

## EFFICACY OF YOGASANA IN THE MANAGEMENT OF GRUDHRASI (SCIATICA)

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### ABSTRACT

Low back pain is most common complaint with a prevalence of 65 to 90% and annual incidence of 4-5%. Grudhrasi is one of the panic conditions in today's society. In Grudhrasi intense shooting pain characteristically radiates from Sphika (gluteal region) to Pada (foot). On the basis of symptoms of Grudhrasi; it can be equated with the disease sciatica in modern science. Sciatica is a common neuralgia characterized by pain radiating into the leg; it is usually caused by nerve root compression and irritation or inflammation of the sciatic nerve, and is often accompanied by lower back pain and neurological deficits in the lower limb. Yoga therapies prescribe specific regimens, postures, breathing exercise and relaxation technique to suit individual needs. Yoga therapy tailors these to the health need of the individual. Ardha-matsyendrasana and Pawanmuktasana creates exercise of lower back, pelvic and lower extremities muscles hence stimulating the

nervous system and improving movements. Ardha-matsyendrasana and Pawanmuktasana are easy to practice and they relax not only superficial but also the deep muscles which also have major role in lower back pain. Clinical trial on 30 diagnosed patients of Grudhrasi of either sex between age group 30 – 60 years and chronicity of less than 3 years, carried out over the period of 30 days showed 76.8% relief in pain, 80% relief in stiffness, 79.5% relief in pricking sensation. The results of SLR test showed 76.7% of relief and the observation of

walking distance in trial group showed 62.5% relief. Ardha-matsyendrasana and Pawanmuktasana showed beneficial results in the management of Grudhrasi i.e. sciatica. Asana's are easy to perform cost effective and help in relieving the spasm & pain by relaxing the spine & associated muscles thereby reducing the sign and symptoms of Grudhrasi i.e. Sciatica.

**KEYWORDS:** Ardha-matsyendrasana, Pawanmuktasana, Grudhrasi, Sciatica.

## INTRODUCTION

Life style changes i.e. gradual changes in the way of living is dragging people towards a continuous mechanical life leading to various disorders. Low back ache is one of such lifestyle related disorder. About 55 - 60% of the population with low Back Ache sufferers belong to the 20- 40 years of age group. Low back pain is most common complaint with a prevalence of 65 to 90% and annual incidence of 4-5%. Improper sitting postures, traveling, change in form of transport, two wheeler users' and sports activities etc. create a pressure on the spine which plays an important role in producing low backache.

Sciatica is a term often used to describe low back pain that spreads (radiates) through the hip, to the back of the thigh, and down the inside of the leg.<sup>[1]</sup> The prevalence of sciatic symptoms reported in the literature varies considerably ranging from 1.6% in the general population to 43% in a selected working population. Sciatic symptoms have close resemblance with Grudhrasi mentioned in Ayurvedic classics as a type of vata vyadhi, wherein the pain along with stiffness, gripping and pulsations start in the buttocks [gluteal region] and gradually encroach the posterior aspect of kati (pelvis and lumbo sacral regions), ooru (thigh), jaanu (behind the knee), jangha (leg) and pada (foot) in sequence.<sup>[2]</sup> Pain in the sciatic distribution of sciatic nerve, due to inflammation, is typical disorder of vata vitiation.<sup>[3]</sup>

The management of sciatica in modern science is not very satisfactory which includes use of analgesics for pain relief and surgical procedures which is often associated with many adverse effects. Hence patients suffering from Grudhrasi (sciatica) generally approach to a physician for a safe, effective and alternative solution for this chronic ailment. Yoga therapy is a holistic system of therapy in which yogic practices are used to prevent and treat not only the ailments of the body, but also of the mind. Yoga therapies prescribe specific regimens, postures, breathing exercise and relaxation technique to suit individual needs.

According to 'Yoga Shastra' practice of asana removes pain. Ardha-matsyendrasana and Pawanmuktasana are important asana describe in ancient text are effective in relieving pain. Their importance is also mentioned in texts of many scholars of yoga. Yoga is the science of human life itself.<sup>[4]</sup>

Among the asana which work on lower back muscles Ardha-matsyendrasana and Pawanmuktasana are easy to practice and their combined effect is not well studied. Hence an attempt was made to study the combined effect of Ardha-matsyendrasana and Pawanmuktasana in Grudhrasi.

**Aim:** To study the effect of yogasana i.e Ardha-matsyendrasana & Pawanmuktasana in the management of Grudhrasi.

**Methodology:** A single group clinical trials on 30 diagnosed cases of Grudhrasi i.e. sciatica, between the age group of 30-60 years of both sex and fulfilling the inclusion criteria was carried out. All 30 patients, after their willing consent duly signed, were asked to follow the Ardha-matsyendrasana & Pawanmuktasana procedure twice daily morning and in the evening for a period of 30 days.

### Procedure

- **Time:** Twice daily- Morning 6 a.m.-7 a.m. (empty stomach) & evening 6 p.m. (without any oral intake for at least 2 hours before performing asana).
- **Method:** Total time for procedure was approximately 15-20 minutes, which included – warm up exercise for 1-2 minutes followed by – omkara chanting for 1-2 minutes- procedure time for asana was 15 minute – step wise procedure of asana (approximately 10 rounds of each Asana) was carried out as per the textual references. No any other medication (internal/external) was given during the trial period.

The **Duration of the treatment** was 30 days and study was continued for post treatment follow up to total 45 days from commencing of the study.

### Selection Criteria

**Inclusion criteria:** Diagnosed cases of Grudhrasi (sciatica) of either sex between age group 30 to 60 years were included in the present study. Patients fit for performing yogasana and having chronicity of present disease condition of less than 3 years were only included.

**Exclusion criteria:** Grudhrasi due to marmabhighata & accident cases, post –surgical complication were excluded. Grudhrasi due to PID & all secondary cases of Grudhrasi were excluded. Pregnant and lactating women were excluded. Patients with congenital deformity & suffering from any other systemic disorders were excluded.

**Assessment Criteria:** The improvement was documented and assessed through statistical method based on the following parameters.

### Scoring system

#### 1 Ruka (Pain): VAS scale Grade

- |                       |   |
|-----------------------|---|
| • No pain (0-1)       | 0 |
| • Mild Pain (2-4)     | 1 |
| • Moderate pain (5-7) | 2 |
| • Severe pain(8-10)   | 3 |

#### 2 Stambha (Stiffness): Grade

- |                                   |   |
|-----------------------------------|---|
| • No stiffness                    | 0 |
| • Patient able to do 75% movement | 1 |
| • Patient able to do 50% movement | 2 |
| • Patient able to do 25% movement | 3 |

#### 3 Toda (Pricking Sensation): Grade

- |   |   |
|---|---|
| • No pricking sensation                               | 0 |
| • Pricking sensation at the time of SLRT at 70 degree | 1 |
| • Pricking sensation at the time of SLRT at 45 degree | 2 |
| • Pricking sensation at the time of SLRT at 30 degree |   |

#### 4. Straight leg raise test: Grade

- |                 |   |
|-----------------|---|
| • More than 90° | 0 |
| • Upto 70       | 1 |
| • Upto 45°      | 2 |
| • Upto 30°      | 3 |

**Functional Disability****Walking distance: Grade**

- No pain on walking any distance. 0
- Unable to walk more than 1 mile due to pain. 1
- Unable to walk more than 0.5 miles due to pain. 2
- Unable to walk more than 0.25 miles due to pain. 3

**Flexion**

- When Patient touches his finger (of upper limb) to the toe, at that time Lumbar vertebra flexes up to only  $60^{\circ}$ . 0
- Patient touches his hand up to Ankle joint with difficulty 1
- Patient touches his hand up to knee joint with difficulty 2

**Extension**

- When Patient touches his hand easily into posterior aspect of knee joint at that time lumbar vertebra extend only  $35^{\circ}$  0
- Patient touches his hand to posterior aspect of knee joint with difficulty. 1
- Patient unable to do extension / touches his hand to posterior aspect of knee joint. 2

**Right / Left lateral Flexion**

- When Patient touches his hand easily up to lateral aspect of knee joint at that time lumbar vertebra flex  $30^{\circ}$ . 0
- Patient touches his hand up to knee joint with difficulty. 1
- Patient unable to touch his hand up to Knee joint. 2

**Rotation**

- When Patient rotates his upper body  $90^{\circ}$  towards (Rt/Lt) lateral side at that time lumbar vertebra rotate only  $5^{\circ}$  0
- When Patient rotates his upper body upto  $60^{\circ}$ – $90^{\circ}$ (Rt / Lt) laterally with difficulty 1
- When Patient rotates his upper body up to  $60^{\circ}$  with difficulty/unable to rotate 2

**Follow ups**

Periodic follow up for total duration of 45 Days was done on 15<sup>th</sup> & 30<sup>th</sup> day during the trial. Post treatment follow up was done on 45<sup>th</sup> day from the commencing of the treatment.

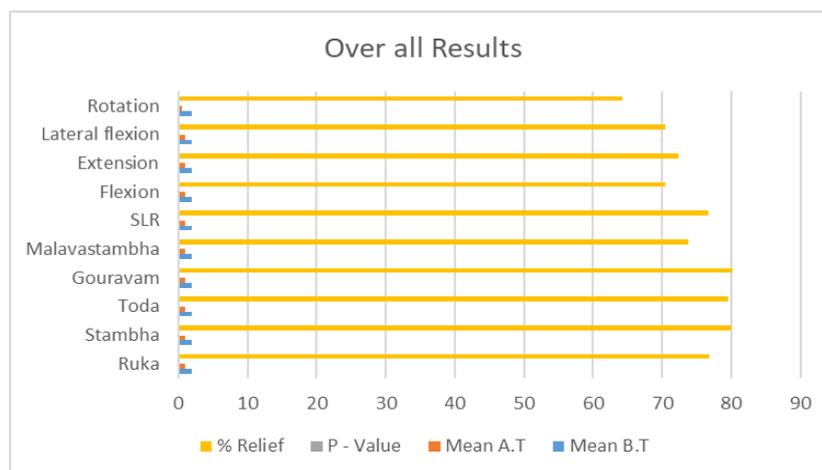
## RESULTS

The maximum number of patient i.e. 53.3% of Grudhrasi were from the age group 30-40 years & 26.6% incidence in the age group of 50 – 60 years, which may be due to age factor which leads to progressive decrease in hydration of inter vertebral disc that leads to degeneration resulting in disc problem there by causing Grudhrasi. It was observed that maximum numbers of patients were females i.e. 63.3% against 36.7% males. Based on the Prakruti of the patients it was observed that maximum number of patient's i. e 56.7% were of vata pittaja and 36.7% were of pitta kaphaja Prakruti. 23.33 % of total patients were doing regular exercise, 26.66% of total patients had occasional exercise and 50% were not performing exercise of any kind. Based on the occupation 33.33% had sitting job, 20% had walking, 20% had standing, 13.33% had sedentary and 13.33% had traveling work of pattern.

Effect on Ruka showed mean score of 2 before and 1 after treatment, where in improvement of 76.8% was observed. Effect on Stambh showed mean score of 3 before and 1 after treatment, where improvement of 80.0% was observed. Effect on Toda was mean score of 3 before and 1 after treatment, which showed improvement of 79.5%. Effect on Straight leg test had mean score of 3 before and 1 after treatment, the improvement of 76.7% was observed in SLR test. Effect on Walking Distance of trial group had mean score of 32 before and 12 after treatment, the improvement of 62.5% was observed in walking distance. Effect on flexion was mean score of 2 before and 1 after treatment, where improvement of 70.4% was found. Effect on extension had mean score of 2 before and 1 after treatment which showed improvement of 72.4%. Effect on extension with mean score of 2 before and 1 after treatment showed improvement of 70.4%. Effect on Rotation with mean score of 1 before & 0.5 after treatment showed improvement of 64.3%.

## OVERALL RESULTS

Parameters	Mean B.T	Mean A.T	P - Value	% Relief
Ruka	2	1	<0.05	76.8
Stambha	2	1	<0.05	80
Toda	2	1	<0.05	79.5
Gouravam	2	1	<0.05	80.2
Malavastambha	2	1	<0.05	73.8
SLR	2	1	<0.05	76.7
Flexion	2	1	<0.05	70.4
Extension	2	1	<0.05	72.4
Lateral flexion	2	1	<0.05	70.4
Rotation	2	0.5	<0.05	64.3



## DISCUSSION

When sciatica develops, it is usually because sciatic nerve roots have been compressed in some way. The pathology involves piriformis muscle, since the fibers of the muscles more or less cushion part of the sciatic nerve. When there is tension in the muscle, it compresses the nerve, which might lead to its characteristic sciatic nerve pain. Both Ardha-matsyendrasana and Pawanmuktasana relieves sciatic nerve pain because it helps in strengthening the area surrounding the sciatic nerve without causing pain. It stretches the muscles of the lower back and piriformis while boosting the blood circulation within the lower back area.

The muscular and skeletal tension in any part of the body directly affects the Srotas (systems) or circulatory channels in our body by creating obstacles for carrying toxins from our body. Asanas with the effect of relieving tension from muscles and bones make the Srotas function more smoothly.

Asanas helps in better blood circulation, better bowel movement for providing relief from constipation, relief from muscular and skeletal pain in the back or lower portion of the body, developing ability to make body movement with better agility and flexibility and many more.

Ardha-matsyendrasana and Pawanmuktasana increases the elasticity of the spine, tones of the nerves and improves the functioning of the spinal cord. Relieves the back pain and stiffness from between the vertebrae. Massages the abdominal organs and increases the digestive juices making it useful for loss of appetite and constipation. Pawanmuktasana helps to remove excess fat from the abdomen and thighs. Enhances blood circulation in the pelvic region. Continuous practice of Ardha-matsyendrasana and Pawanmuktasana correct the

spinal alignment, postural defects and stiffness of muscles. Collective effect of vata shaman, asti and mamsa dhatu pushti relieves symptoms of Grudhrasi (sciatica).

## CONCLUSION

Yoga therapy is a holistic system of therapy in which yogic practices are used to prevent and treat not only the ailments of the body, but also of the mind. Asana have a far reaching effect on body and mind which are attained through regular practice. Ardha-matsyendrasana and Pawanmuktasana are important asana described in ancient text as effective in relieving pain. Ardha-matsyendrasana and Pawanmuktasana are easy to practice and they relax not only superficial but also the deep muscles which also have major role in lower back pain. Pawanmuktasana tones the pelvic muscles and relaxes the leg muscles and relieves sciatic pain. Compression on the legs can reduce varicose veins. Ardha-matsyendrasana removes stiffness and pain in the hip joints and lower extremities. Pawanmuktasana also relieves sciatica by relaxing the piriformis muscles. Ardha-matsyendrasana and Pawanmuktasana are beneficial in the management of Grudhrasi, helping in relieving the symptoms of disease condition without causing any harmful effects on the body.

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