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## Comparative Clinical Study to Assess the Efficacy of *Siravyadhana* with or without *Sadyosnehana* in the Management of *Gridhrasi*

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### ABSTRACT

**Background and Objectives:** Gridhrasi is a disorder where the pain starts from Sphikpradesha and radiates downwards to kati, prushta, uru, janu, jangha and pada respectively. Gridhrasi (Sciatica) is more common among the age group of 20-70 years. Though, the disease is present in lower back and leg, it disturbs the daily routine and overall life of the patient. In the modern medicine administration of Muscle relaxants, NSAIDS, Corticosteroids, Physiotherapy etc. gives temporary relief from pain and at the end the last option left is surgery. *Siravyadhana* is mentioned in the Chikitsasutra of Gridhrasi. As *Siravyadhana* helps in relieving the Sangha, Avarana, Shotha and Vedana, It gives instantaneous and encouraging results in curing the disease. In this study we are evaluating the Efficacy of *Siravyadhana* with or without *Sadyosnehana* in the management of Gridhrasi.

**Methods:** It is an Open label, double arm and randomized prospective comparative clinical study, where 30 subjects who are fulfilling the diagnostic and inclusion criteria was selected and randomly divided into two groups comprising of 15 patients each in one group. One group was subjected to *Siravyadhana* with *Sadyosnehana* and in other group *Siravyadhana* without *Sadyosnehana* was performed. All subjects completed the treatment.

**Results:** Treatment was found to be statistically significant in attaining encouraging results with respect to subjective and objective parameters in both the groups. ( $p < 0.05$  was observed)

**Interpretation and Conclusion:** Even though *Siravyadhana* with *Sadyosnehana* had better effect on Ruk, Stamba and Standing time but in all other Parameters it had equal results with *Siravyadhana* without *Sadyosnehana*.

### KEYWORDS

*Panchakarma, Raktamokshana, Siravyadhana, Sadyosnehana, Gridhrasi.*



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## INTRODUCTION

In Charaka Samhita Trividhaoushadha is explained as Anta-Parimarjana, Bahi-Parimarjana and Shastra-Pranidhana<sup>1</sup> which can be adopted for the management of Vata Vyadhi. Sadyosnehana is included in anta parimarjana chikitsa which is based on the principles of Pravicharanasnehana. It is a procedure of administration of Sneha to achieve Samyaksnig dhalakshanas immediately. Raktamokshana is included in shastra-pranidhana in which dushita Rakta is let out. Raktamokshana has types like Siravyadhana, Prachanna, Jalauka, Shringa and Alabu<sup>2,3</sup> Siravyadhana is mentioned in chikitsa sutra of Gridhrasi. The Siravyadhana helps in relieving of Sanga, Avarana, Shotha and Vedana, it gives instantaneous and encouraging result in curing disease.

Gridhrasi is a disorder where the pain starts from Sphikpradesha and radiates downwards to kati, prushta, uru, janu, jangha and pada respectively<sup>4</sup> Vatavyadhiesare described in Charakasamhita are divided into two groups-Nanatmaja and Samanyaja. Gridhrasi is the one which is included in both, as it is caused by only Vataas well as Kaphanubandhi Vata. Stambha, Ruk, Toda, Graha and Spanda in Sphika, Kati, Uru, Janu, Jangha and Pada, respectively

and Sakthikshe panigrahai.e. Restriction in lifting leg are the cardinal symptoms of Gridhrasi. Kapha is occasionally found as Anubandha dosha in which Arochaka, Tandra and Gaurava are found along with the general symptoms. The presentation of Gridhrasi is similar in signs and symptoms to that of Sciatica.

Low backache is the 2<sup>nd</sup> most common reason for visiting the doctor in the world and affects as many as 80-90% of people during their life time. Lifetime incidences vary from 1.6% to 4.3%. Sciatica is more common among the age group of 20-70 years.<sup>5</sup> Though, the disease is present in leg, it disturbs the daily routine and overall life of the patient. The developing countries like India most of the working class population suffers from Low back pain due to several stressful factors seen in their life and also the postural habits. In the Modern medicine, administration of Muscle relaxants, NSAIDS, Corticosteroids, Physiotherapy etc. gives temporary relief from pain and at the end the last option left is Surgery, which is quite expensive, needs long hospital stay, has several complications and may even cause permanent loss of working capabilities. So there is a need for the research for safer drugs and some cost effective, non-invasive procedures having better efficacy.



If there is no significant improvement in the patient's condition even after Panchakarma treatment, it has to be understood that underlined pathology is Raktavrita Vata. The treatment prescribed for Pitta Samsarga or Raktavrita Vata in Gridhrasi is Raktamokshana.

Hence this study was undertaken by selecting 30 patients in 2 groups, who had unilateral symptoms of Gridhrasi of less than one year duration. The causes were recorded and analyzed. All the cases were subjected to standard Siravyadhana procedure.

## METHODOLOGY

Ethical Committee Approval No. SDM/IEC/38/2017/2018

A minimum of 30 patients who fulfill the inclusion criteria were selected from Outpatient and In-patient department of Sri Dharmasthala Manjunatheshwara College of Ayurveda & Hospital, Hassan. This was an Open label, double arm and randomized prospective comparative clinical study. The study was approved by Institutional ethical committee IEC No: SDM/IEC/38/2017-2018 dated on 20/05/2017

### Diagnostic Criteria

Patients with features of Gridhrasi (as well as Sciatica) having the Lakshanas like

1. Ruk on Sphikpoorva, Kati, Prishtha, Uru, Janu, Jangha and Pada Paryanta (Pain radiates from low back to the legs)
2. Toda (Pricking sensation)
3. Stambha (Stiffness)
4. Spandana (Fasciculation)
5. Positive Straight Leg Raising test ( $30^{\circ}$ - $70^{\circ}$ )
6. Positive Bragard's sign

### Inclusion Criteria

1. Having the complaints less than 1 year
2. Patients of either Gender, above 20 years & below 60 years.
3. The patients, who are fit for Siravyadhana.
4. Patients who are ready to participate and have signed for informed consent form.

### Exclusion Criteria

1. Neoplastic, traumatic and infective conditions of the spine
2. Patients having a history of HIV & HBsAg
3. Systemic diseases like Chronic Heart Disease, Chronic Renal Failure and Chronic Liver Diseases.
4. Uncontrolled Diabetes Mellitus & Hypertension
5. Patients with Hb < 10 gm % with systemic symptoms.
6. Patients with bleeding disorders.

### Intervention:

**Grouping:** Thirty patients fulfilling the diagnostic and inclusion criteria was



selected and randomly divided into two groups comprising of 15 patients each in one group.

### **Poorva Karma:**

Group A

1) Deepana – Pachana with Panchakola Phanta 50ml TID for 3 days

2) Go-gritha (150ml) with Saindhava (10gm) for Sadhyo snehana.<sup>6</sup>

3) Sarvanaga Abhyanga with Murchitatilataila and Bashpasweda with Dashamoolakwatha.

4) Tilavyavagu pana-100ml<sup>7</sup> before 1hr.

Group B

1) Sarvanga Abhyanga with Murchitatilataila and Bashpasweda with Dashamoolakwatha.

2) Tilavyavagu pana-100ml<sup>7</sup> before 1hr.

### **Pradhana Karma:**

Patient is made to sit on a knee height chair. Tourniquet is tied to affected leg, 4 angula below the knee joint. A scalp vein no. 20G is used for Siravyadha. By this, under aseptic condition puncturing is done on the prominent vein near ankle joint and blood is allowed to flow (not more than 320ml) till it gets stopped by its own. During the procedure the vitals are monitored for further complications. (If any)

### **Paschat Karma:**

1) Bandaging was done.

2) Laghudeepana ahara and rest.

Vitals was monitored during the procedure

### **Follow up:**

After completion of study patient was asked to attend the OPD after 15 days.

### **Assessment Criteria**

Primary & Secondary outcome measures was assessed before and after treatment.

### **Primary outcome measures:**

1. Ruk

2. Toda

3. Stambha

4. Gourava

5. Aruchi

6. Tandra

7. Spandana

Samyak Siravyadhana Lakshanas

1. Laghava

2. Vedana Shanti

3. Vyadhirvega Kshaya

4. Mana Prasada

### **Secondary outcome measures:**

It was assessed by the following:

1. Visual analogue scale

2. Bragard's sign

3. Straight leg raising test active

4. Straight leg raising test passive

5. Coin test

6. Gait 50

7. Standing time

8. Walking time

### **OBSERVATIONS (Table 1)**



A total of 32 patients were registered in this work among them 30 patients completed the treatment and 2 patients dropped out.

**Table 1** General Observation

Observation	Number of Patients	Total	Percentage
Age (36-40)	7	30	23.3
Gender (Male)	24	30	80.0
Marital status (married)	23	30	76.7
Economic status (Middle class)	18	30	60.0
Occupation (Agriculture)	10	30	33.3
Position of work (Sitting)	16	30	53.3
Nature of work (Moderate manual)	15	30	50.0
Prakruti (Vata-Kaphaja)	18	30	60.0
RaktaDushti of Blood withdrawn (Vataja)	15	30	50.0

So the observation and assessment was made on 30 patients. Among 30 patients maximum patients belonged to 36-40 year age group (23.3%), Males (80%), Married (76.7%), Middle class (60%), Agriculture (33.3%), Sitting position of work (53.3%), Moderate manual type of work (50.0%), Vatakaphajaprakruti (60%) and Vatajadusti Rakta (50%).

## RESULTS

### Effect of Siravyadhana (with Sadyosnehana) on Signs and Symptoms (Table 2)

**Table 2** Effect of Siravyadhana (with Sadyosnehana) on Signs and Symptoms

Signs/	N	Mean score	X <sup>2</sup>	P
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Symptoms	BT	AT	FU	BT	AT	FU
Ruk	15	2.333	0.000	29.103	<0.001	
Toda	15	3.00	1.30	27.882	<0.001	
Stambha	15	3.00	1.17	28.182	<0.001	
Gourava	15	3.00	1.33	28.000	<0.001	
Aruchi	15	2.93	1.47	26.909	<0.001	
Tandra	15	3.00	1.37	28.204	<0.001	
Spandana	15	2.97	1.03	29.000	<0.001	
SLR Active	15	2.97	1.57	28.133	<0.001	
SLR passive	15	2.93	1.53	28.000	<0.001	
Bragards sign	15	2.97	1.47	28.133	<0.001	
Visual pain analogue scale	15	3.00	1.00	30.000	<0.001	
Standing time	15	3.00	1.00	30.000	<0.001	
Walking time	15	3.00	1.00	30.000	<0.001	
Gait	15	2.70	1.20	22.800	<0.001	

In Group A (Siravyadhana with Sadyosnehana), within the group comparison of results at regular interval shows that there is statistically significant improvement in most of the symptoms namely Ruk, Stambha, Toda, Spandana, Tandra, Aruchi, Gourava and signs namely SLR test, Coin test, Bragard's sign, visual Analogue Pain Scale, Standing time, Walking time and Gait at BT, AT and AFU of treatment. This shows that Siravyadhana with Sadyosnehana is effective in relieving the signs and symptoms of Gridhrasi.



## Effect of Siravyadhana (without Sadyosnehana) on Signs and Symptoms

(Table 3)

**Table 3** Effect of Siravyadhana (without Sadyosnehana) on Signs and Symptoms

Signs/ Symptoms	N	Mean score		X <sup>2</sup>	P
		BT	FU		
Ruk	15	3.00	1.43	28.894	<0.001
Toda	15	3.00	1.47	29.391	<0.001
Stambha	15	3.00	1.17	28.182	<0.001
Gourava	15	3.00	1.33	28.000	<0.001
Aruchi	15	2.53	1.73	16.000	<0.001
Tandra	15	2.53	1.73	16.000	<0.001
Spandana	15	2.93	1.50	25.609	<0.001
SLR Active	15	3.00	1.50	30.000	<0.001
SLR passive	15	3.00	1.50	30.000	<0.001
Bragard's sign	15	2.93	1.53	28.000	<0.001
Visual pain analogue scale	15	3.00	1.07	29.103	<0.001
Standing time	15	2.97	1.07	28.526	<0.001
Walking time	15	3.00	1.03	29.525	<0.001

**Table 4** Comparison of the Effect Therapies on Disease Subjective Parameters (Between Groups-After Treatment)

VARIABLE	Group	Mean Rank	Sum of Ranks	Z-value	2-tailed value	Interpretation
Ruk	Group A	14.50	217.50	-1.439	0.150	NS
	Group B	16.50	247.50			
Toda	Group A	14.50	217.50	-1.439	0.150	NS
	Group B	16.50	247.50			
Stambha	Group A	15.00	225.00	-1.000	0.317	NS
	Group B	16.00	240.00			
Gourava	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			
Aruchi	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			
Tandra	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			
Spandana	Group A	13.50	202.50	-1.795	0.073	NS
	Group B	17.50	262.50			

Gait 15 2.73 1.33 21.143 <0.001

In Group B (Siravyadhana without Sadyosnehana), within the group comparison of results at regular interval shows that there is statistically significant improvement in most of the signs namely Ruk, Stambha, Toda, Spandana, Tandra, Aruchi, Gourava and symptoms namely, SLR test, Coin test, Bragard's sign, visual Analogue Pain Scale, Standing time, Walking time and Gait at BT, AT and AFU of treatment. This shows that Siravyadhana without Sadyosnehana is effective in relieving the signs and symptoms of Gridhrasi.

## Comparison of the Effect Therapies on Disease Subjective Parameters (Between Groups-After Treatment) (Table 4)





This result indicates that the Group A patients attained equal results after the completion of treatment while compared to subjects in the Group B.

### Comparison of the Effect Therapies on Disease Objective Parameters (Between Groups-After Treatment) (Table 5)

**Table 5** Comparison of the Effect Therapies on Disease Objective Parameters (Between Groups-After Treatment)

<i>VARIABLE</i>	<i>Group</i>	<i>Mean Rank</i>	<i>Sum of Ranks</i>	<i>Z-value</i>	<i>2-tailed value</i>	<i>Interpretation</i>
SLR Active	Group A	16.00	240.00	-1.000	0.317	NS
	Group B	15.00	225.00			
SLR Passive	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			
Bragard's Sign	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			
Coin Test	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			
Visual Analogue Scale	Group A	14.00	210.00	-1.175	0.240	NS
	Group B	17.00	255.00			
Standing Time	Group A	11.33	170.00	-2.831	0.005	S
	Group B	19.67	295.00			
Walking Time	Group A	14.27	214.00	-0.872	0.383	NS
	Group B	16.73	251.00			
Gait	Group A	15.50	232.50	0.000	1.000	NS
	Group B	15.50	232.50			

This result indicates that the Group A patients attained highest relief after the completion of treatment while compared to subjects in the Group B.

## DISCUSSION

Recent studies supports the prevalence of Gridhrasi in 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> decades of life.<sup>8</sup> Maximum number of subjects (24) were males. In this study the male to female ratio is 80:20. This indicates that both the genders can suffer from this condition. In males who does hard physical works and in particular, frequent lifting and postural stress are known to increase the risk of sciatica. In case of females they have to work in house as well as outside.

Maximum numbers of subjects were Hindus 29 and 1 patient is Muslim. As there is no role of religion in this disease, probably it is due to the more Geographical proportion of Hindus in and around Hassan city which may be the reason for higher incidence among Hindu community.

Maximum number of subjects (23) were married and 7 were unmarried. Mainly in females having any history of labour or any surgical intervention there is more chance of incidence of Sciatica.

Gridhrasi is common in farmers, heavy workers and postural habitations. This study shows that Gridhrasi is common in farmers and heavy workers.<sup>9</sup>





In present study majority of patients were from middle socio-economic background. They are the people in society who face maximum strain physically and mentally to maintain their living standards in this heavy inflection period. Subjects from middle economical class showed stressful and hard working life of middle class might have caused this disease.

In present study 11 subjects were standing during their work, while 16 were doing work in sitting posture. Not maintaining the proper posture and more physical strain may lead to increased incidence of Gridhrasi.

In the present study more than 50 % were doing moderate manual work. So incidence of disease is more in manual work.

All the patients studied were of dwandwaja doshik constitution. Eighteen patients in the study were of Vata-kaphajaprakruti, 6 of Vata-pittaja. Observing this we can say that, there is dominance of vatadosha in majority of the patients along with pitta and kapha which may predispose them for a vatavyadhi, Gridhrasi.

When the collected rakta was observed for dosha predominant lakshanas, it was found out that 50% of patients had vata-pittajadushitharakta. Gridhrasi is a pain dominant disorder in which vata is main doshha to be involved and pitta being

ashraye-ashrayi of rakta, so this much percentage of patients were under vata-pitta category.

As per the classical reference the amount of blood letted to be one prastha (768ml) i.e. Pravarapramana, half prastha (384 ml) i.e. Madhyamapramana, ¼ prastha (192ml) i.e. Avarapramana

### Discussion on Siravyadhana (Figure 1)



**Figure 1** Mode of Action of Siravyadhana  
Charakacharya has mentioned the use of Siravayadhana, Snehana, Swedana, Basti and Mrudu Virechana for the treatment of Vatavyadhi. Siravyadhana is the unique line of treatment. This procedure is both therapeutic and prophylactic. It is said that Siravyadhana cures the disease from its root. One should keep in mind that Siravyadhana should not be done in case of Dhatukshayajanyavataj Gridhrasi, it has to be done in Gridhrasi caused by margavarana where Rakta is the Avaraka.



According to Ayurveda, basic Dosha responsible for causation of Ruk is Vata and pain is cardinal symptom in most of the Vatavyadhis. In Siravyadhana, expulsion of vitiated doshas accumulated due to inflammatory reaction outside the body can help in relief in pain. Siravyadhana helps to remove the avarana (Obstruction) which helps in normal movement of Vata, thereby restoring normal circulation and function of vayu. It removes congested blood in the area of Shonitaavarana. The effect of Siravyadhana on pain was highly encouraging. Pain might have reduced due to reduction of pressure over the surrounding nerves by Siravyadhana. It has significant effect on SLR test. SLR is less specific test but highly sensitive test for sciatica. Decreased SLR in Most of patients is due to pain caused by the sciatica nerve stretching. Toda, Stambha, Spandana, Aruchi and Gaurava appeared in Raktaavritavata. These were improved due to letting of Raktaavritavata. There was drastic improvement in walking time after Siravyadhana. In short duration severity of pain reduced and patient was able to walk without any difficulty. Gridhrasi is type of Vatavyadhi, So as per classics, that if there is use of Sneha then only one can achieve proper cure for the vatavyadhi because of this intention in

this study as a poorvakarma we are administered sneha in the sadyosnehana manner. According to theory, prior to Shodhana one can undergo Snehana as a Poorvakarma. Siravyadhana is considered under Panchashodhana in the context of Raktamokshana.

## CONCLUSION

Group A (Siravyadhana with Sadyosnehana) and Group B (Siravyadhana without Sadyosnehana) showed significant relief in sign and symptoms of Gridhrasi. This validates the efficacy of Siravyadhana as an important modality of treatment in Vata Roga i.e. Gridhrasi.

Group A (Siravyadhana with Sadyosnehana) showed equal efficacy in reducing signs and symptoms of Gridhrasi namely Ruk, Toda, Stambha, Gourava from Sphikpurva-Kati-Prusta-Uru-Janu-Jangha-Pada, Aruchi, Tandra, Spandana, SLR test, Coin test, Bragard's sign, Visual analogue scale, Standing time, Walking time and Gait at par with Group B (Siravyadhana without Sadyosnehana). After assessment, it can be concluded that, even though Siravyadhana with Sadyosnehana had better effect on Ruk, Stambha and Standing time but in all other Parameters it had equal results.



Overall, it may be concluded that Group A (Siravyadhana with Sadyosnehana) has shown result and improvement equivalent to Group B (Siravyadhana without Sadyosnehana) in the management of Gridhrasi. Hence, it may be recommended that Ayurveda physicians may safely and confidently practice Siravyadhana therapy in Gridhrasi as well in other Vata Vyadhi after due consideration about other parameters, without incurring any loss in its efficacy.

Besides efficacy in Gridhrasi, Group A (Siravyadhana with Sadyosnehana) helps in easy removal of Dushita Rakta and improved the quality of life without adverse reactions and also helps in reducing pain for longer duration and improving productivity.



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