

A Piloting Study on Godugdha Yukta Vaitaran Basti in Vataja Gridhrasi (Sciatica)

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Abstract

Gridhrasi (Sciatica) is a major health problem related to locomotor system in both developed and developing countries. There is close association between low back pain and Sciatica. The prevalence data on low back pain and Sciatica shows the problematic status of the disease. As many as 90% of patients with acute back pain return to work within three months, but many experience symptoms of recurrence and function limitations. This hospital based observational piloting study on Godugdha yukta Vaitaran basti evaluates its therapeutic efficacy on Vataja Gridhrasi. For control study, Katibasti with sahacharadi tailam is taken which is a well known & proven procedure for lumbosacral disorders. The study was conducted on sixty clinically diagnosed cases of Vataja Gridhrasi (Sciatica) on the basis of various subjective & objective scientific parameters. Clinically and statistically improvements were observed after completion of therapy which was more in Vaitaran basti group rather than Katibasti group. Both drugs were well tolerated and patients were not forced to discontinue drug treatment out of drug intolerance. However in the series of trial 100 % recovery leading to Cure could not be achieved. This may be due to the reason that Basti chikitsa is said to be Ardhachikitsa. Godugdha yukta Vaitaran basti has been found to be an effective therapeutic regimen in the management of Vataja Gridhrasi.

Keywords

Vaitaran basti, Gridhrasi (Sciatica), Godugdha (Cow milk)

INTRODUCTION

Gridhrasi (Sciatica) is enumerated under eighty types of Nanatmaja Vata vyadhis and Basti chikitsa is described as Ardhachikitsa for Vatavyadhies^[1]. There are two groups of symptoms found in Gridhrasi i.e. Vataja and Vatakaphaja. There is also indications of two types of Vaitaran basti i.e. Gomutra yukta (cow's urine used – ref. Chakradutta^[2]) and Godugdha Yukta (cow's

milk used – ref. Vangasen^[3]). Critical studies of the above two Samhitas confers that Gomutra yukta Vaitaran basti is used in case of Vatakaphaja Gridhrasi where as Godugdha yukta Vaitaran basti is used in case of Vataja Gridhrasi. The present piloting study on Godugdha yukta Vaitaran basti in Vataja gridhrasi (sciatica) has been planned and implemented with emphasis on easy administration, random availability, no known side effects, low cost and textual

reference etc. Control studies are done using Katibasti with sahacharadi tailam which is a well known & proven procedure for lumbosacral disorders.

Aims and Objectives

This study aims to evaluate the therapeutic efficacy of Godugdha Yukta (cow's milk used) Vaitaran basti on Vataja Gridhrasi. The study was carried out at Gopabandhu Ayurved Mahavidyalaya, Puri. Out of the resembling cases of Gridhrasi (Sciatica) having Vatik type complains, sixty cases were selected according to the selection criteria. They were divided into two groups (TG_I & TG_{II}) keeping behind parity in the age, sex etc. TG_I were treated with Godugdha yukta Vaitaran basti and TG_{II} were treated with Katibasti with sahacharadi tailam.

MATERIALS AND METHODS

Study Design

- ☞ TG_I (BT) vs. TG_I (AT) - Effectiveness of treatment group - I will be assessed
- ☞ TG_{II} (BT) vs. TG_{II} (AT)- Effectiveness of treatment group - II will be assessed

Subjective criteria

- Low back pain radiating to foot (left / right / both)

- Stiffness (Stambha)
- Pain (Ruk) (Numeric pain scale)^[4]
- Pricking sensation (Toda)
- Fasciculation (Spandana)

Objective Criteria

- Lumbar spine mobility (LSM) test
- Oswestry disability (OD) index^[5]
- The low back outcome score (LBOS) scale of Greenough & Fraser^[6]
- Straight leg raising test (SLR / Sakti akshepa nigraha)

The Exclusion Criteria

- Vatakaphaja Gridhrasi (Sciatica having kapha predominance symptoms)
- Traumatic, infective, neoplastic conditions of spine
- Those who are crippled & bed bound (as per Oswestry disability index - 2.0 Grade 4 & 5)

Drug, Dose and Duration

- Vaitaran basti - 372 ml / dose, once daily, empty stomach per rectum for 8 days. [Saindhava Lavana (Rock salt) – 12gm, Guda (Gur) – 24gm, Amleeka (Tamarind) – 48gm, Tila taila (Sesame oil) – 96ml, Godugdha (Cow milk) – 192ml]
- Katibasti with sahacharadi tailam as per requirement locally for 8 days.

RESULTS AND DISCUSSION

The clinical improvement has been ascertained on the presence of Subjective

criteria as well as Objective Criteria after treatment basing on clinical assessment criteria [Table-1]. The Clinical assessment of results obtained basing upon the cardinal clinical features i.e. Straight leg raising test (SLR), Lumbar spine mobility (LSM) test, Oswestry disability (OD) index, The low back outcome score (LBOS) scale of Greenough & Fraser was classified in view of percentage of improvement as follows:

Maximum improvement / Cured	> 75% improvement
Moderate improvement	> 50% to 75% improvement
Mild improvement	> 25% to 50% improvement
Unsatisfactory	Negligible ($\leq 25\%$) improvement

Observations on data - The study reveals that after the middle age, people are more prone to Gridhrasi (Sciatica). The highest incidence is found in the fourth-fifth decade [Fig-1]. This is Vata Prakopaka Kala (aggravation period) and according to modern science there is progressive decrease in degree of hydration of the intervertebral disc with age that leads to the cycle of degeneration resulting in disc problems and causing Gridhrasi (Sciatica). About occupational status this study reveals that

Table 1 Clinical assessment criteria of the disease

Gridhrasi (Sciatica) can occur among various occupations that are prone to more physical works because they have to sustain higher load on their spine [Fig-2]. Regarding Chronicity it is found that maximum was in > 1 - 2 yrs of chronicity group [Fig-3]. The chronicity is due to the greatest stress and progressive degenerative changes of discs.

Figure 1 The incidence of age

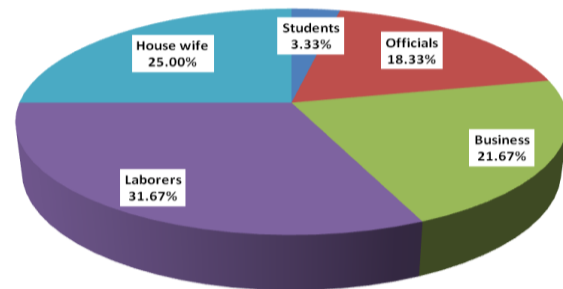
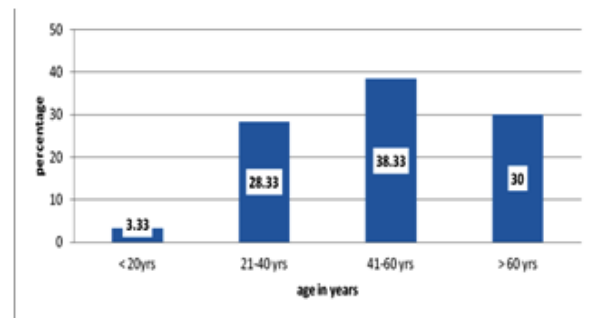
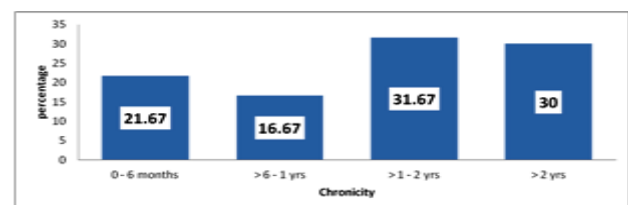


Figure 2 Showing the incidence of occupational status

Figure 3 Showing the Incidence of Chronicity Status



Low back pain radiating to foot (Sphik Purva Kati Pristha Uru Janu Jangha Pada Kramat Vedana)	G₀	→	Pain in lumber region not radiates to anywhere.			
	G₁	→	Pain in lumber region radiates up to thigh.			
	G₂	→	Pain in lumber region radiates to calf.			
	G₃	→	Pain in lumber region radiates to foot.			
Stiffness (Stambha)	G₀	→	No stiffness			
	G₁	→	Mild Stiffness			
	G₂	→	Moderate Stiffness			
	G₃	→	Severe Stiffness			
Pain (Ruk) (The Numeric Pain Scale)	G₀	→	Pain Free			
	G₁	→	Mild Pain			
	G₂	→	Moderate Pain			
	G₃	→	Severe Pain			
Pricking sensation (Toda)	G₀	→	No Pricking Sensation			
	G₁	→	Mild Pricking Sensation			
	G₂	→	Moderate Pricking Sensation			
	G₃	→	Severe Pricking Sensation			
Fasciculation /Twitching (Spandana)	G₀	→	No fasciculation			
	G₁	→	Occasionally discontinued fasciculation			
	G₂	→	Occasionally continued fasciculation			
	G₃	→	Persistent continued fasciculation			
	Severity Grade			Improvement Grade		
Straight leg rising test (SLR / Saktiakshapa nigraha)	G₀	→	> 70 ⁰ (Normal)	I₀	→	< 15 ⁰ (Unsatisfactory)
	G₁	→	51 - 70 ⁰ (Mild form)	I₁	→	15 ⁰ - 30 ⁰ (Mild)
	G₂	→	30 ⁰ - 50 ⁰ (Moderate form)	I₂	→	31 ⁰ - 45 ⁰ (Moderate)
	G₃	→	< 30 ⁰ (Severe form)	I₃	→	> 45 ⁰ (Maximum)
Lumbar Spine Mobility (LSM) test	G₀	→	> 5 cm from L.S. Junction during forward bending	I₀	→	≤ 3 cm (Unsatisfactory)
	G₁	→	> 4 - 5 cm from L.S. Junction during forward bending	I₁	→	> 3 - 4 cm (Mild)
	G₂	→	> 3 - 4 cm from L.S. Junction during forward bending	I₂	→	> 4 - 5 cm (Moderate)
	G₃	→	< 3 cm from L.S. Junction during forward bending	I₃	→	> 5 cm (Maximum)
The Low Back Outcome Score (LBOS)	G₀	→	≥ 65 Scoring (Excellent status)	I₀	→	0 - 29 (Unsatisfactory)
	G₁	→	50 - 64 Scoring (Good status)	I₁	→	30 - 49 (Mild)

	G₂	→	30 - 49 Scoring (Fair status)	I₂	→	50 – 64 (Moderate)
	G₃	→	0 - 29 Scoring (Poor status)	I₃	→	≥ 65 (Maximum)
The Oswestry Disability (OD) Assessment scale (Oswestry disability index - 2.0)	G₀	→	No disability (0%)	I₀	→	> 40 % (Unsatisfactory)
	G₁	→	> 0% - 20% (Minimal disability)	I₁	→	21 -40 % (Mild)
	G₂	→	21 % - 40% (Moderate disability)	I₂	→	> 0 -20 % (Moderate)
	G₃	→	41 – 60 % (Severe disability)	I₃	→	No disability (0%) (maximum improve)
	G₄	→	61- 80 % (Crippled)			
	G₅	→	81 - 100 (Bed bound)			
N.B. – G ₀ , G ₁ , G ₂ , G ₃ are respective Grades of Severity of symptoms and I ₀ , I ₁ , I ₂ , I ₃ are respective Grades of Improvement in symptoms						

Response of treatment - Godugdha yukta Vaitaran basti exhibits good clinical improvement in terms of relieving individual symptoms as well as reducing the severity of disease. As regards subjective and objective parameters all patients belonging to TG_I & TG_{II} were got relief, which has been critically assessed in the language of percentage. So far the improvement of cardinal sign symptoms in the present study, the percentage being 86.66 % & 63.33 % in **Radiation of pain**, 66.66 % & 55.55 % in **Stambha (Stiffness)**, 86.65 % & 63.33 % in **Ruk (Pain)**, 67.77 % & 49.99 % in **Toda (Pricking sensation)**, 55.55 % & 52.22 % in **Spandana (Fasciculation)** among Trial group-I (TG_I) & Trial Group-II (TG_{II}) Greentree Group

respectively. Considering the vital objective parameters, the percentage of improvement being 76.66 % & 38.89 % in **S.L.R test**, 66.66 % & 55.55 % in **L.S.M. test**, 48.88 % & 44.44 % in **L.B.O.S. scale**, 43.33 % & 49.99 % in **O.D. index** among TG_I & TG_{II}, respectively [Table 2, 3, 4]. The clinical assessment of results proves the efficacy of Godugdha yukta Vaitaran basti which shows that maximum cases are got moderate improvement [Table 5]. The statistical adjudication with suitable parameters for different sign and symptoms shows highly significant at 0.1 % level [Table 6].

Discussion on acceptability of trial drug – The trial drug was selected from ayurvedic text Vangasen samhita. It mainly comprising of Saindhava Lavana (Rock salt), Guda

(Gur), Amleeka (Tamarind), Tila taila (Sesame oil) and Godugdha (Cow milk).

Table 2 Showing the presence of Cardinal features, Degree of severity in TG_I

TG I	Presence of cardinal features		BT (Severity grade)								AT (Severity grade)							
			G ₀		G ₁		G ₂		G ₃		G ₀		G ₁		G ₂		G ₃	
			f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Radiation of pain	30	100	0	00.0	0	03.33	0	10.00	2	86.67	2	80.00	0	16.67	01	03.33	00	00.0
Stambha (Stiffness)	30	100	0	00.0	0	20.00	0	26.67	1	53.33	2	76.67	0	13.33	03	10.00	00	00.0
Ruk (Pain - Numeric scale)	30	100	0	00.0	0	03.33	0	10.00	2	86.67	2	80.00	0	16.67	01	03.33	00	00.0
Toda (Pricking sensation)	30	100	0	00.0	0	13.33	1	33.33	1	53.33	2	70.00	0	23.33	02	06.67	00	00.0
Spandana (Fasciculation)	30	100	0	00.0	0	03.33	1	56.67	1	40.00	1	63.33	0	30.00	02	06.67	00	00.0
S.L.R test	30	100	0	00.0	0	03.33	0	20.00	2	76.67	1	63.33	0	30.00	02	06.67	00	00.0
L.S.M. test	30	100	0	00.0	0	23.33	1	36.67	1	40.00	1	53.33	1	33.00	04	13.33	00	00.0
L.B.O.S. scale	30	100	0	00.0	0	00.00	1	36.67	1	63.33	0	00.00	2	83.33	5	16.67	00	00.0
O.D. index	30	100	0	00.0	0	00.00	0	26.67	2	73.33	0	00.00	1	56.67	13	43.33	00	00.0
BT – Before Treatment		AT – After Treatment						f - Frequency		% - Percentage				G ₀ , G ₁ , G ₂ , G ₃ – Respective Gradations				

Table 3 Showing the presence of Cardinal features, Degree of severity in TG_{II}

TG I	Presence of cardinal features		BT (Severity grad)								AT (Severity grade)							
			G ₀		G ₁		G ₂		G ₃		G ₀		G ₁		G ₂		G ₃	
			f	%	f	%	f	%	f	%	f	%	f	%	f	%	f	%
Radiation of pain	30	100	0	00.00	0	06.67	0	10.00	2	83.33	0	30.00	1	53.33	0	16.67	0	00.00
Stambha (Stiffness)	30	100	0	00.00	0	23.33	0	26.67	1	50.00	1	60.00	0	20.00	0	20.00	0	00.00
Ruk (Pain - Numeric scale)	30	100	0	00.00	0	06.67	0	06.67	2	86.67	0	30.00	1	50.00	0	20.00	0	00.00
Toda	30	100	0	00.00	0	00.00	0	30.00	2	70.00	0	13.33	1	53.33	1	33.33	0	00.00

(Pricking sensation)	0	0	0	00	0	00	9	00	1	00	4	33	6	33	0	33	0	00		
Spandana (Fasciculation)	3	10	0	00.	0	10.	1	56.	1	33.	1	46.	1	40.	0	13.	0	00.		
	0	0	0	00	3	00	7	67	0	33	4	67	2	00	4	33	0	00		
S.L.R test	3	10	0	00.	0	13.	1	53.	1	33.	0	26.	1	43.	0	30.	0	00.		
	0	0	0	00	4	33	6	33	0	33	8	67	3	33	9	00	0	00		
L.S.M. test	3	10	0	00.	0	26.	1	43.	0	30.	0	26.	1	53.	0	20.	0	00.		
	0	0	0	00	8	67	3	33	9	00	8	67	6	33	6	00	0	00		
L.B.O.S. scale	3	10	0	00.	0	06.	1	43.	1	50.	0	10.	2	70.	0	20.	0	00.		
	0	0	0	00	2	67	3	33	5	00	3	00	1	00	6	00	0	00		
O.D. index	3	10	0	00.	0	03.	0	16.	2	80.	0	10.	1	53.	1	36.	0	00.		
	0	0	0	00	1	33	5	67	4	00	3	00	6	33	1	67	0	00		
BT – Before Treatment					AT – After Treatment				f - Frequency				% - Percentage				G₀, G₁, G₂, G₃ – Respective Gradations			

Table 4 Percentage average improvement in TG_I & TG_{II}

Average % of improvement	TG _I	TG _{II}
Radiation of pain	86.66	63.33
Stambha (Stiffness)	66.66	55.55
Ruk (Pain - Numeric scale)	86.65	63.33
Toda (Pricking sensation)	67.77	49.99
Spandana (Fasciculation)	55.55	52.22
S.L.R test	76.66	38.89
L.S.M. test	66.66	55.55
L.B.O.S. scale	48.88	44.44
O.D. index	43.33	49.99
TG _I – Treatment Group 1, TG _{II} – Treatment Group 2		

There were no unpleasant incidents or side effects due to Vaitaran basti therapy. Another advantage of Vaitaran basti is that it is easy to constitute, less time consuming and gives least discomfort to both patient and physician. It is cheap as compared to other conventional methods of management

of Gridhrasi (Sciatica). While returning through rectum, it decreases the intra abdominal pressure by cleansing the bowel through evacuation of fecal matter during the course of basti.

TABLE 5 Clinical Results

S. No.	Clinical assessment	After treatment (8 Days)			
		TG _I (n ₁ = 30)		TG _{II} (n ₂ = 30)	
		f	%	f	%
1	Maximum improvement / Cured	-	-	-	-
2	Moderate improvement	23	76.67	7	23.33
3	Mild improvement	7	23.33	23	76.67
4	Unsatisfactory	-	-	-	-
TG _I – Treatment Group 1, TG _{II} – Treatment Group 2 n – No of patients					

The composition of Vaitaran basti is such that it strongly reduces the pain and prevents the degenerative processes. Modern researches also appreciate individual action on bone and bone marrow to promote strong

bones. On the whole, keeping in consideration the composition and there multidimensional effect, it can be inferred that the nutrient property of Guda (Gur), Tila taila (Sesame oil) and Godugdha (Cow milk) work against vitiated Vata due to loss of dhatus (Dhatukshaya). The obstruction of

passage of Vata (Margavarodha) can be eliminated due to anti-inflammatory benefit attributed to Amleeka (Tamarind) and Saindhava Lavana (Rock salt).

TABLE 6 Statistical analysis showing the effectiveness of trial-i & trial-ii with respect to different sign & symptoms

Sign & Symptoms	Treatment Group	Duration	Mean \pm S.D.	Mean diff. \pm S.E	d. f. (n-1)	t-Value	p-Value	Remarks
Radiation of pain	TG _I	B.T.	02.83 \pm 0.46	2.6 \pm 0.12	29	21.66	< 0.001	****
		A.T.	00.23 \pm 0.50					
	TG _{II}	B.T.	02.77 \pm 0.56	1.9 \pm 0.13	29	14.61	< 0.001	****
		A.T.	00.87 \pm 0.68					
Stambha (Stiffness)	TG _I	B.T.	02.33 \pm 0.80	2.0 \pm 0.14	29	14.29	< 0.001	****
		A.T.	00.33 \pm 0.66					
	TG _{II}	B.T.	02.27 \pm 0.83	1.67 \pm 0.15	29	11.13	< 0.001	****
		A.T.	00.60 \pm 0.81					
Ruk (Pain - numeric scale)	TG _I	B.T.	02.83 \pm 0.46	2.6 \pm 0.12	29	21.66	< 0.001	****
		A.T.	00.23 \pm 0.50					
	TG _{II}	B.T.	02.80 \pm 0.55	1.9 \pm 0.13	29	14.62	< 0.001	****
		A.T.	00.90 \pm 0.71					
Toda (Pricking sensation)	TG _I	B.T.	02.40 \pm 0.72	2.0 \pm 0.13	29	15.38	< 0.001	****
		A.T.	00.37 \pm 0.61					
	TG _{II}	B.T.	02.70 \pm 0.46	1.5 \pm 0.13	29	11.54	< 0.001	****
		A.T.	01.20 \pm 0.66					
Spandana (Fasciculation)	TG _I	B.T.	02.36 \pm 0.55	1.93 \pm 0.13	29	14.85	< 0.001	****
		A.T.	00.43 \pm 0.63					
	TG _{II}	B.T.	02.23 \pm 0.63	1.57 \pm 0.12	29	13.08	< 0.001	****
		A.T.	00.66 \pm 0.71					
S.L.R test	TG _I	B.T.	2.2 \pm 0.66	2.3 \pm 0.13	29	17.69	< 0.001	****
		A.T.	1.03 \pm 0.76					
	TG _{II}	B.T.	2.73 \pm 0.52	1.17 \pm 0.07	29	16.71	< 0.001	****
		A.T.	0.43 \pm 0.63					

L.S.M. test	TG _I	B.T.	1.73 ± 0.44	2.0 ± 0.14	29	14.29	< 0.001	****
		A.T.	0.33 ± 0.47					
	TG _{II}	B.T.	2.17 ± 0.79	1.67 ± 0.15	29	11.13	< 0.001	****
		A.T.	0.6 ± 0.72					
L.B.O.S. scale	TG _I	B.T.	2.43 ± 0.62	1.3 ± 0.09	29	14.44	< 0.001	****
		A.T.	1.1 ± 0.54					
	TG _{II}	B.T.	2.63 ± 0.49	1.5 ± 0.11	29	13.64	< 0.001	****
		A.T.	1.67 ± 0.38					
O.D. index	TG _I	B.T.	2.76 ± 0.50	1.46 ± 0.09	29	16.22	< 0.001	****
		A.T.	1.26 ± 0.63					
	TG _{II}	B.T.	2.73 ± 0.45	1.33 ± 0.09	29	14.78	< 0.001	****
		A.T.	1.43 ± 0.50					
TG.Trial Group		P-Value Probability at 0.1 % level			t - Value – Test of Significance			
d. f. – Degree of freedom		n = No. Of Patients			**** Highly significance at 0.1% lvl			

CONCLUSION


The nature of incurability and abundance of Gridhrasi (Sciatica) has inspired to undertake such a problem. The clinical assessment of results proves the efficacy of Vaitaran basti (Godugdha yukta) with moderate improvement in symptoms. However, in the series of trial 100 % recovery leading to cure could not be

achieved. This may be due to the reason that Basti chikitsa is said to be Ardhachikitsa. One may try Basti chikitsa along with other chikitsa to get 100% results. Hence Vaitaran basti (Godugdha yukta) is acceptable for the management of Vataja Gridhrasi (Sciatica) which is proved by the response of the above clinical trial.

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