<b>S.No.</b>	<b>Objective Sign</b>	<b>Parameters</b>	<b>Scoring</b>
10.	Straight leg raising test	0	54
	(in degrees)	10	48
		20	42
		30	36
		40	30
		50	24
		60	18
		70	12
		80	6
		90	0

**Table 6**

Patient	Sex	Pricking pain		Pulling pain		Stiffness		Numbness		Twitching		Tenderness of the sciatic nerve		Sensory impairment		Walking speed		Posture	SLR Test (score) (effected leg)		
		B T	A T	B T	A T	B T	A T	BT	AT	BT	A T	BT	AT	B T	A T	B T	A T		BT	A T	B T
1.	M	3	1	2	0	3	0	3	0	5	1	3	1	3	1	3	0	7	3	42	24
2.	M	3	0	3	1	2	0	3	1	4	0	0	0	0	0	3	0	5	1	36	12
3.	M	2	0	2	0	3	0	2	0	4	1	1	0	3	0	3	1	6	1	30	6
4.	M	3	1	3	1	0	0	3	1	4	0	1	0	2	1	2	0	6	1	42	12
5.	M	3	1	0	0	0	0	2	1	3	0	2	0	1	0	3	0	5	2	30	18
6.	F	3	0	2	0	2	0	1	0	5	1	3	1	2	0	2	1	7	1	42	24
7.	M	2	0	0	0	3	1	0	0	4	1	2	0	2	1	1	0	4	1	36	12
8.	M	0	0	3	1	0	0	3	1	4	1	2	0	3	1	2	0	4	1	36	12
9.	M	2	1	2	0	1	0	3	1	4	0	0	0	0	0	1	0	5	2	30	6
10.	F	3	0	0	0	3	0	2	0	3	0	3	1	1	0	3	0	5	1	24	6

**Statistical Analysis:** Statistical analysis was carried out by using Wilcoxon Sign Rank Test for subjective parameters and Paired t-Test for objective parameter.

The result was interpreted at P<0.05, P<0.01, P<0.001 as level of significance.

**Result**

**Table 7**

Subjective parameters	W/T+	T-	Mean		MD	%Relief	SD	SE	P-value	Significance
			BT	AT						
Pricking pain	45	0	2.400	0.400	2.0	83.33%	0.9428	0.2981	0.0039	Very significant
Pulling pain	28	0	1.700	0.300	1.4	82.35%	0.9661	0.3055	0.0156	Significant
Stiffness	28	0	1.700	0.100	1.6	94.11%	1.265	0.4000	0.0078	Very significant
Numbness	45	0	2.200	0.500	1.7	77.27%	0.8233	0.2603	0.0039	Very significant
Twitching	55	0	4	0.500	3.5	87.50%	0.5270	0.1667	0.0020	Very significant
Tenderness of the sciatic nerve	36	0	1.700	0.300	1.4	82.35%	0.8433	0.2667	0.0039	Very significant
Sensory impairment	36	0	1.700	0.400	1.3	76.47%	0.9487	0.3000	0.0078	Very significant
Walking speed	55	0	2.300	0.200	2.1	91.30%	0.8756	0.2769	0.0020	Very significant
Posture	55	0	5.4	1.400	4.0	74.47%	1.054	0.3333	0.0020	Very significant
<b>Objective parameter</b>	<b>t value</b>									
SLR Test (effected leg)	13.500	-	34.800	13.200	21.60	62.06%	5.060	1.600	<0.0001	Extremely significant

**Table 8**

Patient			W/ T+	T-	Mean		MD	%Relief	SD	SE	P-value	significance
S.NO.	Age(in year)	Sex			BT	AT						
1.	30	M	55	0	7.40	3.10	4.30	<b>58.10%</b>	4.87	1.54	0.0020	Very significant
2.	40	M	36	0	5.90	1.50	4.40	<b>74.24%</b>	7.02	2.22	0.0078	Very significant
3.	66	M	55	0	5.60	0.90	4.70	<b>83.92%</b>	6.86	2.17	0.0020	Very significant
4.	35	M	45	0	6.60	1.70	4.90	<b>74.24%</b>	8.93	2.82	0.0039	Very significant

5.	31	M	36	0	4.90	2.20	2.70	<b>55.10%</b>	3.46	1.09	0.0078	Very significant
6.	39	F	55	0	6.90	2.80	4.10	<b>59.42%</b>	5.10	1.61	0.0020	Very significant
7.	40	M	36	0	5.40	1.60	3.80	<b>70.37%</b>	7.17	2.27	0.0078	Very significant
8.	51	M	36	0	5.70	1.70	4.00	<b>70.17%</b>	7.10	2.24	0.0078	Very significant
9.	30	M	32/34	-2	4.70	1.10	3.60	<b>76.59%</b>	7.32	2.31	0.0234	Significant
10.	30	F	45	0	4.70	0.80	3.90	<b>82.97%</b>	5.08	1.60	0.0039	Very significant

S.No.	Overall assessment	No. of Patients	Percentage
1.	Complete remission	00	0%
2.	Marked improvement	03	30%
3.	Moderate improvement	07	70%
4.	Minor improvement	00	0%
5.	No improvement	00	0%

## OBSERVATION

The effect of *Dashmooladi Niruha Basti* and *Rasaraj Rasa* were observed on the clinical parameters under criteria for assessment. There was 83.33% relief in pricking pain, 82.35% relief in pulling pain, 94.11% relief in stiffness, 77.27% relief in numbness, 87.50% relief in twitching, 82.35% relief in tenderness of the sciatic nerve, 76.47% relief in sensory impairment, 91.30% relief in walking speed and 74.47% relief in posture which is statistically very significant at the level of  $P < 0.05$ . In SLR Test there was 62.06% of relief percentage which is statistically extremely significant at the level of  $P < 0.0001$  ( $t=13.50$ ). The overall effect of the treatment in all patients suggested that, complete cure was not in any patient. Three patients were markedly improved, and seven patients were moderately improved. None of patients remained unchanged.

## DISCUSSION

*Basti* therapy is advocated in the line of treatment for *Gridhrasi* by almost all the *Acharyas*. The idea behind the therapy is supposed to increase strength of the *Gridhrasi Nadi*, the corresponding vertebrae and other involved structures. According to *Acharya Parashara Guda* is the *Mula* of the body where all *Sira* are located. The drug administered through *Guda* reaches first to *Pakvashaya* and then to *Grahani*.<sup>13</sup> *Pakvashaya* is the site of *Purishdhara Kala* and *Grihani* is the site of *Pittadhara Kala*. So *Basti* directly acts on *Purishdhara Kala* and *Pittadhara Kala*. Comment or

*Dalhana* has commented that *Purishdhara & Ashtidhara Kala* and *Pittadhara & Majjadhara Kala* are same (*Dalhana* on *Su. Ka.4/40*). *Vata Nadi* is also made by *Majja Dhatu* and *Majja* is the seat of *Vata Dosha*. So *Basti* is useful in disorders of nervous system. *Dashmooladi Niruha Basti* consist *Dashmool Dravya*, *Saindhava Lavana*, *Madhu* and *Sneha* as active ingredients. According to *Acharya Sushruta* *Dashmool Dravya* are *Kapha-Pitta-Vata Shamaka*, *Amadosha Pachaka* and *Sarvajwaravinashak*<sup>14</sup> (antipyretic) in properties. *Saindhava Lavana* has *Sukshma* and *Tikshna Guna*, it reaches up to the micro channels and breaks down the morbid *Mala* and *Dosha Sanghata*. The presence of  $Na^+$  (*Saindhava*) in *Basti Dravya* may play important role for the absorption of the drug as the  $Na^+$  channels. The most commonly used channel for absorption of the substances. *Madhu* (honey) is made of various substances and considered best among the vehicles (*Ch.Su.27/249*). *Charaka* says that *Basti* containing excess of *Madhu* when administered to the person makes him extremely potent (*Ch.Si.12/28*). *Sneha Dravya* reduces *Vata Dushti*, softens microchannels, destroys the compact *mala* and removes the obstruction in the channels (*Ch.Si.1/7*). So *Dashmooladi Niruha Basti* subsided pricking and pulling pain, reduced stiffness and tenderness, also showed improvement in sensory impairment. *Rasaraj Rasa* contains *Parada* (mercury), *Abhraka* (mica), *Swarna* (gold), *Roupya* (silver), *Loha* (ferrum) and *Vanga* (stannum) *Bhasma*. *Jatifala*, *Ksheerkakoli*, *Kumari* and



*Kakamachi* as *Bhavana Dravya*. *Rasaraj Rasa* has ability to pacify vitiated *Vata Doshas*, majority of the ingredients are *Tikta*, *Madhura* and *Kashaya Rasa* predominant with *Kinchit Katu Rasa*, *Sheet Virya*, *Madhura Vipaka*, *Laghu*, *Snigdha* and *Vyavayi* in nature with alleviating action on all *Doshas*. *Abhraka Bhasma* is hepatoprotective, *Lauha Bhasma* is an antioxidant and *Tamra Bhasma* is antibacterial in properties. *Ashwagandha* acts as immunomodulator and has anti-inflammatory effect. *Swarna* and *Tamra Bhasma* have free radical scavenging properties. *Rasaraj Rasa* reduced numbness, twitching and inflammation etc. in patients.

## CONCLUSION

On the basis of this clinical trial it can be concluded that *Dashmooladi Niruha Basti* and *Rasaraj Rasa* work effectively in the management of *Gridhrasi*. This *Ayurvedic* management prevents the progression of disease and improves the quality of life of the patient. This research paper evaluated the effective management of *Gridhrasi* (Sciatica) through *Ayurveda* perspective. Though this trial was carried out on only 10 patients, large number of sample size is necessary which may be the scope of further research.

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## ABBREVIATIONS

SLR: Straight Leg Raising,  
MRI: Magnetic Resonance Imaging,  
*A.H.Ni.*: *AshtangHridayaNidanasthana*,  
*Ch. Chi.*: *CharakChikitsasthana*,  
*Ch. Si.*: *CharakSiddhiasthana*,  
*Ch. Su.*: *CharakSutrasthana*,  
*Ma. Ni.*: *Madhava Nidana*,  
*Su. Ka.*: *SushrutaKalpasthana*,  
*Su. Ni.*: *SushrutaNidanasthana*,  
BT: Before Treatment,

AT: After Treatment,  
MD: Mean Difference,  
SD: Standard Deviation,  
SE: Standard Error,  
CI: Confidence Interval

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