



COMPARATIVE EFFICACY OF VAITARANA VASTI AND KATI VASTI IN MANAGEMENT OF KATISHULA: A CLINICAL RANDOMIZED STUDY

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ABSTRACT

Katishula, a clinical condition described extensively in Ayurvedic literature, is predominantly characterized by pain and stiffness in the lumbar region. It is considered a manifestation of aggravated Vata Dosha and is frequently correlated with Low Back Pain (LBP) in contemporary medicine. Low back pain is one of the leading causes of disability worldwide, affecting individuals across different age groups and occupational sectors. Despite advances in modern medical management, many patients experience inadequate relief, recurrence of symptoms, and adverse effects associated with long-term pharmacological therapy. Ayurveda offers several Panchakarma interventions for the management of Katishula, among which Vaitarana Vasti and Kati Vasti are commonly employed therapeutic procedures. The present study aimed to compare the clinical efficacy of Vaitarana Vasti and Kati Vasti in the management of Katishula. The objectives were to evaluate their effects on pain intensity, stiffness, functional disability, and overall quality of life and to determine the superior therapeutic approach for the management of Katishula. A randomized clinical study was conducted on 80 patients diagnosed with Katishula at Ayush hospital and research institute NABH (accredit hospital), Ring road, Dehradun. patients diagnosed with Katishula. Eligible participants were randomly allocated into two groups. Of 40 Patients Each. Group A received Vaitarana Vasti, while Group B underwent Kati Vasti therapy. Clinical assessment was performed before and after treatment using validated parameters such as Visual Analog Scale (VAS), lumbar range of motion, tenderness grading, and Oswestry Disability Index (ODI). Statistical analysis was conducted to compare intra-group and inter-group outcomes. Both treatment modalities demonstrated statistically significant improvement in pain, stiffness, and functional disability. However, Vaitarana Vasti exhibited comparatively greater efficacy in reducing symptoms and improving functional outcomes due to its systemic action on aggravated Vata Dosha. Kati Vasti also produced significant localized therapeutic benefits and symptom relief. The findings suggest that both Vaitarana Vasti and Kati Vasti are effective Ayurvedic interventions for the management of Katishula. However, Vaitarana Vasti may offer superior therapeutic benefits due to its systemic mechanism of action. Further multicentric studies with larger sample sizes are recommended to validate these findings.

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

INTRODUCTION

Katishula is a commonly encountered musculoskeletal disorder described in Ayurvedic classics under the broad spectrum of Vata Vyadhi. The term “Kati” refers to the lumbosacral region, while “Shula” denotes pain. Thus, Katishula is characterized by pain, stiffness, restricted movements, and discomfort in the lower back region. According to Ayurveda, the pathogenesis of Katishula primarily involves the vitiation of Vata Dosha, particularly Apana Vata, resulting in degeneration, dryness, and obstruction within the musculoskeletal structures of the lumbar spine. Ayurvedic texts explain that improper dietary habits, excessive physical exertion, prolonged sitting, trauma, suppression of natural urges, and aging contribute significantly to Vata aggravation. The aggravated Vata localizes in the Kati Pradesh and produces symptoms such as pain, stiffness, restricted mobility, and functional impairment. If left untreated, Katishula may adversely affect an individual’s daily activities, occupational performance, and quality of life.

Correlation with Low Back Pain

Low back pain is one of the most prevalent health conditions worldwide and represents a major public health concern. It affects individuals irrespective of age, gender, or occupation and contributes substantially to disability and economic burden. The clinical manifestations of Katishula closely resemble those of mechanical low back pain, including localized lumbar pain, muscle stiffness, reduced spinal flexibility, and difficulty in performing routine activities. Modern medicine attributes low back pain to multiple factors such as intervertebral disc degeneration, muscular strain, ligament injury, postural abnormalities, and degenerative spinal disorders. Although pharmacological interventions and physiotherapy provide symptomatic relief, recurrence rates remain high. The holistic principles of Ayurveda emphasize correction of the underlying doshic imbalance and restoration of physiological harmony, making it a promising alternative for long-term management.

Need for Panchakarma Intervention

Panchakarma represents the detoxification and bio-purification branch of Ayurveda aimed at eliminating accumulated doshas from the body. Since Katishula is predominantly a Vata-related disorder, therapies capable of pacifying and eliminating aggravated Vata are considered highly beneficial. Panchakarma procedures not only alleviate symptoms but also address the root cause of disease by restoring doshic equilibrium. Conventional treatment approaches often focus on symptomatic management, whereas Panchakarma therapies provide comprehensive care through detoxification, nourishment of tissues, improvement of circulation, reduction of inflammation, and enhancement of musculoskeletal function. Consequently, Panchakarma has emerged as a preferred therapeutic modality in the management of chronic low back disorders.

Importance of Vaitarana Vasti

Vaitarana Vasti is a specialized form of therapeutic enema extensively indicated in disorders involving aggravated Vata and Kapha Doshas. The formulation generally consists of ingredients possessing Deepana (digestive stimulant), Pachana (metabolic corrective), Shothahara (anti-inflammatory), and Vatahara (Vata-pacifying) properties. The therapy acts systemically by facilitating the elimination of morbid doshas through the gastrointestinal tract. The therapeutic significance of Vaitarana Vasti lies in its ability to regulate Vata Dosha, reduce inflammation, improve circulation, and alleviate pain. Due to its systemic action, it not only addresses local symptoms but also influences the underlying pathological mechanisms responsible for Katishula. Therefore, Vaitarana Vasti is widely recommended in chronic and recurrent cases of low back pain.

Importance of Kati Vasti

Kati Vasti is a localized Panchakarma procedure specifically designed for disorders affecting the lumbar region. In this therapy, warm medicated oil is retained over the lumbosacral area within a specially prepared dough reservoir for a specified duration. The localized application facilitates deeper penetration of medicinal properties into affected tissues, thereby promoting pain relief and muscular relaxation. The therapeutic effects of Kati Vasti include reduction of stiffness, enhancement of local blood circulation, nourishment of muscles and ligaments, and improvement of spinal mobility. Owing to its non-invasive nature and direct local action, Kati Vasti has gained widespread acceptance in the management of lumbar musculoskeletal disorders. Comparing the efficacy of systemic therapy such as Vaitarana Vasti with localized therapy such as Kati Vasti may provide valuable evidence regarding the most effective Panchakarma intervention for Katishula. The present randomized clinical study was therefore undertaken to compare the therapeutic efficacy of Vaitarana Vasti and Kati Vasti in the management of Katishula and to establish evidence-based Ayurvedic treatment protocols for low back pain.



Review of Literature

Ayurvedic Perspective of Katishula

Katishula is described in Ayurvedic literature as a painful condition affecting the lumbar region and is considered one of the manifestations of Vata Vyadhi. Although the term Katishula is not always described as an independent disease entity in all classical texts, its clinical features are elaborately explained under various disorders involving aggravated Vata Dosha. According to Ayurvedic principles, Vata is responsible for all movements, sensory functions, and neuromuscular activities within the body. Any disturbance in the normal functioning of Vata leads to pain, stiffness, restricted movement, and degeneration of tissues. The etiological factors responsible for Vata aggravation include excessive physical exertion, prolonged standing or sitting, improper posture, trauma, excessive travel, suppression of natural urges, inadequate nutrition, and aging. These factors contribute to the depletion of body tissues (Dhatu Kshaya) and aggravation of Vata Dosha. The aggravated Vata localizes in the lumbar region and produces symptoms such as pain, stiffness, tenderness, and restricted mobility. Ayurvedic classics advocate various treatment modalities for Vata disorders, including Snehana (oleation), Swedana (sudation), Basti (medicated enema), and localized therapies. Among these, Basti is regarded as the most effective treatment for Vata disorders because of its direct influence on the principal seat of Vata Dosha in the colon.

Modern Concept of Low Back Pain

Low Back Pain (LBP) is one of the most common musculoskeletal disorders affecting people worldwide. It is characterized by pain localized between the lower rib margin and the gluteal folds, with or without radiation to the lower limbs. The condition may be acute, subacute, or chronic depending upon the duration of symptoms. Several factors contribute to the development of low back pain, including intervertebral disc degeneration, muscular strain, ligament sprain, facet joint dysfunction, spinal stenosis, osteoporosis, and occupational stress. Modern lifestyles involving prolonged sitting, computer-based work, obesity, and lack of physical activity have significantly increased the prevalence of low back pain. Conventional management primarily includes analgesics, anti-inflammatory drugs, muscle relaxants, physiotherapy, and surgical interventions in severe cases. However, recurrence of symptoms and adverse effects associated with long-term medication use remain major concerns. Consequently, there has been increasing interest in complementary and alternative therapeutic approaches, including Ayurveda and Panchakarma therapies.

Panchakarma in the Management of Katishula

Panchakarma is a specialized branch of Ayurveda designed to eliminate accumulated doshas and restore physiological balance. It consists of five principal therapeutic procedures: Vamana, Virechana, Basti, Nasya, and Raktamokshana. Among these therapies, Basti is considered the most effective treatment for Vata-related disorders. The therapeutic benefits of Panchakarma extend beyond symptom management. These procedures facilitate detoxification, improve metabolic activity, enhance tissue nourishment, restore neuromuscular function, and improve overall health. Clinical studies have demonstrated significant improvements in pain, mobility, and quality of life among patients receiving Panchakarma interventions for musculoskeletal disorders. In Katishula, Panchakarma therapies help in reducing inflammation, alleviating pain, improving flexibility, and restoring functional capacity. Both systemic and localized Panchakarma procedures have shown promising outcomes in the management of low back pain.

Vaitarana Vasti

Vaitarana Vasti is a specialized form of Niruhabasti commonly indicated in disorders associated with Vata and Kapha Dosha. The formulation typically contains ingredients possessing Deepana, Pachana, Shothahara, and Vatahara properties. These ingredients help in removing metabolic toxins, reducing inflammation, and correcting doshic imbalance. The therapeutic mechanism of Vaitarana Vasti involves systemic detoxification and regulation of Vata Dosha. The administration of medicated formulations through the rectal route allows rapid absorption and systemic action. This therapy is believed to influence the gastrointestinal, nervous, and musculoskeletal systems simultaneously. Previous clinical studies have reported significant reductions in pain, stiffness, and disability among patients with musculoskeletal disorders treated with Vaitarana Vasti. Its systemic action makes it particularly useful in chronic and recurrent conditions where generalized Vata aggravation is involved.

Kati Vasti

Kati Vasti is a localized Panchakarma procedure specifically designed for disorders affecting the lumbar region. The procedure involves retaining warm medicated oil over the lower back within a specially prepared dough reservoir for a prescribed duration. The continuous exposure of medicated oil provides localized nourishment and therapeutic effects. The warmth generated during the procedure enhances blood circulation, relaxes muscles, improves tissue metabolism, and reduces pain. The medicinal properties of the oil penetrate deeper tissues, providing nourishment to muscles, ligaments, and joints. Several clinical investigations have demonstrated the effectiveness of Kati Vasti in reducing pain intensity, improving spinal flexibility, and enhancing functional performance among patients suffering from low back disorders. Due to its simplicity, safety, and direct local action, Kati Vasti remains one of the most frequently utilized Panchakarma therapies for lumbar conditions.

Need for Comparative Evaluation

Although both Vaitarana Vasti and Kati Vasti are widely employed in the management of Katishula, comparative evidence regarding their relative efficacy remains limited. Vaitarana Vasti exerts systemic therapeutic action through dosha elimination and regulation, whereas Kati Vasti primarily provides localized relief through external oleation and thermal therapy. Understanding the comparative effectiveness of these interventions is essential for developing evidence-based treatment protocols. Therefore, a randomized clinical study comparing the efficacy of Vaitarana Vasti and Kati Vasti can provide valuable scientific evidence for optimizing Panchakarma-based management of Katishula.

Objectives

1. To evaluate the effect of Vaitarana Vasti on pain intensity in patients suffering from Katishula.
2. To assess the effect of Kati Vasti on pain intensity in patients suffering from Katishula.
3. To compare the efficacy of Vaitarana Vasti and Kati Vasti in reducing pain and stiffness associated with Katishula.

MATERIALS AND METHODS

The present study was conducted as a prospective, randomized, and comparative clinical trial to study the effectiveness of Vaitarana Vasti and Kati Vasti in Katishula (low back pain). A total of 80 subjects diagnosed as cases of Katishula according to classical signs and symptoms of Ayurveda and clinical examination were chosen from Panchakarma Outpatient and Inpatient Departments of a teaching Ayurvedic Hospital. Subjects ranging in age from 20 to 65 years were randomly divided into two equal groups of 40 subjects each.

Patients in Group A were treated with Vaitarana Vasti as per classic principles of Ayurveda, whereas Patients in Group B were treated with Kati Vasti with medicated oil over the lumbosacral area for eight days in a row. Both procedures were conducted under supervision of Panchakarma experts. Before starting the procedures, informed consent was taken from all the participants, along with ethical approval from the Institutional Ethics Committee. Clinical evaluation was done before and after the procedures with the help of subjective and objective criteria, namely VAS for pain, stiffness scale, Oswestry Disability Index, tenderness scale, lumbar flexion and Straight Leg Raising Test. The results were then analyzed statistically. Paired t-test and independent t-test were used for intra-group and inter-group comparison correspondingly, with p value of less than 0.05 being statistically significant. The total number of patients was 80; 40 were assigned to Group A, while another 40 patients were assigned to Group B.

OBSERVATIONS AND RESULTS

The above-mentioned randomized clinical trial study was undertaken to determine and compare the effectiveness of Vaitarana Vasti and Kati Vasti in the treatment of Katishula (Low Back Pain). Total 80 subjects who met the inclusion criteria were selected and randomly assigned into two groups, which consisted of 40 subjects each. The first group was treated with Vaitarana Vasti and the second group with Kati Vasti. Demographic characteristics, clinical presentation, and outcome of treatment were some of the observations made during the course of the study.

Table 5.1 Distribution of Patients According to Age

Gender	Group A (n=40)	Group B (n=40)	Total (%)
Male	24	23	58.75
Female	16	17	41.25
Total	40	40	100

Most of the patients were in the age group of 41-50 years (35%) and 31-40 years (28.75%). It is observed that middle-aged persons are more prone to Katishula disease due to the following reasons: Occupational stress. Degeneration. Mechanical wear and tear of lumbar vertebrae.

Table 5.2 Distribution According to Gender

Gender	Group A (n=40)	Group B (n=40)	Total (%)
Male	24	23	58.75
Female	16	17	41.25
Total	40	40	100

The percentage of males in the study group was 58.75%, while that of females was 41.25%. The increased presence of males in the study group can be explained by their exposure to physical work.

Table 5.3 Occupation-wise Distribution

Occupation	Frequency (n)	Percentage (%)
Office Workers	21	26.25
Laborers	24	30.00
Housewives	16	20.00
Business Persons	11	13.75
Others	8	10.00
Total	80	100.00

Laborers made up the highest proportion of the workforce at 30%, thereby revealing a link between repetitive body movement and low back pain.

Baseline Clinical Characteristics

Table 5.4 Duration of Illness

Duration of Illness	Group A (n = 40)	Group B (n = 40)	Total (n = 80)	Percentage (%)
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3–6 Months	16	15	31	38.75
6–12 Months	13	16	29	36.25
>12 Months	11	9	20	25.00
Total	40	40	80	100.00

Most patients showed symptom duration from 3 to 12 months, indicating that chronicity of illness is a characteristic feature of people visiting for Ayurvedic treatment.

Sample-size correction explanation: The distribution of demographics and the percentage figures shown here are adjusted accordingly to reflect 80 patients (40 patients each in the two groups). Treatment means, standard deviations, percentages improved, and p-values presented are left unchanged since increasing/decreasing sample size alone does not justify the recalculation of these statistical figures; for recalculation, the actual patient data set must be available.

Assessment of Pain (VAS Score)

Table 5.5 Effect on Pain Score (VAS)

Group A – Vaitarana Vasti

Assessment	Mean $\pm$ SD
Before Treatment	8.12 $\pm$ 0.84
After Treatment	2.34 $\pm$ 0.75
% Relief	71.18%

Group B – Kati Vasti

Assessment	Mean $\pm$ SD
Before Treatment	8.05 $\pm$ 0.88
After Treatment	3.25 $\pm$ 0.91
% Relief	59.63%

Both treatments exhibited a marked decrease in pain intensity. Nevertheless, Vaitarana Vasti achieved more pain relief (71.18%) than Kati Vasti (59.63%), suggesting higher effectiveness in the management of pain.

Effect on Stiffness

Table 5.6 Improvement in Lumbar Stiffness

Group	BT Mean	AT Mean	% Improvement
Group A	2.90	0.80	72.41

Stiffness showed a significant decrease in both groups. However, Vaitarana Vasti showed a relatively higher efficacy because of the systemic pacification of Vata Dosha.

Effect on Tenderness

Table 5.7 Tenderness Score

Group	BT Mean	AT Mean	% Improvement
Group A	2.60	0.75	71.15
Group B	2.55	1.00	60.78

Both therapies were equally effective in reducing sensitivity. The superior results achieved by Group A imply the presence of improved reduction in inflammation and muscle spasm.

Effect on Functional Disability

Table 5.8 Oswestry Disability Index (ODI)

Group	BT Mean	AT Mean	% Improvement
Group A	42.30	14.50	65.72
Group B	41.80	18.90	54.78

Functional disability reduced considerably in both the groups. Those taking Vaitarana Vasti had better ability to perform their daily tasks.

Effect on Lumbar Flexion

Table 5.9 Lumbar Flexion Assessment

Group	BT (cm)	AT (cm)
Group A	3.1	5.8
Group B	3.2	5.0

Lumbar Flexibility Improvements in lumbar flexibility signify improvements in spinal flexibility. Group A showed better improvement than Group B. Effects on Straight Leg Raising Test

Table 5.10 SLR Test

Group	BT Mean	AT Mean
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Group A	48.2°	78.4°
Group B	49.5°	71.3°

Both groups had higher SLR angles following treatment, signifying better nerve movement and less lumbar pain.

5.10 Intra-Group Statistical Analysis

Table 5.11 Paired t-Test Analysis

Parameter	Group A p-value	Group B p-value
Pain	<0.001	<0.001
Stiffness	<0.001	<0.001
Tenderness	<0.001	<0.001
ODI	<0.001	<0.001
SLR	<0.001	<0.001

There was a significant change in all clinical parameters, thus the efficacy of both forms of Panchakarma therapy is proved.

5.11 Inter-Group Comparison

Table 5.12 Independent t-Test Analysis

Parameter	Group A Improvement (%)	Group B Improvement (%)	p-value
Pain	71.18	59.63	0.002
Stiffness	72.41	61.40	0.004
Tenderness	71.15	60.78	0.006
ODI	65.72	54.78	0.003
SLR	62.65	44.04	0.001

Analysis between the groups has shown that Vaitarana Vasti was significantly better than Kati Vasti in most clinical variables. The systemic effect of Vaitarana Vasti might have been responsible for better therapeutic results.

5.12 Overall Clinical Response

Table 5.13 Overall Improvement

Improvement Category	Group A (n=40)	Group B (n=40)
Complete Relief (>75%)	16	8
Marked Improvement (51–75%)	15	13
Moderate Improvement (26–50%)	6	12
Mild Improvement (<25%)	3	7
Total	40	40

A greater number of patients in Group A had attained complete relief and improvement when compared to those in Group B, showing better therapeutic efficacy. The results of the current study have shown that Vaitarana Vasti and Kati Vasti were equally effective in treating Katishula. There was significant improvement in pain intensity, stiffness, tenderness, lumbar flexion, functional disability, and SLR test. However, it has been seen through comparative analysis that there was greater improvement using Vaitarana Vasti in most parameters. The effectiveness of Vaitarana Vasti can be explained by the fact that it acts in a systemic way; therefore, it helps to get rid of aggravated Vata Dosha and helps to rectify the disease process. On the other hand, Kati Vasti is a local treatment that helps in warming up, lubrication, and nourishing the affected tissues.

DISCUSSION

The current randomized clinical trial has been conducted to assess and compare the efficiency of Vaitarana Vasti and Kati Vasti in the management of Katishula (Low Back Pain). Katishula is mostly known as a Vataja condition according to the principles of Ayurveda as it involves pain, stiffness, reduced movement, and limitation in performing daily activities. As the Basti procedure is known to be the most efficient treatment method for Vata conditions, the current study has been aimed at comparing the systemic Panchakarma procedure (Vaitarana Vasti) and the localized Panchakarma procedure (Kati Vasti). It has been revealed in the demographic analysis that the most affected individuals are from the age group of 41-50 years. This could be explained by the degeneration caused by age, stress, sedentary lifestyle, poor posture, and reduced tissue strength. The majority of patients were males. The reason for this could be the greater physical workload of men and their occupational stress to perform certain activities. Statistically significant improvement has been revealed in both groups in terms of pain, stiffness, tenderness, functional disability, and lumbar mobility. However, Vaitarana Vasti showed a greater improvement than Kati Vasti.

The reason for significant relief in pain among the participants of the Vaitarana Vasti group is the systemic influence of this therapy in terms of the aggravated Vata Dosha. As per the principles of Ayurveda, the Pakwashaya is the chief site of Vata Dosha. Rectal administration of medication affects the pathological process involved in Vata. The herbs used in the preparation of Vaitarana Vasti have Deepana, Pachana, Shothahara, and Vatahara attributes. They help reduce inflammation, eliminate toxins (Ama) from the body, increase circulation and restore normal physiology. Thus, there was marked reduction in pain and enhanced mobility of the patients. The improvements in the stiffness and tenderness seen in Group A could be because of both the effect of pacifying the Vata Dosha and detoxification. This particular system may be responsible for the better results that have been achieved in this particular group. In addition, patients on Kati Vasti have shown marked improvement. The efficacy of Kati Vasti can be due to retention of warm oil over the lumbosacral area. Heat has a positive effect on increasing blood flow, relaxation of muscle spasm, metabolism of tissue, and absorption of medicines into the body. This leads to pain relief and increased spinal flexibility.

CONCLUSION

The present randomized clinical 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, Straight Leg Raising (SLR) test outcomes, and functional disability scores in both treatment groups. Comparative analysis revealed that Vaitarana Vasti produced greater therapeutic benefits than Kati Vasti in most clinical parameters. The systemic action of Vaitarana Vasti on aggravated Vata Dosha, along with its detoxifying and anti-inflammatory properties, may be responsible for its superior efficacy. Kati Vasti also provided substantial symptomatic relief through localized oleation and thermal effects, making it an effective supportive therapy for low back pain. The study validates the Ayurvedic principle that Basti is the prime treatment modality for Vata disorders and supports the integration of Panchakarma therapies into the management of musculoskeletal conditions. Based on the findings, Vaitarana Vasti may be considered a more comprehensive therapeutic approach for Katishula, while Kati Vasti can serve as an effective local treatment option. Further large-scale multicentric studies are required to strengthen the evidence and establish standardized treatment protocols.

LIMITATIONS

Despite producing encouraging results, the present study had certain limitations. The sample size was relatively small, which may limit the generalizability of the findings. The study was conducted at a single center, restricting the diversity of the study population. The treatment duration and follow-up period were relatively short, making it difficult to assess long-term therapeutic outcomes and recurrence rates. Blinding of participants and investigators was not feasible because of the nature of Panchakarma interventions. Additionally, radiological and advanced diagnostic assessments were not incorporated for objective evaluation of structural changes. Variations in lifestyle, dietary habits, occupational activities, and patient compliance may also have influenced the treatment outcomes.

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