



Clinical Research

A clinical study of *Nirgundi Ghana Vati* and *Matra Basti* in the management of *Gridhrasi* with special reference to sciatica

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Abstract

Gridhrasi can be equated with sciatica, where pain, weakness, numbness, and other discomforts along the path of the sciatic nerve often accompanies low back pain. It is a common affliction of adults, costing billions of dollars in healthcare and resulting in more lost days of work than any other illness but the common cold. A herniated disc, spinal stenosis, piriformis syndrome, etc., can all cause sciatica. The treatment available for sciatica in modern medicine is not very satisfactory. The role of research in Ayurveda is to elucidate the underlying principles and to explain them in modern parameters. The present study was aimed at establishing clinically the effect of *Nirgundi* (*Vitex negundo*) *Ghan Vati* (dried water extract) alone as well as in combination with *Matra Basti* in the management of *Gridhrasi*. A total of 119 patients were registered for the study, out of which 102 patients completed the treatment: 52 patients in group A (*Nirgundi Ghan Vati*) and 50 in group B (*Nirgundi Ghan Vati* + *Matra Basti*). The results show that both treatments had an effect on *Gridhrasi*, but there was better relief of the signs and symptoms in group B. *Matra Basti* and *Nirgundi Ghan Vati* might both contribute to different extents in the recovery of the patient.

Key words: *Gridhrasi*, sciatica, *Nirgundi Ghana vati*, *Vitex negundo*, therapeutic enema, *Matra Basti*

Introduction

The most common musculoskeletal disorder affecting the movement of leg is low back pain. Among the affected patients, 40% have radicular pain and these cases can be classified under the umbrella term of sciatic syndrome. Low back pain is extraordinarily common, second only to the common cold. About 50% of working adults experience a back injury each year.^[1] The prevalence of sciatica ranges from 11%–40%. *Gridhrasi*, an entity enumerated by *Shula Pradhana*, is one among the 80 types of *Nanatmaja Vata Vyadhi*. According to *Charaka*, *Stambha*, *Ruka*, *Toda*, and *Spandana* are the signs and symptoms of *Vataja Gridhrasi*. *Aruchi*, *Tandra*, and *Gaurava* are additional symptoms of *Vata-Kaphaja Gridhrasi*.^[2] *Gridhrasi Nidana* are general *Vata Prakopaka Nidana*. In the pathogenesis of *Gridhrasi*, *Vyana Vata* plays a major role get masked by *Kapha*, produces restricted movements as *Gati* of *Vayu* is disturbed. *Kandara* is affected by vitiated *Dosha* and the symptom ‘*SakthanahKshepan Nigrihamiyata*’ (i.e., restricted movement of leg) proves the involvement of *Asthi Sandhi*, as *Asthi* is site of *Vata* and there is an inverse relation between the two. As far as the pathological aspect

is concerned, there is irritation of the 4th and 5th lumbar roots and the 1st sacral root, which together form the sciatic nerve.^[3] The SLR (straight leg raising) test is used both for diagnosis as well as for assessing the progress of treatment. Treatment for *Gridhrasi* is effective, simple, safe, and economically affordable. *Snehana*, *Swedana*, and *Mridu Shodhana* are applied in all *Vatavyadhis*. However, in *Gridhrasi*, as *Snayu* and *Rakta* are involved, *Agnikarma* and *Siravyadha* are the lines of treatment.^[4]

Prof Shukla was the first to introduce *Nirgundi* in the oral form under his guidance in IPGT and RA following work was done for joint disorder. All the scholars have reported that *Nirgundi* is very effective when given orally, possessing specific properties that can check the *Samprapti* of joint disorders such as rheumatoid arthritis and osteoarthritis. *Shodhana* therapy has already been established as being better than *Shamana*. *Matra Basti* in the form of *Nirapada Basti* can be used as an OPD level procedure level for long time without any complication.

Hence, *Nirgundi Ghan Vati* and *Matra Basti* by *Nirgundi Taila* were selected for the present study. The *Tila* used for *Nirgundi Taila* preparation possess *Vatashamaka* properties.

Aims and Objectives

- To assess the efficacy of *Nirgundi Ghan Vati* and *Matra Basti* in the management of *Gridhrasi*.

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- To find a simple, effective, and cheap drug that can be used for outpatient treatment of *Gridhrasi*.
- To assess any side effect during the course of treatment.

Materials and Methods

A total 119 patients of *Gridhrasi* from among the outpatients and inpatients of Kayachikitsa and Panchakarma Department, Institute for Post Graduate Teaching and Research in Ayurveda, Jamnagar, were selected for the study.

Inclusion criteria

Subjective parameters

- Presence of *Ruk*, *Toda*, *Stambha*, and *Spandana* in the *Sphik*, *Kati*, *Uru*, and *Pada*
- Tenderness along the course of the sciatic nerve
- Patients in the age-group of 20–60 years

Objective parameters

- SLR test in affected leg as objective measure for diagnosis and assessment of improvement in treatment
- Popliteal compression test, knee jerk, and ankle jerk

Exclusion criteria

- Benign or malignant tumor of the spine or tuberculosis of the vertebral column
- Uncontrolled diabetes mellitus, cardiovascular disease, and pregnancy

Investigations

Routine investigations were done in all cases included hemoglobin, total leukocyte count, differential leukocyte count, erythrocyte sedimentation rate, fasting blood sugar, and RA factor; routine examination of urine and stool; and x-ray of lumbosacral region (anteroposterior and lateral view).

Posology

Drugs

1. *Nirgundi Ghan Vati* (oral), each tablet 500mg
2. *Matra Basti* and local *Abhyanga* by *Nirgundi Taila*.

Grouping

Patients were randomly divided into two groups:

Group A: *Nirgundi Ghan Vati*, 2 tablets thrice daily after meals (i.e., 3 gm/day)

Duration: 30 days; *Anupana*: with lukewarm water; local *Abhyanga* and *Swedana*: for 21 days; in three sittings, each sitting of 1 week duration, followed by a 3-day interval.

Group B: Same treatment as in group A + *Matra Basti* with 60 ml of *Nirgundi Taila* for 21 days; in three sittings, each sitting of 1 week duration, followed by a 3-day interval.

Follow-up: 1 month

Criteria for assesment

The data presented as general observations viz. age sex, religion, etc. *Nidana* and *Lakshana*. The result of therapy was evaluated on the basis of improvement in subjective parameters on various rating scales. For statistical analysis, we calculated means, standard deviations and standard errors, and percentages.

Student's paired 't' test was used for assessing the differences between groups. The obtained results were interpreted as: nonsignificant: $P > .05$, significant: $P < .01$, and highly significant $P < .001$. The chi-square test was used for subjective parameters.^[5]

The total effect of therapy was assessed taking into consideration the overall improvement in signs and symptoms and was calculated by the formula:

Total BT – Total AT × 100/ Total BT

The obtained results were classified as:

Marked improvement: 75%–100% relief

Moderate improvement: 51%–75% relief

Mild improvement: 26%–50% relief

Unchanged: <25% relief

Observation and Results

Out of 119 patients, 64 patients were registered in group A and, of these, 52 patients completed treatment and 12 discontinued treatment. In Group B, 55 patients were registered: 50 patients completed treatment and 5 patients discontinued treatment. Important features were as follows: 37.81% were from the age-group of 31–40 years, 64.70% were females, 91.59% were married, 91.59% were Hindus, 57.96% were housewives, 97.95% were from urban areas, 22.68% of the women were of menopausal age, 24.36% of the women had history of caesarean delivery, 60.48% were *Vata-Kaphaja* type, 39.48% were *Vataja* type, 39.48% had *Vata-Pitta Prakriti*, and 33.60% had *Pitta-Kapha Prakriti*. Among *Nidana*, 54.6% had *Mithya Ahara*, 45.36% had *Katu Rasa Sevana*, 38.64% had *Ritu Viparita Ahara*, 57.96% had *Vishamacheshta*, 18.48% had *Aticheshta*, 12.70% had *Bharana*, 11.99% had *Abhighata*, 45.36% had *Chinta*, 26.88% had *Shoka*, 45.36% had habitual constipation, and 21% had obesity. Cardinal symptoms of *Ruk*, *Toda*, and positive SLR test were found in all the patients (100%). *Aruchi* was seen in 74.76%, *Gaurava* in 46.2%, *Tandra* in 29.45%, *Spandana* in 25.23%, and *Dehasyapi Pravakrta* (functional scoliosis) in 18.48% patients. In *Dushya*, involvement of *Kandara-Sira-Snayus* was found in 88.37%, *Rasadushti* in 81.39%, *Raktadushti* in 34.88%, *Mamsadushti* in 27.90%, *Medadushti* in 30.23%, and *Asthi* and *Majjadushti* in 39.53% of patients each.

Both groups showed improvement, but group B showed better results in the chief complaints and also in the neurological findings. In group B there was relief in *Ruka* (62.20%), *Toda* (63%), *Stambha* (71%), SLR test (56%), and walking time (59.82%). We assessed the effect of therapy on *Dosha* involvement: In group A, relief in *Vataja Gridhrasi* was 28.84%, while it was 71.15% in *Vata-Kaphaja*. In group B, relief in *Vataja Gridhrasi* was 44%, while it was 56% in *Vata-Kaphaja*. Among the two groups result effect of therapy was found better in *Vata-Kaphaja* type of *Gridhrasi* and were better having chronicity less than 1 year in both groups, where most patients 68% were from group B.

The chi-square test showed good improvement (statistically highly significant; $P < .001$) in parameters like *Ruk*, *Toda*, and walking time in both groups; the improvement in *Spandana* was also significant ($P < .01$). Treatment did not produce significant improvement in any of the other symptoms. When the total effect of therapy is considered, treatment with *Matra Basti* was slightly better than *Nirgundi Ghana Vati*, though the difference was statistically nonsignificant ($P > .05$) [Table 1].

Table 1: Effect of therapy on chief complaints of 102 patients

Chief complaint	Chi-square value	P	Chief complaint	Chi-square value	P
Ruk	24.409	<.001	Aruchi	1.347	<.5
Toda	18.850	<.001	Gaurava	1.464	<.5
Stambha	0.886	<.5	SLR Test	1.777	<.5
Spandana	3.177	<.10	Walking time	14.61	<.001

Discussion

Among the study subjects, 37.08% were in the age-group of 31–40 years and 32.77% in the age-group of 41–50 years. Thus, the 4th decade of life appears to be the initial stage of *Vata Prakopa*. According to modern science, there is progressive decrease in the degree of hydration of the intervertebral disc with age, leading to the cycle of degeneration. Hence, the prevalence of sciatica is high in middle-aged people. This theory is supported by the present study. Most of the patient's (97.5%) were from urban areas; this is because of fast lifestyles and hazards associated with industrialization. A large proportion of the patients (57.96%) were housewives. Household work involves working in abnormal posture for long periods and so there is much wear and tear and higher loads on their spine. Labourers too show relatively high prevalence (8.4%) because of the heavy work they do.

Bad posture, standing, forward bending, long walking, constant sitting were the aggravating factors in 80% of patients and a constipative diet in 45% patients. A high proportion of patients (39.48%) had *Vata-Pittaja* and 33.60% had *Pitta-Kaphaja Prakriti*, while the rest (25.20%) had *Vata-kaphaja*; this suggests that *Vata* plays a major role in the manifestation of *Gridhrasi*. In *Nidana*, 58.8% had *Katu Dravyatisevana*; ingestion of food which are *Ruksha*, *Sheeta*, *Laghu*; *Ratri Jagarana*; *Vegavidharana*; and all such factors that lead to *Dhatu Kshaya* and *Vata Prakopa*.^[6] *Vega Sandharana* (found in 19.32%) and *Vishama Cheshta* (in 57.96%) may be precipitating factors of *Gridhrasi* as they cause strain on the spine. History of *Abhighata* was found in 11.99%, which indicates that the presence of a prior *Kha-Vaigunya* increases the incidence of *Gridhrasi*. As much as 45.36% of patients had *Mansik* factors such as *Atichinta*, which reflects the role of tension in *Vata Prakopa*.

History of cesarean delivery was present in 24.36% of the women; possibly epidural anesthesia adversely affects the lumbosacral area. Among the female subjects, 22.68% had reached menopause, indicating that degenerative changes occur earlier in relation to male. Twenty-one percent of the women were obese; excessive pressure is exerted on the weight-bearing joints such as the lumbosacral joint, and the nerves originating from this area were affected. In x-ray findings, 10.08% had spondylosis and osteoporosis, 5.04% had sacralisation, 9.49% had spondylolisthesis at L5-S1, and 5.04% had Schmorl's node and lumbar canal stenosis, where the spinal canal narrows and compresses the spinal cord or sciatic nerve roots. Patients with normal x-ray findings were included under piriformis syndrome.

Effect of therapy: Improvement of pain and *Toda* was more in group B (62.19%) in comparison to group A (38.69%). Pain is produced mainly by *Vata Prakopa*, and *Basti* is the best treatment for *Vata*. *Usna Virya* of *Nirgundi* and *Til-Sneha* act synergistically to reduce pain and hence the better relief in group B. The analgesic and anti-inflammatory action of *Nirgundi* can be attributed to its flavonoid content, which are

Table 2: Overall total effect of therapy

Total effect of therapy	No. of patients	
	Group A	Group B
Mild improvement	31 (59.52%)	25 (50.00%)
Moderate improvement	14 (26.8%)	16 (32.00%)
Marked improvement	7 (13.44%)	9 (18.00%)

known to act through inhibition of prostaglandin biosynthesis.

Toda: This shows that nearly half of the patients who have disturbed *Nidra* by *Toda* as night is *Vata Prakopaka Kala*, so *Toda* might be aggravated during this *Kala*, group (group B) showed better improvement in *Toda* (62.90%) than group A (45.03%). *Matra Basti* acts as *Vata anulomana* and relaxes the spinal muscles controlling *Apana Vayu*. *Spandana* occurs due to *Vata* and is better relieved by *Matra Basti*.

Comparative relief in neurological findings (SLR test): *Sakthikshepanigraha* was measured by the SLR test. In group B, *Nirgundi Ghan Vati* and *Matra Basti* provided 55.97% relief, which was statistically highly significant ($P < .001$). (*Dehasya Pravakrata*) Group B showed better (60%) relief than group A ($P < .001$) [Figure 1]. With *Matra Basti*, all the patients were able to lift the leg higher due to reduction in muscular spasm. In group B, walking time were relieved (59.62%) and jerks (68.75%) better than group A [Figure 2] may be due to *Vatkapha Shamak* properties, *Snigdha* decrease *Rukshta* of *Vata* and *Vasti* may help in breaking the *Sanga* and *Margavrodh*. Group B showed better results in the chief complaint and the neurological findings, as *Matra Basti* may be helping in controlling both *Vata* and *Kapha* and breaking the *Samprapti*.

Effect of therapy on Dosha involvement: In group B, *Vataj* types result was statistically highly significant ($P < .001$) with relief of 56%; this was possibly due to the *Vatahara* effect of *Sneha-Basti*.

Effect of therapy on Dushya involvement: In group B, statistically highly significant result was found in the improvement of symptoms of *Dushti* of *Rasa*, *Mamsa*, *Asthi*, *Majja*, and *Kandara-Sira-Snayu* and significant result was found in the *Dushti* of *Rakta* and *Meda* in comparison to group A, proving the effect of *Matra-Basti* in combination with oral *Nirgundi Ghan Vati*. The overall effect of therapy is shown in Table 2. The therapy on follow-up showed that maximum number of patients (70.56%) had no recurrence of symptoms during the period of follow-up of 1 month. Recurrence was more common in group A than in group B, which shows that the combination of the oral drug and *Matra Basti* provides better radical cure.

Probable mode of action of Nirgundi Ghan Vati

Vata and *Kapha* are the main chief causative factors for *Gridhrasi*; they can be pacified by *Tikta* and *Katu Rasa* present in *Nirgundi Ghan Vati*. Also, its *Tikshna Guna* and *Ushna Virya* pacify vitiated *Vata*.^[7] Thus, *Nirgundi* controls both *Kapha*

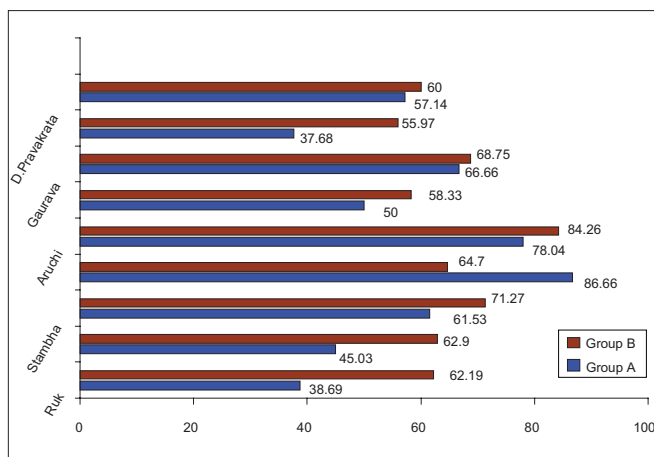


Figure 1: Effect of therapy in groups A and B

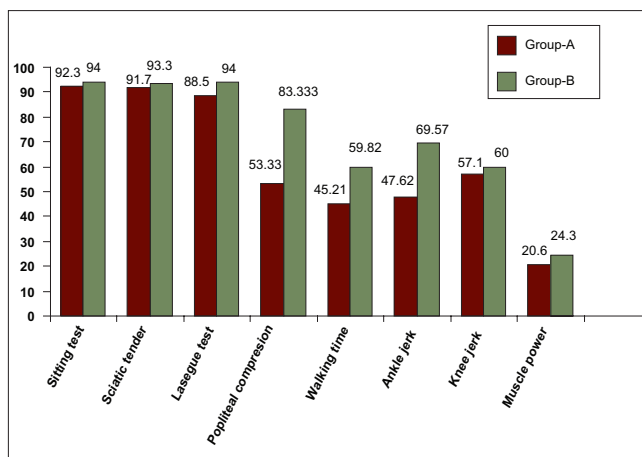


Figure 2: Effect of therapy on neurological findings (in percentage) in the two groups

Table 3: Pharmacodynamics of Nirgundi Taila in Matra Basti

Drugs	Rasa	Guna	Virya	Vipaka	Doshghnata	Karma
Nirgundi	Tikta, Katu, Kashaya	Laghu, Ruksha	Ushna	Katu	Vata-Kapha↓	Shopha-nashaka, Shulanashana, Deepana,
Tila	Madhura, Kashaya, Tikta	Guru, Snigdha	Ushna	Madhura	Vata↓	Vatahara, Vedanasthapana, Antidiuretic

and Vata together and minimises the process of pathogenesis. Fresh leaves of *Vitex Negundo* have anti-inflammatory and pain-suppressing activities, possibly mediated via inhibition of prostaglandin synthesis.^[8]

Due to the presence of *Nirgundi Taila*, *Matra Basti* can be considered as *Laghu*, *Snigdha*, *Ushna*, and *Tikshna*, having *Vata-Kapha Shamaka* action that antagonises *Kapha* and *Vata*.^[9] *Taila Snigdha Guna* antagonises *Ruksha* of *Vata* and *Tikshna Guna* helps in removing *Srotodushti* due to ‘Sanga’ [Table 3]. Hence, *Matra Basti* directly pacifies *Apan Vayu*, restoring equilibrium of *Agni* which controls both *Samana Vayu* and *Pran Vayu*.

Just as destruction of the roots kills a plant, *Vasti* administration destroys disease. Moreover, *Basti* is best for *Vatavyadhi* also for *Asthi Gata* disease *Vasti* and *Tikta* drug is beneficial.^[10] *Asthi* being the site of *Vata* and *Vasti* materials purify the *Purishadhara Kala*.^[11] *Asthi Vaha Srotas* may be purified, and vitiated *Vata* get subsided. *Pakwashaya*, in the main sites of *Vata* and *Basti* drug, i.e., mainly *Sneha*, possesses *Vata Shamaka* property. Here, it is noteworthy that the *Nirgundi* oil, used for *Basti*, possesses *Vata Kapha Shamaka* properties due to *Ushna Virya*, and thus suppresses the disease.

Conclusion

Both treatments have effect on *Gridhrasi*. Although *Nirgundi Ghan Vati* showed good results, *Nirgundi Ghan Vati* with *Matra Basti* provided better relief of the signs and symptoms. *Nirgundi* is cheap, easily available, free from controversy, and very effective in joint disorders.

Shamana therapy does not appear to be solely responsible for the end result. Therefore, *Matra Basti* and *Shamana* drug both

might be contributing together to different extents in the recovery of the patient. *Vasti* clears the *Srotas* by removing *Mala* and *Avarana*, conquers the *Rukshata* of *Vayu* with *Snigdha Guna*, and also normalizes *Apan Vayu* which is the main culprit. The selected treatment does not work only to relieve symptoms, but it works at the level of *Samprapti* and minimizes the chances of recurrence of the disease. Thus, the benefits of treatment persisted during the follow-up period of 1 month. To prevent radiation hazards, MRI may be taken as objective parameter.^[12]

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