JR.A.S. Vol. XXIV, No. 2-3, (2003) pp.42-50

A CLINICAL STUDY ON *GRIDHRASI* (SCIATICA) AND ITS MANAGEMENT *WITH NIRGUNDI*

Sthiti Srujani Mishra, N.C. Dash and B.K. Das

(Received on 14-1-2003)

About 7 million people are temporarily out of work at any given time due to low back pain that often accompanies to leg pain (sciatica) and it is the most common cause of disability for persons under the age of 50.

Searching out a remedy for sciatica still under process and administration of Vitex nirgundo Linn. externally as well as internally discloses a remarkable efficacy established through clinical and statistical review which recorded as 70% of maximum improvement, 20% of moderate improvement and 10% of mild improvement.

Introduction

The word *Gridhrasi* is derived from the Sanskrit word *Gridhra* that means the name of a bird i.e. Vulture. The name given so is because the patient suffering from this disease walks like a Vulture. It implies the typical gait of the patient, slightly tilted at the affected side and affected leg in the flexed position and the another leg being extended.

From the period of Maharishi Carak and Sushruta (1000 B. C.) the disease is described in classical texts by its name and included under 80 types of *Nanatmaja Vatavyadhi*. But according to modern medicine it is a symptom not a disease, the symptom is pain which starts in the low back and radiates down one or both the lower limbs. The condition was first described by Contugno in 1770. So the disease is called as Contugno's disease. But the terminology sciatica came into use about the beginning of 19th century.

The sciatic nerve is the longest and thickest nerve in human body. It originates from the vertebral column at the level of 4th lumbar to 3rd sacral vertabra and

Post Graduate Department of Kayachikitsa, Gopabandhu Ayurveda Mahavidyalaya, Puri - 752 002 (Orissa).

extends up to the feet. Hence the pain in sciatica is felt in the lower back and it radiates along the nerve up to the feet. The causes of sciatica are arthritic changes in the L.S.spine, disc herniation in the level of L.S. spine due to bad posture, accidents, sedentary life style and repetitive Stress Injuries (RSI) from heavy weightlifting, twisting, pulling, running, driving, riding etc.

This disease is very painful and sometime it hampers the routine life of individual concern. It is a progressive disease but not fatal by nature, most common on the 3rd to 6th decade of life and occurs about three times as frequently in the male as in the female sex.

According to ayurvedic concepts, due to more intake of *Vatavardhak Ahara Vihara, Vata* gets vitiated and when this vitiated *Vata* alone or *Vata* with *Kapha* gets sited over *Gridhrasi Nadi* then it leads to the disease *Gridhrasi.*

The modem life style, dietary habits, injudicious ways of physical activities, mental strain are said to have definite role in the occurrence of *Vatavyadhi* like *Gridhrasi* and the remedial skill so far available are unsatisfactory.

Here the present work has been aimed to establish the efficacy of *Nirgundi* (both internally and externally) in the management of *Gridhrasi.*

Materials and Methods

The study has been carried out in the Dept. of Kayachikitsa, G.A.M. Puri during the period of July 2001 to June 2002 among 30 number of patients between the age group 20-60 yrs. irrespective of the sex.

The selection was made referring to classical sign and symptoms of *Gridhrasi.* The following parameters have been adopted during selection and assessment to benefits.

- *Stambha* (stiffness in waist and leg)
- *Ruk* (low backache radiating to foot)
- *Toda* (pricking sensation)
- *Spandan* (feeling of pulsation along the nerve)
- *Dehavakrata* (scoliosis)
- *Sakthi Utkshepa Nigraha* (straight leg raising)

Drug, Dose & Duration

Trial drug. I : *Nirgundi Kwatha* 50 ml in luke warm condition twice daily for 30 days.

Trial drug II : *Nirgundi Kwatha* 50 ml twice daily along with *Nirgundi Patrapinda Sweda* once daily at morning for 30 days.

Control drug: Diclofence potassium 50 mg (tradename-ultra-k) thrice daily after food for 10 days.

Procedure of *Patra Pinda Sweda:* Fresh *Nirgundi* leaves were cut into small pieces

and fried with *Til* oil. When the leaves were become hot, two boluses were made out of it by two pieces of clothes. The boluses were steamed with boiled *Nirgundi Patra Kwatha* and then applied on the affected parts of the patient for a period of 30 minutes maintaining a temperature within 40°C.

Prior to the application of hot compression, mild massage with *Til* oil was done on the affected parts of the patient for a period of 5 minutes.

Study design: It is a case controlled single blind clinical trial. The total 30 number of selected patients registered for the trial were divided into three group

T1 - Constituting 10 patients were treated with only *Nirgundi Kwatha* orally.

T2 - Constituting 10 patients were treated with *Nirgundi Kwatha* orally and *Nirgundi Patra Pinda Sweda* externally.

T3 - Constituting 10 patients were treated with diclofenac potassium.

T1 (BT) vs T1 (AT) Effectiveness of T 1 was assessed

T2 (BT) vs T2 (AT) Effectiveness of T2 was assessed

T3 (BT) vs T 3 (AT) Effectiveness of T 3 was assessed

Observation and Discussion

Among 30 number of cases exposed to trials, 40% were belonging to the age group of 51 to 60 years. Natural decay of the tissues *(Dhatukshaya)* and predominance of *Vatadosa* during this period may be the cause behind it.

The incidence of males were reported (66.66%) higher than females. As per the texts males are more prone to this disease. It may be due to their more engagement in fieldworks and heavy workload in comparison to females.

As regards occupation and economical status maximum patients belong to labour class (40%) and poor income group (50%). This may be due to hard labour and insufficient nutritious diet.

As regards conveyance used, studied among the patients, cycle riders and rickshaw pullers were maximum (50%) because this exerts more pressure resulting to trauma at the lumbo sacral area may lead to sciatica.

Patients with history of weight lifting on head and back were maximum in number (53.33%) which leads to PID and consequence of pain radiating down words.

There has been improvement observed clinically which has been reflected in the tables 1 to 3.

Table 1

Status of severity of different sign and symptoms before treatment and proportion of patients improved after treatment of different groups.

Sign/ symptoms		B.T. A.T.1 (10 days)									A.T. 20 (20 days)						A.T. 30 (30 days)					
		G1	G2	G3	G0	G1	G2	G3	P*'	%	G0	G1	G2	G3	P*	%	G0	G1	G2	G3	P*	%
Ruk (pain)	Trial-I	3	5	2	-	3	5	2	0I	0	-	5	4	1	0.2	20	2	6	2	-	0.7	70
	Trial-II	1	5	4	2	8	-	0.5	50	-	6	4	-	0.5	50	7	3	-	-	1.0	100	
	Control	1		7	2	4	6	-	-	1.0	100											
Stambha	Trial-I	4	4	1	-	4	4	1	0	0	-	4	4	-	0.44	44	-	5	4	-	.77	33
(stiffnesss)	Trial-II	2	6	2	-	3	7		1.0	100		4	6	-	1.0	100	2	8	-	-	1.0	100
	Control	4	3	2	4	5	-		1.0	100												
Toda (priking	Trial-I	7	2	0		7	2	-	0	0	-	7	2	-	0	0	1	8	-	-	0.33	33
sensation)	Trial-II	3	3	4		3	7		0.4	40	-	8	2	-	0.6	60	7	3			1.0	100
	Control	5	3	2	5	5	-	-	0.8	80												
spandan	Trial-I	3	-	-	-	3	-	-	0	0	-	3	-	-	0	0	1	8	-	-	0.33	33
(pulsation)	Trial-II	6			2	4			0.33	33		-	-	0.5	50	6	-		1.0	100		
	Control	5	2	-	3	4			0.85	85	0 I 0											
Deha	Trial-I	6	1	2	-	6	1	2	0	0	-	6	1	2	0	0	3	4	2	-	0.7	77
vakra *(scoliosis)*	Trial-II	3	3	3	-	6	3	-	1.0	100	-	7	2	-	1.0	100	6	3	-	-	1.0	100
Sakthi	Control	4	3	2	5	4	-	-	1.0	100												
Utkshepa	Trial-I	3	3	4	-	3	3	4	0	0	-	4	2	4	0.7	70	1	3	6	-	0.9	90
Nigraha	Trial-II	-	4	6	-	4	6	-	1.0	100	1	3	6	-	1.0	100	10	-	-	1.0	100	
(SLR)	Control	2	4	4	5	5	-	-	1.0	100												

P* Proportion of patients improved, % - Percentage of patients improved, SLR = Straight leg raising

Ruk (pain), *Stambha* (stiffnesss), and *Sakthi Utkshepa Nigraha* (S.L.R.) are not most cardinal and appropriate diagnostic factor which have been assessed and improved dramatically. The above improvement have substantiated the recovery, which have been recorded as the proportion of patients improved.

Table 2

Statistical analysis and percentage of relief with the trial I, II and control drug to different sign and symptoms after treatment.

	Sign/ Symptoms	Duration of treatment	Mean ± S.D.	% Relief	d.f.	't'	'p'	Remarks
Ruk (Pain)	Trial-I	B.T.	1.9 ± 0.74	-	-	-	-	-
		A.T1 (10)	1.9 ± 6.74	0	9	-	-	No change
		A.T2 (20)	1.6 ± 0.69	11.66		1.41	<0.05	Insignificant at 5% level
		A.T3 (30)	1.0 ± 0.63	44.99		3.89	<0.005	Highly significant at O.5%level
	Trial-II	B.T.	2.3 ± 0.67	-		-	-	-
		AT1 (10)	1.8 ± 0.42	18.33	9	0.04	<0.025	Significant at 2.5% level
		A.T2 (20)	1.4 ± 0.51	36.66		3.89	<0.005	Highly significant at 0.5% level
		AT3 (30)	0.3 ± 0.48	86.66		7.8	<0.001	Highly significant at 0.1 %level
	Control	B.T.	2.1 ± 0.56	-		-	-	-
		A.T1 (10)	0.6 ± 0.51	73.32	9	9.12	<0.001	High significant at 0.1 % level
Stambha (Stiffness)	Trial-I	B.T.	18.44 ± 6.85	-		-	-	-
		AT1 (10)	18.44 ± 6.85	0	8	-		No change
		A.T2 (20)	17.33 ± 7.29	0		1.97	>0.05	Insignificant at 0.5% level
		A.T3 (30)	15.33 ± 6.78	9.25		3.78	<0.01	Significant at 1% level
	Trial-II	B.T.	23.3 ± 7.1	-		-	-	-
		AT1 (10)	19.2 ± 6.12	11.66	9	6.43	<0.001	Highly significant at 0.1 % level
		AT2 (20)	14.6 ± 5.33	16.66		8.26	<0.001	Highly significant at 0.1 % level
		AT3 (30)	8.6 ± 5.35	63.33		10.76	<0.001	Highly significant at 0.1 % level
	Control	B.T.	16.77 ± 7.75	-		-	-	-
		AT1 (10)	6.00 ± 6.08	59.24	8	5.48	<0.001	High significant at 0.1 % level
Toda (Pricking sensation)	Trial-I	B.T.	1.22 ± 0.44	-		-	-	-
		A.T1 (10)	1.22 ± 0.44	0	8	-	-	No chnage
		A.T2 (20)	1.22 ± 0.44	0		-	-	No change
		A.T3 (30)	0.88 ± 0.33	22.22		1.98	>0.05	Insignificant at 5% level
	Trial-II	B.T.	2.1 ± 0.87	-		-	-	-
		A.T1 (10)	1.7 ± 0.48	13.33	9	2.48	<0.05	Significant at 5% level
		A.T2 (20)	1.2 ± 0.42	233.33		3.27	<0.01	Significant at I % level
		A.T3 (30)	0.3 ± 0.48	86.66		6.26	<0.001	Highly significant at 0.1 % level
	Control	B.T.	1.7 ± 0.82	-		-	-	-
		ATI (10)	0.5 ± 0.52	68.24	9	4.86	<0.001	High significant at 0.1 % level
Spandan (pulsation)	Trial-I	B.T.	1± 0	-		-	-	-
		A.T1 (10)	1±0	0	2	-	-	No chnage
		A.T2 (20)	1±0	0		-	-	No change
		A.T3 (30)	0.33±0.54	66.66		2.32	>0.05	Insignificant at 5% level
	Trial-II	B.T.	1± 0	-	-	-	-	
		AT1 (10)	0.66 ± 0.51	33.33	5	1.58	>0.05	Insignificant at 5% level
		A.T2 (20)	0.50 ± 0.54	50		2.4	>0.05	Insignificant at 5% level
		A.T3 (30)	0 ± 0	100		-	-	Highly effective
	Control	B.T.	1.28 ± 0.48	-		-	-	-
		AT1 (10)	0.57 ± 0.53	57.14	6	3.91	<0.005	High significant at 0.5% level
Deha Vakrata (scoliosis)	Trial-I	B.T.	31.33 ± 7.87	-		-	-	-
		A.TI (10)	31.33 ± 7.87	0	8	-	-	No chnage
		A.T2 (20)	31.33 ± 7.87	0		4.38	-	No change
		A.T3 (30)	27.44 ± 8.14	46.29		-	>0.005	High significant at 0.5% level
	Trial-II	B.T.	36.22 ± 7.01	-		-	-	-
		ATI (10)	30.44 ± 6.06	27.77	8	7.79	>0.001	High significant at 0.1% level
		A.T2 (20)	26.00 ± 5.59	31.48		8.01	>0.001	High significant at 0.1 % level
		AT3 (30)	20.7 ± 1.71	79.62		8.05	>0.001	High significant at 0.1 % level
	Control	B.T.	32.44 ± 7.97	-		-	-	-
		ATI (10)	22.77 ± 3.92	75.91	8	5.21	<0.001	High significant at 0.1 % level

Contd

	Sign/ Symptoms	Duration of treatment	Mean ± S.D.	% Relief	d.f.	't'	'p'	Remarks
Sakthi Utkshepa Nigraha (S.L.R.)	Trial-I	B.T.	55.3±8.16	-		-	-	-
		A.TI (10)	55.3±8.16	0	9	-	-	No change
		A.T2 (20)	58±8.6	5		4.89	<0.005	High significant at 0.5% level
		A.T3 (30)	62.4±5.66	30		12.84	<0.001	High significant at 0.1 % level
	Trial-II	B.T.	50.5±6.98	-		-	-	-
		ATI (10)	58.5±6.28	39.99	9	12.64	<0.001	High significant at 0.1 % level
		AT2 (20)	61.9±7.03	44.99		11.43	<0.001	High significant at 0.1 % level
		A.T3 (30)	76.2±5.65	100		24.23	<0.001	High significant at 0.1 % level
	Control							
		B.T.	46.18±21.65	-		-	-	-
		ATI (10)	70.4±2.87	75	9	6.12	<0.001	High significant at 0.1 % level

B.T. = Before treatment, < = Less than, > Greater than, S.D., Standard deviation, d.f.= Degree of freedom

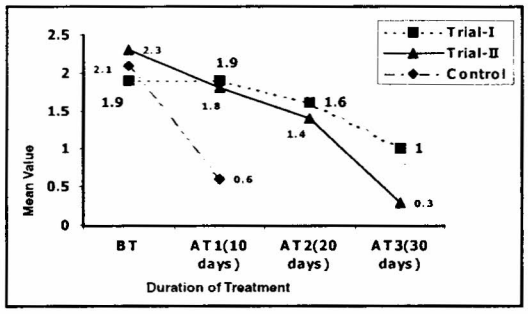
The statistical adjudication reflected in the table-2 demonstrates a highly significant efficacy encountered with the trial drug II, comparing to trial drug I and control drug.

Table 3

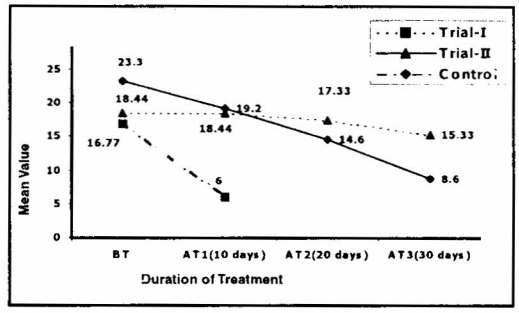
Assessment of result with Trial I, trial II and control drug after treatment

Clinical	AT1 (10 days)						AT2 (20 days)		AT3 (30 days)					
	Trial- I		Trial-II		Control		Trial-I		Trial-II		Trial-I		Trial-II	
Assessment	f	%	f	%	f	%	f	%	F	%	F	%	f	%
Maximum improvement (75-100%)	-	-	-	-	6	60	-	-	-	-	-	-	7	70
Moderate improvement (50-74%)	-	-	-	-	2	20	-	-	2	20	2	20	2	20
Mild improvement (25.49%)	-	-	8	80	2	20	1	10	7	70	1	10	1	10
Unsatisfactory (<25%)	10	100	2	20	-	-	9	90	1	10	7	70	-	-

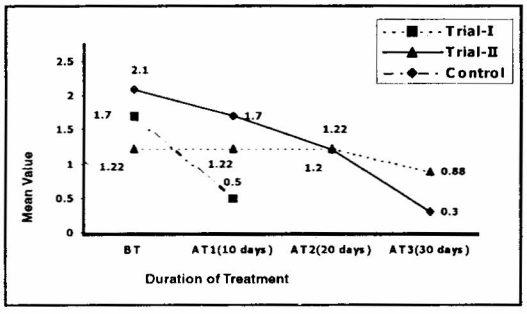
Finally the assessment of result documented in the table-3 shows that the patient's accomplishment was more remarkable among the trial-II group patients as compared to trial-I and control group of patients. The reason for this exploration may be the trial-II being a combined therapy, the drug efficacy is more and the prolonged used also enchanced its efficacy in a better manner.



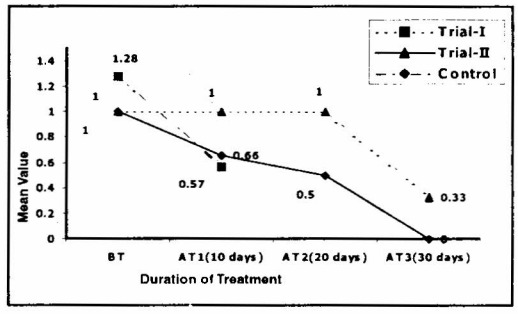
Ruk (pain)



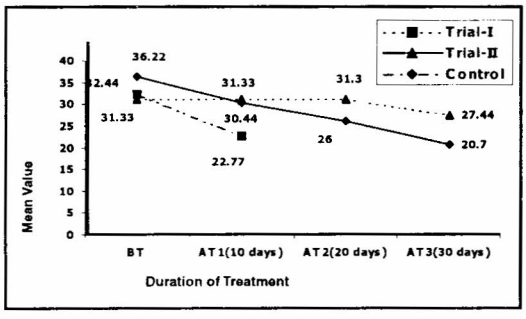
Stambha (stiffness)



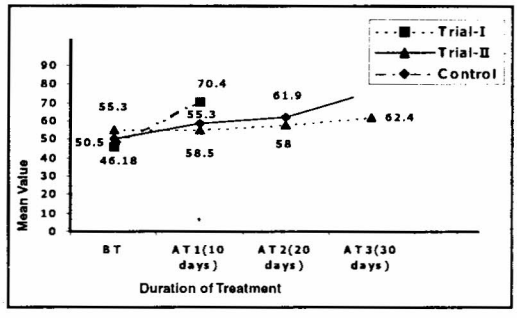
Toda (priking sensation)



Spandan (pulsation)



Dehavakrata (scoliosis)



Sathi Utkshepa Nigraha (straignt raising)

Statistical analysis of effectiveness of different drugs among group-I, II and control patients

According to Ayurvedic concepts the pharmacodynamics of Nirgundi is *Vata Kapha Hara, Sothahara Vedanasthapak, Amapachak, Srotosodhak, Balya* and *Rasayan* which are the most desired and required potentials for the treatment of *Gridhrasi.*

As regards mechanism of action, the application of *Swedana* followed by *Abhyanga* reduces spasm by inducing muscular relaxation, improves the blood supply and activates the metabolic processes which are responsible for relief of pain, tenderness, swelling, stiffness, deformity, atrophy of muscles etc., So it reduces inflammation of discs and other associated structures which compress and irritate the nerve roots or nerves. It also relieves the inflammation of an injured nerve. This may inhibits the transmission of pain impulses along nerve fibers those carry messages of pain from a site of damaged tissue to the brain.

Conclusion

Through this token of work the ethical declaration regarding *Nirgundi* has been worked out and proved acknowledgeable. There is no toxicity encountered during the trial period apart from its abundancy, cost effectiveness and easy route of administration. Thus *Nirgundi* alone can be prescribed as a dependable recipe in *Gridhrasi* in a mild to moderate severity.

REFERENCES

Atridev Vidyalankar - *Ayurveda ka Brithat Itihas*

Chunekar, K.C. and pandey, G.S. - *Bhavaprakash Nighantu*

Dash, Govinda - *Bhaisajya Ratnavali*

Dutta, Ravi Shastri - *Harita Samhita*

Dutta, Ambika Shastri - *Sushruta Samhita*

Gupta, Atridev Viddaylankar - *Astanga Sangraha*

Gupta, Atridev - *Astanga Hridaya*

Henry Gray - *Gray's Anatomys*

Harrison - *Harrison* 's *principles* of *Internal Medicine*

Karambelkar, V. W. - *Atharvaveda & Ayurveda*

Kasture, Haridas Sridhar - *Ayurvediya Panchakarma Vigyan*

Khare, P.C. - *Indian Herbal Therapies*
Wealth of India, Volume - X

Mahajan, B.K. - *Methods in Biostatistics*

Menino de Souza - *How to examine a patient*

Mishra, B.S.	-	*Bhavaprakash,* madhyama khanda, (Bidyotini Tika)
Munro, John Edwards Christopher	-	*Macleod's Clinical Examination*
Ramachandra S.K.	-	*Encyclopaedia* of *Indian Medicine*
Ray, Rajiv Ku.	-	Vangasena, Hindi commentary
Sharma Hemaraj	-	*Kashyap Samhita*
Sharma Prayagadatta	-	*Sarangadhara Samhita,* Hindi commentary,
Shastri, K. and Chaturvedi G.N.	-	*Charak Samhita* (Bidyotini)
Shastri, Sri Laxmipati	-	*Yogaratnakara*
		Davidson's Principles and *Practice* of *Medicine*
Shastri, Sudarshana	-	*Madhav Nidana* (Bidyotini)
Sen, Gananath	-	*Pratyaksha Sarira*
Singh Amara	-	*Amarakosa*
Shukla, Girija Dayalu	-	*Bhela Samhita*
Tripathy, Jagadiswar parasad	-	*Chakradatta*
Vedic, N.S.	-	*Rigveda*

सारांश

गृध्रसी के नैदानिक प्रबन्धन में निर्गुण्डी के साथ चिकित्सीय अध्ययन

स्थिति स्रुरूजनी मिश्रा, एन. सी. दास एवं बी. के. दास

निम्नपृष्ठगत शूल जो कि अक्सर टांगो को पीड़ित करता है जिससे आक्रान्त होकर लगभग साथ नियुत व्यक्ति अस्थायी रूप से कर्महीन होते हैं और 50 वर्ष से कम उम्र के व्यक्तियों में अकर्मण्यता उत्पन्न करने का एक सामान्य कारण है।

गृध्रसी रोग की चिकित्सा पर अनुसंधान अब भी जारी है और इस व्याधि में निर्गुण्डी का बाह्य एवं आभ्यन्तर प्रयोग का नैदानिकीय एवं सांख्यिकीय दृष्टि से प्रभाव देखने पर औषधि की क्रियाशीलता 70 प्रतिशत अधिकतम, 20 प्रतिशत मध्यमतम एवं 90 प्रतिशत निम्नतम पायी गयी।