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## A Clinical Study to Evaluate the Efficacy of *Katibasti* with *Gokshuradya Taila* in *Gridhrasi*

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### ABSTRACT

In day to day life, pain is the major symptom which creates obstacle to maintain the healthy life. *Gridhrasi* is one such *shoolapradhana Vatavyadhi* which presents with pain radiating from low back to the affected side of lower limb. According to the causative factors, the symptoms vary from pain to that of sensory and motor disability. Among the treatment modalities, *Swedana* is advised in the conditions like *Stambha*, *Ruk*, *Toda* which are the major symptoms of *Gridhrasi*. *Katibasti* is *Snigdha*, *Ekanga*, *Shaman Sweda* indicated in pathogenesis of *kati pradesha* which is evident in *Gridhrasi*. Here *Gokshuradya taila* was selected for *katibasti* due to its indications in *Gridhrasi*, *Padakampana*, *Katiprishtha Graha*, *Shotha*. This is a single blind clinical study with pre-test and post-test design wherein 30 patients diagnosed as *Gridhrasi* fulfilling the inclusion criteria were treated with *Gokshuradya taila katibasti* for 30 minutes daily for 7 days. The assessment was done before and after the treatment and after 14 days of treatment. Results obtained were analysed for the statistical significance using Wilcoxon signed rank sum test for qualitative data and paired t- test for numerical or qualitative data. The statistical analysis showed that there was statistically significant improvement in parameters like *Shoola*, *Stambha*, *Toda*, *Gruhnati*, Magnitude of pain, functional ability, functional disability. Hence, *Gokshuradya taila kati basti* can be effectively used in the management of *Gridhrasi*.

### KEYWORDS

*Gridhrasi*, *Swedana*, *Katibasti*



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## INTRODUCTION

From the time immemorial to ultramodern civilised life, locomotion is one of the important basic needs of living beings for normal daily life. The movement of most animal is essential in order to find food, a mate, escape predators and find suitable microhabitat<sup>1</sup>. The *Vatadosha* is the responsible for all the activities in the body. when in normal state it maintains the body activities, the same in abnormal state, causes severe pain, disability and so on<sup>2</sup>. One such disease with pain dominance and affecting the gait or movement is *Gridhrasi*<sup>3</sup>. Based on the severity, based on the involved *dhatu and upadhatu, marma*, the intensity of symptom varies from radiating pain to that of severe numbness, disability or loss of movement. Hence the disability, pain and the affected quality of life shows the need of an energetic treatment. The symptomatology of the *Gridhrasi* is best compared with sciatica syndrome. In Sciatica syndrome, the pain radiates from low back region to the foot along the distribution of sciatic nerve. Sciatica is not a single disease entity, but a symptom complex which can be caused by several diseases affecting the sciatic nerve & its roots. Depending on how it is defined, 2% to 40% of people have sciatica at some point<sup>4</sup>. Nowadays most common disorder

which affect the movement of leg, particularly in the middle age is the low back., out of which 40% may be radiating pain to the lower limb of affected side which comes under sciatica syndrome.

The life time incidence of low back pain ranges from 50-70%, whereas incidence of sciatica ranges from 30-40%<sup>5</sup>. The disease is now becoming a significant threat to the working populations.

In the treatment of *Gridhrasi*, along with general *vatavyadhi chikitsa*, the treatment modalities like *Snehana, Swedana, Basti, Siravyadha, Agnikarma* can be advised depending upon the *avastha of Gridhrasi*<sup>6</sup>. Among the treatments, *swedana* is best advised in conditions like *Stambha, Ruk, Toda, Gaurava*<sup>7</sup> as symptoms in *Gridhrasi*. As there is a pathogenesis in *katipradesha*, a *sthanika, ekangasweda* is best selected. Hence, an *ekangasweda* practiced over *katipradesha* is *katibasti* which is selected as a *swedana* procedure in the present study. As there is involvement of *vata* or *vatakapha*, a *snigdhasweda* with *vata shamana* or *vatakapha shamana* property is best advocated. Hence with this idea in backdrop, *Gokshuradya taila*<sup>8</sup> has been selected for the study. *Gokshuradya Taila* contains *Goskshura, Tila Taila, Ksheera, Shunthi & Guda* and it is indicated in *Gridhrasi, Katigraha, Prushtagraha*. Hence to evaluate the efficacy of



*Gokshuradya taila katibasti* in *Gridhrasi*, present study was conducted.

## MATERIALS AND METHODS

In the present study, the methodology adopted in the clinical study is:

### Source of the data:

#### *Drug source*

*Gokshuradya Taila* was prepared in S.D.M. Ayurveda pharmacy, Kuthpady, Udupi.

#### *Patient source*

A minimum of 30 patients diagnosed as *Gridhrasi* were selected for the study from IPD/OPD of Shri Dharmasthala Manjunatheshwara Ayurveda Hospital Kuthpady, Udupi.

### Methods of data collection

- **Study Design:** Single blind clinical study with pre and post-test design.
- **Sample Size:** Minimum of 30 patients diagnosed as *Gridhrasi*, fulfilling the inclusion criteria was taken for the study.
- A complete profile of the patient was recorded in a proforma consisting of all the relevant data like demographic data, symptomatology, physical signs & symptoms, clinical examinations and observation related to the treatment.

### Diagnostic criteria

#### *Symptoms of Gridhrasi like*

- *Stambha*
- *Ruk*

- *Toda*
- *Gruhnati*
- *Spandana in Kati, Prusta, Uru, Jangha & Pada*
- *Tandra*
- *Gaurava*
- *Arochaka*

#### *Symptoms of Sciatica/Lumber IVDP like*

- Low backache radiating pain to buttock, thigh, knee & foot.
- Tingling sensation & Numbness in lower limb & foot of affected side.

### Inclusion criteria

- Patients presenting with diagnostic criteria
- Patients of either sex between 16 to 70 years.
- Patients fit for *Kati Basti*.

### Exclusion criteria

- Congenital deformities of spine.
- Traumatic, Infective, neoplastic conditions of the spine.
- Post-surgical conditions of spine.
- Pregnant women.
- Any other illness interfering the treatment.

### Duration

Duration of Treatment	: 7 days.
Duration of follow up	: 14 days.
Total duration	: 21 Days

### Investigations

- Routine haematological investigations like Haemoglobin %, Total Count, Differential Count, Erythrocyte



Sedimentation Rate & Random Blood Sugar.

- X-ray of Lumbo-sacral spine in AP & lateral view (If required).

### **Intervention**

#### **1. Poorvakarma**

- Patient was advised to take light diet 2 hours before the procedure.

- Gokshuradya Taila* (200ml) is heated in hot water bath.

- Godhuma choorna* was mixed with required amount of water to make dough and it is made into circular ring.

- Patient was made to lie-down in prone posture exposing the *Kati pradesha*.

#### **2. Pradhanakarma**

- The circular ring prepared from *Godhuma choorna* was fixed over affected portion of *Kati pradesha* so that the tender area lies inside the ring.

- The ring is fixed properly and the wall of the ring is raised

- 150 ml Warm/hot *Gokshuradya Taila* was filled with spatula into circular ring.

- Temperature of the *Taila* was maintained uniformly (up to maximum tolerance temperature i.e. about in between 38-40 degree Celsius) throughout the procedure by repeated mixing of hot *taila*.

#### **3. Paschatakarma**

- The *Taila* was removed using a spatula.

- Godhuma* dough was removed.

- Mild massage was given over the *Kati pradesha*.

- Patient was asked to take rest for 30 minutes.

- Taila* was changed once in two days.

Duration of procedure : 30 minutes.

### **Assessment criteria**

Each patient was assessed before, after the treatment and after the follow up period based on the subjective and objective parameters. The observations and assessment were recorded in specially prepared case proforma.

#### **Subjective parameters**

A) Symptoms of *Gridhrasi* and Sciatica syndrome.

B) Subjective symptoms of *Samyak, Ati and Heena Swedana*.

#### **Objective parameters**

1. Straight Leg Raising Test.

2. Lasegue's sign.

3. Bowstring sign.

4. Schober's test.

5. Braggard's sign.

#### **Questionnaires used**

1. Pain disability questionnaire

2. Greenough and Fraser Scoring method.

3. Sugar barker and Barofsky clinical mobility scale.

4. Oswestry disability assessment questionnaire.



## OBSERVATIONS

In the present study 30 patients of *Gridhrasi* were treated with *katibasti* with *Gokshuradya taila* for 7 days.

Total number of patients registered for the study: 30

Number of patients completed the study: 30

Dropouts: nil.

Some of the observations are given as in the table 1 & table 2

**Table 1** Demographic observations

Parameters	Observations in each parameter	Maximum number of patients	Percentage
Age	31-40 Yrs., 41-50 Yrs., 51-60 Yrs. & 61-70 Yrs.	7 each	23%
Gender	Male	24	80%
Marital status	Married	30	100
Occupation	Labour	11	36.67

**Table 2** Observations related to the disease

Symptoms	Maximum observations	Number of patients	Percentage
Low backache	Present	30	100%
Radiation of pain	Present	30	100%
Extent of radiation	Present up to buttock	10	33.33%
Radiation side	Left	12	40%
Duration of onset of illness	<1 yr. & >2 yrs.	13	43.33%
Mode of onset	Gradual	28	93.33%
Associated symptoms	<i>Stambha</i> , <i>Ruk</i> , <i>Toda</i>	30	100%
Course of pain	Continuous	26	86.67%
Nature of pain	Dragging	23	76.7%
Straight Leg Raising Test	51 <sup>0</sup> -70 <sup>0</sup>	21	70%

## RESULTS

In this, *katibasti* with *Gokshuradya taila* was done in 30 patients of *Gridhrasi*. The relevant data were collected before the treatment and patient were assessed on first day of treatment (BT), after the treatment (AT) and after follow up of 14 days (AF). The collected data were analysed using paired -t Test for quantitative data whereas

Wilcoxon Signed Rank Test was used for ordinal data i.e. qualitative data.

After the *katibasti* with *Gokshuradya taila*, the analysis of the patients showed that there was statistically significant improvement observed in *Ruk*, *stambha*(stiffness) of low back, *Toda* (Pricking pain), pain functional ability.

The different values are given in Table 3.



**Table 3** Statistical analysis of observed results for subjective parameters

Symptoms	BT		AT		AF		Ties	Total	Z-value	P-value
	MR	SR	MR	SR	MR	SR				
<i>Stambha</i>	15.5	465.00	5.50	55.00	15.50	465.00	BT-AT 20	BT-AT 30	BT-AT -4.93	BT-AT <0.001
	0						AT-AF 20	AT-AF 30	AT-AF -3.16	AT-AF <0.05
							BT-AF 0	BT-AF 30	BT-AF -5.02	BT-AF <0.001
<i>Ruk</i>	15.0	435.00	5.0	45.00	15.00	435.00	BT-AT 1	BT-AT 30	BT-AT -4.081	BT-AT
	0						AT-AF 21	AT-AF 30	AT-AF -3.00	AT-AF <0.001
							BT-AF 1	BT-AF 30	BT-AF -4.080	BT-AF <0.05
<i>Toda</i>	15.3	446.00	6.00	66.00	15.00	435.00	BT-AT 0	BT-AT 30	BT-AT -4.59	BT-AT <0.001
	8						AT-AF 19	AT-AF 30	AT-AF -3.12	AT-AF <0.05
							BT-AF 1	BT-AF 30	BT-AF -4.802	BT-AF <0.001
<i>Gruhna</i>	11.0	231.00	1.50	1.50	10.50	210.00	BT-AT 0	BT-AT 21	BT-AT -4.132	BT-AT <0.001
	0						AT-AF 19	AT-AF 21	AT-AF 0.000	AT-AF >0.05
							BT-AF 1	BT-AF 21	BT-AF -4.021	BT-AF <0.001
<i>Aruchi</i>	4.50	36.0	0.00	0.00	4.50	36.00	BT-AT 0	BT-AT 8	BT-AT -2.828	BT-AT <0.05
							AT-AF 8	AT-AF 8	AT-AF 0.000	AT-AF >0.05
							BT-AF 0	BT-AF 8	BT-AF -2.828	BT-AF <0.05
<i>Gaurava</i>	4.00	28.00	1.00	1.00	4.00	28.00	BT-AT 0	BT-AT 7	BT-AT -.2530	BT-AT <0.05
							AT-AF 6	AT-AF 7	AT-AF -1.00	AT-AF >0.05
							BT-AF 0	BT-AF 7	BT-AF -2.460	BT-AF <0.05
<i>SLR</i>	10.0	190.00	2.63	10.50	9.50	171.00	BT-AT 0	BT-AT 19	BT-AT -3.905	BT-AT <0.001
	0						AT-AF 14	AT-AF 19	AT-AF -0.828	AT-AF >.005
							BT-AF 1	BT-AF 19	BT-AF -3.774	BT-AF <0001

**Table 4** Statistical analysis of observed results for objective parameters

Parameters	n	Mean			Mean diff	%	±SD	±SE	t	P	
		BT	AT	AF							
1.	1. Pain assessment -Pain Disability Questionnaire	30	25.0	41.0	42.00	15.93	63.56	BT 3.86	BT 0.70	- 26.7	<0.001 75
			6	0		(BT-AT)					





				1.56	3.8	AT	AT	-	<0.001	
				(AT- AF)		3.22	0.58	4.09 5		
				17.50	69.83	AF	AF	-	<0.001	
				(AF- BT)		2.99	0.54	30.5 4		
<b>2. Pain assessment-Greenough and Fraser scoring method</b>										
	30	32.2	56.2	61.23	23.96	74.34	BT	BT	-	<0.001
		3	0		(BT- AT)		7.15	1.33	21.9 5	
					5.43	9.66	AT	AT	-4.71	<0.001
					(AT- AF)		9.33	1.70		
					29.40	91.21	AF	AF	-	<0.001
					(AF- BT)		7.33	1.41	22.6 8	
<b>3. Functional ability- Sugarbaker Barosky clinical mobility Scale</b>										
	30	16.7	22.6	23.13	5.83	34.78	BT	BT	-	<0.001
		6	0		(BT- AT)		2.58	0.47	17.1 9	
					0.53	2.34	AT	AT	-2.89	<0.05
					(BT- AT)		1.77	0.32		
					6.36	37.94	AF	AF	-	<0.001
					(BT- AT)		1.69	0.30	17.9 9	
<b>4. Functional disability- Oswestry disability assessment</b>										
	30	20.7	7.30	4.83	13.40	64.73	BT	BT	24.5	<0.001
		0			(BT- AT)		3.64	0.66	5	
					2.46	33.69	AT	AT	4.68	<0.001
					(BT- AT)		3.06	0.55		
					15.86	76.61	AF	AF	26.2	<0.001
					(BT- AT)		2.60	0.47	6	

**Table 5** Overall benefits on completion of the study

S.N.	Improvement	No. of patients	
1	Total cure	0	
2	Marked Improvement (60-70%)	60-70%	7
		70-80%	10
		80-90%	9
		90-100%	2
3.	Moderate improvement (40-60%)	2	
4.	Mild improvement (<40%)	0	
5.	Unchanged (0%)	0	
6.	Deterioration	0	

In the study, the overall effect of the therapy was observed as 2 patents showed maximum improvement between 90-100%. 9 patients showed improvement between

80-90%, in 10 patients, 70-80% improvement was seen, in 7 patients, 60-70% improvement was observed and moderate improvement (40-60%) were





observed in 2 patients as shown in Table no. 5.

## DISCUSSION

### Assessment of Samyak swinna lakshana

- *Samyak swinna lakshana* was assessed in all the patients daily after the *katibasti*.
- The *samyak swinna lakshanas* mentioned in *Charaka samhita* were assessed and all the symptoms were not observed in all the patients. The reason may be as *katibasti* is a *mrudu, ekanga sweda*
- The symptoms like, *sheetavyuparama, mardavata* were observed in all the patients. The reduced degree of pain and stiffness was considered as *Shoola vyuparama, stambha nigraha* in many patients and this was observed in later days. *Gaurava nigraha* was observed in *Vatakaphaja Gridhrasi* patients in whom *gaurava* was there before treatment as slight reduction in the *gaurava/heaviness* after the treatment as shown in Table no 3. *Sweda pradurbhava* was not observed in any patients as *katibasti* is an *ekanga, mrudu, dravasweda*.
- No patients presented with *ati* or *heena swedana lakshana*.

### Clinical study

*Swedana*, a line of management is best indicated in diseases presenting with

*stambha, shoola, gaurava* and the symptoms due to *sheetaguna* dominance<sup>9</sup>. The *vata* and *vata kaphaja vyadhis* are the ideal indications for *swedana chikitsa*<sup>10</sup>. In the present study, the *Gridhrasi* selected for the study presents with similar symptoms with either *vata* or *vata kapha* dominance. The *Gridhrasi* is also listed under *swedana arha vyadhis*<sup>11</sup>. The patients treated with *Gokshuradya taila kati basti* showed significant improvement in all the parameters selected for the study.

The *sheetaguna* with *vata* or *vata kapha dosha* manifests in the form of *stambha*. The line of management here is *vata* or *vata kapha shamana, ushna chikitsa*. The *swedana* being the ideal treatment, the patients are relieved of the symptoms as observed in the clinical study. In addition to this, the *stambhahara* effect of *swedana* is highlighted in its definition and *samyaka lakshana* also<sup>12</sup>. The drugs in *Gokshuradya taila* are having *vata, vata kapha shamana* property<sup>13</sup> and few are having *ushna, teekshna guna* which again contributes to the effect. The pain in *Gridhrasi* is due to *vata* in both the type of *Gridhrasi*. The *snigdha, ushna and shamana sweda* indicated as *katibasti* helps in *vata shaman* by *snigdha guna* and the effect of *swedana* is *vata* and *vata kapha shamana*. The *shoolahara* property of *swedana* is identified in its definition and *samyak*



*lakshana* which shows its importance in reducing pain. The same is observed in present study s shown in Table no. 3 & 4. The radiating pain is due to the involvement of *khandara*<sup>14</sup> where the line of treatment is again *snigdha swedana chikitsa*. The restricted range of movement is improved by the *swedana* as highlighted in *guna* of *shamananga swedana*<sup>15</sup>. The ingredients in *Gokshuradya taila* like *gokshura*, *ardraka* are having *shoolahara* property. Along with *shothahara*, *gokshura* is specifically indicated in *katishula*. *Ardraka* is used as Rubefacient, Stimulant<sup>16</sup> which relieves the pain and causes redness by increasing the circulation. It also stimulates the peripheral nerves so that the pain sensation is masked. The *tila taila* used as a base for taila is also having *shoolahara effect*<sup>17</sup>. The *vata shamana guna* also contributes the effect. The numbness or pricking pain may be due to the compression or chemical irritation of the nerve. When the *Swedana* is given, the increased circulation clears the chemical irritation by decreasing the inflammatory material of disc. The chemical irritation contributes to radicular pain from disc herniation, the inflammatory material of disc comes in contact with the nerve root, causing impingement and compression. Disc tissue, particularly the nucleus pulposus initiates an inflammatory response and produces and releases

proinflammatory cytokines<sup>18</sup> which are reduced by action of heat.

*Gaurava* observed in whole body, *Aruchi* are observed in *vata kaphaja Gridhrasi* due to involvement of *kapaha dosha* and *jatharagni*.<sup>19</sup> As the *katibasti* is localized treatment, it does not work at *jatahragni* level. Even though there was statistical significance, clinically much difference was not seen. The other reason may be, during the treatment all the patients were advised *laghu-bhojana* which might have improved the *agni* to some extent. Hence slight improvement was seen in the patient as shown in Table no 3. The *gaurava* and *aruchi* are subjective symptom where we have to rely on patient which might have shown some difference. The other reason may be- *ushnaguna* of *Swedana* and the *ushna guna*, *veerya* of the drugs in *Gokshuradya taila* might have caused by *kapha shamana* where by patient felt some relief. The *sneha* in the form of *tila taila* has the effect of not aggravating the *kapha*. Hence even though the *snigdha* treatment was given, it has not worsened the *kaphadosha*.

The range of SLR was improved after the treatment as shown in Table no 3. The pain and stiffness which was preventing the range of movement of the affected upper limb is relieved by the treatment, the range of movement will increase thus showing the



improvement in the degree of SLR. The *swedana*, *Gokshuradya taila* used in the treatment relieves the *vata* or *vatakapaha*, relieves the symptoms like *shoola*, *stambha*. Hence improvement was seen in the patient. The same is depicted in the present study. In the mechanical irritation of the nerve, there will be inflammation, oedema around the nerve. The heat increases the circulation which in turn reduces the oedema around the nerve. The anti-inflammatory effect of the drug *gokshura*, *ardraka* adds to the relief. The *shothahara* effect of *gokshura* also contributes to the benefit achieved. In case if chemical irritation, the heat increases the circulation where by the chemical and inflammatory mediators are washed off. The anti-inflammatory effect of the drug helps to achieve *shothahara* effect. When the oedema, inflammation, pain and stiffness is relieved gradually by the treatment, the range of movement increases. The same is observed in the present study.

After the treatment the functional ability was improved and the functional disability was significantly reduced which may be due to reduced pain and stiffness which were affecting the daily work. Hence as there was statistically significant improvement was there in all the parameters, the *Gokshuradya taila kati*

*basti* can be effectively used in the management of *Gridhrasi*.

### **Overall effect of the therapy**

In the present study, overall effect of the therapy, 28 patients showed marked improvement (60% - 100%) and 2 patients showed moderate improvement (40% - 60%) as shown in Table no 5.

The procedure of *swedana* is said to relieve *stambha*, *gaurava*, *shoola*, *toda*, thereby improving the functional ability of the patient. As *stambha*, *gaurava*, *shoola* are relieved significantly after the treatment and are assessed as subjective symptoms, there might have been such significant improvement. As *stambha*, *gaurava*, *shoola*, *gruhnati* are the symptoms in the *Gridhrasi*, the patients might have got relief in these symptoms but it will not suggest the *samprapti vighatana*. The same is observed in the present study as there was insignificant improvement in few of the symptom after the treatment. The complete management of *Gridhrasi* may need specific *basti chikitsa* which is to be administered repeatedly in regular interval with other *bahya-upakrmas*.

### **CONCLUSION**

On the basis of the present study, the following conclusions were drawn: -



- In the present study, the symptoms like *stambha*, *shoola* were present in 100% patient. *Spandana* and *tandra* was not seen in any patient.
- As per the study result, the *Gokshuradya taila katibasti* can be effectively practiced in the management of *Gridhrasi*. Even though the *swedana* used was *snigdha*, there is no worsening of *kaphaja* symptoms by the *snigdhasweda*. The *Gokshuradya taila* used in the study is having *shoolahara*, *shothahara* property with *vata* and *vata kapha shaman* drugs. Hence it added to the benefit of *swedana chikitsa*.
- The overall effect of the therapy showed marked improvement in maximum number of patients. But this relief cannot be considered as *samprapti vighatana* as depicted in the study. The improvement after the treatment, during the follow-up was not significant in some of the parameters. Hence the management in the form of repeated *basti chikitsa* with specific *swedana* may yield better result.



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