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A COMPARATIVE CLINICAL EVALUATION OF *BALADI YAPANA BASTI* AND *HAPUSHADI YAPANA BASTI* IN *KATI GRAH*- RESEARCH ARTICLE

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ABSTRACT

- Lumbar spondylosis is described as a degenerative disorder affecting the lumbosacral region of the spine, resulting in intervertebral disc degeneration. According to *Gada Nigraha*, *Kati Grah* is one of the disorder of impaired *Vata* having Joint stiffness (*Kati Stambha*), Low backache (*Kati Shoola*), Restriction of movement (*Akunchan Prasarane Akshamta)*, Numbness (*Kati Suptata*). *Panchakarma* is the pivot of *Ayurveda* cosmos. *Basti Karma* is known to be the best remedy for *Vata* disorders thus for this research, open labelled clinical study was done wherein 50 patients were taken in random manner having symptoms of *Kati Grah* and were divided into two groups, group A received *Baladi Yapana Basti* and group B received *Hapushadi Yapana Basti* for 8 days evaluation and the result of both the group exhibited that the improvement provided by group A was better in both sign & symptoms like *Kati Shool*, *Akunchan*

Prasarane Akshamta, *Kati Suptata* in comparison to group B.

KEYWORDS: Kati Grah, Vata Vyadhi, Lumbar Spondylosis, Baladi Yapana Basti, Hapushadi Yapana Basti, Panchakarma.

INTRODUCTION

The vertebral column represents one of the most intricate and functionally significant structures of the musculoskeletal system owing to its complex biomechanics, susceptibility to degenerative alterations, and the profound disability arising from its dysfunction. Among its various segments, the lumbar spine bears the principal responsibility of supporting the weight of the upper body while simultaneously facilitating mobility and maintaining postural stability. This constant mechanical stress renders the lumbar region particularly vulnerable to degenerative changes and mechanical strain, thereby contributing substantially to chronic low back disorders.

The contemporary era, characterized by rapid industrialization, sedentary lifestyle, prolonged occupational sitting, and reduced physical activity, has witnessed a marked increase in degenerative musculoskeletal disorders, particularly those involving the vertebral column. Among these, Lumbar Spondylosis has emerged as one of the most prevalent causes of chronic low back pain and disability. Lumbar Spondylosis is a degenerative disorder involving osteophytosis, intervertebral disc degeneration, disc desiccation, and facet joint arthropathy, commonly manifested by chronic low back pain, stiffness, restricted movements, and radiculopathic symptoms leading to considerable functional impairment and deterioration in quality of life.[1]

Although the prevalence of low back pain (LBP) has remained relatively stable globally, the disability associated with it has increased significantly. In the United States, back pain accounts for approximately 175.8 million days of restricted activity annually. At any given time, nearly 2.4 million Americans suffer disability due to low back pain, of which nearly half experience chronic manifestations. Furthermore, low back pain has been recognized as one of the leading causes of disability among individuals below 45 years of age.[2] In 1990 alone, nearly 400,000 industrial low back injuries resulted in disability in the United States.[3] These statistics highlight the enormous socioeconomic burden imposed by degenerative spinal disorders.

Ayurvedic classics describe that symptoms, when fully manifested, may evolve into distinct disease entities. The clinical presentation of Lumbar Spondylosis closely resembles *Kati Graha*, described under the spectrum of *Vata Vyadhi*, particularly among the *Nanatmaja Vata Vikara*.[4] The term "*Kati*" denotes the lumbar region, while "*Grah*" implies stiffness, restriction, or painful immobilization. Clinically, the condition is characterized by *Stambha* (stiffness), *Ruk* (pain), and *Grah* (restriction of movement) localized to the *Kati Pradesh*.

According to Ayurvedic principles, the pathogenesis of *Kati Grah* is predominantly attributed to the vitiation of *Vata Dosha*. Owing to its inherent qualities such as *Ruksha* (dry), *Laghu* (light), *Sheeta* (cold), and *Khara* (rough), aggravated *Vata* induces *Dhatu Kshaya* and *Dhatvagni Mandya*, resulting in degeneration of *Asthi Dhatu* and its associated structures. Consequently, degeneration, pain, stiffness, and restriction of movement manifest progressively in the lumbosacral region.[5]

The conventional biomedical management of Lumbar Spondylosis primarily focuses on symptomatic relief through analgesics, non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, physiotherapy, epidural steroid injections, and surgical interventions in severe or refractory cases. However, these therapeutic approaches often provide temporary relief and are associated with limitations such as adverse drug reactions, dependency, recurrence, and high treatment costs. Therefore, there remains a growing need for safer, holistic, and more effective therapeutic strategies that address both symptomatology and underlying pathology.[6]

Ayurveda advocates a comprehensive and holistic approach in the management of *Vata Vyadhi*, wherein *Basti Karma* is considered the foremost therapeutic modality. *Acharya Charaka* emphasizes *Basti* as the supreme treatment for aggravated *Vata*.[7] *Basti Karma* includes the administration of medicated decoctions (*Niruha Basti*) and unctuous formulations (*Anuvasana Basti*) through the rectal route. It exerts multidimensional therapeutic effects including *Vata Anulomana, Srotoshodhana, Brimhana*, and *Balya*.

Among various *Basti* regimens, *Yoga Basti* involves a systematic administration of *Anuvasana* and *Niruha Basti* in a planned sequence to restore the equilibrium of *Dosha, Dhatu*, and *Mala*. Since *Pakvashaya* is considered the principal seat of *Vata*, rectal administration of *Basti* directly influences the pathophysiology of *Vata* disorders.

Furthermore, the *Rasayana* and *Brimhana* properties of *Basti* help nourish *Asthi* and *Majja Dhatu*, thereby arresting degenerative processes and improving functional capacity.[8]

Previous clinical studies and empirical evidence have demonstrated the efficacy of *Basti Karma* in alleviating the clinical features of *Kati Grah*, including reduction in pain (*Shoola*), stiffness (*Stambha*), and improvement in mobility (*Chalana Shakti*). Additionally, *Basti* therapy enhances overall strength, Ojas, and *Vyadhikshamatva*, thereby reducing recurrence and improving quality of life.[9]

Considering the increasing prevalence of Lumbar Spondylosis, its significant impact on the productive age group, the chronicity and severity of symptoms, limitations of conventional management, and the classical references highlighting the efficacy of *Basti* therapy in *Kati Grah*, the present open-label randomized clinical trial was undertaken to evaluate the therapeutic efficacy of *Yoga Basti* in the management of *Kati Grah* with special reference to Lumbar Spondylosis.

AIM AND OBJECTIVES

The study was carried out as per clinical research and ethical guide lines to fulfill the following aims and objectives

1. Assessment of the clinical efficacy of *Baladi Yapana Basti* in the management of *Kati Grah.*
2. Assessment of the clinical efficacy of the *Hapushadi Yapana Basti* in the management of *Kati Grah.*

MATERIALS AND METHODS

Patients with classical features of *Kati Grah* will be selected randomly from OPD and I.P.D of Patanjali Bhartiya Ayurvigyan avum Anusandhan Sansthan, Haridwar. It will be a clinical study with pre and post-test design wherein a minimum of 50 patients suffering from *Kati Grah* will be selected irrespective of their gender, caste, creed or occupation. Patients will be divided randomly into 2 groups each comprising of 25-25 patients on the basis of inclusion and exclusion criteria with detailed clinical history and physical examination and other necessary investigations.

a. INCLUSION CRITERIA

- Age 18- 60 years

- Either sex
- Patients with classical features of Kati Grah.
- Diagnosed case of Lumbar spondylosis (LS).
- Patients fit for *Basti*.

b. EXCLUSION CRITERIA

- Diagnosed case Tuberculosis (Tubercular sacroiliitis, Potts Spine etc.)
- Pregnancy & lactating mothers.
- Patients who are unfit for *Basti* karma.
- Any diagnosed case of major systemic disorder like Chronic Renal Failure, Liver Cirrhosis etc.

Research design

It is a randomized open label clinical study where patients were assigned in two groups each comprising of 25 patients and a period of treatment for 8 days.

Group-A

Patients of this group were administered Baladi yapana *Basti* with yoga *Basti* schedule with Anuvasana *Basti* of *Sahacharadi Tail*.

Group-B

Patients of this group were administered Hapushadi yapana *Basti* with yoga *Basti* schedule with *Anuvasana Basti* of *Sahacharadi Tail*.

COMPOSITION OF MEDICINE

Ingredients of *Baladi Yapana Basti*	**Quantity**
Madhu	96 ml
Saindhav	8 gm
Taila	144 ml
Kalka- *yashtimadhu, shatpushpa, kushta,pippali, vacha, indraYava, Rasanjan, priyangu, Yavani*	48 gm
Kwath- *Bala, AtiBala, Rasna, Ashwagandha, Madanphala, Aragvadha, Bilva, Guduchi, Punarnava, Eranda, Sahachara, Palasha, Devadaru, Agnimantha, Gambhari, Shyonaka, Brihati, Shalaparni, Kantakari, Gokshura, Prishnaparni, Patala, Yava, Kola, Kulattha*	192 ml
Ksheera	40 ml
Masha Rasa	80 ml

Ingredients of Anuvasana *Basti*

Sahcharadi Tail -72ml.

Procedure - *Niruha Basti*

Poorva Karma*: Niruha-Basti* is indicated to be administered at noon (*Madhyahna*), after the digestion of previous meal or empty stomach. It is presumed that when stomach is full, peristalsis is stimulated, and intestinal contents are pushed to end point. If *Niruha* is given in full stomach, it will hamper the intestinal activities leading to complications. *Sarvanga Abhyanga* with suitable *Sneha* and *Sarvanga Vashp Swedan* should be done prior to the administration of *Basti*. Patient is asked to lie down on his left side and keep head on his arms in form of pillow with body relaxed and straight. The right leg should be drawn up to his chest and the left leg should be straightened.

Pradhan Karma: The *Basti* is taken in the *Basti-Putaka* and tied well placing the *Basti Netra* in position. The trapped air in *Basti-Yantra* is expelled by gently pressing the *Basti Putaka*. Anal region and the *Netra* should be smeared with oil. Gently probe the anal orifice with the index finger of the left hand and introduce the *Basti Netra* through it into the rectum up to first *Karnika* without shaking. Keeping in the same position, press the *Basti Putaka* with right hand with adequate force. The amount of time taken for squeezing should be 30 *Matra Kala*. Remove carefully the *Basti-Netra* when a little quantity of *Niruha* has remained inside the *Basti Putaka*.

Pashchat Karma: Patient should be gently struck three times on each of the soles and over the buttocks. He is made to lie on his back as long as it would take to count up to hundred. The lower limb should be in raised position by means of pillow in such a way that the active principle (*Veerya*) of the *Basti* spreads throughout the body. If a patient gets the urge for defecation he can attend. After passing the motion at an appropriate time patient is allowed to take solid food immediately. Nutritional food must be given since after taking food *Kapha* is increased and has nullifying action on *Vata Vriddhi* produced by *Niruha*.

CRITERIA OF ASSESSMENT

Ingredients of *Hapushadi Yapana Basti*	**Quantity**
Madhu	96 gm
Saindhav	10 gm
Taila	144 ml
Hapusha	80 gm

Yava	160 gm
Dugdha	480 ml

SUBJECTIVE PARAMETERS

GRADING FOR KATI SHOOLA (Back pain)

Symptoms	Score
No pain	0
Mild pain	1
Moderate pain but no difficulty in moving	2
Severe pain with much difficulty in moving	3

GRADING FOR *KATI STAMBHA* (stiffness)

Symptoms	Score
No Stiffness	0
Mild stiffness	1
Moderate stiffness	2
Severe stiffness	3

GRADING FOR *AKUNCHAN PRASARNAE AKSHAMTA* (restriction of movement)

Symptoms	Score
No restriction of movements	0
Restriction in any one movement of above	1
Restriction in any 2 movements	2
Restriction in any 3 movements	3

GRADING FOR *KATI SUPTATA* (Numbness)

Symptoms	Score
No numbness	0
Mild numbness	1
Moderate numbness	2
Severe numbness	3

OBJECTIVE ASSESSMENT

- **L. Lumbar Flexion**

>20	18-19.9	15.9-17.9	13.8-15.8	11.7-13.7	9.6-11.6	7.5-9.5	5.4-7.4	3.3-5.3	1.2-3.2	<1.2
0	1	2	3	4	5	6	7	8	9	10

- **SCHOBER'S TEST**

>7.0	6.4-7.0	5.7-6.3	5.0-5.6	4.3-4.9	3.6-4.2	2.9-3.5	2.2-2.8	1.5-2.1	0.8-1.4	=<0.7
0	1	2	3	4	5	6	7	8	9	10

OBSERVATIONS AND RESULTS

Table 1: Within-group efficacy of Group A on subjective parameters (Wilcoxon Signed-Rank Test).

Parameter	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
***Kati Shoola* (Pain)**	1.92	0.64	2.00	0.00	0.57	0.86	0.000	0.0000353	66.67%	Sig
***Kati Stambha* (Stiffness)**	1.04	0.72	1.00	1.00	0.89	0.68	0.000	0.0114	30.77%	Sig
***Akunchan-Prasarana Akshamata* (Restricted Movement)**	1.28	0.48	1.00	0.00	0.79	0.51	0.000	0.0001047	62.50%	Sig
***Kati Suptata* (Numbness)**	0.28	0.04	0.00	0.00	0.46	0.20	0.000	0.0143	85.71%	Sig

Table 2: Within-group efficacy of Group B on subjective parameters (Wilcoxon Signed-Rank Test).

Parameter	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
***Kati Shoola* (Pain)**	1.80	1.00	2.00	1.00	0.58	0.71	0.000	0.0000802	44.44%	Sig
***Kati Stambha* (Stiffness)**	1.28	0.76	1.00	1.00	0.74	0.66	0.000	0.0007891	40.62%	Sig
***Akunchan-Prasarana Akshamata* (Restricted Movement)**	1.20	0.52	1.00	0.00	1.00	0.65	0.000	0.0013	56.67%	Sig
***Kati Suptata* (Numbness)**	0.36	0.08	0.00	0.00	0.57	0.28	0.000	0.0082	77.78%	Sig

Table 3: Within-group efficacy of Group A on objective parameters (Wilcoxon Signed-Rank Test).

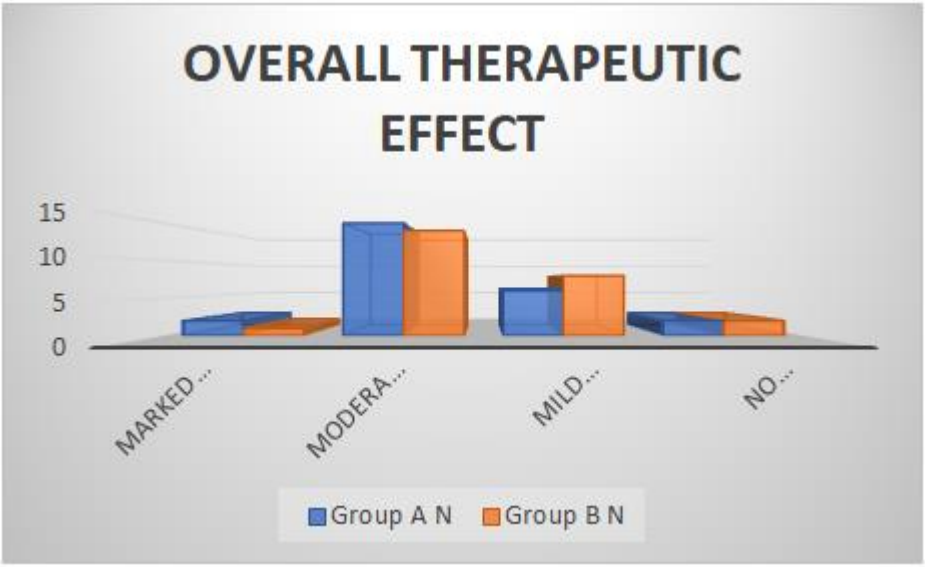
Parameter	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
Lateral Lumbar Flexion (Right)	2.32	1.12	2.00	1.00	0.75	0.73	0.000	0.0000335	51.72%	Sig
Lateral Lumbar Flexion (Left)	2.20	0.92	2.00	1.00	0.71	0.91	0.000	0.0000374	58.18%	Sig
Schober's Test	2.16	0.84	2.00	1.00	0.62	0.80	0.000	0.0000243	61.11%	Sig

Table 4: Within-group efficacy of Group B on objective parameters (Wilcoxon Signed-Rank Test).

Parameter	Mean		Median		SD		Wilcoxon W	P-Value	% Effect	Result
	BT	AT	BT	AT	BT	AT				
Lateral Lumbar Flexion (Right)	2.08	1.24	2.00	1.00	1.00	0.93	0.000	0.0000632	40.38%	Sig
Lateral Lumbar Flexion (Left)	2.20	1.20	2.00	1.00	0.91	0.87	0.000	0.0000356	45.45%	Sig
Schober's Test	2.24	1.36	2.00	1.00	0.83	0.57	0.000	0.0000636	39.29%	Sig

RESULTS

Diagram 1: Assessment of Overall Effect of therapy:



In Group A, the distribution of overall therapeutic outcome was as follows: 36.00% Marked Improvement, 48.00% Moderate Improvement, 16.00% Mild Improvement, 8.00% No Improvement.

In Group B, the corresponding distribution was: 16.00% Marked Improvement, 40.00% Moderate Improvement, 28.00% Mild Improvement, 8.00% No Improvement. These findings, taken together with the per-parameter statistics, support the conclusion that Group A achieved a higher proportion of patients in the marked-to-moderate improvement bands while Group B retained a higher proportion of mild improvement, with both groups recording comparable rates of non-response.

DISCUSSION

The present study demonstrated significant improvement in both subjective and objective parameters in patients of *Kati Grah* with special reference to Lumbar Spondylosis, indicating the efficacy of the therapy in reducing symptoms and improving functional status. Among the subjective parameters, *Kati Shoola* (pain) showed 66.67% relief with reduction in mean score from 1.92 to 0.64, which may be attributed to the *Vatahara*, *Vedanasthapana*, and *Shothahara* properties of the therapy that help reduce inflammation, muscular spasm, and nerve irritation. *Kati Stambha* (stiffness) improved by 30.77%, possibly due to the *Ushna* and *Snigdha* qualities of the treatment that enhance circulation and reduce rigidity in the lumbar region. *Akunchana-Prasarana Akshamata* (restricted movements) showed 62.50% improvement,

likely resulting from reduction in pain and stiffness, thereby improving flexibility and functional mobility. *Kati Suptata* (numbness) demonstrated maximum improvement of 85.71%, suggesting effective action of the therapy on neuromuscular involvement and *Vata Dushti* affecting sensory functions. Objective assessment through lumbar flexion tests also revealed encouraging results. In lateral lumbar flexion on both sides, Group A showed comparatively higher mean ranks than Group B, though the differences were statistically insignificant ($p>0.05$), indicating comparable improvement in spinal movements in both groups. Schober's test showed statistically significant improvement in Group A compared to Group B ($p=0.0277$), suggesting better enhancement in lumbar flexion and spinal flexibility. The overall improvement observed in objective parameters may be due to reduction in pain, stiffness, muscular spasm, improved circulation, and nourishment of supporting structures of the lumbar spine. Thus, the findings of the study indicate that the therapy was effective in alleviating clinical symptoms and improving mobility and functional efficiency of the lumbosacral region.

CONCLUSION

Vata Dosha is the principal force governing movement, coordination, and sensory functions in the body. *Kati Grah*, one among the 80 *Nanatmaja Vata Vikara*, occurs due to vitiation of *Vata* Dosha and can be clinically correlated with Lumbar Spondylosis based on its symptomatology, pathogenesis, and complications as described in *Gada Nigraha*. The etiological factors responsible for *Vata Prakopa* also contribute significantly to the development of Lumbar Spondylosis. *Baladi Yapana Basti*, though indicated generally in *Kati Grah*, appears to be more effective in *Vataja* and *Vata-Kaphaja* conditions due to its *Vatahara* and *Brimhana* properties, whereas in *Pitta*-predominant individuals, symptoms may aggravate because of the *Ushna Veerya* of its ingredients. After proper assessment and diagnosis, *Baladi Yapana Basti* administered in *Yoga Basti* schedule helped normalize vitiated *Vata Dosha* and promoted rejuvenation and strengthening of neuromuscular functions. *Basti Karma* acts through the *Veerya* of the drugs, which after reaching the *Pakwashaya* spreads throughout the body to exert systemic therapeutic effects. The *Kalka Dravya* enhances the potency and efficacy of the formulation, resulting in gradual symptomatic improvement. Additionally, *Basti* may influence the gut microbiome and regulate the enteric nervous system, thereby contributing to overall clinical improvement.

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