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Research Article

AN OPEN LABELLED RANDOMIZED CONTROLLED CLINICAL STUDY TO EVALUATE THE EFFECT OF *VARDHAMANA BALAMOOLA RASAYANA* IN *GRIDHRASI* W.S.R TO SCIATICA SYNDROME

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ABSTRACT

Gridhrasi, a *Nanathmaja vata vyadi*, manifests in two distinct forms: *Vataja* and *Vata-Kaphaja*. Despite the availability of conventional treatments, patients often experience only temporary relief. *Rasayana Chikitsa*, a traditional approach, offers a promising long-term solution. This study aims to evaluate the effectiveness of *Rasayana Chikitsa* in managing symptoms of *Gridhrasi* and improving patient outcomes. **Objectives:** To evaluate the therapeutic effect of *Vardhamana Balamoola Rasayana* in *Gridhrasi.* **Methodology:** A randomized controlled clinical study was conducted on 30 patients, aged 18-70 years, who attended the outpatient department (OPD) of the institute with low back pain radiating to lower limbs. These patients met the diagnostic criteria and participated in the study. The participants were divided into two groups: Group A, which received *Vardhamana Lashuna Rasayana* for 16 days, and Group B, which received *Vardhamana Balamoola Rasayana* for 30 days. The treatment protocol involved mild purgation followed by incrementally increasing doses. Efficacy was assessed using both subjective criteria (pain, stiffness, functional ability) and objective criteria (Straight Leg Raise (SLR) test) at baseline, during treatment, and post-treatment. Statistical analysis was performed using paired t-tests, Wilcoxon's signed-rank tests, unpaired t-tests, and Mann-Whitney U tests to evaluate the treatment outcomes. **Results:** *Vardhamana Balamoola Rasayana* showed superior efficacy, with 20% achieving maximum relief. It also had higher mild relief rates (46.66% vs. 26.66%) and lesser minimum relief rates (0% vs. 40%). **Conclusion:** *Vardhamana Balamoola Rasayana* demonstrated superior efficacy in pain management, functional ability, and neurological deficit reduction, making it a more effective therapeutic option for *Gridhrasi* symptom relief.

INTRODUCTION

Like a modern skyscraper, the human spine defies gravity and defines us as vertical bipeds. It forms the infrastructure of a biological machine that anchors like kinetic chain and transfers biomechanical forces into coordinated functional activities.[1] As age progresses, their occur wear and tear of these functions through the compensatory structural and neurochemical changes, some of which can cause pain, functional disability, and transmute the neuro-physiologic circuitry. Sciatic nerve is the largest nerve in the body. Any irritation or compression of the sciatic nerve will lead to sciatica.[2]

Gridhrasi is considered as a *Shoola pradhana nanathmaja vata vyadhi*.[3] The word *Gridhrasi* indicates the typical gait which resembles the bird "*Gridhra*" i.e., vulture, which is commonly seen in *Gridhrasi* patients. The cardinal clinical features of *Vataja gridhrasi* includes *Ruk* (pain), *Toda* (pin prick sensation), *Stamba* (stiffness), *Muhuspandan* (twitching) in *Sphika* (buttock), *Kati* (pelvis), *Uru* (thigh), *Janu* (knee), *Janga* (calf), *Pada* (foot) in order.[4] *Sakthikshepana nigraha*[5] i.e., restriction to lift the lower limb, is seen in *Kaphanubandha Gridhrasi.*

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Sciatica is a debilitating, relatively common condition with a lifetime incidence varying from 13% to 40%. The corresponding annual incidence of an episode of sciatica ranges from 1% to 5 %.[6] Incidence of sciatica is also related with age. Rarely seen before the age of 20, incidence peaks in fifth decade and declines thereafter.[7] The signs and symptoms of sciatica quietly mimic with the condition of *Gridhrasi.* Conventional medicine treatment of sciatica is limited to NSAID's, opioid and non-opioid analgesics, muscle relaxants, corticosteroid injections, physiotherapy and surgery.[8] They may be having an immediate relief but they play a minimum role in rectifying the pathology. Therefore, a treatment with long term benefit is to be adopted. Whereas, in Ayurveda there are many modalities of treatment mentioned for the betterment of this disease, one among them is *Rasayana chikitsa*. This research endeavored to assess the efficacy of *Rasayana Chikitsa* in *Gridhrasi*, focusing on symptomatic relief, functional improvement, and overall effectiveness. Accordingly, we undertook a comprehensive study titled: "An Open-Labelled Randomized Controlled Clinical Study to Evaluate the Effect of *Vardhamana Balamoola Rasayana* in *Gridhrasi* with Reference to Sciatica Syndrome."

MATERIALS AND METHODS

Participants were recruited from the institute's outpatient department, with the study reported in accordance with CONSORT statement guidelines.[9]

Setting

Sri Dharmasthala Manjunatheshwara Ayurveda Hospital & Research center, Kuthpady, Udupi.

Participants

Between April 2023 and July 2024, a total of 30 participants with confirmed *Gridhrasi* diagnosis were enrolled in the study, following a rigorous screening process based on predefined diagnostic, inclusion, and exclusion criteria. Eligibility was assessed irrespective of gender, caste, or creed.

Diagnostic criteria

Symptoms of *Gridhrasi* i.e., pain in the low back radiating to lower limbs, including both *Vataja* and *Kaphaja Gridhrasi*.

Inclusion criteria

- Patients fulfilling the diagnostic criteria.
- Patients with or without radiological evidence- MRI, CT of disc prolapse.
- Patients with or without radiological evidence- MRI, CT of lumbar spondylosis.
- Patients between the age groups of 18-70 years and of either sex.

Exclusion criteria

- Patients with radiological evidence of fracture of vertebrae, congenital deformities and neoplasm of spine.
- Pregnancy and lactating mother.
- Evidence of osteoporosis with BMD < -2.5.
- Had participated in any clinical trial within 3 months of screening.

Research design

This clinical study utilized a randomized, controlled, parallel-group comparative design. Participants were randomized using an online Random Number Generator with a block size of 2, and allocated in a 1:1 ratio to either the control or intervention group. A total of 30 participants were enrolled (15 per arm), based on sample size calculations.[10]

Intervention

Group A - *Vardhamana Lashuna Rasayana* group

Recruited subjects will be administered with-

Day 1: 20ml *Eranda Taila* along with 20ml *Shunti Kashaya* orally in early morning in empty stomach for *Koshta shodhana*.

Day 2-5: 12 capsules (each 500mg) of *Lashuna* will be administered orally in empty stomach with *Godugda*.

Day 6-9: 24 capsules of *Lashuna* will be administered orally in empty stomach with *Godugda.*

Day 10-13: 36 capsules of *Lashuna* will be administered orally in empty stomach with *Godugda*.

Day 14-17: 48 capsules of *Lashuna* will be administered orally in empty stomach with *Godugda*.

Day 18: *Mridu Virechana* done with 20gm of *Trivrit Leha.*

Group B- *Vardhamana Balamoola Rasayana* group

Recruited subjects will be administered with-

Day 1: 20ml *Eranda Taila* along with 20ml *Shunti Kashaya* orally in early morning in empty stomach for *Koshta shodhana*.

Day 2-9: Oral administration of 1 capsule of *Balamoola Rasayana* of 250mg in empty stomach with *Godugda*, and then increasing 1 capsule per day till it reaches 8 capsules (2gm) on the 9th day.

Day 10-30: Oral administration of 8 capsule of *Balamoola Rasayana* of 250mg in empty stomach with *Godugda*.

Table 1: **Duration of study**

Group A	Group B
Total duration: 48 days	Total duration: 61days
Intervention: 18 days	Intervention: 31 days
Follow up: 30 days	Follow up: 30 days

Duration of the study

Study approval and ethics

The study was approved by the Institutional Ethics Committee-Human (IEC-H) of Sri Dharmasthala Manjunatheshwara College of Ayurveda, Udupi, with reference number SDMCAU/ACA-49/ECH 33/2022-23, dated September 23, 2022. The study is registered with the Clinical Trials Registry of India (CTRI) with registration number CTRI/2024/03/064609.

Criteria for assessment

Subjective parameters

- Pain using- Greenough and Fraser scoring method.[11] Table 2
- Stiffness using- Myotonia behaviour scale (MBS).[12] Table 3
- Functional Ability- Sugar baker & Barofsky Clinical Mobility Scale.[13] Table 4
- Functional Disability- Oswestry Disability assessment questionnaire.[14] Table 5

Objective parameters

- SLR Test (*Saktiutkshepa nigraha*)
- Neurological deficit Table 6

Statistical Methods

Statistical analysis was performed using Sigma Plot Version 13.0. Efficacy assessments were made using subjective and objective criteria at baseline, during treatment, and post-treatment. Within-group comparisons were analysed using paired t-tests and Wilcoxon's signed rank tests. Between-group comparisons were made using unpaired t-tests and Mann Whitney tests.

Table 2: Assessment of pain (Greenough and fraser scoring method)

Assessment of pain (Greenough and Fraser scoring method)		
Question	**Answer**	**Point**
How often do you have to take pain killers for your pain?	Never	6
	Occasionally	4
	Almost every day	2
	Several times every day	0
How often do you have consultation with a doctor?	Never	6
	Rarely	4
	1-2 times per month	2
	1-2 times per week	0
At present are you working?	Full time at regular job	9
	Full time at a lighter job	6
	Part time	3
	Not working	0
So, you need to rest during the day because of pain?	Not at all	6
	A little	4
	Half the day	2
	Over half the day	0
At present, can you undertake household chores or additional jobs?	Normally	9
	As many as usual, but slowly	6
	A few, not as many as usual	3
	Not at all	0
At present, can you undertake sports or active pursuits, such as dancing?	As much as usual	9
	Almost as much as usual	6
	Some, much less than usual	3
	Not at all	0
How much does back pain affect your ability to dress?	No effect	3
	Mildly or moderately affected	2

	Difficult	1
	Not possible	0
How much does back pain affect your ability to sit?	No effect	3
	Mildly or moderately affected	2
	Difficult	1
	Not possible	0
How much does back pain affect your ability to walk?	No effect	3
	Mildly or moderately affected	2
	Difficult	1
	Not possible	0
How much does back pain affect your ability to sleep?	No effect	3
	Mildly or moderately affected	2
	Difficult	1
	Not possible	0
How much does back pain affect your ability to travel?	No effect	3
	Mildly or moderately affected	2
	Difficult	1
	Not possible	0
How much does back pain affect your sex life?	No effect	6
	Mildly or moderately affected	4
	Difficult	2
	Not possible	0

Table 3: Assessment of stiffness

Assessment of stiffness
0- No stiffness
1- Some stiffness exists, which can be ignored
2- Some stiffness exists, which can be ignored at times, but doesn't impair daily activities
3- Stiffness exists, which demands a higher level of mental awareness when performing some duties and activities.
4- Severe stiffness exists, which impairs every duty and activity

Table 4: Assessment of functional ability (Sugarbaker and barofsky clinical mobility scale)

Assessment of functional ability (Sugarbaker and barofsky clinical mobility scale)		
Mobility parameter	**Finding**	**Rating**
Upright posture (how patient functions with or without prosthesis)	Does not stand	0
	Stands only with personal assistance	1
	Stands with the assistance of a hand-held appliance (crutch, cane, walker)	2
	Stands without assistance	3
Walking (how patient functions with or without prosthesis)	Does not walk	0
	Walks only with personal assistance	1
	Walks with the assistance of a hand-held appliance (crutch, cane, walker)	2
	Walks without assistance	3

Gait (how patient functions with or without prosthesis)	Walks slowly or not at all	0
	Walks at a moderately slow pace	1
	Walks briskly	2
	Can jog or run	3
Sitting (how patient functions with or without prosthesis)	Sits only for short periods of time and prefers to lie down	0
	Sits without discomfort for short periods of time (1 hr)	1
	Sits without discomfort for longer periods of time (over 1 hr)	2
	Sits without discomfort	3
Stair climbing (how patient functions with or without prosthesis)	Cannot climb stairs	0
	Climbs stairs with assistance of another person	1
	Climbs stairs with assistance of hand rail and/or crutches	2
	Climbs stairs unassisted	3
Hand-held appliances (crutches and canes)	Cannot use crutches or cane	0
	Must use crutches	1
	Uses single crutch or cane or two crutches intermittently	2
	Uses no hand-held appliance	3
Wheelchair	Moves with the aid of wheelchair most of time	0
	Moves with the aid of wheelchair only for long distances	1
	Occasionally uses wheelchair	2
	Never uses wheelchair	3
Time usage	Spends most day in bed or on couch at home	0
	Spends most of day in chair at home	1
	Spends most of day ambulatory but confined to the house	2
	Spends most of day ambulatory	3

Table 5: Functional Disability (Oswestry Disability assessment Questionnaire)

Functional Disability (Oswestry Disability assessment Questionnaire)
Questionnaire description: 10 sections describing the pain and its impact with each section scored from 0-5, with higher values indicating more severe impact.
Section 1: Pain Intensity
• I can tolerate the pain I have without having to use pain killers. [0 points]
• The pain is bad but I manage without taking pain killers. [1 point]
• Pain killers give complete relief from pain. [2 points]
• Pain killers give moderate relief from pain. [3 points]
• Pain killers give very little relief from pain. [4 points]
• Pain killers have no effect on the pain and I do not use them. [5 points]
Section 2: Personal Care
• I can look after myself normally without causing extra pain. [0 points]
• I can look after myself normally but it causes extra pain. [1 point]
• It is painful to look after myself and I am slow and careful. [2 points]
• I need some help but manage most of my personal care. [3 points]
• I need help every day in most aspects of self-care. [4 points]
• I do not get dressed, wash with difficulty and stay in bed. [5 points]

Section 3: Lifting
• I can lift heavy weights without extra pain. [0 points]
• I can lift heavy weights but it gives extra pain. [1 point]
• Pain prevents me from lifting heavy weights off the floor, but I can manage if they are conveniently positioned, for example, on a table. [2 points]
• Pain prevents me from lifting heavy weights but I can manage light to medium weights if they are conveniently positioned. [3 points]
• I can lift only very light weights. [4 points]
• I cannot lift or carry anything at all. [5 points]
Section 4: Walking
• Pain does not prevent me walking any distance. [0 points]
• Pain prevents me walking more than 1 mile. [1 point]
• Pain prevents me walking more than 0.5 miles. [2 points]
• Pain prevents me walking more than 0.25 miles. [3 points]
• I can only walk using a stick or crutches. [4 points]
• I am in bed most of the time and have to crawl to the toilet. [5 points]
Section 5: Sitting
• I can sit in any chair as long as I like. [0 points]
• I can only sit in my favourite chair as long as I like. [1 point]
• Pain prevents me sitting more than 1 hour. [2 points]
• Pain prevents me from sitting more than 0.5 hours. [3 points]
• Pain prevents me from sitting more than 10 minutes. [4 points]
• Pain prevents me from sitting at all. [5 points]
Section 6: Standing
• I can stand as long as I want without extra pain. [0 points]
• I can stand as long as I want but it gives me extra pain. [1 point]
• Pain prevents me from standing for more than 1 hour. [2 points]
• Pain prevents me from standing for more than 30 minutes. [3 points]
• Pain prevents me from standing for more than 10 minutes. [4 points]
• Pain prevents me from standing at all. [5 points]
Section 7: Sleeping
• Pain does not prevent me from sleeping well. [0 points]
• I can sleep well only by using tablets. [1 point]
• Even when I take tablets I have less than 6 hours sleep. [2 points]
• Even when I take tablets I have less than 4 hours sleep. [3 points]
• Even when I take tablets I have less than 2 hours of sleep. [4 points]
• Pain prevents me from sleeping at all. [5 points]
Section 8: Sex Life
• My sex life is normal and causes no extra pain. [0 points]
• My sex life is normal but causes some extra pain. [1 point]
• My sex life is nearly normal but is very painful. [2 points]
• My sex life is severely restricted by pain. [3 points]

• My sex life is nearly absent because of pain. [4 points]
• Pain prevents any sex life at all. [5 points]
Section 9: Social Life
• My social life is normal and gives me no extra pain. [0 points]
• My social life is normal but increases the degree of pain. [1 point]
• Pain has no significant effect on my social life apart from limiting my more energetic interests such as dancing. [2 points]
• Pain has restricted my social life and I do not go out as often. [3 points]
• Pain has restricted my social life to my home. [4 points]
• I have no social life because of pain. [5 points]
Section 10: Traveling
• I can travel anywhere without extra pain. [0 points]
• I can travel anywhere but it gives me extra pain. [1 point]
• Pain is bad but I manage journeys over 2 hours. [2 points]
• Pain restricts me to journeys of less than 1 hour. [3 points]
• Pain restricts me to short necessary journeys less than 30 minutes. [4 points]
•Pain prevents me from travelling except to the doctor or hospital. [5 points]

Table 6: Assessment of neurological deficit

Assessment of neurological deficit		
Parameter	**Finding**	**Points**
Neurological signs	Normal	0
	Reflex asymmetry, age > 50 or previous surgery	0
	Reflex asymmetry, age <=50 years of age	5
	Motor weakness	10
	Sensory deficit	10
	Motor and sensory deficits	25
Root tension signs	List-flexed knee stance	10
	Femoral nerve stretch positive	10
	Unilateral straight leg raising>75°	0
	Unilateral straight leg raising 60-75°	10
	Unilateral straight leg raising <60°	20
	Crossed straight leg response	20

RESULTS

Subjective parameters

Effect of *Vardhamana Lashuna Rasayana* and *Vardhamana Balamoola Rasayana* in pain

Effect on Group A

The efficacy of *Vardhamana Lashuna Rasayana* in pain management was evaluated in 15 subjects using the Greenough and Fraser pain scoring scale, where higher scores indicate better performance. Results showed a significant increase in mean pain scores, from 25.933 to 37.46, after treatment, indicating improved pain management. The Wilcoxon Signed Rank test confirmed this improvement to be highly statistically significant ($P < 0.001$).

Effect on group B

The efficacy of *Vardhamana Balamoola Rasayana* in pain management was evaluated in 15 subjects using the Greenough and Fraser pain scoring scale, where higher scores indicate better performance. Results showed a significant increase in mean pain scores, from 20.0 to 38.933, after treatment, indicating a substantial improvement in pain management. The Wilcoxon Signed Rank test confirmed this improvement to be highly statistically significant (P < 0.001).

Table 7: Statistical analysis within the group on the effect of *Vardhamana lashuna rasayana* and *Vardhamana balamoola rasayana* in pain

Group	Mean		BT -AT	% of Relief						
	BT	AT				SD	SE	Median	Z	P
Group A N = 15	25.933	37.467	11.800	45.5%	BT	10.271	2.652	22.000	-3.295	P = <0.001
	0				AT	11.482	2.965	40.000		
Group B N=15	20.0	38.933	18.933	94.665%	BT	2.332	0.312	19.000	-3.410	P = <0.001
	0				AT	3.214	0.405	40.000		

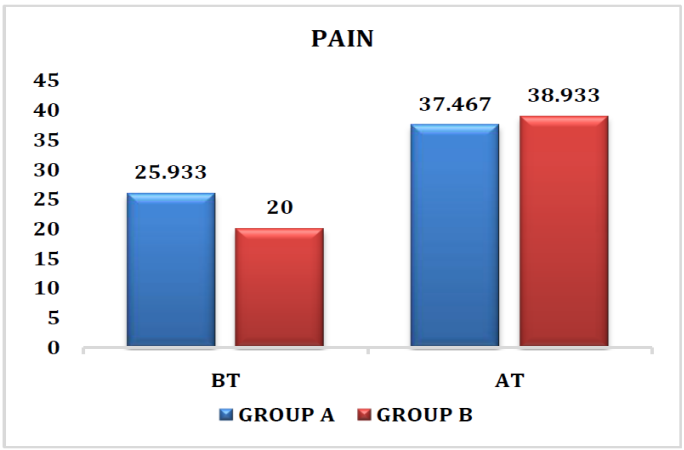

Figure 1 Effect on pain within the groups

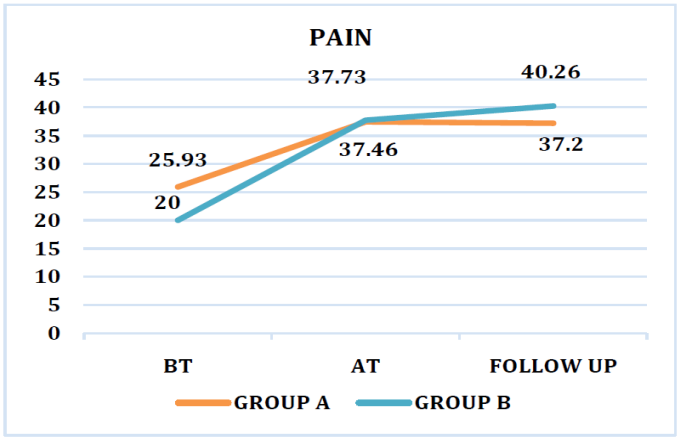

Figure 2 Follow up on pain

Effect of *Vardhamana Lashuna Rasayana* and *Vardhamana Balamoola Rasayana* in *Sthamba*

Effect on group A

The effect of *Lashuna Rasayana* on *Sthamba* before and after treatment in 15 patients is given below. Statistical analysis revealed that the mean score of *Sthamba* which was 2.667 has been reduced to 1.175 after the treatment. By adopting Wilcoxon Signed Rank test, it is found that change that occurred with the treatment is greater than would be expected by chance, there is a statistically significant difference (P = 0.012).

Effect on group B

The effect of *Balamoola Rasayana* on *Sthamba* before and after treatment in 15 patients is given below. Statistical analysis revealed that the mean score of *Sthamba* which was 2.667 has been reduced to 0.933 after the treatment. By adopting Wilcoxon Signed Rank test, it is found that change that occurred with the treatment is greater than would be expected by chance, there is a statistically significant difference (P =<0.01).

Table 8: Statistical analysis within the group on the effect of *Vardhamana lashuna rasayana* and *Vardhamana balamoola rasayana* in Sthambha

Group	Mean		BT - AT	% of Relief						
	BT	AT				SD	SE	Median	Z	P
Group A N = 15	2.667	1.175	1.200	44.99%	BT	1.175	0.303	3.0	-2.496	0.012
	0				AT	1.534	0.396	1.0		
Group B N=15	2.667	0.933	1.733	64.97	BT	1.676	0.433	4.0	-3.130	0.001
	0				AT	1.033	0.267	1.0		

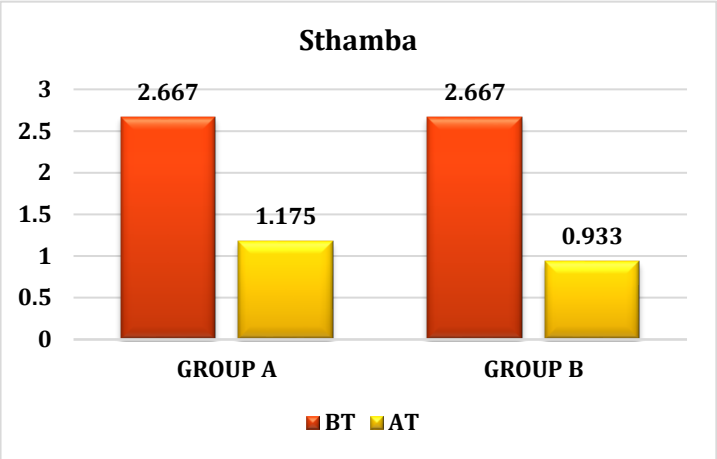

Figure 3: Effect on *Sthambha* within the groups

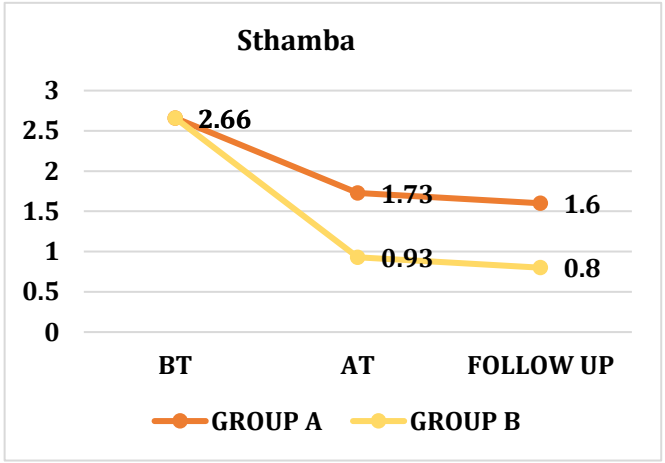

Figure 4: Follow up on *Sthambha*

Effect of *Vardhamana Lashuna Rasayana* and *Vardhamana Balamoola Rasayana* in Functional ability

Effect on group A

The efficacy of *Vardhamana Lashuna Rasayana* in functional ability was evaluated in 15 subjects using the Sugarbaker and Barofsky clinical mobility scale. Results showed a significant increase in mean functional ability scores, from 15.733 to 19.267, after treatment, indicating improved functional ability. The Wilcoxon Signed Rank test confirmed this improvement to be highly statistically significant ($P < 0.001$).

Effect on group B

The efficacy of *Vardhamana Balamoola Rasayana* in functional ability was evaluated in 15 subjects using the Sugarbaker and Barofsky clinical mobility scale. Results showed a significant increase in mean functional ability scores, from 15.200 to 19.867, after treatment, indicating improved functional ability. The Wilcoxon Signed Rank test confirmed this improvement to be highly statistically significant ($P < 0.001$).

Table 9: Statistical analysis within the group on the effect of *Vardhamana lashuna rasayana* and *Vardhamana balamoola rasayana* in functional ability

Group	Mean		BT - AT	% of Relief		SD	SE	Median	Z	P
	BT	AT								
Group A N = 15	15.733	19.267	3.533	22.455%	BT	4.877	1.259	17.000	-3.218	P = <0.001
	0				AT	3.411	0.881	20.000		
Group B N=15	15.200	19.867	4.667	30.70%	BT	3.144	0.812	16.000	-3.434	P = <0.001
	0				AT	2.800	0.723	21.000		

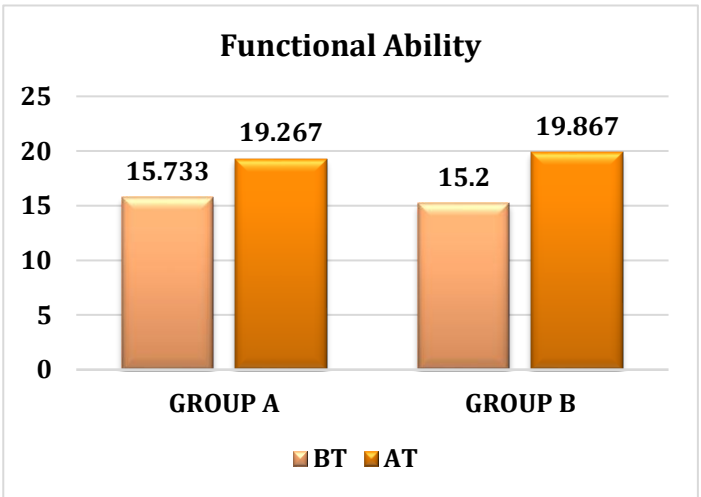

Figure 5: Effect on functional ability within the groups

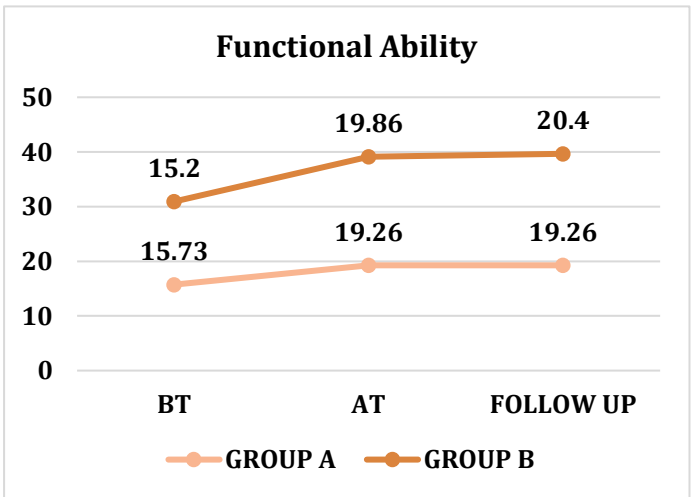

Figure 6: Follow up on functional ability

Effect of *Vardhamana Lashuna Rasayana* and *Vardhamana Balamoola Rasayana* in Functional disability

Effect on group A

This clinical study evaluated the efficacy of *Vardhamana Lashuna Rasayana* in reducing functional disability in 15 subjects, using the Oswestry Disability Index (ODI) questionnaire. The results showed a significant decrease in mean functional disability scores, from 25.87 to 16.80, indicating a 35% improvement in functional disability after treatment. Statistical analysis using the Wilcoxon Signed Rank test confirmed this improvement to be highly statistically significant (P < 0.001).

Effect on group B

This clinical study assessed the efficacy of *Vardhamana Balamoola Rasayana* in reducing functional disability. 15 subjects underwent Oswestry Disability Index (ODI) evaluations, revealing a significant decrease in mean functional disability scores from 30.06 to 16.86 after treatment, representing a 43.9% improvement in functional disability. The Wilcoxon Signed Rank test confirmed this improvement to be highly statistically significant (P < 0.001).

Table 10: Statistical analysis within the group on the effect of *Vardhamana lashuna rasayana* and *Vardhamana balamoola rasayana* in functional disability

Group	Mean		BT -	% of						
	BT	AT	AT	Relief		SD	SE	Median	Z	P
Group A N = 15	25.867	16.800	9.067	35.052	BT	7.927	2.047	27.0	-3.300	P= <0.001
					AT	8.002	2.066	15.0		
Group B N=15	30.067	16.867	13.200	43.90	BT	6.088	1.572	33.0	3.414	P= <0.001
	0				AT	6.728	1.737	16.0		

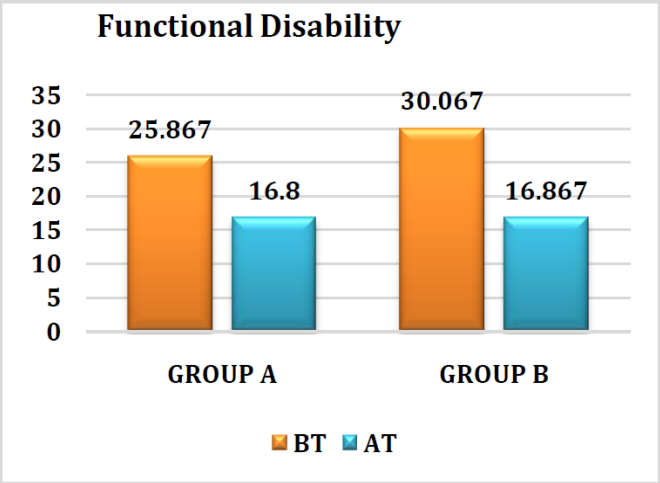

Figure 7: Effect on functional disability within the groups

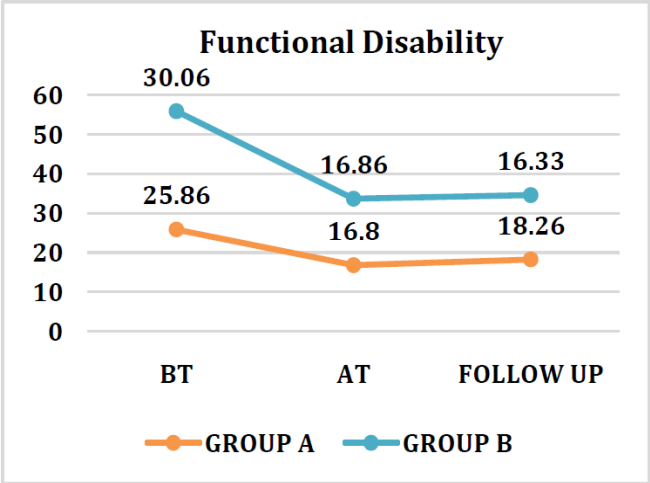

Figure 8: Follow up on functional disability

Objective parameters

Effect of *Vardhamana Lashuna Rasayana* and *Vardhamana Balamoola Rasayana* on Straight leg raising test (SLR)

Effect on group A

The effect of *Vardhamana lashuna rasayana* on straight leg raising test (SLR) and after treatment in 15 patients is given below. Statistical analysis revealed that the mean score of SLR which was 35 has been improved to 51 after the treatment. By adopting paired T test, it is found that the improvement recorded was statistically significant with P <0.001.

Effect on group B

The effect of *Vardhamana balamoola rasayana* on straight leg raising test (SLR) and after treatment in 15 patients is given below. Statistical analysis revealed that the mean score of SLR which was 39.667 has been improved to 64.333 after the treatment. By adopting paired T test, it is found that the improvement recorded was statistically significant with P <0.001.

Table 11: Statistical analysis within the group on the effect of *Vardhamana lashuna rasayana* and *Vardhamana balamoola rasayana* on SLR

Group	Mean		BT -	% of						
	BT	AT	AT	Relief		SD	SE	Median	T	P
Group A N = 15	35	51	16	45.71%	BT	13.496	3.485	40.00	9.388	P=<0.001
					AT	13.256	3.423	50.0		
Group B N=15	39.667	64.333	24.667	62.185 %	BT	7.188	1.856	40.0	9.646	P=<0.001
	0				AT	7.037	1.817	65.0		

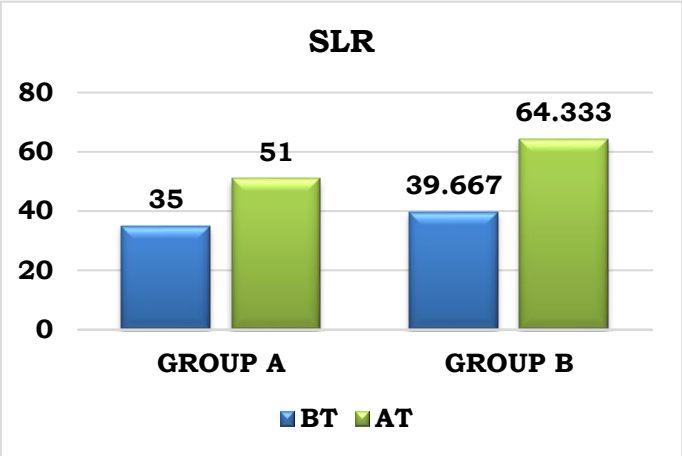

Figure 9: Effect on SLR within the groups

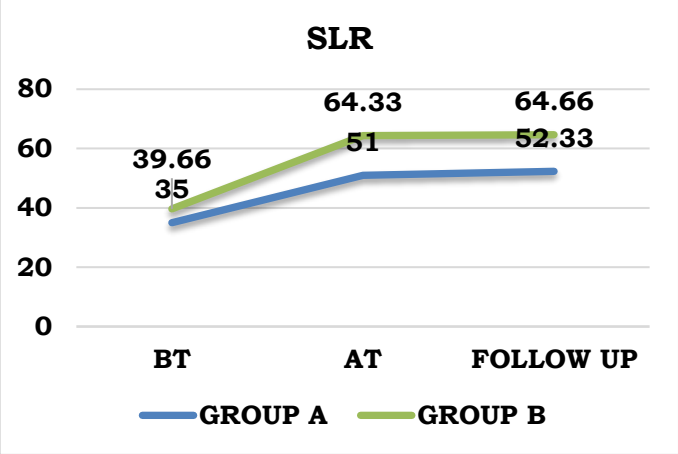

Figure 10: Follow up on SLR

Effect of *Vardhamana Lashuna Rasayana* and *Vardhamana Balamoola Rasayana* on Neurological deficit

Effect on group A

A clinical trial assessed *Vardhamana Lashuna Rasayana* effectiveness in reducing neurological deficits. 15 subjects underwent evaluations using the Neurological Deficit Assessment Scale, demonstrating a substantial decrease in mean scores from 38.33 to 24.0. This 37.5% improvement in neurological deficits translated to improved functional ability. The Wilcoxon Signed Rank test confirmed the highly statistically significant outcome ($P < 0.001$).

Effect on group B

A clinical trial evaluated the efficacy of *Vardhamana Balamoola Rasayana* in reducing neurological deficits. 15 subjects underwent assessments using the Neurological Deficit Assessment Scale, revealing a remarkable 58.6% decrease in mean scores, from 43.87 to 18.0. This substantial improvement in neurological deficits corresponded to significantly enhanced functional ability. Statistical analysis using the Wilcoxon Signed Rank test confirmed the highly statistically significant outcome ($P < 0.001$), underscoring the treatment's effectiveness.

Table 12: Statistical analysis within the group on the effect of *Vardhamana lashuna rasayana* and *Vardhamana balamoola rasayana* on neurological deficit

Group	Mean		BT -	% of						
	BT	AT	AT	Relief		SD	SE	Median	Z	P
Group A N = 15	38.333	24.0	14.333	37.39	BT	16.439	4.245	30.0	3.089	P= <0.001
					AT	14.904	3.848	20.0		
Group B N=15	43.867	18.0	25.867	58.966	BT	14.999	3.873	45.0	3.425	P= <0.001
	0				AT	10.488	2.708	20.0		

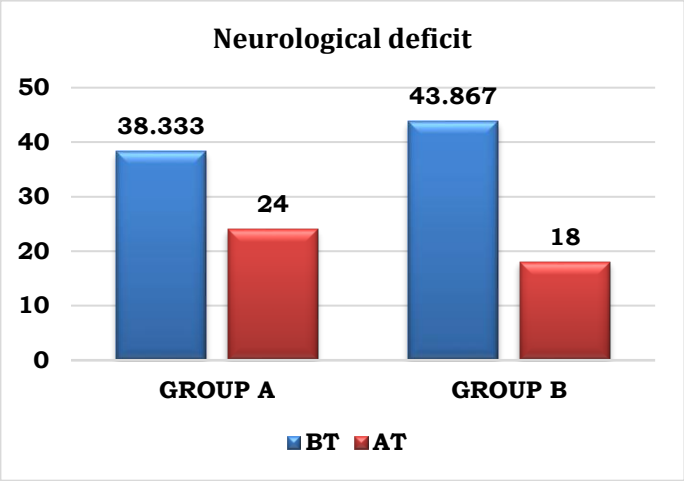

Figure 11: Effect on neurological deficit within the groups

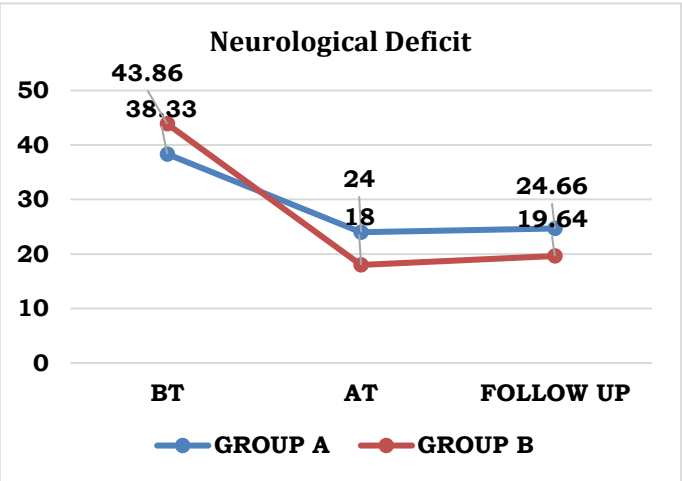

Figure 12: Follow up on neurological deficit

DISCUSSION

Gridhrasi, a *Vataja Nanatmaja Vyadhi*, is a complex condition characterized by *Vatadushti*, which plays a crucial role in its etiopathogenesis. *Rasayana Chikitsa*, a therapeutic approach that encompasses drugs, diets, and lifestyle interventions, is essential in managing *Vatavyadhi* by rejuvenating bodily cells and enhancing nutritional status. Prior cleansing through *Shodhana* (purificatory) procedures is necessary to optimize the effect of *Rasayana Chikitsa*.

Lashuna Rasayana, endowed with *Snigdha, Ushna*, *Pachana*, and *Brihmana* properties, has been found to effectively alleviate *Prakupita Vata* and *Kapha dosha*, addressing *Kevala* and *Margavaranajanya Vatavyadhi*. Recent studies on *Allium sativum* (*Lashuna*) have revealed its impressive bioactive profile, characterized by antimicrobial, antioxidant, anti-inflammatory, and cardioprotective effects. Furthermore, sulphur compounds in *Lashuna* stimulate neurotrophic factors production and neurogenesis, rendering it a potent remedy for neurological disorders.

Bala (Sida cordifolia Linn.), a highly esteemed herb in Ayurvedic medicine, has been found to be effective in managing *Vatavyadhi*. Its therapeutic profile, characterized by *Snigdha*, *Pichila guna*, and *Sheeta Veerya* properties, alleviates *Dhatu Kshaya* caused by *Vata Dosha*. Additionally, *Madhura Rasa* and *Madhura Vipaka* exhibit *Vatashamaka* properties, mitigating *Vata Dosha* and promoting *Brahmana* action.

The pathology of *Gridhrasi* involves both *Dhatu Kshayaja* and *Margavaranjanya*, with *Vata dosha* playing a primary role. Therefore, drugs with *Vata-harana* properties, such as *Balamoola*, are essential. Its specific *Karma*, including *Balya*, *Nadi Balya*, and *Rasayana,* makes it an effective treatment for *Gridhrasi.* Recent studies have validated the therapeutic potential of Sida cordifolia in managing osteoporosis, a critical factor in the development of sciatica syndrome. Its phytoconstituents, particularly polyphenols, phenolic acids, and flavonoids, exhibit antioxidant activity and down-regulate KIF-17 and NR2B expression, key proteins involved in pain transmission. This results in pain inhibition through reduced neuro-inflammation and glial activity.

CONCLUSION

The present study conclusively demonstrates the efficacy of *Vardhamana Balamoola Rasayana* in managing *Gridhrasi*, yielding statistically significant improvements in pain scores, *Sthamba* symptoms, functional ability, and functional disability. Notably, *Balamoola Rasayana* exhibited a more pronounced therapeutic effect than *Vardhamana Lashuna Rasayana* in alleviating neurological deficits. Both treatments were well-tolerated, with minimal adverse events reported. These findings suggest that *Vardhamana Balamoola Rasayana* is a valuable adjunctive therapy for managing *Gridhrasi*. Further research is necessary to fully explore the potential of *Rasayana Aushadi* in alleviating symptoms and promoting overall health and well-being. This study contributes to the growing body of evidence supporting the integration of traditional Ayurvedic therapies into modern healthcare practices, underscoring the importance of evidence-based research in advancing Ayurveda's growth and acceptance.

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