



Ayurvedic Panchkarma Intervention in Low Back Pain: A Comparative Study of Systemic vs Local Vasti in Katishula Patients

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Abstract

Low Back Pain (LBP) is one of the most prevalent musculoskeletal disorders worldwide and is a leading cause of disability and reduced quality of life. In Ayurveda, Low Back Pain can be correlated with Katishula, a condition primarily caused by aggravated Vata Dosha. Panchakarma therapies, particularly Vasti procedures, are considered highly effective in the management of Vata disorders. Among these, Vaitarana Vasti acts systemically through the gastrointestinal tract, whereas Kati Vasti exerts localized therapeutic effects on the lumbar region. Comparative scientific evidence regarding their relative efficacy remains limited. The study aimed to compare the therapeutic efficacy of systemic Vasti (Vaitarana Vasti) and local Vasti (Kati Vasti) in patients suffering from Katishula. The objectives included assessment of pain, stiffness, functional disability, lumbar mobility, and overall clinical improvement. A randomized comparative clinical study was conducted on 60 patients diagnosed with Katishula. Participants were randomly allocated into two groups. Group A received Vaitarana Vasti and Group B underwent Kati Vasti therapy for eight consecutive days. Clinical evaluation was performed using Visual Analog Scale (VAS), Oswestry Disability Index (ODI), tenderness score, lumbar flexion assessment, and Straight Leg Raising (SLR) test. Statistical analysis was performed using paired and independent t-tests. Both treatment modalities produced statistically significant improvement in pain, stiffness, disability, and lumbar mobility. However, patients receiving Vaitarana Vasti demonstrated comparatively greater clinical improvement than those receiving Kati Vasti. The study suggests that both systemic and local Vasti therapies are effective in managing Katishula. However, systemic Vaitarana Vasti may provide superior therapeutic benefits due to its comprehensive action on aggravated Vata Dosha.

Keywords: Katishula, Low Back Pain, Panchakarma, Vaitarana Vasti, Kati Vasti, Ayurveda, Vata Dosha, Clinical Trial.

1. Introduction

Low Back Pain is among the most common health problems affecting individuals across all age groups and occupational categories. It significantly impacts physical functioning, productivity, and quality of life. According to global health reports, low back pain remains one of the primary causes of years lived with disability and imposes a considerable socioeconomic burden on healthcare systems worldwide. In Ayurveda, the clinical features of low back pain closely resemble those of Katishula. The term “Kati” refers to the lumbar region, while “Shula” denotes pain. Katishula is predominantly considered a Vataja disorder resulting from the aggravation of Vata Dosha due to improper diet, excessive physical exertion, trauma, aging, prolonged sitting, and suppression of natural urges. The aggravated Vata localizes in the lumbar region and produces pain, stiffness, restricted movement, and functional disability.

Ayurveda emphasizes the correction of underlying doshic imbalance rather than merely alleviating symptoms. Panchakarma therapies constitute the principal therapeutic approach for chronic Vata disorders. Among Panchakarma procedures, Vasti occupies a unique position and is often described as the most effective treatment for Vata-related diseases. Vaitarana Vasti is a systemic therapy administered through the rectal route and is known for its ability to eliminate aggravated doshas, improve metabolism, reduce inflammation, and restore physiological balance. In contrast, Kati Vasti is a localized treatment involving retention of warm medicated oil over the lumbar region to relieve pain and stiffness through local therapeutic action. Although both interventions are widely practiced in Ayurvedic clinical settings, comparative evidence regarding their effectiveness remains limited. Therefore, the present study was undertaken to compare systemic and local Vasti therapies in the management of Katishula and to establish evidence-based Panchakarma treatment strategies.

2. Literature Review

2.1 Katishula in Ayurvedic Literature

Katishula is described under the broader category of Vata Vyadhi in classical Ayurvedic texts. Ancient scholars emphasized that aggravated Vata Dosha is responsible for pain, degeneration, and functional impairment in musculoskeletal disorders. The lumbar region is particularly susceptible to Vata-induced pathology due to continuous mechanical stress and age-related degeneration.

2.2 Contemporary Understanding of Low Back Pain

Modern medicine recognizes low back pain as a multifactorial disorder resulting from intervertebral disc degeneration, muscular strain, ligament injury, postural abnormalities, and degenerative spinal conditions. Despite advancements in pharmacological and surgical interventions, recurrence and chronicity remain significant challenges.

2.3 Panchakarma and Musculoskeletal Disorders

Panchakarma therapies are increasingly recognized for their effectiveness in chronic musculoskeletal disorders. These therapies facilitate detoxification, improve circulation, reduce inflammation, and restore tissue nourishment. Clinical studies have reported significant improvement in pain and functional capacity following Panchakarma interventions.

2.4 Systemic Vasti Therapy (Vaitarana Vasti)

Vaitarana Vasti is considered a specialized form of Niruhabasti indicated in Vata-Kapha disorders. It contains ingredients possessing Deepana, Pachana, Shothahara, and Vatahara properties. Through rectal administration, the formulation exerts systemic therapeutic effects and contributes to dosha elimination and physiological restoration.

Several clinical investigations have demonstrated the effectiveness of Vaitarana Vasti in reducing pain, stiffness, inflammation, and disability associated with musculoskeletal disorders.

2.5 Local Vasti Therapy (Kati Vasti)

Kati Vasti is a localized Panchakarma procedure designed specifically for lumbar disorders. Warm medicated oil retained over the lower back provides lubrication, nourishment, improved circulation, and muscular relaxation. Previous studies have reported significant pain relief and improved spinal mobility following Kati Vasti treatment.

2.6 Need for Comparative Study

Although both Vaitarana Vasti and Kati Vasti are routinely employed in clinical practice, limited comparative evidence exists regarding their relative effectiveness. Since one therapy acts systemically and the other locally, comparative evaluation may help determine the most effective treatment approach for Katishula.

3. Aim and Objectives

Aim

To compare the clinical efficacy of systemic Vasti (Vaitarana Vasti) and local Vasti (Kati Vasti) in the management of Katishula (Low Back Pain).

Objectives

1. To evaluate the effect of Vaitarana Vasti on pain and disability associated with Katishula.
2. To assess the effect of Kati Vasti on pain and disability associated with Katishula.
3. To compare the effectiveness of systemic and local Vasti therapies.
4. To assess improvement in lumbar mobility following treatment.

4. Materials and Methods

The present study was designed as a prospective randomized comparative clinical trial conducted in the Department of Panchakarma of an Ayurvedic teaching hospital. A total of 60 patients diagnosed with Katishula were enrolled after obtaining informed consent. Eligible participants aged between 20 and 65 years were randomly allocated into two groups comprising 30 patients each. Group A received systemic Vasti therapy in the form of Vaitarana Vasti, while Group B underwent local Vasti therapy through Kati Vasti. Both interventions were administered for eight consecutive days according to classical Panchakarma guidelines. Clinical assessments were conducted before and after treatment using Visual Analog Scale (VAS), Oswestry Disability Index (ODI), tenderness grading, lumbar flexion measurements, and Straight Leg Raising (SLR) test. The collected data were statistically analyzed using descriptive and inferential statistical methods. Paired t-tests were employed for within-group comparisons, whereas independent t-tests were used for between-group analysis. A p-value of less than 0.05 was considered statistically significant. Ethical approval was obtained from the Institutional Ethics Committee prior to commencement of the study.

5. Results

Table 1: Demographic Characteristics of Patients

Variable	Systemic Vasti (n=30)	Local Vasti (n=30)	Total (n=60)
Mean Age (Years)	44.8 ± 8.6	45.3 ± 7.9	45.1 ± 8.2
Male	17 (56.7%)	18 (60.0%)	35 (58.3%)
Female	13 (43.3%)	12 (40.0%)	25 (41.7%)
Duration of Disease (>6 Months)	19 (63.3%)	18 (60.0%)	37 (61.7%)

The demographic characteristics of both groups were comparable at baseline. The mean age of participants was approximately 45 years, indicating that middle-aged individuals are more commonly affected by Katishula. Male patients constituted a slightly higher proportion of the study population. The majority of participants had symptoms persisting for more than six months, suggesting the chronic nature of low back pain.

Table 2: Comparison of Pain Scores (VAS)

Assessment	Systemic Vasti (Mean $\pm$ SD)	Local Vasti (Mean $\pm$ SD)
Pre-Treatment	8.20 $\pm$ 0.74	8.05 $\pm$ 0.81
Post-Treatment	2.15 $\pm$ 0.65	3.05 $\pm$ 0.72
Mean Difference	6.05	5.00
Percentage Improvement	73.78%	62.11%

Both treatment groups demonstrated significant reduction in pain intensity after intervention. However, the Systemic Vasti group showed greater improvement, with a 73.78% reduction in pain compared to 62.11% in the Local Vasti group. This finding suggests that systemic Vasti may provide superior pain relief through comprehensive Vata pacification and systemic therapeutic action.

Table 3: Improvement in Functional Disability (ODI)

Assessment	Systemic Vasti	Local Vasti
Pre-Treatment ODI Score	43.5 $\pm$ 6.4	42.8 $\pm$ 5.9
Post-Treatment ODI Score	14.2 $\pm$ 4.3	19.3 $\pm$ 5.1
Mean Difference	29.3	23.5
Percentage Improvement	67.36%	54.91%

The Oswestry Disability Index scores decreased considerably in both groups, indicating improved ability to perform daily activities. The Systemic Vasti group exhibited greater improvement than the Local Vasti group, suggesting a stronger impact on overall functional recovery and quality of life.

Table 4: Range of Motion (ROM) Improvement

Assessment	Systemic Vasti	Local Vasti
Pre-Treatment ROM (cm)	3.2 $\pm$ 0.7	3.3 $\pm$ 0.8
Post-Treatment ROM (cm)	6.1 $\pm$ 0.9	5.3 $\pm$ 0.8
Mean Improvement	2.9	2.0
Percentage Improvement	90.63%	60.61%

A significant increase in lumbar flexion was observed in both treatment groups. The Systemic Vasti group demonstrated a greater enhancement in spinal mobility, indicating improved flexibility, reduced stiffness, and better musculoskeletal function compared with the Local Vasti group.

Table 5: Overall Clinical Improvement

Improvement Category	Systemic Vasti (n=30)	Local Vasti (n=30)
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Complete Relief (>75%)	13 (43.3%)	7 (23.3%)
Marked Improvement (51–75%)	11 (36.7%)	12 (40.0%)
Moderate Improvement (26–50%)	5 (16.7%)	8 (26.7%)
Mild Improvement (<25%)	1 (3.3%)	3 (10.0%)

The overall clinical response showed that a higher proportion of patients in the Systemic Vasti group achieved complete relief compared to the Local Vasti group. While both interventions were effective, the results indicate that Vaitarana Vasti provided more comprehensive and sustained therapeutic benefits in the management of Katishula.

6. Discussion

The present randomized comparative clinical study was conducted to evaluate the efficacy of systemic Vasti (Vaitarana Vasti) and local Vasti (Kati Vasti) in the management of Katishula (Low Back Pain). Katishula is a common musculoskeletal disorder described in Ayurveda under the category of Vata Vyadhi and is characterized by pain, stiffness, restricted mobility, and impairment of daily activities. The primary objective of the study was to determine whether a systemic Panchakarma intervention could provide superior clinical outcomes compared to a localized therapy. The demographic profile revealed that the majority of patients belonged to the middle-aged group (41–50 years). This finding is consistent with the understanding that degenerative changes, occupational stress, prolonged sitting, and repetitive physical strain become increasingly significant during this phase of life. The predominance of male patients may be attributed to greater involvement in physically demanding occupations and activities that place continuous stress on the lumbar region.

Both treatment groups exhibited statistically significant improvements in pain, stiffness, tenderness, lumbar flexibility, Straight Leg Raising (SLR) test scores, and functional disability. These findings indicate that both systemic and local Panchakarma interventions are effective therapeutic modalities for Katishula. However, comparative analysis demonstrated that Vaitarana Vasti produced superior outcomes in almost all assessed parameters. The significant reduction in pain observed in the Vaitarana Vasti group may be explained by its systemic action on aggravated Vata Dosha. According to Ayurvedic principles, Pakwashaya (large intestine) is the principal site of Vata Dosha. Administration of medicated Vasti directly influences the seat of Vata and facilitates its normalization. The ingredients used in Vaitarana Vasti possess Deepana (digestive stimulant), Pachana (metabolic corrective), Shothahara (anti-inflammatory), and Vatahara (Vata-pacifying) properties. These actions contribute to the removal of metabolic toxins (Ama), reduction of inflammation, and restoration of normal physiological functions. The substantial improvement in stiffness and tenderness observed in the Vaitarana Vasti group further supports the concept of systemic dosha regulation. By addressing the underlying pathology rather than merely providing symptomatic relief, Vaitarana Vasti appears to offer a more comprehensive therapeutic effect. This may explain the higher percentage improvement observed in pain scores, disability indices, and mobility assessments.

Patients receiving Kati Vasti also experienced significant clinical benefits. The therapeutic effects of Kati Vasti are primarily localized and result from the retention of warm medicated oil over the lumbar region. The warmth improves local circulation, enhances tissue metabolism, reduces muscular spasm, and promotes relaxation. The medicated oil nourishes muscles, ligaments, and joints, thereby contributing to pain relief and improved flexibility. The improvement observed in lumbar mobility and SLR test outcomes in both groups indicates restoration of musculoskeletal function and reduction of neuromuscular irritation. However, the greater improvement recorded in the Vaitarana Vasti group suggests that systemic correction of Vata imbalance may be more effective than localized treatment alone, particularly in chronic and recurrent cases.

The reduction in Oswestry Disability Index (ODI) scores reflects significant enhancement in the patients' ability to perform routine activities. Since low back pain often affects occupational performance and quality

of life, the improvement in disability scores highlights the practical clinical relevance of Panchakarma therapies. The findings validate the classical Ayurvedic concept that Basti is the most effective treatment for Vata disorders. While Kati Vasti remains a valuable local therapy for symptomatic relief, Vaitarana Vasti appears to provide broader therapeutic benefits by acting on the systemic pathology responsible for Katishula. The study therefore supports the use of systemic Panchakarma interventions as a primary therapeutic approach in the management of chronic low back pain.

7. Conclusion

The present study demonstrated that both Vaitarana Vasti and Kati Vasti are effective Panchakarma interventions for the management of Katishula (Low Back Pain). Significant improvements were observed in pain intensity, stiffness, tenderness, lumbar mobility, functional disability, and overall quality of life following treatment. Comparative analysis revealed that Vaitarana Vasti produced greater therapeutic benefits than Kati Vasti across most clinical parameters. The systemic action of Vaitarana Vasti on aggravated Vata Dosha, combined with its detoxifying, anti-inflammatory, and restorative effects, may be responsible for its superior efficacy. Kati Vasti also provided considerable relief by improving local circulation, reducing muscular tension, and enhancing tissue nourishment. The findings suggest that systemic Panchakarma therapy may be more effective than localized therapy in addressing the underlying pathogenesis of Katishula. Nevertheless, both interventions can be considered safe, effective, and clinically useful treatment options. The study provides scientific support for the integration of Ayurvedic Panchakarma procedures into the management of low back pain and reinforces the importance of Vasti therapy in Vata-related disorders.

8. Clinical Implications

The results of this study have important implications for clinical practice in Ayurveda and integrative healthcare. The demonstrated efficacy of both Vaitarana Vasti and Kati Vasti supports their use as non-pharmacological treatment options for patients suffering from low back pain. These therapies may reduce dependence on long-term analgesics and anti-inflammatory medications, thereby minimizing the risk of adverse drug reactions. The superior performance of Vaitarana Vasti suggests that systemic Panchakarma interventions should be considered particularly in patients with chronic, recurrent, or severe manifestations of Katishula. Kati Vasti may be especially useful in patients requiring localized symptom relief, muscular relaxation, and improved lumbar mobility. Combining systemic and local Panchakarma approaches may further enhance therapeutic outcomes. The findings also highlight the potential role of Ayurveda in the multidisciplinary management of musculoskeletal disorders. Integration of Panchakarma therapies with physiotherapy, yoga, ergonomic correction, and lifestyle modification may provide a comprehensive and sustainable approach to low back pain management.

9. Future Recommendations

Future studies should be conducted with larger sample sizes and multicentric designs to improve the generalizability of findings. Long-term follow-up assessments are necessary to determine the sustainability of therapeutic benefits and recurrence prevention. Comparative investigations involving different types of Basti formulations, Kati Vasti protocols, and combined Panchakarma regimens may help identify the most effective treatment strategies for Katishula. Advanced diagnostic techniques such as magnetic resonance imaging (MRI), electromyography, and inflammatory biomarker analysis should be incorporated to provide objective evidence of therapeutic effects. Future research may also explore the influence of Prakriti, Dosha predominance, age, gender, and disease duration on treatment outcomes. The integration of Panchakarma therapies with yoga, rehabilitation programs, dietary interventions, and modern pain management techniques should be investigated to develop comprehensive evidence-based treatment models. Such research will contribute significantly to the scientific validation and global acceptance of Ayurvedic approaches in the management of low back pain and related musculoskeletal disorders.

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