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Research Article

UNLOCKING AYURVEDIC SYNERGY: A RANDOMIZED CONTROLLED TRIAL ON *BRIHAT PANCHAMOOLA GHANAVATI* AND *ERANDA PATRA POTTALI SWEDA* IN *GRIDHRASI* (SCIATICA)

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ABSTRACT

Gridhrasi, clinically comparable to sciatica, is a *Vata*-dominant disorder characterized by radiating pain, stiffness, and functional impairment. Ayurveda aims to correct the underlying pathogenesis through *Vata–Kapha* balancing and *Samprapti Vighatana.* **Objective:** To evaluate and compare the efficacy of *Brihat Panchamoola Ghana Vati* and *Eranda Patra Pottali Sweda* in the management of *Gridhrasi* (sciatica) with a standard control group. **Material and Methods:** A randomized, controlled, parallel-group interventional study was conducted on 90 clinically diagnosed patients. Participants were randomly allocated into three groups (n=30 each), Group A received *Brihat Panchamoola Ghana Vati* 500mg BD with *Eranda Taila (Sahapana)* after meal and Group B received *Brihat Panchamoola Ghana Vati* 500mg twice a day with *Eranda Taila* after meal along with *Eranda Patra Pottali Sweda* and Group C was given Tab. Methylcobalamin 1500mcg once a day after meal for 45 days. Assessment included subjective (*Ruka, Toda, Stambha, Spandana, Gaurava*) and objective parameters (SLR, walking distance), evaluated at baseline and follow-ups (15th, 30th, and 45th day). Statistical analysis was performed using Wilcoxon, Kruskal–Wallis, paired t-test, and ANOVA. **Result:** All groups showed significant improvement ($p<0.05$), with Group B demonstrating the greatest efficacy 80–85% symptom resolution and marked gains in SLR (69.2% normal) and walking ability (73.1% walking 1km pain-free). **Conclusion:** The combined therapy of *Brihat Panchamoola Ghana Vati* with *Eranda Patra Pottali Sweda* was found to be more effective than internal medication alone or standard control therapy in managing *Gridhrasi*. The intervention significantly reduces pain and stiffness and improved mobility through *Vata–Kapha* pacification.

INTRODUCTION

Gridhrasi, derived from the term *"Gridhra"* (vulture), denotes a gait resembling that of a vulture due to severe radiating pain[1] *Acharya Charaka* classifies it under the 80 *Vata-Nanatmaja Vyadhis*[2], presenting as *Ruk, Toda, Stambha,* and *Spandana,* while *Vata-Kaphaja* involvement adds *Tandra, Gaurava, and Aruchi*.[3] Causative factors include lumbo-sacral trauma (*Abhighata*), postural defects (*Vishamachesta*), overloading (*Bharavahana*), abrupt unbalanced movements (*Atichesta*), sedentary habits, and psychological stress *Chinta, Shoka* etc.).[4]

Sciatica is considered the modern counterpart of *Gridhrasi* and is categorized under dorsopathies, characterized by radiating pain along the sciatic nerve from the lumbar region to the foot. Major etiologies include intervertebral disc herniation and lumbar degenerative changes, often preceded by trauma or strain.[5,6] Diagnosis widely relies on history and the Straight Leg Raising (SLR) test, which correlates with

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Susruta's description of *Sakthisepana Nigrahaṇa.*[7] Due to lifestyle changes, the incidence of low back pain and sciatica is increasing globally, with a prevalence of 2.2%–3% in India, affecting mainly individuals aged 25–64.[8] Conventional therapy- NSAIDs, analgesics[9], physiotherapy, and invasive procedures- provides only symptomatic or temporary relief. Ayurveda aims for *Samprapti Vighatana*, addressing deranged *Apana* and *Vyana Vayu* with associated *Kapha* through *Vatashamaka, Kaphashamaka, Vatanulomaka, Deepana-Pachana*, and *Shulaprashamana* therapies such as *Snehana, Swedana, Basti, Siravyadha, Agnikarma.*[10]

Therefore, the present study evaluates the efficacy of *Brihat Panchamoola Ghana Vati* combined with *Eranda Patra Pottali Sweda* in the management of *Gridhrasi*. *Chakradatta* recommends *Brihat Panchamoola Kaṣhaya* with *Eraṇḍa Taila* in *Vatavyadhi Chikitsa*[11], where *Gridhrasi* is a principal indication. Owing to its *Vata–Kapha hara, Shulahara, and Sothahara* properties, the formulation is considered suitable for correcting the pathogenesis of *Gridhrasi*. For better palatability, dose precision, and compliance, the traditional decoction was converted into *Ghanavati* form.

AIMS AND OBJECTIVES

- To evaluate the effect of *Brihat Panchamoola Ghana Vati* and *Eranda Patra Pottali Sweda* in the management of *Gridhrasi* (sciatica).
- To compare the effect of Ayurvedic intervention with the control group in the management of *Gridhrasi* (sciatica).

MATERIALS AND METHODS

This was a randomized, controlled parallel group, interventional study design. The study was approved by the Institute Ethics Committee (Ethical clearance approval no: Dean/2023/EC/6783), BHU, Varanasi, on 04/12/2023. The study was also registered with CTRI (Ctri reg. no. CTRI/2024/05/067889). Patients attending the OPD and IPD of *Kayachikitsa* and *Panchakarma*, Sir Sunderlal Hospital, BHU, Varanasi, who fulfilled the inclusion criteria were selected for the study. Patient demographics and clinical characteristics were collected by using a standard Proforma. Prior to enrolment, patients gave witnessed written informed consent.

Inclusion Criteria

- Age group 20-60 years (irrespective of sex, race, caste, religion).
- On the basis of sign and symptoms mentioned for *Gridhrasi* (either *Vataj* or *Vata kaphaj)*
- SLR i.e. straight leg raising test, Bragard's test positive
- Patient who are not taking any other medication for *Gridhrasi*.

Exclusion Criteria

- Age below 20 and above 60 years.
- Patients having complications like uncontrolled diabetes mellitus, hypertension, tuberculosis of spine, fracture related to spine or malignancy of spine.
- Known case of cardiac diseases (ischemic heart disease, trauma, coronary artery disease, myocardial infarction etc.)
- Pregnancy, lactating mother.
- Any other chronic illnesses like T.B. etc.

Study design

Study of a clinical evaluation of *Brihat Panchamoola Ghana Vati* and *Eranda Patra Pottali Sweda* in the management of *Gridhrasi* was carried out by registering 90 cases of patients presenting with history of sciatica disorder from OPD/IPD of Kayachikitsa and Panchkarma OPD, SSH, BHU, Varanasi. Based on statistical calculation, the maximum sample size required was n=26**,** and considering a 15% anticipated loss to follow-up, the sample size was fixed at n=30 for each group. These 90 patients were randomly divided into three groups of 30 patients in each group.

Study groups & Treatment Schedule

- Group A (n=30)- The patients of this group treated with *Brihat panchamoola Ghana vati* with *Eranda Taila* for consecutive 45 days.
- Group B (n=30)- The patients of this group treated with *Brihat panchamoola Ghana vati* with *Eranda Taila* along with *Patra potalli sweda* (For 7 days at every follow up) for 45 days.
- Group C (n=30)- The patients of this group treated with Control *Drug tab. Methylcobalamin* for 45 days.
- Route of Administration – Oral (after meal), *Sthanik Sweda* (local application)
- *Eranda Taila* as *Shahpana*[12] according to *Kostha* (*Krura Kostha*-15ml, *Madhya Kostha-10ml, Mridu Kostha-5ml*)
- *Anupan - Koshna Jala*
- Total duration of treatment- 45 days
- During treatment follow up- 15th day, 30th day & 45th days

Method of preparation of drug

- **Trial Drug- (*Brihat Panchamoola Ghana Vati)*** Before the preparation, All the dried ingredients- *Bilva, Agnimantha, Shyonaka, Patala, Gambhari*

were taken in equal proportions and were ground by the grinder to form a *Yavakuta churna*. Dried ingredients were ground into *Yavakuta churna* and soaked overnight in 16 parts of water. The mixture was boiled until reduced to 1/8th, then filtered to obtain *Kwatha*.[13] The *Kwatha* was reheated at 90–95°C until semisolid, forming *Ghana*, which was then made into *Vati* and packed in airtight containers. The identification and assessment of quality of drugs was done by the experts of Department of Botany and Rasashastra evum Bhaisjya kalpana Department, Faculty of Ayurveda, I.M.S. B.H.U. and the drugs were prepared at Ayurvedic Pharmacy, Faculty of Ayurveda, IMS, BHU

- ***Patra Pottali Sweda*[14]:** Fresh *Eranda* leaves were chopped and fried with grated coconut and lemon in mild-heated oil until brown, then wrapped in cloth to form two *Pottali* (≈300–350gm each). After *Abhyanga* with medicated oil, warm *Patra Pottali* was applied rhythmically for 30–45 minutes until proper *Swedana* signs appeared. *Pottali* were replaced every three days. Procedure was conducted at *Panchakarma* IPD, Faculty of Ayurveda, IMS, BHU.
- **Control Group-** The drug Tab. Methylcobalamin was WHO GMP-certified by Intas Pharmaceutical Company. The medicine was obtained in sealed blister packaging with the batch details, Batch No.: INP24CQ28

Criteria for Assessment[15,16]

Improvement was assessed based on relief in the cardinal symptoms of the disease, using a severity-based scoring system applied to all signs and symptoms (Table. 1 Subjective and Table. 2 Objective parameter).

Table 1: Subjective Criteria

***Ruka* (Pain)**	
Severity/Duration	**Grade**
No pain	0
Occasional pain	1
Mild pain and without difficulty in walking	2
Moderate pain and slight difficulty in walking	3
Severe pain with severe difficulty in walking	4
***Toda* (Pricking sensation)**	
No pricking sensation	0
Occasional pricking sensation	1
Mild pricking sensation in a day	2
Moderate pricking sensation frequent	3
Severe pricking sensation persistent	4
No pricking sensation	0
***Stambha* (Stiffness)**	
No stiffness	0
Sometimes for few minutes after sitting for long duration but relieved by mild movements 5 – 10 minutes.	1
Daily for more than 1 hour or more than once in a day but routine works are not disturbed.	2
Stiffness lasting for more than 1 hour or many times a day mildly affecting the daily routine.	3
Stiffness lasting for 2-6 hours\daily routines are hampered severely.	4
***Spandana* (Throbbing/Pulsating)**	
No throbbing/pulsating	0
Sometimes for 5-10 minutes which is relieved spontaneously.	1

Daily for 10 – 30 minutes	2
Daily for 30 – 60 minutes in a day affecting daily routine	3
Daily more than 1 hour (many times in a day affecting daily routine).	4
***Gaurava* (Heaviness)**	
No heaviness	0
Mild heaviness (occasional feeling of heaviness not affecting the normal movements)	1
Moderate heaviness (frequent feeling of heaviness affecting the normal movements)	2

Table 2: Objective parameter

S.L.R. Test done by using Wall-Mount Goniometer	
>90	0
71-90	1
51-70	2
31-50	3
Upto 30	4
Walking distance	
Patient can walk upto km without pain.	0
Patient can walk upto 500m without pain.	1
Patient can walk upto 250m without pain.	2
Patient feels pain on standing.	3
Patient cannot stand.	4

Investigations

CBC, LFT, RFT, ESR

X-Ray Lumbar spine AP and lateral view, MRI lumbosacral (if required).

Assessment of overall effect of therapy

1. Complete remission- 100%
2. Marked improvement – >75% to<99%
3. Improvement - >50% to <74%
4. Mild improvement – >25% TO <49%
5. Unchanged- <25%

Statistical Analysis

Wilcoxon Signed Rank Test was used for within-group comparison of subjective and objective parameters, while inter-group comparison was done using the Kruskal–Wallis Test. Serological parameters were analyzed using the Paired t-test, and inter-group comparison was performed with One-way ANOVA. When ANOVA showed significant results, post-hoc tests were applied to identify significant group differences.

OBSERVATION AND RESULT

Table 3: Baseline Demographic Characteristics of the Study Participants (n = 90)

Variable	Group A (n=30)	Group B (n=30)	Group C (n=30)	Total (n=90)
Age (years)				
21–30	11 (36.7%)	8 (26.7%)	0 (0.0%)	19 (21.1%)
31–40	10 (33.3%)	8 (26.7%)	11 (36.7%)	29 (32.2%)
41–50	5 (16.7%)	7 (23.3%)	10 (33.3%)	22 (24.4%)
51–60	4 (13.3%)	7 (23.3%)	9 (30.0%)	20 (22.2%)

Gender				
Male	19 (63.3%)	20 (66.7%)	9 (30.0%)	48 (53.3%)
Female	11 (36.7%)	10 (33.3%)	21 (70.0%)	42 (46.7%)
Religion				
Hindu	28 (93.3%)	29 (96.7%)	30 (100.0%)	87 (96.7%)
Muslim	2 (6.7%)	1 (3.3%)	0 (0.0%)	3 (3.3%)
Marital Status				
Married	21 (70.0%)	25 (83.3%)	27 (90.0%)	73 (81.1%)
Unmarried	9 (30.0%)	5 (16.7%)	3 (10.0%)	17 (18.9%)
Occupation				
Desk work (professional)	10 (33.3%)	6 (20.0%)	9 (30.0%)	25 (27.8%)
Field work (semi-professional)	6 (20.0%)	12 (40.0%)	7 (23.3%)	25 (27.8%)
Physical labour (skilled worker)	7 (23.3%)	7 (23.3%)	6 (20.0%)	20 (22.2%)
Housewife/unemployed	7 (23.3%)	5 (16.7%)	8 (26.7%)	20 (22.2%)
Socio-economic Status				
Higher	11 (36.7%)	6 (20.0%)	9 (30.0%)	26 (28.9%)
Middle	16 (53.3%)	20 (66.7%)	15 (50.0%)	51 (56.7%)
Lower	3 (10.0%)	4 (13.3%)	6 (20.0%)	13 (14.4%)
Dietary Habit				
Vegetarian	17 (56.7%)	15 (50.0%)	15 (50.0%)	47 (52.2%)
Mixed	13 (43.3%)	15 (50.0%)	15 (50.0%)	43 (47.8%)
Habitat				
Rural	16 (53.3%)	14 (46.7%)	14 (46.7%)	44 (48.9%)
Urban	13 (43.3%)	14 (46.7%)	14 (46.7%)	41 (45.6%)
Semi-urban	1 (3.3%)	2 (6.7%)	2 (6.7%)	5 (5.6%)
Addiction				
None	19 (63.3%)	24 (80.0%)	17 (56.7%)	60 (66.7%)
Tea/Coffee	7 (23.3%)	4 (13.3%)	7 (23.3%)	18 (20.0%)
Tobacco	4 (13.3%)	2 (6.7%)	2 (6.7%)	8 (8.9%)
Alcohol	0 (0.0%)	0 (0.0%)	4 (13.3%)	4 (4.4%)

Most participants (32.2%) belonged to the 31–40-year age group, with males constituting 53.3% of the study population. The majority were Hindus (96.7%), married (81.1%), belonged to the middle socioeconomic class (56.7%), followed a vegetarian diet (52.2%), and had no addiction (66.7%).

Table 4: Baseline Ayurvedic Characteristics of the Study Participants (n = 90)

Variable	Group A (n=30)	Group B (n=30)	Group C (n=30)	Total (n=90)
Śārīra Prakṛti				
Vata–Pitta	10 (33.3%)	17 (56.7%)	9 (30.0%)	36 (40.0%)
Vata–Shelsmama	12 (40.0%)	9 (30.0%)	12 (40.0%)	33 (36.7%)
Shelsmama –Pitta	8 (26.7%)	4 (13.3%)	9 (30.0%)	21 (23.3%)
Mānasa Prakṛti				
Sāttvika–Rājasika	3 (10.0%)	2 (6.7%)	0 (0.0%)	5 (5.6%)

Rājasika–Tāmasika	19 (63.3%)	16 (53.3%)	10 (33.3%)	45 (50.0%)
Tāmasika–Sāttvika	8 (26.7%)	12 (40.0%)	20 (66.7%)	40 (44.4%)
Satva				
Pravara	7 (23.3%)	4 (13.3%)	6 (20.0%)	17 (18.9%)
Madhyama	14 (46.7%)	21 (70.0%)	16 (53.3%)	51 (56.7%)
Avara	9 (30.0%)	5 (16.7%)	8 (26.7%)	22 (24.4%)
Koṣṭha				
Mṛdu Koṣṭha	3 (10.0%)	3 (10.0%)	1 (3.3%)	7 (7.8%)
Madhyama Koṣṭha	24 (80.0%)	26 (86.7%)	19 (63.3%)	69 (76.7%)
Krūra Koṣṭha	3 (10.0%)	1 (3.3%)	10 (33.3%)	14 (15.6%)

Vata–Pitta Prakṛti (40.0%), *Rājasika–Tāmasika Mānasa Prakṛti* (50.0%), *Madhyama Satva* (56.7%), and *Madhyama Koṣṭha* (76.7%) were the predominant constitutional features among the participants.

Table 5: Comparison of Subjective Assessment Parameters in Different Trial Groups

Subjective Parameter	Group	Within Group (Wilcoxon Signed Rank Test)	p-value	Between Group at Final Follow-up (Kruskal–Wallis Test)	p-value
Ruka (pain)	A	Z = -4.686	<0.001	χ^2 = 28.513	<0.001
	B	Z = -4.565	<0.001		
	C	Z = -4.832	<0.00se1		
Toda (pricking pain)	A	Z = -4.466	<0.001	χ^2 = 13.739	0.001
	B	Z = -4.602	<0.001		
	C	Z = -4.072	<0.001		
Stambha (stiffness)	A	Z = -4.839	<0.001	χ^2 = 18.524	<0.001
	B	Z = -4.529	<0.001		
	C	Z = -4.419	<0.001		
Spandana (pulsating sensation)	A	Z = -4.472	<0.001	χ^2 = 16.003	<0.001
	B	Z = -4.472	<0.001		
	C	Z = -4.388	<0.001		
Gaurava (heaviness)	A	Z = -4.117	<0.001	χ^2 = 0.175	0.916
	B	Z = -4.284	<0.001		
	C	Z = -4.123	<0.001		

Table 5 presents all three treatment groups demonstrated statistically significant improvement in the subjective symptoms of *Gridhrasi*, namely *Ruka, Toda, Stambha, Spandana*, and *Gaurava* (Wilcoxon signed-rank test; p< 0.001). Intergroup comparison at the final follow-up showed a statistically significant difference for *Ruka, Toda, Stambha*, and *Spandana* (p<0.05), whereas *Gaurava* showed no significant difference among the groups (p=0.916).

Table 6: Comparison of Objective Clinical Assessment Parameters in Different Trial Groups

Objective Parameter	Group	Within Group (Wilcoxon Signed Rank Test)	p-value	Between Group at Final Follow-up (Kruskal–Wallis Test)	p-value
Straight Leg Raising (SLR) Test	A	Z = -4.702	<0.001	χ^2 = 23.001	<0.001
	B	Z = -4.550	<0.001		
	C	Z = -4.906	<0.001		

Walking distance	A	Z = -4.605	<0.001	χ^2 = 14.272	0.001
	B	Z = -4.509	<0.001		
	C	Z = -4.564	<0.001		

Post-hoc Comparison at Final Follow-up

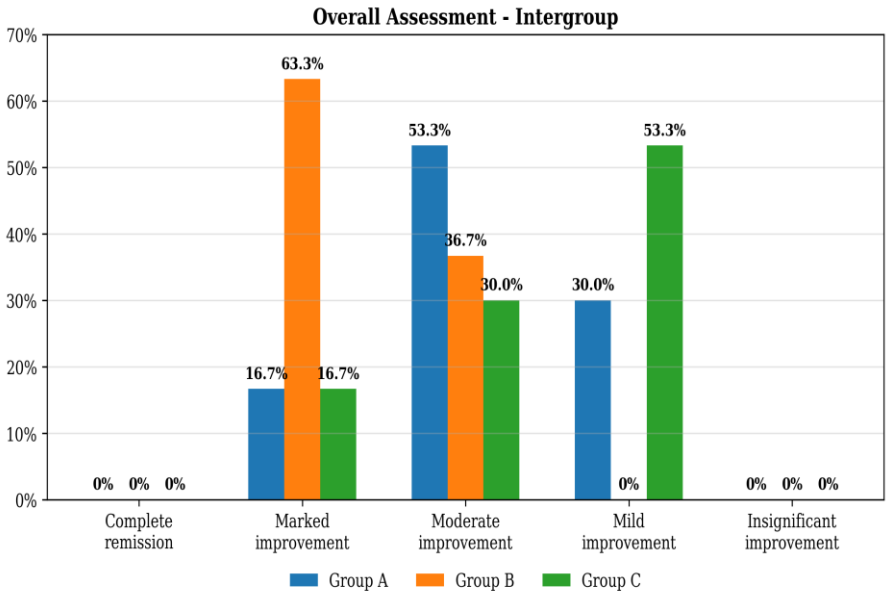
Parameter	Significant Pairwise Comparison (Bonferroni corrected)	p-value
SLR Test	Group A vs Group B	0.001
	Group B vs Group C	<0.001
Walking distance	Group A vs Group B	<0.001
	Group B vs Group C	0.014

Table 6 shows all three groups demonstrated statistically significant improvement in objective clinical parameters, namely Straight Leg Raising (SLR) test and walking distance (Wilcoxon signed-rank test; $p < 0.001$). Intergroup comparison at the final follow-up revealed significant differences for both parameters (SLR: $\chi^2 = 23.001$, $p < 0.001$; Walking Distance: $\chi^2 = 14.272$, $p = 0.001$). Post-hoc analysis showed that Group B demonstrated significantly better improvement than Groups A and C.

Table 7: Overall Clinical Response to Therapy Among the Study Participants (n = 90)

Assessment	Group A (n=30)	Group B (n=30)	Group C (n=30)
Unchanged (0–25%)	0 (0.0%)	0 (0.0%)	0 (0.0%)
Mild improvement (26–50%)	9 (30.0%)	0 (0.0%)	16 (53.3%)
Moderate improvement (51–75%)	16 (53.3%)	11 (36.7%)	9 (30.0%)
Marked improvement (76–99%)	5 (16.7%)	19 (63.3%)	5 (16.7%)
Complete remission (100%)	0 (0.0%)	0 (0.0%)	0 (0.0%)

Table 7 shows Overall Clinical Response: The majority of patients in Group A (53.3%) achieved moderate improvement, whereas Group B showed the best therapeutic response, with 63.3% of patients attaining marked improvement. In contrast, Group C predominantly exhibited mild improvement (53.3%). Overall, 40.0% of patients demonstrated moderate improvement, followed by 32.2% with marked improvement and 27.8% with mild improvement. No patient remained unchanged or achieved complete remission. The intergroup difference in overall clinical response was statistically highly significant ($\chi^2 = 31.124$, $p < 0.001$), indicating superior efficacy of the intervention in Group B.



DISCUSSION

The present study demonstrated that *Gridhrasi* was most prevalent in the 31–40-year age group, suggesting increased vulnerability among young and middle-aged adults as a result of greater biomechanical stress, occupational load, and postural strain.[17,18]. A slightly higher incidence among males was also observed, which aligns with the Ayurvedic understanding that *Vata*-aggravating factors- such as strenuous physical activity, frequent travel, and irregular lifestyle patterns- tend to be more common in men.[19] These demographic trends are consistent with earlier clinical reports indicating that sciatica is more frequent in physically active individuals exposed to repetitive mechanical stress. In this study, occupational distribution was diverse, with equal proportions of desk workers and field workers (27.8% each), followed by physical labourers and housewives (22.2% each). A diverse occupational distribution was observed, and factors such as prolonged sitting, poor posture, repetitive bending, lifting, and household strain contribute to lumbar stress, aligning with Ayurveda's concept of *Vishama Cheshta* that aggravates *Vata* and predisposes to *Gridhrasi*.[20] The therapeutic outcomes of the present study correspond with previous Ayurvedic clinical trials that highlight the superior effectiveness of combining internal *Vata*-pacifying formulations with external *Swedana* procedures in *Vata-Vyadhi*. The efficacy of the intervention is supported by the combined pharmacodynamic properties (Figure 1) of Ayurvedic formulation *Kashaya, Tikta, and Madhura Rasa,* which reduce inflammation and soothe irritated tissues; *Laghu, Snigdha,* and *Guru Guna***,** which balance *Vata,* nourish tissues, and restore stability; *Ushna Veerya***,** which enhances *Agni*, improves circulation, and alleviates stiffness; and *Madhura Vipaka***,** which promotes healing and *dhatu* nourishment without aggravating *Vata.*[21]

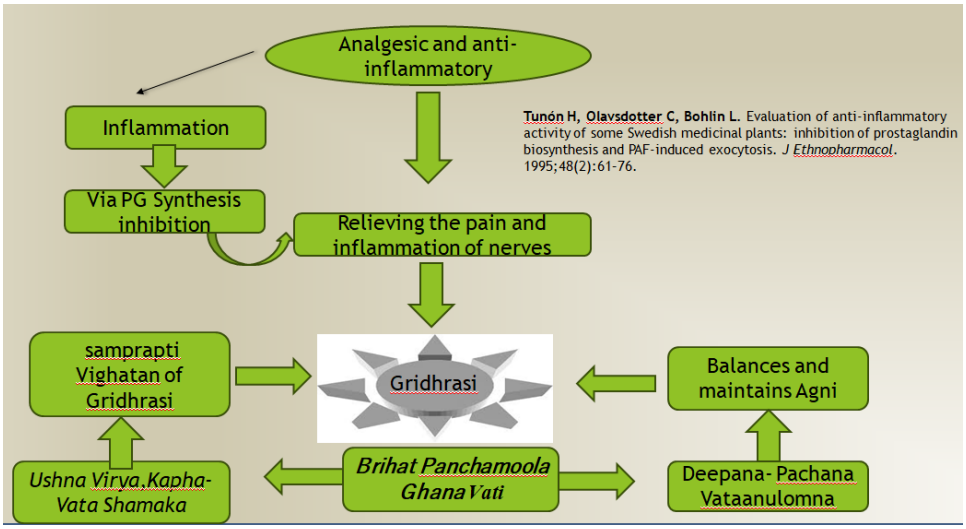


Figure 1: Probable mode of action of *Ayurvedic* formulation

Brihat Panchamoola Ghana Vati provides a synergistic *Vata–Kapha* pacifying and anti-inflammatory action beneficial in *Gridhrasi*. *Bilva* offers *Deepana–Pachana, Sothahara*, and *Vedanasthapana* effects, with Marmelosin demonstrating antioxidant and anti-inflammatory activity.[22] *Agnimantha* shows analgesic and anti-inflammatory actions through flavonoids and phenolics that inhibit TNF-α, IL-1β, and IL-6.[23] *Shyonaka* contains flavonoids such as Baicalein and Oroxylin A, which suppress TNF-α and COX-2, reducing pain and inflammation.[24] *Patala* exerts potent anti-inflammatory and analgesic effects via compounds like luteolin, lapachol, and tannins that modulate cytokine release.[25] *Gambhari* contributes neuroprotective, antioxidant, and analgesic actions by inhibiting prostaglandins and inflammatory cytokines.[26] *Eranda Taila*, used as *Sahapana*, further enhances efficacy through its *Snigdha* and *Uṣṇa* qualities. Ricinoleic acid inhibits PGE2 synthesis by modulating COX enzymes, reducing inflammation, vascular permeability, and pain, making the combination effective for managing *Gridhrasi* (sciatica).[27] *Eranda Patra Pottali Sweda* provides localized sudation that pacifies aggravated *Vata* by inducing perspiration, improving circulation, and reducing stiffness and heaviness. The heat of the bolus causes vasodilation and helps clear inflammatory mediators, while the *Snigdha, Ushna, and Tikshna* qualities of *Eranda* leaves relieve *Ruk*, *Stambha*, and *Sotha*. Mechanical pressure enhances lymphatic drainage and muscle relaxation, and phytoconstituents like ricinoleic acid and flavonoids offer anti-inflammatory and analgesic effects. The *Pottali* also aids transdermal absorption, allowing deeper penetration of active compounds.[28,29] All three groups showed statistically significant intra-group improvements *(*$p<0.05$*)* across all subjective and functional parameters. However, Group B (*Brihat*

Panchamoola Ghana Vati+Eranda Patra Pottali Sweda) consistently produced the highest rate of complete recovery, particularly in *Ruka, Toda, Stambha, Spandana*, SLR improvement, and walking ability. while improvements in *Gaurava* were similar across groups ($p>0.05$), and the absence of adverse effects with stable laboratory values, along with lifestyle and postural guidance, further supported the safety, tolerability, and sustained symptomatic relief achieved through these interventions.

CONCLUSION

The combined therapy of *Brihat Panchamoola Ghana Vati* and *Eranda Patra Pottali Sweda* demonstrated superior efficacy in alleviating pain, reducing stiffness, and improving functional mobility by pacifying *Vata–Kapha* and promoting *Srotas* clearance, with no observed adverse effects, while lifestyle guidance and postural care further enhanced therapeutic outcomes. future research should explore larger multi-center studies with extended follow-ups and integrative therapeutic approaches to strengthen clinical applicability and long-term outcomes.

Declaration of patient consent:

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patient understand that his/her name and initials will not be published and due efforts will be made to conceal his identity.

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