

CLINICAL EVALUATION OF THE EFFICACY OF A HERBAL PREPARATION AND KATI BASTI IN THE MANAGEMENT OF GRIDHRASI ROGA W.S.R. TO SCIATICA

Avneesh Kumar Dwivedi¹, Ajay Kumar Sharma²

¹Lecturer, Deptt. of Kayachikitsa, Shri Dhanwantri Ayurvedic Medical College & Research Centre, Mathura, Uttar Pradesh, India

²Director & Head, P.G. Deptt. of Kaya Chikitsa, N.I.A., Jaipur, Rajasthan, India

ABSTRACT

The study was conducted in 30 clinically diagnosed patients of *Gridhrasi Roga*(Sciatica) with an objective of clinical evaluation of a *Cap.Parijat Patra Ghana* and *Kati Basti* in the management of *Gridhrasi Roga*(Sciatica). These patients were divided into three groups of 10 patients each. Patients of group-A administered *Cap. Parijat Patra Ghana* 500 mg BD with lukewarm water for 1 month, patients of group-B were *Kati Basti* with *Dashmoola Taila* for 21 days and patients of group-C were administered *Cap.Parijat Patra Ghana* 500 mg BD with lukewarm water for 1 month and *Kati Basti* with *Dashmoola Taila* for 21 days, simultaneously. It was observed that the patients of *Gridhrasi Roga*(Sciatica) of group-C had shown maximum percentage of improvement, whereas it was moderate in patients of group-B and patients of group-A had shown mild improvement. No side effects were reported, in any of the patients in all the three groups, during the trial period. Various observations made and results obtained were computed statistically to find out the significance of the values obtained and various conclusions were drawn accordingly.

Key Words : *Gridhrasi Roga*, Sciatica, *Kati Basti*, Herbal Preparation

INTRODUCTION

Human beings desire of having good living with healthy life. For this purpose they have been very keen and conscious in maintaining a disease free society. In ancient time they followed nature's rule and lived freely without any stress in their life. But now-a-days people are busy in their routine works and unaware to maintain their health. Consequently, they are being susceptible to various kinds of life style disorders. *Gridhrasi Roga* (Sciatica) is one of them.

The low back pain is common problem seen in persons, commonly, in modern era. Out of which 40% persons have radicular

pain and this comes under the umbrella of Sciatica-Lumbago-Syndrome. Such presentation was common in olden period and ancient science of life named it as *Gridhrasi Roga*. It is considered as *Shoola Pradhan Vaat Vyadhi*. Many researches were conducted on this disease, but still the complete cure of this is mirage.

Gridhrasi indicates the typical gait that resembles of a bird "Gridhra" i.e.vulture, which is often seen in patients of *Gridhrasi Roga*. The cardinal clinical features of *Gridhrasi Roga* are –*Ruka*(Pain)-*Toda*(Pricking Sensation)-*Stambha*(Stiffness)-*Muhurspandan* in the

Sphika – Kati – Uru – Janu – Jangha Pada in order¹, *Sakthikshepan – Nigrah* i.e. restricted lifting of lower limb.² In *Kaphanubandh Tandra , Arochak and Gaurav*³ are also present. The clinical features seen in *Gridhrasi Roga* can be well correlated with Sciatica of modern medicine. Sciatica is very painful condition, in which pain begins in lumbar region and radiate along the postero-lateral aspect of thigh and leg.⁴ Hence movement of affected lower limb is restricted and patient is not able to walk properly. Since medical science recognizes the gravity of this problem, therefore a medicament which relieves the pain , improves the functional ability , restores from functional disability and controls the condition with cost effectiveness , is the need. This need should be systematically evaluated for efficacy and safety. Sequential administration of the *Snehan , Swedan , Basti , Siravedh* and *Agnikarma* are lines of treatment of *Gridhrasi* as expounded in the *Ayurvedic* literature. Apart from these procedures , the line of treatment that can be given at O.P.D. level , very easy to administer and be very effective , is yet to be established. Many herbs , for the management of *Gridhrasi Roga* , are described in *Ayurvedic* literature and their therapeutic effect is yet to be explored. On the quest of such an effective , if possible , radical management of *Gridhrasi Roga*, we came across some very effective drugs , which have been individually proven successful such as *Parijat Patra* and *Kati Basti* with *Dashmoola Taila*. These drugs having very effective properties in *Vatvyadhi* and given good result in various researches on clinical trials. For a better and stable result , a combination of both the drugs was selected for trial.

MATERIALS AND METHODS

Aims and Objectives:- Present research work has been undertaken with following four main objectives-

1. Conceptual and clinical studies on the *Gridhrasi Roga* w.s.r. to sciatica.
2. To assess the efficacy of a *Herbal Preparation* and *Kati Basti* in the management of *Gridhrasi Roga* w.s.r. to Sciatica.
3. To compare the relative efficacy of a *Herbal Preparation* and *Kati Basti* in the management of *Gridhrasi Roga* w.s.r. to Sciatica.
4. To assess the combined efficacy of *Herbal Preparation* and *Kati Basti* in the management of *Gridhrasi Roga* w.s.r. to Sciatica

Materials and Methods :-

(1) Selection of cases – The study was conducted on 30 clinically, pathologically and radiologically diagnosed patients of *Gridhrasi Roga*(Sciatica). The selection of patients was made from O.P.D.\I.P.D. wing of P.G. Department of *Kayachikitsa*, N.I.A., Jaipur.

(2) Inclusion Criterias -

Apparentaly normal individuals in the age group of 15-75years of either sex suffering from *Gridhrasi Roga*.

Vataj and *Vata-Kaphaj* both types of *Gridhrasi Roga*.

Sciatica(*Gridhrasi Roga*) due to disc prolapsed(L4-5 or L5-S1).

Sciatica(*Gridhrasi Roga*) due to Ankylosing Spondylitis.

Sciatica(*Gridhrasi Roga*) due to Spinal Stenosis.

Sciatica(*Gridhrasi Roga*) due to Spondylolisthesis.

(3) Exclusion Criterias –

***Gridhrasi Roga* more than 10 years old.**

T.B. Spine, Tumours of Spinal Cord, Malignancy of Pelvis.

Diabetic Neuropathy, Cauda-equina Syndrome.

(4) Trial Drugs- The Herbal Preparation and Dashmoola Taila were selected as trial drugs, for evaluating their role in the man-

agement of a series of patients of Gridhrasi Roga.

A. HERBAL PREPARATION (Chakradatta, Vatvyadhi 22/97)⁵

Table no. 1 showing Ingredients of Cap. Parijat Patra Ghana

S.No.	Drug	Botanical Name	Part Used
1.	Parijat	Nyctanthes arbor-tristis	Leaf

Method of Preparation:- Ghan Satva was made from the decoction of the leaves of the Parijat. Ghan Satva was dried and filled in the capsules in the dose of 250 mg in each capsule. **Dose:-** 2 Cap., Two times

in a day, with lukewarm water, for 30 days.

B. DASHMOOLA TAILA

Table no. 2 Showing Ingredients of Dashmoola taila⁶

S.No.	Drugs	Botanical Name	Parts Used
1.	Bilva	Aegle mormelos	Moola(Root)
2.	Syonak	Oroxylum indicum	-do-
3.	Patla	Stereospermum suaveolens	-do-
4.	Agnimanth	Premna mucronata	-do-
5.	Gambhari	Gmelina arborea	-do-
6.	Salparni	Desmodium gangeticum	-do-
7.	Prisniparni	Uraria picta	-do-
8.	Brihti	Solanum indicum	-do-
9.	Kantkari	Solanum surattense	-do-
10.	Gokshura	Tribulus terrestris	-do-
11.	Tila Taila	Sesamum indicum	Seed's Oil

Method of Preparation:-All the components of Dashmoola Taila, except Tila Taila were taken to form Kvath and Kalka. This Kalka and Kwath was mixed with Tila Taila and boiled continuously till the sign of Samyak Pak appeared.

Method of Administration of Kati Basti:-

A boundry was made, with flour paste of Urada(Phaseolus mungo Linn.), in the lumbar region centering the site of pain and then lukewarm Dashmoola Taila was poured and retained there for approx. 45 minutes daily for 21 days. The oil was changed frequently so as to maintain the temperature of the oil to a particular level. The oil for the Kati Basti was exchanged on every 5th day.

(5) Administration of Drugs:- The 30 patients of Gridhrasi Roga were registered and divided randomly into following three groups. Each group have 10 patients.

Group- A:- 10 registered patients of Gridhrasi Roga were administered with Herbal Preparation in a dose of 500 mg two times in a day with lukewarm water for a period of 30 days. **Group-B:-** 10 registered patients of Gridhrasi Roga were administered with Kati Basti(Dashmoola Taila) for a period of 21 days. **Group-C:-** 10 registered patients of Gridhrasi Roga were administered with Herbal Preparation and Kati Basti(Dashmoola Taila) simultaneously in the manner as discussed above.

(6) Duration of Clinical Trial and Follow-up Study:-Duration of clinical trial was 30 days.

All patients were followed up once in a week regularly.

(7) Criterias of Assessment:- During trial and follow up study the patients were assessed on following parameters:-

- **Subjective Improvement:-** All the patients registered for present trial were looked for any changes in their

growing feeling of well being, if any, produced after the therapy.

- **Objective Improvement:-** Following Clinical and Functional aspects were looked into before, during and after completion of the trial:-

- **Clinical Assessment :-**

Table No.-3 Showing Clinical Features(to be assessed) of Gridhrasi Roga according to Ayurvedic Texts ^{7,8}

S. No.	Clinical Manifestations	Before Treatment	After Treatment			
			7 th day	14 th day	21 st day	30 th day
1.	Toda(Pricking type of pain)					
2.	Sphuran(Flickering Sensation)					
3.	Tandra(Lethargy)					
4.	Stambha(Stiffness)					
5.	Arochak(Tastelessness)					
6.	Agnimandya(Diminished Appetite)					
7.	Praseka(Excessive Salivation)					
8.	Bhaktdweshya(Anorexia)					

Table No.-4 Showing Clinical Features(to be assessed) of Sciatica according to Modern Texts ⁹

S. No.	Clinical Manifestations	Before Treatment	After Treatment			
			7 th day	14 th day	21 st day	30 th day
1.	Pain					
2.	Tingling Sensation					
3.	Numbness					
4.	Burning Sensation					
5.	Weakness of Limbs					
6.	Gait Disturbances					
7.	Walking Distance					
8.	Diminished\Absent ankle jerk					
9.	Diminished\Absent Pain Sensation					
10.	Diminished\Absent Touch Sensation					

- **Functional Assessment :-**

a. S.L.R.(Straight Leg Raising) Test¹⁰ :-

- **Method of Examination of S.L.R. Test:-** First of all tell to patient to lie in supine position on examination table. Now tell to raise his both lower limbs, one by one, straight upward on the axis of hip joint. Examine the angle (with the help of Goniometer), between sur-

face of examination table and respective lower limb, at which the low backache starts. That is the angle for +ve S.L.R. Test. If pain in low back is absent, S.L.R. Test will be -ve.

Table No.:-5 Showing grades of S.L.R. Test

Grades	S.L.R. Test	Before Treatment	After Treatment			
			7 th day	14 th day	21 st day	30 th day
0	No Pain at 90 degree					
1	Pain at 89-71 degree					
2	Pain at 70-52 degree					
3	Pain at 51-33 degree					
4	Pain at 32-0 degree					

Table No.:-6 Showing Assessment of Walking Time-

	Before Treatment	After Treatment			
		7 th day	14 th day	21 st day	30 th day
Time taken to cover the distance of 10 mts.					

For the assessment of above mentioned Clinical and Functional aspects of the *Gridhrasi Roga*(Sciatica) the following

symptom rating scale, developed by Prof. A.K. Sharma et.al.was used :-

Table No.:-7 Showing assessment of gravity of symptoms :-

S. N0.	Grading of Symptoms		
1.	Absent	0	00%
2.	Mild	+	25%
3.	Moderate	++	50%
4.	Severe	+++	75%
5.	Agonising	++++	100%

Table No.8 Showing the assessment of improvement in the symptoms :-

S. No.	Grading of Symptoms		
1.	No Relief	++++	00%
2.	Mild Relief	+++	25%
3.	Moderate Relief	++	50%
4.	Significant Relief	+	75%

5.	Excellent Relief	0	100%
----	------------------	---	------

(8

Criteria or Diagnosis: Diagnosis of *Gridhrasi Roga* (Sciatica) was done on the basis of following factors :-

- Clinical Features available in *Ayurvedic* and Modern Texts.
- With the help of following investigations-
 - Hb%, T.L.C., D.L.C., E.S.R.
 - R.A. Factor
 - X-ray L-S spine (AP. & Lateral view)
 - C.T. Scan (optional)
 - M.R.I. (optional)

All the investigations were performed in all the patients before starting clinical trial. The investigations were repeated after the course of therapy where ever needed.

Above mentioned criterias of diagnosis were helpful in making differential diagnosis and confirmation of diagnosis *Gridhrasi Roga* (Sciatica).

Statistical Methods Used in the Study:- Various observations made and results obtained were computed statistically to find out the significance of the values obtained and various conclusions were drawn accordingly. 'p' Value was calculated with the help of standard of charts on the basis of 't' value.

Table No.:-9 Showing Assessment of Significance¹¹

P > 0.05	Non significant (N.S.)
P < 0.05	Significant (S.)
P < 0.01	More Significant (Mo.S.)
P < 0.001	Highly Significant (H.S.)

OBSERVATIONS AND RESULTS

The clinical study carried out in the present series of patients have revealed that maximum incidences were found in between 51-60 years of age, Female Sex, Hindu Religion, Household job workers, Married, Urban area, Jangal Desha, Middle class, Vegetarian dietary habit, Illiterate and Menopausal female. Majority of patients were having *Madhyam Kotha Sama Agni*, *Samyak Nidra* and *Madhyam Sharira*. Maximum number of patients were having Vata-Kapha type of *Sharirika Prakriti*, Rajsik Type of *Mansik Prakriti*, *Prakriti-samsamvaya* type of *Vikriti*, *Madhyam Sara-Samhanan* and *Pramana*, *Pravara Stmya* and *Madhyam Satva-Ahara Shakti-*

Vyayama Shakti and *Vaya*. Maximum number of patients were of Vataj type of *Gridhrasi Roga*, having b/l involvement of limbs, of < 1 year chronicity, of Sub-acute onset of disease, having Slow progress of disease and shown Marked improvement in the disease. *Ruka* (Pain) and *S.L.R.* test +ve were found in all the patients, 53.33% patients were having complaint of *Toda*. *Stambha* was present in 60% patients whereas *Sphurana* was present in 80% patients. *Arochak*, *Tandra*, *Agnimandya*, *Bhaktdwesh*, *Tingling Sensation*, *Burning Sensation*, and *Numbness* were present in 23.33%, 10%, 10%, 6.66%, 86.66%, 16.66%, 43.33% of patients, respectively. *Dehasyapi Pravakrta* (Scoliosis) was

found in 33.33% patients and Praseka was absent in all the patients. Diminished Ankle jerk was present in 46.66% patients, Hypoesthesia was present in 16.665 patients and same percentage of patients were having loss of sensation in different dermatome in affected limb.

Subjective Improvement

After the completion of trial there was a marked improvement in the feeling of well being in all the three groups but the inci-

dence of improvement was higher in Group-C, moderate level of improvement was observed in Group-B and the patients of Group-A have shown mild level of improvement.

Clinical Improvement

TABLE No. 10 :- Showing the Effect of Therapy according to recovery in Signs and Symptoms in 10 Patients of Group-A Treated with Cap. Parijat Patra Ghana

S.No.	Signs and Symptoms	n	Mean Scores		Difference	% Relief	S.D ±	S.E ±	't'	p	Result
			B.T.	A.T.							
1.	Toda(Pricking Pain)	5	1.2	0.8	0.4	33.33	0.51	0.16	2.44	<0.05	S
2.	Sphurana(Flickering Sensation)	8	1.8	1.2	0.6	33.33	0.51	0.16	3.67	<0.01	S
3.	Tandra(Lethargy)	2	0.4	0	0.4	100	0.84	0.26	1.50	>0.10	NS
4.	Stambha(Stiffness)	7	1.5	0.9	0.6	40	0.51	0.16	3.67	<0.01	S
5.	Arochak(Tastelessness)	2	0.4	0.1	0.3	75	0.67	0.21	1.40	>0.10	NS
6.	Agnimandya(Diminished Appetite)	1	0.2	0.0	0.2	100	0.63	0.20	1.00	>0.10	NS
7.	Praseka	0	-	-	-	-	-	-	-	-	ND
8.	Bhaktadwasha(Anorexia)	1	0.1	0.0	0.1	100	0.31	0.10	1.00	>0.10	NS
9.	Pain	10	3.0	2.4	0.6	20	0.69	0.22	2.71	<0.05	S
10.	Tingling Sensation	9	3.0	2.1	0.89	29.56	0.89	0.28	3.12	<0.05	S
11.	Numbness	4	2.3	1.6	0.69	29.87	1.27	0.40	1.72	>0.10	NS

12.	Burning Sensation	2	1.6	1.4	0.19	11.8	0.8	0.2	0.7	>0.1	NS
			1	2		0	0	5	4	0	
13.	Weakness of Limbs	7	2.4	1.8	0.59	24.4	0.8	0.2	2.1	>0.0	NS
			1	2		8	6	7	5	5	
14.	Gait Disturbances	9	2.7	2.0	0.69	25.4	0.7	0.2	3.1	<0.0	S
			1	2		6	0	2	0	5	
15.	Walking Distance	9	1.8	1.3	0.5	27.7	0.5	0.1	3.0	<0.0	S
						7	2	6	0	5	
16.	Diminished or Absent Ankle Jerk	5	0.8	0.5	0.3	37.5	0.4	0.1	1.9	>0.0	NS
						0	8	5	6	5	
17.	Diminished or Absent Touch Sensation	0	-	-	-	-	-	-	-	-	ND
18.	Diminished or Absent Pain Sensation	0	-	-	-	-	-	-	-	-	ND
19.	S.L.R. Test	1	3.1	2.4	0.7	22.5	0.4	0.1	4.5	<0.0	S
		0				8	8	5	8	1	

TABLE No.11 :-Showing the Effect of therapy according to recovery in Signs and Symptoms in 10 patients of Group- B treated with Kati Basti

S. No.	Signs and Symptoms	n	Mean Scores		Difference	% Relief	S.D ±	S.E ±	't'	p	Result
			B. T.	A. T.							
1.	Toda(Pricking Pain)	5	1.2	0.3	0.9	75	1.1	0.3	2.5	<0.0	S
							0	4	8	5	
2.	Sphurana(Flickeringsensation)	8	2	0.4	1.6	80	1.0	0.3	4.7	<0.0	S
							7	3	0	1	
3.	Tandra(Lethargy)	1	0.2	0	0.2	100	0.6	0.2	1	>0.1	NS
							3	0		0	
4.	Stambha(Stiffness)	9	2.1	0.1	2	95.2	0.8	0.2	7.7	<0.0	HS
						3	1	5	4	01	
5.	Arochak(Tastelessness)	2	0.4	0	0.4	100	0.8	0.2	1.5	>0.1	NS
							4	6	0	0	
6.	Agnimandya(Diminished Appetite)	2	0.4	0	0.4	100	0.9	0.3	1.3	>0.1	NS
							6	0	0	0	
7.	Praseka(Excessive Salivation)	0	-	-	-	-	-	-	-	-	ND

8.	<i>Bhaktadwe-sha</i> (Anorexia)	0	-	-	-	-	-	-	-	-	ND	
9.	Pain	10	3	0.6	2.4	80	0.6	0.2	10.9	2.85	<0.001	HS
10	Tingling Sensation	8	1.8	0.7	1.1	61.1	0.7	0.2	4.7	3.1	<0.001	S
11	Numbness	4	0.8	0.1	0.7	87.5	0.9	0.3	2.3	4.03	<0.005	S
12	Burning Sensation	1	0.2	0	0.2	100	0.6	0.2	1	3.0	>0.1	NS
13	Weakness of Limbs	10	1.9	0.5	1.4	73.6	0.5	0.1	8.5	1.67	<0.001	HS
14	Gait Disturbances	10	1.6	0.2	1.4	87.5	0.5	0.1	8.5	1.67	<0.001	HS
15	Walking Distance	10	2.2	0.3	1.9	86.3	0.7	0.2	8.1	3.4	<0.001	HS
16	Diminished or Absent Ankle Jerk	4	0.7	0.2	0.5	71.4	0.7	0.2	2.2	2.35	>0.0	NS
17	Diminished or Absent Touch Sensation	1	0.3	0.1	0.2	66.6	0.6	0.2	1	3.0	>0.1	NS
18	Diminished or Absent Pain Sensation	1	0.2	0	0.2	100	0.6	0.2	1	3.0	>0.1	NS
19	S.L.R. Test	10	3.1	0.5	2.6	83.8	0.5	1.6	15.9	2.01	<0.0	HS

TABLE No.12:- Showing the Effect of Therapy according to recovery in Signs and Symptoms in 10 patients of Group- C treated with *Cap. Parijat Patra Ghana* AND *Kati Basti*

S. N	Sign and Symptoms	n	Mean Score	Differe- nce	% Re- lief	S.D ±	S. E ±	't'	p	Re- sult	
0.			B. T.	A. T.							
1.	<i>Toda</i> (Pricking Pain)	6	1.6	0.3	1.3	81.2	1.1	0.3	3.54	<0.001	S
2.	<i>Sphurana</i> (Flickering sensation)	8	2.1	0.3	1.8	85.7	1.0	0.3	5.51	<0.001	HS
3.	<i>Tandra</i> (Lethargy)	0	-	-	-	-	-	-	-	-	ND
4.	<i>Stambha</i> (Stiffness)	3	0.6	0	0.6	100	0.9	0.3	1.96	>0.05	NS
5.	<i>Arocha-</i>	3	0.6	0	0.6	100	0.9	0.3	1.96	>0.0	NS

ka(Tastelessness)		6	0	5								
6.	<i>Agnimand Ya</i> (Diminished Appetite)	0	-	-	-	-	-	-	-	-	-	ND
7.	<i>Praseka</i> (Excessive Salivation)	0	-	-	-	-	-	-	-	-	-	ND
8.	<i>Bhakta-Dwesh</i> a(Anorexia)	1	0.3	0	0.3	100	0.9	0.3	1	>0.1	NS	
9.	Pain	1	3	0.5	2.5	83.3	0.5	0.1	15	<0.0	HS	
		0				3	2	6		01		
10	Tingling Sensation	9	2.4	0.5	1.90	79.1	0.8	0.2	6.86	<0.0	HS	
			0	0		6	7	7		01		
11	Numbness	5	1.2	0.2	1	83.3	1.0	0.3	3	<0.0	S	
			0	0		3	5	3		5		
12	Burning Sensation	2	0.4	0	0.40	100	0.8	0.2	1.50	>0.0	NS	
			0				4	6		5		
13	Weakness of Limbs	8	1.6	0.3	1.3	81.2	0.8	0.2	4.99	<0.0	HS	
						5	2	6		01		
14	Gait Disturbances	1	2.2	0.2	2	90.9	0.4	0.1	13.4	<0.0	HS	
		0				0	7	4	1	01		
15	Walking Distance	1	2.2	0.3	1.9	86.3	0.3	0.1	19	<0.0	HS	
		0				6	1	0		01		
16	Diminished or Absent Ankle Jerk	5	0.9	0.1	0.8	88.8	0.9	0.2	2.75	<0.0	S	
						8	1	9		5		
17	Diminished or Absent Touch Sensation	4	1.1	0.8	0.3	27.2	0.4	0.1	1.96	>0.0	NS	
						7	8	5		5		
18	Diminished or Absent Pain Sensation	4	0.9	0.4	0.5	55.5	0.7	0.2	2.23	>0.0	NS	
						6	0	2		5		
19	S.L.R. Test	1	3.4	0.5	2.9	85.2	0.7	0.2	12.4	<0.0	HS	
		0				9	3	3	2	01		

DISCUSSIONS

The highest incidence of *Gridhrasi Roga*(Sciatica) was seen in between 51-60 years of age, in which 11 cases (36.66%), followed by the 31-40years and 41-50 years 6 cases (20%) in each group. This can be supported by the fact that middle aged subjects(30-60 years of age) are more exposed to strong biochemical force and heavy work in comparison to others,

which may also create this condition. Also the degenerative process starts after the age of 30 years which results into different types of degenerative changes in the vertebrae of Lumbo-sacral region causing *Gridhrasi Roga*(Sciatica). This(51-60 years) is *Vata Prakopaka Kala* and according to modern science, there is progressive decrease in degree of hydration of the inter-vertebral disc with age that leads

to the cycle of degeneration resulting in disc problems and causing *Gridhrasi Roga*(Sciatica). Hence, prevalence of sciatica is high in middle age group of people which is supported by the findings of the present study. In present study, maximum number of patients were female i.e. 60% followed by male (40%). Highest incidence was observed in females because the degenerative process of bone is very high in menopausal women and it starts after the age of 30 years. Male are at hard physical jobs and in particular frequent lifting of heavy weight and postural stress are known to increase the risk of sciatica. In the present series of 30 registered cases of *Gridhrasi Roga*(Sciatica) the affliction of the disease was found more in patients having household and labour job i.e. 15 (50%) and 10(33.33%) subjects, respectively. The high prevalence of *Gridhrasi Roga*(Sciatica) in Housewives and Labours seems to be due to frequent involvement in wrong postures and heavy physical work, respectively. The incidence of *Gridhrasi Roga*(Sciatica) was highest in the patients who belonged to Urban area i.e. 22 (73.33%) while those who were from Rural area were 8 (26.67%). This is because of fast, hectic and stressful life styles of the people who belonged to urban area. The majority of cases registered for the current trial, belonged to middle & lower classes, which includes 15 cases (50%) in each group. This data reflects that, physical strain full activities are found in the people who are from middle and poor classes. Maximum number of patients i.e. 66.66% were vegetarians while remaining 33.33% patients were taking mixed diet. This is because of most patient were Hindus and Hindus are vegetarian in this area. The majority of cases registered for the current trial were, either uneducated or

primary level educated i.e. 50% and 30%, respectively. This data reflects that, these subjects do more physical strainful activities in comparison to others. Most of the female patients i.e. 61.11% were having menopausal history while 33.33% patients were having regular menstrual history. Only 01 patient reported for irregular menstruation. This reflects that after the menopause, chances of occurrence of the disease increases. In the present study Maximum i.e. 80% patients were found to have *Madhyam Sharira* and patients of *Sthoola* and *Krishna Sharira* were 10% each. So, it is evident that, the prevalence of *Gridhrasi Roga*(Sciatica) is high in subjects having *Madhyam Sharira*. This feature may be, because subjects having *Madhyam Sharira* have capacity to do more physical work than others. All the patients of this study were having *Dwandaja Prakriti*. 80% patients were having *Vata-Kapha Prakriti*, 13.33% patients were having *Vata-Pitta Prakriti* and 6.66% of patients were having *Pitta-Kapha Prakriti*. This study suggests that *Vata Dosha* plays a major role in the manifestation of the *Gridhrasi Roga*(Sciatica). In this study, 83.33% patients were having *Rajsik prakriti* and 16.66% patients were having *Tamsik prakriti*. This data support the *Vataj* and *Vat-kaphaj* types of the disease and predominance of *Vat Dosha* in the disease, also. In this trial, all the patients were having *Madhyam Sara*. It may be because, patients of *Pravara Sara*, mostly free of disease and patients of *Hina Sara*, mostly have so many diseases with severe complications and these type of subjects have been excluded from the study. In the present study, maximum number of patients i.e. 76.66% were of *Madhyam Vaya* followed by *Vridhdha Vaya* i.e. 16.66% and only 6.66% patients were of *Vivardhman*

Vaya. This feature may be, because *Madhyam Vaya* is the period of maximum physical activity and in *Vridhdha Vaya* there is physiological vitiation of *Vata Dosha* and the rate of process of degeneration is very high. In the trial, maximum no. of patients i.e. 86.66% were of *Vatik* type followed by *Vat-Kaphaj* type i.e. 13.33%. It may be, because the *Gridhrasi Roga* is *Vaat Nanatmaj Vyadhi* and sometimes *Anubandh* of *Kapha Dosha* may occur. Maximum number of the patients i.e. 53.33% were having less than 1 year of chronicity, 16.66% were having above 2 years of chronicity, and 30% were having 1 – 2 years of chronicity. This data reflects that, maximum number of subjects have chronicity less than 1 year followed by having 1-2 years, it may be because first the patient goes to allopathic side when they haven't satisfactory response, then comes to *Ayurvedic* treatment. Maximum number of patients i.e. 76.66% were having Sub-acute onset of disease followed by Chronic onset i.e. 23.33% and no patient was having Acute onset. This type of feature may be, because the maximum patients take analgesics by self medication due to which the presentation of the disease becomes either Sub-acute or Chronic. In the trial, maximum no. of patients i.e. 76.66% were having slow progress of disease followed by rapid progress i.e. 23.33% and no patient had shown stationary form of the disease. This type of feature may be due to degeneration of vertebrae and inter-vertebral discs occurs slowly and sometimes sudden trauma on the lumbo-sacral region or sudden heavy weight lifting cause Rapid onset. *Ruka* (pain in sciatic nerve distribution) and SLR test were found positive in all the patients i.e. 100%. 53.33% patients were having complaint of *Toda* (Pricking Pain).

Stambha (Stiffness) was present in 60% patients whereas *Sphurana* (Flickering Sensation) was present in 80% patients. *Arochaka* (Tastelessness), *Tandra* (Lethargy), *Agnimandya* (Diminished Appetite), *Bhaktadwesa* (Anorexia), Tingling sensation, Burning sensation and numbness were present in 23.33%, 10%, 10%, 6.66%, 86.66%, 16.66%, 43.33% of patients respectively.

Above data proves that maximum presence of *Vataja* type of symptoms, followed by *Vata-Kaphaja* type of symptoms. Here, predominance of *Vataja* type of *Gridhrasi Roga* (Sciatica) is again being proved in present study.

Diminished Ankle jerk was present in 46.66% of the patients. This observation shows involvement of 5th lumbar and 1st sacral root of sciatic nerve. Data regarding X-ray findings suggests involvement of lumbo-sacral spine in producing the symptoms of Sciatic syndrome. In this trial, all the patients were having –ve R.A. Factor. This data reveals that no patient had history of Rheumatoid Arthritis involvement. Although, we recommended C.T. Scan or M.R.I. to some of the patients of *Gridhrasi Roga* (Sciatica), but none of the patients got it done, no observations are reported on these parameters.

In patients of Group A no patient had obtained Marked Improvement while in patients of Group B 70% and in patients of Group C 90% patients had obtained Marked Improvement. In Group A no patient had witnessed Moderate improvement and in patients of Group B 30% patients had witnessed Moderate Improvement while in patients of Group C 10% patients had witnessed Moderate Improvement. In patients of Group A 100% patients had reported Mild Improvement, while no patient was reported to get Mild

improvement in patients of Groups B & C. None of the patients was found unchanged and fully cured in all the three groups.

Probable Mode of Action of Parijat:- *Parijat Patra* possess, *Guna - Laghu, Ruksha, Rasa - Tikta, Vipaka - Katu, Veerya - Ushna*,¹² With the help of its *Gunas, Rasa, Vipak* and *Veerya* it pacifies *Kapha dosha* while with the help of its *Veerya* it pacifies *Vata Dosha*. So, on the basis of its pharmacological properties, it can be concluded that, it possess *Kapha-Vatahar* action. In *Ayurvedic* classics, also it is mentioned as *Kapha-Vatahara* dravya.¹³ Since, the *Gridhrasi Roga* is of two types *Vataj* and *Vata-kaphaj*¹⁴ means in all its forms either *Vata* or *Vata* and *Kapha* both *Doshas* will be vitiated. The selected drug has *Kaph-Vatahar* action, therefore it should be effective in the management of all forms of *Gridhrasi Roga*. Further, in *Chakradatta*, decoction of its leaves have been indicated to cure all forms of *Gridhrasi Roga (Chakra.Vaatavyadhi 22/97)*.¹⁵ In the view of knowledge of modern science, the various chemicals like, Tannins, Glycosides, Methyl Salicylate and Alkloids etc. present in leaves of *Parijat* possess Anti-inflammatory and Analgesic action. Therefore, by the action of these constituents it breaks the basic pathology i.e. inflammation of disease *Sciatica*, consequently helps in relieving its clinical features.

Probable Modes Of Action Of Dashmoola Taila:- Among the 10 dravyas of *Dashmoola* 5 dravyas(50%) have *Vata-Kapha shamak* property, 4 dravyas(40%) have *Tridosaghna* property and 1 dravya(10%) has *Vata-Pitta shamak* property. It means, in *Dashmoola* all dravyas(100%) have *Vata shamak* property and 9 dravyas(90%) have *Vata-Kapha shamak* property. Therefore, it will be a

potent *Vata shamak, Vata-Kaph shamak* and *Tridosaghna* Compound. In *Ayurvedic* Texts, also mentioned, "*Dashmoolam Tridoshaghnam Kaphmarut Nashnam*".¹⁶ Since, the *Gridhrasi Roga* is of two types viz. *Vataj* and *Vat-kaphaj* and *Dashmoola* has *Kaph-Vatahar* action, therefore it should be effective in all forms of *Gridhrasi Roga*. In the view of knowledge of modern science, the various chemicals present in *ghatak dravyas* of *Dashmoola* possess anti-inflammatory and Analgesic action. Therefore, by the action of these constituents it breaks the basic pathology i.e. inflammation, of disease *Sciatica*, consequently helps in relieving its clinical features. *Tila Taila* possess, *Rasa-Madhura, Kashaya, Tikta, Guna- Guru, Snigdha, Veerya - Ushna, Vipak - Madhura, Doshaghnta-: Vata Shamak*.¹⁷ Therefore, it should be effective in *Gridhrasi Roga*.

Probable Modes Of Action Of Kati Basti:- *Kati Basti* is a procedure in which both the properties of *snehana* & *swedana* are incorporated. The reason behind selection of *Kati Basti* is that it comes under direct contact with painful region. In this disease, *Samprapti* is at *Kati*-region and is mostly associated with structural changes of lumbar vertebral column. There is derangement in Lumbo-sacral joints & vertebrae, degeneration of intervertebral disc and lubrication function of *Shleshaka Kapha* is affected, which results in compression, irritation or inflammation of *Gridhrasi Nadi* i.e. *Sciatic Nerve*, resulting in severe pain. Therefore, local *Snehana* and *Swedana* is very effective and gives quick results because they act at the site of *Samprapti*.

As *Vata Dosha* is *Sheeta, Ruksha* in nature and *Sweda* being *Ushna* and with prior *Snehana, Snigdha* in nature, alle-

viates *Vata*, *Swedana* increases sweat and brings out *Maladravyas* along with sweat. Thus it decreases *kleda* in the body resulting in the reduction of *Gaurava* (Heaviness) and *Stambha* (Stiffness) which are common symptoms of *Vatavyadhies*. After *Swedana Romancha* (Sizzling Sensation), *Toda* (Pricking Pain), *Vedana* (Pain), *Sho-tha* (Oedema), *Angagraha* (Stiffness in organs), *Ayam* (Feeling of expansion) vanishes and the organs become soft and elastic (*Ch.chi.28/80*). *Acharya Charak* has pointed that when even dry wood can be made to become soft and flexible with *Snehana* and *Swedana* then why not the living organs? (*Ch.chi.28/79 Ch.su.14/5*). *Gridhrasi Roga* is clearly mentioned in the list of *Swedanarha vyadhies* and also the cardinal and associated features of *Gridhrasi Roga* like *shool* (Pain), *Stambha* (Stiffness), *Sankocha* (Shrinking type of Feeling), *supti* (Numbness) have also been mentioned. *Gridhrasi Roga* is a *Vatavyadhi* and sometimes *Kaphanubandhi*. *Swedana* is also indicated in *Vatavyadhies* as well as *Vatakaphaja Vyadhies*. (*Ch.su.14/3*). *Gridhrasi Roga* is a *Shoolapradhana Vatavyadhi* and *Shulavyuparama* (destruction of pain) is the sign of proper *Swedana*. (*Ch.su.14/3*). In *Kati Basti* the warm oil is retained for a long time (Approx. 45 minutes) at the site of pathology the resultant effect of the procedure produced according to the physiology is stated below :-

Thermal effect of warm oil –These are effects arising from an increase in blood temperature stimulation of thermo detector in the skin and local temperature increase. Heat has been defined as increase in the velocity of particles. In general this has catalytic effect on all chemical process. Thus application of heat results in an increase in the local metabolism of the cell

and increased transport through the cell membranes . For every increase of one degree Celsius within the physiological limits, the metabolic activity increases by about 10%. The local metabolic increase leads to an increase in the oxygen partial pressure (po₂), the carbon di- oxide partial pressure (pco₂) and acidity pH. These three factor po₂, pco₂ & pH determine the local perfusion by their effect on pre-capillary Sphincter and meta arterioles . The pre-capillary sphincter and the meta-arterioles in the tissue control the local homeostasis by alternate contractions and relaxations. This alternate activity controls the perfusion of the capillary bed. At the same time, the contraction forces the blood in the capillaries forward . This process of auto-regulation is referred to as “vasomotion” which is principally determined by the oxygen concentration.

An increase in the temperature of connective tissue , in particular the collagenous tissue such as skin , muscle , tendon , ligament or articular capsule will be accompanied by an increase in the elasticity .Heat can improve the elasticity of fibrous tissue by a factor of 2 to 10 . At the same time , the viscosity of matrix decreases . Consequently connective tissue such as tendon tissue and ligament will also become more elastic.

CONCLUSIONS

A close perusal of the observations and inferences that can be drawn leads to the following conclusions :-

1. On the basis of their clinical manifestations *Gridhrasi Roga* can be correlated with disease entity *Sciatica*, as described in modern medical science.
2. Clinical response in a series of patients of *Gridhrasi Roga* (*Sciatica*) treated with simply *Cap. Parijat Patra Ghana*

was of milder type, although there was a clinical trend of improvement of various symptoms of disease, but it was not marked.

3. Patients of *Gridhrasi Roga*(Sciatica) treated with *Kati Basti* presented with moderate improvement in their symptoms of the disease.
4. The best result of combined therapies, with administration of *Cap. Parijat Patra Ghana* and *Kati Basti*, was noticed in majority of the patients registered for the present clinical trial.
5. The initial response to *Ayurvedic* therapies in respective groups was slow, which increased significantly as the duration of treatment steadily progressed.
6. In initial stages of starting of *Ayurvedic* treatment modalities in respective groups some of the patients had to consume some brand of modern analgesic or anti-inflammatory drug. But with the advancement of *Ayurvedic* treatment modalities the requirement of such drugs gradually decreased and most of the patients registered for the present clinical trial discontinued any kind of modern analgesic or anti-inflammatory drug during the clinical trial.
7. It was observed that those patients who followed the dietary and lifestyle modifications as instructed they responded very well to the treatment given. In contrast, registered patients who who didn't follow the advice of *Pathyapathya* in reference to *Ahara* and *Vihara* didn't respond properly to the given treatment.
8. All the patients registered for the current research project tolerated, *Cap. Parijat Patra Ghana* and *Kati Basti* with *Dashmoola Taila*, very well. No

side/toxic effect were reported in any of the patients registered for the trial.

On the basis of the various observations and results obtained after completion of the current research project, it can be concluded that, *Cap. Parijat Patra Ghana* and *Kati Basti* with *Dashmoola Taila* may be used separately or simultaneously in the effective management of patients of *Gridhrasi Roga*(Sciatica). The clinical response in terms of improvement in various symptoms of *Gridhrasi Roga*(Sciatica) was milder in *Cap. Parijat Patra Ghana* treated group, moderate in patients of *Kati Basti* group and the best results were obtained in patients of *Gridhrasi Roga*(Sciatica) in group C, when *Cap. Parijat Patra Ghana* and *Kati Basti* administered together, simultaneously.

Therefore, it can be concluded that, **combined therapy in the form of administration of *Cap. Parijat Patra Ghana* and *Kati Basti* with *Dashmoola Taila* is safe and effective Ayurvedic treatment modality in the management of *Gridhrasi Roga*(Sciatica).**

REFERENCE

1. Shastri Kashinath, Edited by Pandey Gangasahay , *Carak Samhita – Vidyotini* Hindi commentary, Part -2, 5th Edition, Chaukhabha Sanskrit Sansthan , Varanasi, 1997.
2. Shastri Ambikadatta, *Sushruta Samhita Ayurveda Tatvadipika*, Hindi commentary, Part -2, 11th Edition, Chaukhabha Sanskrit Sansthan, Varanasi, 1997.
3. Shastri Kashinath, Edited by Pandey Gangasahay , *Carak Samhita – Vidyotini* Hindi commentary, Part 1& 2 5th Edition, Chaukhabha Sanskrit Sansthan , Varanasi, 1997.

4. Harsh Mohan, Text Book of Pathology, 5th Edition, Jaypee Brothers Medical Publishers (P) Ltd., New Delhi, 2005.
5. Edited by Dwivedi Ramanath, *Vaidya Prabha* Hindi commentary, by Tripathi Indradev, *Cakradatta* of Sh. Cakrapanidatta, 3rd Edition, Chaukhambha Sanskrit Sansthan, Varanasi, 1997.
6. Shastri Ambikadatta, *Bhaisajya Ratnavali*, Chaukhambha Sanskrita Sansthan, Varanasi.
7. Shastri Kashinath, Edited by Pandey Gangasahay, *Carak Samhita – Vidyotini* Hindi commentary, Part -2, 5th Edition, Chaukhambha Sanskrit Sansthan, Varanasi, 1997.
8. Upadhyaya Yadunandan, *Madhav Nidana - Madhukosha Vyakhya*, Purvardh, Chaukhambha Sanskrit Sansthan, Varanasi, Reprint 2004.
9. Fauci, Braunward Illelbacher, Wilson & Others, Harrison's Principle of Internal Medicine, 17th Edition International Edition, McGraw Hill, 2008.
10. Sainani G.S., A.P.I. Text Book of Medicine, 16th Edition.
11. Mahajan B. K., Methods in Biostatistics, 6th Edition, Jaypee Brothers Medical Publishers(P)Limited, New Delhi, 1997.
12. Sharma P.V., *Dravyaguna Vigyan – 2nd, 2nd Edition*, Chaukhambha Bharti Academy, Varanasi 1998.
13. Pandey Hari Prasad, *Bhava Prakash - Uttrardh 2nd Part – Vidyotini* Hindi commentary, Chaukhambha Sanskrit Sansthan, Varanasi.
14. Shastri Kashinath, Edited by Pandey Gangasahay, *Carak Samhita – Vidyotini* Hindi commentary, Part -2, 5th Edition, Chaukhambha Sanskrit Sansthan, Varanasi, 1997.
15. Edited by Dwivedi Ramanath, *Vaidya Prabha* Hindi commentary, by Tripathi Indradev, *Cakradatta* of Sh. Cakrapanidatta, 3rd Edition, Chaukhambha Sanskrit Sansthan, Varanasi, 1997.
16. Pandey Hari Prasad, *Bhava Prakash - Uttrardh 2nd Part – Vidyotini* Hindi commentary, Chaukhambha Sanskrit Sansthan, Varanasi.
17. Sharma P.V., *Dravyaguna Vigyan – 2nd, 2nd Edition*, Chaukhambha Bharti Academy, Varanasi 1998.

CORRESPONDING AUTHOR

Dr. Avneesh Kumar Dwivedi

Lecturer, Deptt. of Kayachikitsa, Shri Dhanwantri Ayurvedic Medical College & Research Centre, Mathura, Uttar Pradesh, India

Email: avneeshkumardwivedi@gmail.com
