



A COMPARATIVE STUDY TO EVALUATE THE EFFECT OF MARMA STIMULATION WITH DISTAL SODIUM CHANNEL BLOCK (DSCB) IN THE MANAGEMENT OF *GRIDHRASI* W.S.R. TO SCIATICA

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ABSTRACT

Sciatica, a debilitating condition characterized by pain radiating along the sciatic nerve, is a prevalent issue affecting a significant portion of the population. The condition is often associated with herniation of lumbar intervertebral discs and results in pain and paresthesia along the sciatic nerve distribution. It commonly exacerbates with physical activity such as heavy work, bending, and twisting. The incidence of sciatica ranges from 13% to 40%. In Ayurveda, sciatica is understood as *Gridhrasi*, a condition described under *Vatavyadhis*, categorized into *Sa-manyaja* and *Nanatmaja* types. Among the 80 types of *Nanatmaja Vataja Vyadhis*, *Gridhrasi* is noted for causing severe pain, often radiating from the buttocks down to the foot, similar to sciatic nerve distribution.

While modern medicine offers conservative treatments such as rest, anti-inflammatory medications, physiotherapy, and, in severe cases, surgery, these approaches are not always effective and carry risks such as recurrence and loss of work capability. There is a growing need for safer and more effective alternative therapies. This study aims to evaluate and compare the effects of two non-invasive treatments, *Marma* Therapy and Distal Sodium Channel Block (DSCB), for the management of *Gridhrasi* (Sciatica). *Marma* Therapy, a quick and cost-effective technique, has shown promise in treating musculoskeletal disorders, while DSCB is an emerging treatment that offers potential in pain management. The goal of this study is to provide a safer, more economical alternative to conventional treatments, addressing the high prevalence of sciatica and offering a solution with minimal complications.

Keywords: Gridhrasi, DSCB, Ayurveda, Pain portals, Marma, sodium channel

INTRODUCTION

SCIATICA is a common, yet debilitating condition characterised by pain radiating along the sciatic nerve. The patient suffers from Pain And paresthesia in the sciatic nerve distribution or associated lumbosacral nerve root. Sciatica pain often worsens with heavy work, flexion, bending, and twisting. Radicular pain in the sciatic nerve distribution is due to the herniation of one or more lumbar intervertebral discs. The disease tends to manifest sciatica on either one side or both. Such a tedious, painful disease nowadays enhances its rate of effect. The incidence of this condition is between 13 % to 40%.

This condition is more or less understood and explained. The Knowledge that Ayurveda provides about this condition (sciatica) is far greater than that of modern medical science.

Ayurvedic text describes this disease under *vata vyadhis*. And they have divided it into *samanyaja* and *nanatmaja*.

GRIDHRASI is one of these vyadhis described under 80 types of *Nanatmaja vataja vyadhies*¹. The Ayurvedic text *Maha ruja Vyadhis* has been described and vyadhis are *Vishwachi*, *Khalli*, and *Gridhrasi (Harita)*. These three severe *Vatika* disorders cause more severe pain than any other *Vatika* disorder. Compared to the other two disorders, *Gridhrasi* is more widespread. *Gridhrasi* also emits radiation that causes agonising agony that needs to be relieved right away. In *Gridhrasi*, pain radiates insidiously from the buttock towards the waist, *Prishta* (back), then *Uru* (thigh), *Knee* (calf), and *Pada* (foot). Similarly, pain in the sciatic nerve distribution or its component radiates from the buttock towards the foot in *Sciatica*. The grave condition of *Gridhrasi* v/s *Sciatica* manifests crippling & handicapped to some.

Various therapy options are now available to manage sciatica. Modern medicine only offers conservative treatments for this illness, such as rest, immobilisation, analgesic and anti-inflammatory medicines, physiotherapy, etc. After receiving protracted conservative treatment, if the pain and neurological ab-

normalities do not go away, some give a caudal epidural block. However, if the pain is still present, the patient will eventually undergo surgery, which is not the best option because there is a risk of recurrence. Some patients may lose their ability to work. There is a need to look for safer medications as well as methods with the same or greater efficacy because these drugs must be used continually for lengthy periods.

As there are few curative treatments for this disease, new modalities have to be developed. Marma Therapy has been widely employed in the management of musculoskeletal illnesses. It is an efficient, quick, rapid, non-invasive therapy that can be completed at an OPD level. It is very safe and cost-effective.

Additionally, a brand-new idea known as Distal Sodium Channel Block is on the rise, heralding a paradigm shift in how we see pain management. It will be a blessing for humanity. These can avoid more expensive and invasive treatments.

Keeping in view the prevalence of the disease in society and the need to execute an effective, economical, and complication-free modality of treatment, the present study has been undertaken.

In this study, we are conducting " a comparative study to evaluate the effect of Marma Therapy and DSCB in the management of Gridhrasi W.S.R. to Sciatica."

The concept behind the study:-

There are many upakarma for the *vata dosha* mentioned in ayurvedic literature, such as *abhyanga*, *unmardana* which pacifies the vitiated *vata dosha* by making anuloma gati of *vata*; all such therapies which relieve pain work on *vata dosha* as *vata* is the central region for pain or *Ruka* and thereby cure the disease, So by this study effectiveness of therapies which works on same principle such as *marma therapy* will be compared with the modern concept of relieving pain by DSCB will be evaluated as both therapies are emerging as an effective treatments modalities in pain-related disorders of musculoskeletal origin.

Importance/need of this study:-

The importance and need for a comparative study to evaluate the effect of *Marma* stimulation with distal sodium channel block in the management of *Gridhrasi*(sciatica) can be outlined as follows:

PLAN OF STUDY:-

The present study has been planned in the following sections, viz.-

Introduction

Review of literature:- *Ayurvedic* review
Modern review

Ayurvedic Review:- *Gridhrasi*
Concept of *marma*
Marma stimulation

Modern Review :- Sciatica
Anatomy
Concept of DSCB

MATERIAL AND METHODS

Selection of Patients:

Age Group - Between 18–70 years

Sex - Either sex

Area of Residence - Rural / Urban

Study Design - Open and prospective.

Study Centres - Bicentral

Place of research work - Patients selected were from OPD/IPD of the Shalya Tantra Department of R.G.G.P.G. Ayu College and Hospital Paprola and Shivam Ortho Care, Una.

Sample Size and Methods

Two Groups- Divided into two groups (50 patients each)

a. Group I : *Marma* stimulation at *Kshipra* and *Gulpha* *Marma*
(50 patients)

b. Group II: DSCB at Beta 1, Beta 2, and Beta 3
(50 patients)

Sample Size - Total 100 Patients

Inclusion Criteria

- Patients willing for trial.
- Patients age group 18-70 years of either sex.

c. Patients with the following sign & symptoms of *Gridhrasi* & *Sciatica* were screened :-

i. Pain (*Ruka*) starts in the back gluteal region and radiates down one or

both lower limbs.

ii. Pricking sensation (Toda)

iii. Stiffness (Stambha)

iv. Twitching (Spandana)

v. Anorexia (Aruchi)

vi. Torpor (Tandra)

vii. Heaviness (Gaurava)

viii. (+ve) SLRT

ix. Pump Handle Test

x. Faber's test

xi. Sensory assessment

D. Exclusion Criteria

- Patients are not willing to try.
- Patients below 18 and above 70 are unwilling to go on trial or are not ready to consent.
- Patients with infectious diseases of the spine.
- Patients with infection at the site of DSCB infiltration.
- Patients with Malignancy.
- Pregnant or Lactating Females
- Patients with known hypersensitivity to the drugs.
- Addicted patients such as drug abusers.

Investigations-

- Haematological - Hb, TLC, DLC, ESR, blood sugar (fasting or random)
- X-Ray - L-S SPINE AP. AND LATERAL VIEW
- Other - MRI LS SPINE (If required)

The study was planned under two headings:-

- Conceptual Study
- Clinical study

1. Conceptual study:-

The available literature (in *Ayurvedic* and *Modern* texts) has been scrutinised for comprehensive details related to the disease. In this part, a detailed study of the literature related to anatomy, disease procedure, and drugs has been carried out to have a clear idea

about the mechanism of the cause of the disease and the available management procedures.

- **Group 1:-** Marma stimulation at *Kshipra* and *Gulpha Marma* four sitting with intervals of one week. (7 days)
- Duration of trial - 1 month

Group 2:-No. of patients to be enrolled for trial - 50

- Duration of trial - 1 month

- Follow up - 7th , 14th and 28th day
- Dose of the drug - 3 ml at single pain portal
- Route of Administration - In- tramuscular
- Patients were advised to take complete rest until the completion of therapy.
- No analgesics were prescribed.

2. CLINICAL STUDY



Kshipra Marma



Gulpha Marma



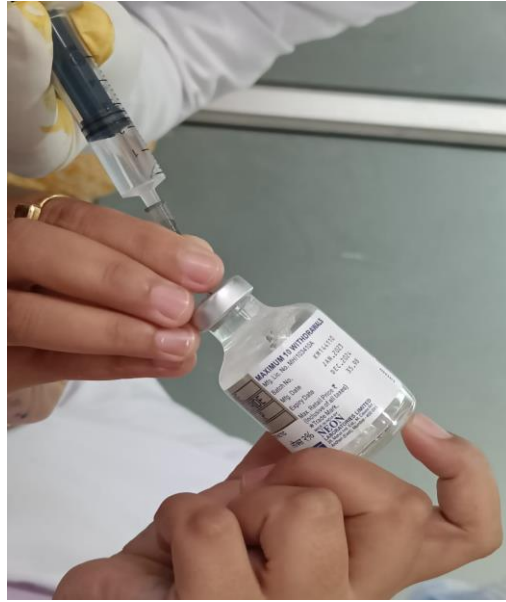
Preparation of the part



Beta 1



Beta 2



Drug being loaded



Pre therapy



Post therapy

EXAMINATION AND ASSESSMENT

A detailed history was taken after the patient's registration, and a complete physical examination was performed. All findings were noted in a set proforma, indicating that they fulfilled the conditions of inclusion criteria.

MANAGEMENT

After the diagnosis, the patients were registered for trial and treatment given. A total of 4 sittings was given an interval of 7 days.

Marma therapy Methodology (GROUP 1)

The surgical and parasurgical procedures need careful handling, so the same was also adapted in the present study as :

i) *Purva karma* *Pradhana karma*

ii) *Pashchat karma*

(i) *Purva karma*

- i. A patient who was considered fit for procedure was prepared accordingly
- ii. Patients were counselled and explained about the procedure in order to make them mentally aware of the events of treatment.
- iii. Consent of the patients obtained from the patients themselves.
- iv. Agropaharaniya -
- v. Marking of the site with a pen i.e. 4 angulas above the gulpha in the back of affected limb (From mid of medial aspect to mid of lateral aspect of lower leg covering the dorsal surface at a height of 4 angulas from the medial malleolus & lateral malleolus.), marking was done in a transverse pattern with a distance of 0.5 cm from one to another dot, thoroughly cleansed and abhyanga was done with *Murchita tila taila* for 15 minutes. This served the purpose of both snehana and svedana, as *Murchita tila taila* provides *Snehana* and *Abhyanga* is a variety of *agni svedana* mentioned by Acharya Charaka.

(ii) *Pradhana karma*

Patients were kept in supine positions before starting the procedure.

A) Site of the marma :-

1. Kshipra marma:- There are 2 kshipra marmas in lower limb

Type:- Snayu (ligament)

Size :- 1/2 anguli (finger unit)

Site :- Middle of the 1st web space at the dorsal aspect

2. Gulpha marma :- There are 2 Gulpha marmas

Type :- Sandhi

Size :- 2 anguli (2 finger width)

Site :- B/L malleoli

With the help of fingers each marmas were stimulated

Duration of touch: <1 sec

Total cycle:- 3 each cycle 20 times stimulation

It was difficult to control the timing of touch at a finer level because the procedure was done manually, and slight variations cannot be ruled out.

(iii) *Pashchat karma*

Immediately after completion of the procedure sthanika abhyanga of the marma point was done. During the procedure, the patient was carefully observed for any untoward complication.

The patient was called after one week for next sitting. Before going for the second sitting of Marma stimulation on the same manner, patient was questioned about the relief in the complaints and any untoward. Effects of the procedure if any and recorded in the follow up chart.

DSCB AT BETA 1 AND BETA 2 :-

(i) **PURVA KARMA :- Painting of the part is done. Sensitivity test of lignocaine is done**

(ii) **Pradhana karma:- DSCB injection sites; (A) Beta 1 (2 cm anterior and inferior to lateral malleolus) and Beta 2 (between Achilles tendon and posteroinferior aspect of lateral malleolus)**

Drug used:- lignocaine 0.5% with distal water

Amount infiltrated :- 3ml at each site

Route of administration :- intramuscular

Pashchat karma :- Limb elevation, bed rest.

CRITERIA OF ASSESSMENT-

The improvement in the patient was assessed mainly on the basis of relief in the cardinal sign and symptoms of the disease. To assess the effect of therapy

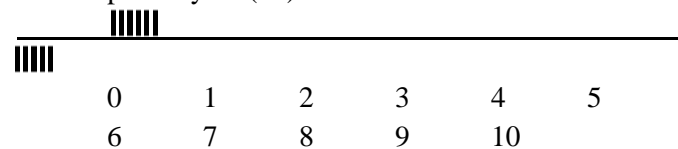
objectively, all the signs and symptoms were given scoring depending on their severity as below.

Subjective Criteria-

1. Pain (Ruja)

	<i>Grade</i>
a. No pain	0
b. No pain at rest but occurs after physical work	1
c. Pain present at rest but mild	2
d. Pain present at rest but moderate	3
e. Pain present at rest but severe	4
2. Pricking sensation (Toda)
 - a. No pricking sensation 0
 - b. Occasional pricking sensation 1
 - c. Constant mild pricking sensation 2
 - d. Constant moderate pricking sensation 3
 - e. Constant severe pricking sensation 4
3. Radiation of pain -
 - a. No radiation of pain 0
 - b. Pain at gluteal region 1
 - c. Pain radiates up to the knee 2
 - d. Pain radiates up to leg 3
 - e. Pain radiates up to foot 4
4. Visual Analogue Scale -

In this pain assessment tool, the patient indicates the intensity of pain on an imaginary line of 10 cm, marked from no pain (0) at one end to pain as bad as it could possibly be (10) at the other end.



5. Verbal descriptive scale

- a. No pain - 0

- b. Mild pain - 1
- c. Distressing - 2
- d. Horrible - 3
- e. Excruciating - 4

Objective Criteria –

1. straight leg raising test –
 - Position - supine
 - Pain on raising the affected leg straight at an angle was assessed in grades -

0	-	At or > 90°
1	-	71 – 90°
2	-	51 – 70°
3	-	31 – 50°
4	-	up to 30°
2. Lasegues test

Grades –

0	-	No pain at an angle of 90° on ankle dorsiflexion
1	-	Pain occur in between 70 – 89° on ankle dorsiflexion
2	-	Pain occur in between 69 – 60° on ankle dorsiflexion
3	-	Pain occurs < 60° on ankle dorsiflexion

STATISTICAL ANALYSIS

Mean, Percentage relief, Z value and ‘p’ values were calculated.

CRITERIA FOR ASSESSING THE TOTAL EFFECT

Considering the overall improvement shown by the patients in signs and symptoms, the total effect of the therapy has been assessed as below.

1. Cured – >80% relief in signs and symptoms
2. Markedly Improved - More than 65-80% relief in signs & symptoms
3. Improved – 25-65% relief in sign and symptoms

4. Unchanged – Below 25% relief in signs and symptoms

Result

TOTAL PATIENT TAKEN WERE 100

Group I (50 BUT two patients left the trial)

Group 2(50 BUT three patients left the trial)

Group I

Showing the effect of Marma therapy on assessment parameters of Gridhrasi

Sr no.	Name of feature	N	Mean score		D= bt-at	%ge of relief	Variance		Z value	P value	Result
			Bt	At			V1	V2			
1	Pain	48	3.37	0.79	2.58	76.55	0.3244	0.5514	19.12487	<0.00001	HS
2	Pricking sensation	48	3.14	0.70	2.44	77.70	0.3399	0.3386	20.50172	<0.00001	HS
3	Radiation of pain	48	3.51	0.55	2.96	84.33	0.2553	0.3829	25.37976	<0.00001	HS
4	VAS	48	8.16	1.67	6.49	79.53	0.5248	0.5372	43.97914	<0.00001	HS
5	VRS	48	3.37	1.27	2.1	62.31	0.3244	0.2867	18.648583	<0.00001	HS
6	SLRT	48	3.14	0.70	2.44	77.70	0.3399	0.3386	20.50172	<0.00001	HS
7	Lasegues test	48	2.76	0.51	2.25	81.52	0.1831	0.298	22.2915	<0.00001	HS

Group II :

Showing the effect of DSCB (Distal Sodium Channel Block) on assessment parameters of Gridhrasi

Sr no.	Name of feature	N	Mean score		D= bt-at	%ge of relief	Variance		Z value	P value	result
			Bt	At			V1	V2			
1	Pain	47	3.23	0.70	2.53	78.32%	0.3570	0.4745	19.03561	<0.00001	HS
2	Pricking sensation	47	3.46	0.44	3.02	87.28%	0.2543	0.296	27.92156	<0.00001	HS
3	Radiation of pain	47	3.45	0.39	3.06	88.69%	0.2535	0.2442	30.07297	<0.00001	HS
4	VAS	47	7.7	1.38	6.32	82.07%	0.0527	0.3718	67.16352	<0.00001	HS
5	VRS	47	3.27	1.08	2.19	66.97%	0.3348	0.3404	18.28404	<0.00001	HS
6	SLRT	47	3.46	0.44	3.02	87.28%	0.2543	0.2960	27.92156	<0.00001	HS
7	Lasegue test	47	2.83	0.39	2.44	86.21%	0.1418	0.2442	27.18139	<0.00001	HS

INTERGROUP COMPARISON

SUBJECTIVE CRITERIA : shows Intergroup comparison of effects of treatments on subjective criteria of *Gridhrasi* w.s.r. *Sciatica*

Clinical features	Group I			Group II		
	X=BT-AT	Z value	%age relief	X=BT-AT	Z value	%age relief
Pain	2.58	19.124	76.55%	2.53	19.03	78.32%
Pricking sensation	2.44	20.50	77.70%	3.02	27.92	87.28%
Radiation of pain	2.96	25.37	84.33%	3.06	30.07	88.69%
VAS	6.49	43.97	79.53%	6.32	67.16	82.07%
VRS	2.1	18.64	62.31%	2.19	18.28	66.97%

OBJECTIVE CRITERIA :

Shows Intergroup comparison of effects of treatments on Objective criteria of *Gridhrasi* w.s.r. *Sciatica*

Clinical features	Group I			Group II		
	X=BT-AT	Z value	%age relief	X=BT-AT	Z value	%age relief
SLRT	2.44	20.50	77.70%	3.02	27.92	87.28%
Lasegues test	2.25	22.29	81.52%	2.44	27.18	86.21%

OVERALL EFFECT OF THERAPY :

shows the overall effect of treatment in Group I and Group II

Sr. No.	Total Effect	Group I		Group II	
		No.of pa-tient	%age	No. Of patients	%age
1.	Cured	16	33.33%	26	55.31%
2.	Markedly improved	30	62.5%	21	44.69%
3.	Improved	2	4.16%	-	-
4.	Not improved	-	-	-	-

RESULT :-

The entire work, entitled “A comparative study to evaluate the effect of Marma Therapy and Distal Sodium Channel Block (DSCB) in the management of *Gridhrasi* (*Sciatica*) ”can be concluded as below”:-

1. There are references of *Gridhrasi* in Ayurvedic texts. It comes under 80 types of *Nanatamaja vatika disorders*. By considering clinical features of *Gridhrasi*, it can be correlated with *Sciatica*.
2. The disease *Gridhrasi* is a painful and crippling condition presented with *Ruka* and its Radiation, *Toda* and *Stambha* and require immediate relief.
3. This disease is more common in people involved in domestic activities followed by people who involved in heavy physical work and common in the 5th decade. Whereas the 3rd decade is in the

high-risk category. They were *Vata-kaphaja prakriti*.

4. The maximum patients were within 1- 4weeks chronicity .So, this is the disease which runs for long duration and attains a chronic course.
5. Statistically DSCB is proved effective in the management of *Gridhrasi*.
6. Overall effect of procedure named DSCB in term of:-

Cured	–	55.31%
Markedly improved	-	44.49 %

CONCLUSION

The following conclusion can be drawn from the present work and a few suggestions made by:

This study was done to substantiate the efficacy of *marma chikitsa* and DSCB in management of *Sciatica*

ca. Two different treatment modalities were taken in form of *Marma* chikitsa and DSCB and their comparative effects were evaluated on predefined parameters. Almost 96% of the patients treated with *Marma* chikitsa showed highly significant results while 4.1 % of the patients got moderate results whereas 100% of the patients who were treated with DSCB showed highly significant results.

Intergroup comparative study revealed highly significant results in group 2 patients, i.e. with DSCB in comparison to group 1 i.e. *Marma* therapy. Both modalities were found effective in management of sciatica on predefined parameters along with functional improvement in the condition of the patients.

Although minimal DSCB involves invasive procedure whereas *Marma* therapy is noninvasive and easy to perform procedure both for the patient and practitioner. Thus both the modalities have their own pros and cons but showed promising results in the pain management of patients suffering from sciatica.

Thus, this study substantiates the alternate, effective and efficient treatment modalities for sciatica in addition to conventional analgesic therapies like NSAIDs and opioids. The promising results revealed in this study pave the way for the requirement of a more exhaustive and extensive large-scale study in the fields of these respective treatment modalities.

In conjunction with marma therapy scope of *Snehana*, *Swedana* with *dosha* specific *aushadha dravya* may be explored. Similarly, the option of using adjuvant like clonidine, with DSCB needs thorough research.

Distal Sodium channel blocks treat the pain and not the cause. A thorough clinical examination and proper investigations are needed to eliminate all red flags, before deploying SCB as the definitive management. Large proportion of conditions which are definitively managed by SCB are self-limiting situations, with a natural history of resolution over a period of time.

Indiscriminate usage of SCB, without a precise diagnosis is to be discouraged, because the block may the pain, which is the most important symptom in conditions like tumours, tuberculosis of spine, infections,

or metastasis. These situations need proper management.

It is essential to take proper written consent for the procedure, and if required even a video consent can be taken. Anaphylactic reactions to Xylocaine in such low concentration and volumes are very rare but still not unknown. The treating surgeon must thus be well prepared to handle anaphylactic shock if it unfortunately happens.

Proper record keeping and documentation are essential, as this is an emerging technology, and many questions still remain unanswered.

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