



## Research Article

### STUDY OF EFFECT OF SELECTIVE YOGA TECHNIQUES IN THE MANAGEMENT OF *GRIDHRASI - SCIATICA*

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**KEYWORDS:** Yoga Techniques, *Gridhrasi*, Sciatica, *Vata Vyadhi*.

#### ABSTRACT

**Objective:** The present study intended to focus on the disease evaluation i.e., *Gridhrasi - Sciatica* and effect of selective Yoga Techniques in the management of *Gridhrasi - Sciatica* was undertaken. **Clinical source:** Patients of *Gridhrasi* attending Swasthavritta O.P.D and camps conducted by S.J.G Ayurvedic Medical College, P.G Studies and Research center, Koppal. **Study Design:** Yoga Techniques are used *Ardhakati Chakrasana*, *Ardha Shalabhasana* (half locust pose), *Shalabhasana* (full locust pose), *Bhujangasana* for 60 days, Treatment duration was 30 days. 15 patients full filling the inclusion criteria of *Gridhrasi* were randomly selected and advised for Yoga techniques in morning. Parameters are *Stambha* (stiffness), *Ruk* (pain), *Toda* (pricking sensation), *Spandana* (twitching), and SLR test **Results:** Shown significant effect after the treatment.

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#### INTRODUCTION

*Gridhrasi* is a *Rujapradhana Nanatmaja Vata Vyadhi*, intervening with the functional ability of low back and lower limbs. Low back pain is the major cause of morbidity throughout the world affecting mainly the young adults. Life time incidence of low back pain is said to be 50-70% with the incidence of Sciatica more than 40%.<sup>[1]</sup>

Certain occupations are also directly producing the deformities in the bones and joints of the body, specially the joints of back and even more on lumbar vertebrae. The disease mostly affects the age group between 18 to 60 yrs with occupations like heavy weight lifting, continuous pressure on the back etc., are main causative factors and leads to sciatica.<sup>[2]</sup>

Sciatica is a condition where patients suffer from immobilizing and shooting pain starting from low back, which refers to lower limb either unilateral or bilateral. Hence movement of affected leg is restricted and patient is unable to walk properly.<sup>[2]</sup>

According to Ayurvedic texts Sciatica can be correlated to *Gridhrasi*. Here mainly *Vata dosha* is vitiated.<sup>[3,4]</sup> The origin of disease according to Ayurveda, is at *Katipradesha* (lumbo-sacral region). The symptoms of *Gridhrasi* are *Ruk*, *Toda*, *Sthamba*, *Spandana* in the *Sphik*, *Kati*, *Prishtha*, *Uru*, *Janu*, *Jangha* and *Pada* in *Anukrama*.<sup>[5,6,7]</sup>

If it is not treated in time, it may lead to serious complications like alteration in bowel and bladder function, loss of sensation in lower limbs etc.<sup>[8]</sup> So in this condition easy and effective treatment is required.

*Asanas* were release pressure and compression on sciatic nerve. Thus yoga help to relieve pain and discomforts of sciatica.<sup>[9]</sup> Yoga offers natural and effective remedies.

#### MATERIALS AND METHODS

##### SOURCE OF DATA

**Literary source:** Classical text books of Ayurveda, Text books of contemporary science, Text books of

Yoga, Published articles from periodicals, journals and other magazines, Authenticated websites.

**Clinical source:** The size of sample was 15 excluding dropouts. Patients of *Gridhrasi* attending Swasthavritta O.P.D and camps conducted by S.J.G Ayurvedic Medical College, P.G Studies and Research center, Koppal.

### Selection of the patient

#### Inclusive criteria

- Patients presenting with classical signs and symptoms of *Gridhrasi* like *Ruk*, *Toda*, *Stambha*, *Spandana* was selected.
- Patients of age group between 20-60 yrs age.
- Above clinical symptoms with or without radiological changes.

#### Exclusive criteria

- Patients affected with IVDP (Inter vertebral disc prolapse), spinal injuries, Infection of spine, Congenital deformities etc
- Pregnancy
- Patients associated with other systemic disorders.
- Patients unfit for *Yogasanas* and *Vata-Kaphaj Gridhrasi*.

#### Grouping of patients

Five patients of *Gridhrasi* were randomly taken and advised Yoga in morning.

#### Procedures:

**Yoga Techniques:** 1. *Ardhakati Chakrasana* 2. *Ardha Shalabhasana* (half locust pose) 3. *Shalabhasana* (full locust pose) 4. *Bhujangasana*

**Assessment of Variables:** The improvement in the patient is assessed mainly on the basis of relief in the cardinal signs and symptoms of disease. To assess the effect of therapy subjectively and objectively, all the signs and symptoms are given scoring depending upon their severity.

#### Subjective:

1. *Stambha* (Stiffness), 2. *Ruk* (Pain), 3. *Toda* (Pricking sensation), 4. *Spandana* (Twitching)

#### Objective

1) SLR test

**Investigations:** If required hematological tests and radiological tests.

#### Assessment Criteria

**Ruk:** No pain- (0), Painful, walks without limping - (1), Painful, walks with limping but without

support-(2), Painful, can walk only with support-(3), Painful, unable to walk- (4)

**Stambha:** No stiffness -(0), Mild stiffness (1-10 min) - (1), Moderate stiffness (11-20 min) -(2), Severe stiffness (21-30 min) -(3), Very severe stiffness (more than 30 min)- (4)

**Toda:** Absent - (0), Mild, occasionally in a day - (1), Moderate not persistent - (2), Moderate and persistent - (3), Severe and persistent - (4)

**Spandana:** No twitching - (0), Mild twitching (1-10 min) - (1), Moderate twitching (11-20 min) - (2), Severe twitching (21-30)-(3), Very Severe twitching (more than 30 min)-(4)

**SLR Test:** Is assessed as positive at 0° to 90° with pain, negative at 90° (without pain)  
More than 90°- (0), 71°- 90°- (1), 51°- 70° - (2), 31°- 50°- (3), Up to 30°- (4)

**Collection of data:** By using assessment parameter (subjective and objective) data was collected before treatment, after treatment follow up.

**Assessment of clinical improvement:** Clinical improvement of the disease was based on improvement in the clinical finding and reductions in the severity of symptoms of the disease after treatment and after post treatment follow up.

#### Grading For the Clinical Improvement for Individual Variables

- 1) **CI-III:** Excellent i.e., 3 degree reduction in the severity score, against the initial score i.e. severe - normal
- 2) **CI-II:** Good i.e., 2 degree reduction in the severity score, against the initial score i.e., Reduction from moderate- normal, severe- mild.
- 3) **CI-I:** Encouraging i.e., 1 degree reduction in the severity score, against the initial score i.e., Reduction from mild- normal, moderate- mild and severe- moderate.
- 4) **C.S:** Clinically stable i.e., severity score remaining as against the initial score.
- 5) **C.D:** Clinically deteriorated i.e., increased in severity score

#### Statistical Analysis:

The data were collected from all groups, before, after treatment, and after follow up (at the end of follow up) and statistically analyzed by using student paired 't' test in consultation with biostatistician.

**Observation and Results****Table 1: Assessment Criteria: Degree of assessment criteria before treatment**

Sr.No.	Assessment Criteria	Yoga techniques BT									
		NR Go	%	MLD G1	%	MDR G2	%	SVR G3	%	VSVR G4	%
1	<i>Ruk</i>	-		0	-	8	53.33	6	40	1	6.66
2	<i>Sthmbha</i>	-		2	13.33	8	53.33	5	33.33	0	-
3	<i>Toda</i>	-		2	13.33	6	40	5	33.33	1	6.66
4	<i>Spandan</i>	-		0	-	7	46.66	6	40	2	13.33
5	SLR	-		1	6.66	10	66.66	4	26.66	-	-

**Table 2: Assessment Criteria - Degree of assessment criteria after treatment**

Sr.No.	Assessment Criteria	Yoga techniques AT									
		NR Go	%	MLD G1	%	MDR G2	%	SVR G3	%	VSVR G4	%
1	<i>Ruk</i>	-	-	1	6.66	12	80	2	13.33	0	-
2	<i>Sthmbha</i>	-	-	4	26.66	9	60	2	13.33	0	-
3	<i>Toda</i>	-	-	2	13.33	6	40	5	33.33	0	-
4	<i>Spandan</i>	-	-	1	6.66	6	40	7	46.66	0	-
5	SLR	-	-	5	33.33	7	46.66	3	20	0	-

**Table 3: Showing the effect of Yoga techniques on Ruk**

Assessment	Mean	BT-AT	Diff%	SD of diff	SE of diff	't' test value	P value	significance
BT	2.53	0.467	19.56	0.516	0.133	3.500	0.004	S
AT	2.07							

The mean score observed in *Ruk* before the treatment was 2.53, after the treatment 30days of *Yoga* the Mean difference between B.T and A.T was 0.467 and percentage improvement was 19.55%. 't' test value was 3.500 which is statistically significant and P value 0.004. This shows that yoga practice also has an analgesic effect by decreasing the pain of the individual.

**Table 4: Showing the effect of Yoga techniques on Stambha**

Assessment	Mean	BT-AT	Diff%	SD of diff	SE of diff	't' test value	P value	significance
BT	2.20	0.333	15.33	0.488	0.126	2.646	0.019	S
AT	1.87							

The mean score observed in *Stambha* before the treatment was 2.20, after 30days of *Yoga* the Mean difference was 0.333 and percentage improvement was 15.33%. 't' test value was 2.646 which is statistically significant P value 0.019. The yogic practices may shows reduce intensity of the stiffness it may happen due to practicing *Asanas* muscles will be relaxed.

**Table 5: Showing the effect of Yoga techniques on Toda**

Assessment	Mean	BT-AT	Diff%	SD of diff	SE of diff	't' test value	P value	significance
BT	2.20	0.267	11.81	0.458	0.118	2.256	0.041	S
AT	1.93							

The mean score observed in *Toda* before the treatment was 2.33, after 7days of *Yoga* the Mean difference was 0.267 and percentage improvement was 11.81%. 't' test value was 2.256 which is statistically P value 0.041. This must have occurred as a result yoga practices may stretch low back region. This may happen because Yogic practices might have relieved pressure on spinal nerve.

**Table 6: Showing the effect of Yoga techniques on Spandana**

Assessment	Mean	BT-AT	Diff%	SD of diff	SE of diff	't' test value	P value	significance
BT	2.67	0.267	10	0.458	0.118	2.256	0.041	S
AT	2.40							

The mean score observed in *Spandana* before the treatment was 2.67 after 30 days of Yoga the Mean difference was 0.267 and percentage improvement was 10%. 't' test value was 2.256 which is statistically significant P value 0.041. Results may be due to mobility and stretching effect of *Asanas*.

**Table 7: Showing the effect of Yoga techniques on SLR**

Assessment	Mean	BT-AT	Diff%	SD of diff	SE of diff	't' test value	P value	significance
BT	2.20	0.333	15.13	0.488	0.126	2.646	0.019	S
AT	1.87							
AT	1.67							

The mean score observed in SLR test before the treatment was 2.20 after 30 days of *Yoga* the Mean difference was 0.333 and percentage improvement was 15.13%. 't' test value was 2.646 which is statistically significant and P value 0.019. And this might have relieved pressure on sciatic nerve, which may lead to improvement in SLR.

**Results after Treatment**

**Table 8: Results after Treatment in Sciatica**

Parameter	CI IV	%	CI III	%	CI II	%	CI I	%	CS	%	CD	%
<i>Ruk</i>	0	0	0	0	0	0	7	46.66	8	53.3	0	0
<i>Sthamba</i>	0	0	0	0	0	0	6	40	9	60	0	0
<i>Toda</i>	0	0	0	0	0	0	4	27.66	11	73.33	0	0
<i>Spandana</i>	0	0	0	0	0	0	4	27.66	11	73.33	0	0
SLR	0	0	0	0	0	0	5	33.33	10	66.66	0	0

In case of *Ruk*, among 15 patients, 7 (46.66%) showed Grade 1 clinical improvement remaining 8 (53.33%) were stable. In case of *Stambha* 6 (40%) patients had Grade I improvement remaining 9 (60%) were stable. In case of *Toda* 4 (27.66%) had Grade I improvement and remaining 11 (73.33%) were stable. In case of *Spandana* 4 (27.66. %) had Grade I improvement and 11 (73.33%) were stable. In case SLR 5 (33.33%) had Grade I improvement and rest 10 (66.66%) were stable after treatment.

**OVERALL RESULTS**

**Table 9: Showing the overall effect of Yoga Techniques**

Response	No of pt	Percentage
No relief	12	80%
Mild relief	3	20%

**Discussion on *Gradhrasi* (*Sciatica*)**

The disease *Gridhrasi* is one of the major problems throughout the country. The disease is known since Vedic period in our country and since many centuries in western world.

Intervening with the functional ability of low back and lower limbs, it is particularly seen in most active period of life involving working class people causing hindrance in routine life.

It is a neuro-muscular disorder, which poses a serious threat to quality of life in the most productive group of population in India today. The chances of occurrence of *Gridhrasi* is expected to increase in the coming years due to increased tendency of computerization, hectic routines, obesity, active life style, mental stress, unwholesome diet and excessive travelling.

'Sciatica' term in general indicates neuralgia along the course of sciatic nerve, most often with

pain radiating into the buttock and lower limb. Low back pain is the major cause of morbidity throughout the world

**Discussion on *Yoga* Techniques**

**Overall Effect of *Asanas* in *Gridhrasi***

- In *Asanas* the muscle are stretched by assuming the various body position which will automatically apply an elongation to the particular muscle under consideration. A muscle slowly and gradually stretched by practice, so that it can eventually extend well beyond its normal limitations. This elongation squeezes out stagnant blood and allows it to be replaced by pure oxygenated blood when the muscle resumes its normal shape.
- 'The *Asanas* does merely contraction of the muscle and nerves; it provides the good relaxation to the active muscle which is involved,

so the *Asanas* can be continued for a prolonged duration without any difficult or complication.

- Improves the working capacity of the muscle and nerves of back and leg.
- To stretch the muscle it is important that they are fully relaxed. If muscles are tense they will automatically resist any attempt made to stretch them. This relaxation of muscles can be developed with practice and one can gain control over them systematically.
- The spine is the major channel which carries all nervous impulses from the brain to the body. Spine interferes with this system by impeding nerve connection. Efficient nerves require a good blood supply.
- *Gridhrasi* (Sciatica) having symptoms like *Ruk*, *Stambha*, *Toda*, *Spandana*,
- The *Asanas* like *Ardha Katichakrasana*, *Shalabasana*, *Arda Shlabasana*, *Bujangasana* are widened the intervertebral spaces by pulling the back muscles downward this is the yogic traction. This lengthens the muscles of the back and it causes relief from symptoms like *Ruk*, *Toda* etc.

### Discussion on Observations

**Age:** In this study it was found that the incidence was highest in the age group of 31-40 years constituting 50% of total numbers of patients,

**Occupation:** Maximum number of patients were labours and business which constituted 43.33% and 36.66% respectively.

**Socio-economic status:** Majority of patients belonged to the lower class and lower middle class group which constitute about 63.33% and 30% respectively.

**Nature of work:** Majority of suffers were have the active working style, which accounting for 90%. Whereas 10% the patients were of the sedentary working style.

**Dietary Habits:** Maximum number of patients (53.33%) was registered in the group of mixed diet habit.

**Chronicity:** In 15 cases, 80% had the chronicity of 3-6 months, 16.66% had the chronicity between 6months to 1yr and 3.33% had the chronicity less than 3months. This suggests that the disease is *Shoolpradhana* and needs early management.

### DISCUSSION ON RESULTS

The patients of age group between 20-60 yrs selected from the OPD of S.J.G Ayurvedic Medical College, Hospital P.G. Research centre Koppal. 15 cases were registered and 15 cases were selected for the study. Observed features in the patients during the study were recorded in the case sheets and these results were analyzed and

tabulated after completion of clinical study. These result findings are discussed below.

### Discussion on effect of Yoga therapy

Analysis of overall effect of the treatment in the patients of *Gridhrasi* showed good improvement. The treatment was given with thirty days of *Ardha Katichakrasana*, *Bujangasana*, *Ardha Shalabasana*, *Shalabasana*, there was considerable reduction in the symptoms of Sciatica. None of the patients develop any complications or any untoward symptom or any side effects during the course of treatment in the study group and therefore the treatment modalities is safe and is of therapeutic value. The above said observations indicate that patients have shown improvement in all the criteria of assessment of *Gridhrasi*.

### Discussion on probable mode of action of selective Yoga Techniques

Pain indicates aggravation of *Vata Dosha*, in the related or distant region in the body. *Asanas* are scientific postural patterns, which should be performed without getting any sort of pain in the body. *Yogasan*s stretch, stimulate nerves and tone up the back muscles in turn increase the blood supply. *Asanas* also release pressure and compression on sciatic nerve. This leads to automatic postural corrections, relaxation of contracted muscles and normal flow of *Vata dosha* in its *Sthana* and aggravated properties (*Gun*s) of *Vata* subsides. Thus *Gridhrasi* symptoms also reduced by practicing *Asanas*, and *Asana* does eradication of all diseases or *Laxanas*. Thus according to above observation and result patients have got relief from above symptoms of *Gridhrasi* by *Ardha Katichakrasana*, *Bujangasana*, *Ardha Shalabasana*, *Shalabasana*.

*Ardhakatichakrasana*, *Bujangasana*, *Arda-shalabasana*, *Shalabasana* strengthens the lower back muscles and loosens the spinal vertebrae, it causes relief from symptoms like *Ruk*, *Toda* etc.

### CONCLUSION

*Gridhrasi* comes under *Vata vyadhi* which commonly associated with the *Shoola* in *Sphik*, *Kati*, *Prushta*, *Uru*, *Janu* and *Jangha* is a prominent feature in its manifestation. The Yoga is alone sufficient to manage mild cases of sciatica. In the present study showed statistically significant result in subjective and objective parameters. To gain the benefits, one must practice *Asanas* regularly over a period of time and the benefits will last longer. The conclusions were drawn on the basis of discussion on Yoga techniques and observation and results.

## REFERENCES

1. [https://en.wikipedia.org/wiki/Low\\_back\\_pain](https://en.wikipedia.org/wiki/Low_back_pain) accessed on 20 Jan 2019
2. Outline of Orthopaedics; by John Crawford Adams, David L.Hamblen.13<sup>th</sup>edition, 2000; p200-202.
3. Sushruta; Sushruta Samhita by Kaviraj Ambikadutta Shastry, vol 1, Nidanasthana,1<sup>st</sup> chapter 78<sup>th</sup>sloka; 2<sup>nd</sup> edition, 2005; Chowkhambha Sanskrit series office, Varanasi; p238.
4. Vagbhata; Astanga Hradaya by K.R.Srikantha Murthy, Nidanasthana, 15<sup>th</sup> chapter 54<sup>th</sup>sloka; 5<sup>th</sup> edition, 2003; Chowkhambha sanskrit series office, Varanasi;p16.
5. Madhavakara; Madava Nidana of English translation by K.R.Srikantha Murthy, 22<sup>nd</sup> chapter 54<sup>th</sup>sloka; 6<sup>th</sup>editon, 2004; Chaukhambha Orientalia, Varanasi;p86.
6. Agnivesha; Charaka Samhita; revised by Charaka and Dridhabala English translation by R.K.Sharma, Bhagvan Dash vol 5, Chikitsasthana, 27<sup>th</sup> chapter 56<sup>th</sup>sloka; 2<sup>nd</sup> edition 2007; Chowkhambha Sanskrit series office, Varanasi;p35.
7. Srivaidya Shodala; Gada Nigraha; Vidyotinihindi commentary by Sri Indradev Tripaty, part 2<sup>nd</sup>, Vatavyadhi adhikara-62; 5<sup>th</sup>edition, 2005; Chaukhambha Orientalia Varanasi;p486.
8. Baily and Loves; Short Practice of Surgery; 24<sup>th</sup> edition, 2004; p569.
9. Swami Satyananda Saraswati; Yoga and Kriya; School of Yoga Bihar; p42, 48.

**Cite this article as:**

Praveenkumar D Chotagal, Guheshwar Patil, Kashinath Samagandi. Study of Effect of Selective Yoga Techniques in the Management of Gridhrasi – Sciatica. AYUSHDHARA, 2019;6(2): 2089-2094

**Source of support: Nil, Conflict of interest: None Declared**

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