

Comparative Efficacy of Sadya Virechana and Dashmoola Niruha Basti in the Management of Kaphanubandhi Katishoola (Non-specific Low Back Pain): A Randomized Controlled Trial

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Abstract

Background: Non-specific low back pain (NSLBP) is one of the leading causes of disability worldwide and significantly affects quality of life and work productivity. In Ayurveda, Katishoola is predominantly considered a Vataja disorder. When Vata is obstructed by Kapha (Kaphanubandhi Avastha), symptoms such as pain, stiffness, heaviness (Gaurava), and drowsiness (Tandra) become prominent. Classical Ayurvedic texts recommend Shodhana therapy to eliminate the obstructing Dosha. While Dashmoola Niruha Basti is regarded as the principle treatment for Vata disorders, Sadya Virechana using Eranda Taila with Payah (milk) is specifically indicated for Kapha-induced obstruction of Vata.

Objective: To compare the clinical efficacy of Sadya Virechana and Dashmoola Niruha Basti in the management of Kaphanubandhi Katishoola (non-specific low back pain).

Materials and Methods: A prospective randomized controlled clinical trial was conducted on 60 patients diagnosed with Kaphanubandhi Katishoola. Participants aged 20–45 years were randomly allocated into two equal groups. Group A received Sadya Virechana with 50 mL Eranda Taila and 100 mL Payah (warm milk) after Snehana and Swedana. Group B received Dashmoola Niruha Basti followed by Anuvasana Basti with Tila Taila according to classical guidelines. Patients were assessed before treatment and on the sixth day using the Visual Analogue Scale (VAS), Roland–Morris Disability Questionnaire, Angagauravata score, and Tandra score. Statistical analysis was performed using paired t-test and Wilcoxon signed-rank test, while intergroup comparison was performed using appropriate parametric and non-parametric tests. A p-value <0.05 was considered statistically significant.

Results: Both groups demonstrated highly significant improvement ($p < 0.001$) in pain, disability, heaviness, and drowsiness. Group A showed 96.87% improvement in VAS and disability scores, whereas Group B showed 96.96% and 97.36% improvement respectively. Intergroup comparison revealed no statistically significant difference, indicating comparable efficacy of both interventions.

Conclusion: Sadya Virechana with Eranda Taila and warm milk is clinically as effective as Dashmoola Niruha Basti in managing Kaphanubandhi Katishoola. Considering its simplicity, reduced treatment duration, cost-effectiveness, and patient acceptability, Sadya Virechana may be considered an effective first-line Shodhana therapy in appropriately selected patients with acute and subacute non-specific low back pain.

Keywords: Katishoola, Non-specific low back pain, Sadya Virechana, Eranda Taila, Dashmoola Niruha Basti, Panchakarma, Ayurveda, Randomized controlled trial.

Introduction

Low back pain (LBP) is one of the most prevalent musculoskeletal disorders worldwide and remains the leading cause of years lived with disability. According to the Global Burden of Disease Study, nearly 619 million people were affected by low back pain in 2020, and this number is projected to increase substantially because of population growth, ageing, sedentary lifestyles, obesity, and occupational risk factors. Non-specific low back pain (NSLBP), in which no definite structural pathology can be identified, accounts for approximately 85–90% of all cases encountered in clinical practice. Besides causing pain and functional disability, NSLBP imposes a considerable socioeconomic burden through healthcare expenditure, work absenteeism, and reduced productivity.

Conventional management of NSLBP includes non-steroidal anti-inflammatory drugs (NSAIDs), muscle relaxants, physiotherapy, exercise therapy, and lifestyle modification. Although these interventions often provide symptomatic relief, prolonged pharmacological therapy may be associated with adverse effects such as gastrointestinal irritation, renal dysfunction, cardiovascular complications, and recurrence of symptoms after discontinuation. Consequently, there is increasing global interest in complementary and integrative medical approaches that provide effective, safe, and sustainable management of chronic musculoskeletal disorders.

Ayurveda describes low back pain under the broad spectrum of Katishoola, a disease predominantly caused by vitiated Vata Dosha. Classical Ayurvedic literature explains that pain (Shoola) is a cardinal manifestation of aggravated Vata. However, when Vata becomes obstructed by Kapha (Avarana or Upastambha), the clinical presentation differs from pure Vata disorders. Patients commonly experience heaviness (Gaurava), stiffness, restricted movements, lethargy (Tandra), and dull aching pain in the lumbosacral region. This condition is clinically recognized as Kaphanubandhi Katishoola, where Kapha obstructs the normal movement of Vata, resulting in impaired physiological functioning and pain.

The pathogenesis of Kaphanubandhi Katishoola involves Srotorodha (obstruction of body channels), accumulation of Kapha, impaired movement of Vata, reduced Agni, and localized pain. Therefore, treatment should not merely pacify Vata but should first remove the obstructing Kapha before restoring the normal direction of Vata (Vatanulomana). This principle is clearly emphasized in classical Ayurvedic texts, where elimination therapies (Shodhana) are recommended for diseases involving Dosha obstruction.

Among Panchakarma procedures, Basti is regarded as the most effective therapy for Vata disorders and is often referred to as "Ardha Chikitsa" because of its broad therapeutic utility. Dashmoola Niruha Basti possesses anti-inflammatory, analgesic, Vata-Kapha pacifying, and channel-cleansing properties. It not only alleviates pain but also improves mobility and functional capacity. However, administration of Niruha Basti requires specialized infrastructure, trained personnel, multiple procedural steps, careful

patient monitoring, and considerable clinical time. These practical limitations may reduce its feasibility in busy outpatient settings.

Alternatively, Sadya Virechana is recommended in Ayurvedic classics for conditions where Vata is obstructed by Kapha. Eranda Taila (castor oil), administered with payah (warm milk), acts as a mild purgative that facilitates Kapha elimination, promotes Vatanulomana, and restores normal bowel function. Pharmacologically, castor oil contains ricinoleic acid, which stimulates intestinal motility through activation of EP3 prostanoid receptors, resulting in effective bowel evacuation. Experimental studies also suggest anti-inflammatory and analgesic properties that may contribute to symptomatic improvement in musculoskeletal disorders. The combination with warm milk enhances tolerability while maintaining the mild purgative action described in classical texts.

Recent research has demonstrated beneficial effects of Panchakarma therapies in the management of musculoskeletal disorders, particularly low back pain. However, most published studies evaluate Basti alone or compare Panchakarma with oral medications. Scientific evidence directly comparing Sadya Virechana with Dashmoola Niruha Basti for Kaphanubandhi Katishoola remains limited. Establishing the comparative efficacy of these two classical interventions is clinically important because Sadya Virechana is simpler, less time-consuming, more economical, and easier to administer than Basti. If comparable therapeutic outcomes are achieved, Sadya Virechana may serve as a practical first-line Shodhana therapy in appropriately selected patients.

The present randomized controlled clinical trial was therefore designed to compare the therapeutic efficacy of Sadya Virechana with Eranda Taila and warm milk and Dashmoola Niruha Basti in patients with Kaphanubandhi Katishoola (non-specific low back pain). Clinical outcomes were assessed using validated pain and disability scales together with classical Ayurvedic symptom assessment to generate evidence regarding the relative effectiveness of these two interventions and their applicability in contemporary Ayurvedic clinical practice.

Materials and Methods

Aim

To compare the clinical efficacy of Sadya Virechana and Dashmoola Niruha Basti in the management of Kaphanubandhi Katishoola (Non-specific Low Back Pain).

Objectives

Primary Objective

To evaluate the effect of Sadya Virechana on pain intensity and functional disability in patients with Kaphanubandhi Katishoola.

To evaluate the effect of Dashmoola Niruha Basti on pain intensity and functional disability.

To compare the therapeutic efficacy of both interventions.

Secondary Objectives

To assess changes in Angagauravata (heaviness of the body).

To assess changes in Tandra (drowsiness).

To evaluate the safety and patient acceptability of both treatment modalities.

Hypothesis

Null Hypothesis (H_0): There is no statistically significant difference between Sadya Virechana and Dashmoola Niruha Basti in the management of Kaphanubandhi Katishoola.

Alternative Hypothesis (H_1): Sadya Virechana is comparable or superior to Dashmoola Niruha Basti in improving clinical outcomes among patients with Kaphanubandhi Katishoola.

Study Design

This study was designed as a prospective, randomized, controlled, parallel-group clinical trial conducted in the Department of Kayachikitsa. Sixty eligible participants were randomly allocated into two equal groups ($n = 30$ each). The study compared the efficacy of Sadya Virechana (Group A) with Dashmoola Niruha Basti (Group B) using standardized clinical outcome measures.

Study Setting

The study was conducted in the Department of Kayachikitsa, in our OPD.

Sample Size

A total of 60 patients fulfilling the eligibility criteria were enrolled and equally randomized into two treatment groups.

Group A (Trial Group): 30 patients

Group B (Control Group): 30 patients

Randomization

Patients were randomly assigned using a computer-generated randomization sequence. Allocation was performed in a 1:1 ratio. Baseline demographic and clinical characteristics were comparable between the groups.

Inclusion Criteria

Patients fulfilling all of the following criteria were included:

Age between 20 and 45 years.

Non-specific low back pain of 15 days to 3 months duration.

Clinical features suggestive of Kaphanubandhi Katishoola.

Presence of Gaurava and/or Tandra.

Willingness to provide written informed consent.

Exclusion Criteria

Patients with the following conditions were excluded:

Vertebral fracture or spinal trauma.

Intervertebral disc prolapse with neurological deficit.

Spinal infections.

Malignancy.

Congenital spinal deformity.

Ankylosing spondylitis.

Pregnancy and lactation.

Severe systemic illness.

Previous spinal surgery.

Uncontrolled diabetes mellitus or hypertension.

Ethical Considerations

The study was conducted according to the ethical principles of the Declaration of Helsinki. Institutional Ethics Committee approval was obtained before commencement of the study, and written informed consent was obtained from every participant before enrollment.

Intervention

Group A – Sadya Virechana

Patients underwent:

Sarvanga Abhyanga using suitable medicated oil.

Bashpa Swedana (steam fomentation).

Oral administration of Eranda Taila 50 mL mixed with 100 mL warm cow's milk on an empty stomach.

Patients were observed until completion of Virechana and advised appropriate post-procedure dietary regimen (Samsarjana Krama) according to their digestive capacity.

Group B – Dashmoola Niruha Basti

Patients received:

Dashmoola Niruha Basti (approximately 960 mL) prepared according to classical Ayurvedic guidelines.

Additional Niruha Basti, if required, based on clinical response.

Evening Anuvasana Basti with 120 mL Tila Taila.

Standard dietary and lifestyle advice was provided during the treatment period.

Outcome Measures

Patients were assessed before treatment (Day 0) and after completion of treatment (Day 6).

Primary Outcome Measures

Visual Analogue Scale (VAS) for pain.

Roland-Morris Disability Questionnaire (24-item).

Secondary Outcome Measures

Angagauravata score.

Tandra score.

Overall clinical improvement.

Statistical Analysis

Data were entered into Microsoft Excel and analysed using standard statistical software (IBM SPSS or equivalent). Continuous variables were expressed as mean $\pm$ standard deviation. Categorical variables were presented as frequencies and percentages.

Within-group comparisons were performed using the paired t-test for normally distributed variables and the Wilcoxon signed-rank test for ordinal data. Between-group comparisons were analysed using the independent t-test or Mann-Whitney U test wherever appropriate. A p-value <0.05 was considered statistically significant, while $p < 0.001$ was considered highly significant.

Study Flow

Screening of eligible participants.

Baseline clinical assessment.

Random allocation.

Intervention.

Day-6 follow-up assessment.

Statistical analysis.

Interpretation of results.

Results

Baseline Characteristics

A total of 60 patients fulfilling the inclusion criteria were enrolled and randomized equally into two groups (n = 30 each). All participants completed the study, and no dropouts or adverse events were reported during the treatment or follow-up period. Baseline demographic and clinical characteristics were comparable between the two groups, indicating successful randomization.

Table 1. Demographic Characteristics of Study Participants

Variable	Group A (n=30)	Group B (n=30)	p value
Mean age (years)	34.6 ± 6.2	35.1 ± 5.9	>0.05
Male	16 (53.3%)	17 (56.7%)	>0.05
Female	14 (46.7%)	13 (43.3%)	>0.05
Mean duration of symptoms	41.2 ± 18.4 days	39.8 ± 17.9 days	>0.05

There were no statistically significant differences in baseline characteristics between the groups (p>0.05).

Improvement in Pain (VAS Score)

Both interventions produced highly significant reductions in pain intensity after treatment.

Table 2. Comparison of VAS Score

Group	Percentage improvement	Statistical significance
Group A (Sadya virechana)	96.87%	p < 0.001
Group B (Dashmoola Niruha Basti)	96.96%	p < 0.001

Intergroup comparison: p = 0.415 (Not significant)

The findings indicate that both therapies were equally effective in reducing pain intensity.

Improvement in Functional Disability

Functional disability assessed using the Roland–Morris Disability Questionnaire improved significantly in both groups.

Table 3. Roland–Morris Disability Score

Group	Percentage improvement	Statistical significance
Group A (Sadya virechana)	96.87%	p < 0.001
Group B (Dashmoola Niruha Basti)	97.36%	p < 0.001

Intergroup comparison: p = 0.855 (Not significant)

The improvement observed in both groups was clinically meaningful and statistically comparable.

Improvement in Angagauravata

Table 4. Angagauravata

Group	Percentage improvement	Statistical significance
Group A	59.60%	p < 0.001
Group B	64.47%	p < 0.001

Intergroup comparison: p = 0.710 (Not significant)

Both interventions significantly reduced the sensation of heaviness, with no statistically significant difference between the groups

Improvement in Tandra

Table 5. Tandra

Group	Percentage improvement	Statistical significance
Group A	65.60%	p < 0.001
Group B	66.36%	p < 0.001

Intergroup comparison: p = 0.096 (Not significant)

Both treatment modalities effectively relieved Tandra, suggesting successful reduction of Kapha predominance.

Overall Therapeutic Response

Table 6. Overall Clinical Outcome

Clinical response	Group A	Group B
Good improvement	28 (93.34%)	29 (96.67%)
Moderate improvement	2 (6.66%)	1 (3.33%)
Mild/No improvement	0	0

The majority of participants in both groups achieved good clinical improvement, demonstrating excellent therapeutic efficacy.

Summary of Results

The present randomized controlled trial demonstrated that both Sadya Virechana and Dashmoola Niruha Basti significantly improved pain, disability, heaviness, and drowsiness in patients with Kaphanubandhi Katishoola. Intergroup comparisons showed no statistically significant differences across any outcome measures, indicating comparable clinical efficacy. Considering its single-day administration, simplicity, lower procedural burden, and comparable outcomes, Sadya Virechana appears to be a practical alternative to Dashmoola Niruha Basti in the management of acute and subacute non-specific low back pain.

Discussion

The present randomized controlled clinical trial evaluated the comparative efficacy of Sadya Virechana and Dashmoola Niruha Basti in the management of Kaphanubandhi Katishoola (non-specific low back pain). Both interventions produced statistically highly significant improvements in pain intensity, functional disability, Angagauravata, and Tandra. Intergroup analysis demonstrated no statistically

significant difference between the two treatment modalities, suggesting that Sadya Virechana is therapeutically comparable to the established Basti therapy in appropriately selected patients.

Non-specific low back pain is a multifactorial disorder characterized by pain and impaired physical function without a clearly identifiable structural pathology. In Ayurveda, Katishoola is primarily attributed to vitiated Vata Dosha. However, when Vata is obstructed by Kapha (Kaphanubandhi Avastha), additional symptoms such as heaviness, stiffness, lethargy, and restricted movements become evident. The fundamental pathological event in this condition is Srotorodha (obstruction of body channels), which impedes the normal movement of Vata. Therefore, Ayurvedic management emphasizes the elimination of the obstructing Kapha before attempting to normalize Vata.

The significant reduction in pain observed in both groups reflects successful correction of the underlying pathogenesis. In Group A, Sadya Virechana with Eranda Taila and warm milk effectively eliminated accumulated Kapha, promoted Vatanulomana, and restored normal physiological function. Classical Ayurvedic texts describe Eranda Taila as possessing Ushna (hot), Tikshna (penetrating), Sukshma (subtle), and Sara (flow-promoting) properties. These attributes facilitate liquefaction and expulsion of Kapha while simultaneously pacifying aggravated Vata. The observed reduction in pain is therefore consistent with the Ayurvedic principle that relief from obstruction restores the normal movement of Vata and alleviates Shoola.

From a modern biomedical perspective, the pharmacological effects of castor oil may also explain the clinical improvement. Ricinoleic acid, the principal active constituent of castor oil, stimulates intestinal motility through activation of prostanoid EP3 receptors, producing controlled purgation. Experimental studies have also demonstrated anti-inflammatory and analgesic activities, which may contribute to reduced pain perception. Furthermore, the gut–brain axis and enteric nervous system are increasingly recognized as important modulators of inflammation and pain. By improving bowel function and systemic homeostasis, Sadya Virechana may indirectly influence pain modulation and functional recovery.

Dashmoola Niruha Basti demonstrated comparable efficacy in reducing pain and disability. According to Ayurvedic classics, Basti is regarded as the most effective therapy for Vata disorders because of its direct action on the principal site of Vata in the Pakwashaya. Dashmoola possesses well-documented anti-inflammatory, analgesic, antioxidant, and Vata-Kapha pacifying properties. Administration of Niruha Basti facilitates cleansing of the colon, pacifies aggravated Doshas, nourishes tissues, and restores normal physiological balance. These mechanisms collectively explain the marked improvement observed in Group B.

The substantial improvement in Roland–Morris Disability Questionnaire scores indicates that both therapies not only relieved pain but also restored functional capacity. Functional disability in low back pain is often associated with muscle spasm, reduced spinal mobility, fear of movement, and impaired daily activities. The reduction in disability following both interventions suggests improvement in biomechanical function, enhanced mobility, and restoration of normal physical performance. This outcome is particularly important because functional recovery is considered a primary goal in the management of non-specific low back pain.

Marked reductions in Angagauravata and Tandra further support the effectiveness of both interventions in correcting Kapha predominance. These symptoms are classical indicators of Kapha-associated obstruction and often persist despite symptomatic pain relief if the underlying Dosha imbalance is not addressed. Their significant improvement suggests successful elimination of Kapha and restoration of

Doshic equilibrium. This finding strengthens the Ayurvedic rationale for selecting Shodhana therapy in Kaphanubandhi conditions rather than relying solely on symptomatic management.

Although both therapies produced nearly identical clinical outcomes, Sadya Virechana offers several practical advantages. The procedure is comparatively simple, requires fewer resources, can usually be completed within a single day, and is generally well accepted by patients. In contrast, administration of Dashmoola Niruha Basti requires specialized equipment, trained personnel, multiple procedural steps, careful monitoring, and greater institutional resources. From the perspective of clinical practice, these differences are important because a simpler intervention with comparable efficacy may improve accessibility, patient compliance, and cost-effectiveness.

The findings of the present study are in agreement with previous Ayurvedic clinical studies reporting significant benefits of Panchakarma therapies in musculoskeletal disorders. Earlier investigations have shown that Basti effectively reduces pain, stiffness, and disability in patients with Katishoola and Gridhrasi. Likewise, studies evaluating Eranda Taila have reported analgesic, anti-inflammatory, and Vatahara effects in disorders characterized by pain and restricted movement. However, direct comparative studies between Sadya Virechana and Dashmoola Niruha Basti remain limited. Therefore, the present trial contributes clinically relevant evidence supporting the use of Sadya Virechana as an effective alternative in selected cases of Kaphanubandhi Katishoola.

Despite these encouraging findings, certain limitations should be acknowledged. The sample size was relatively small, limiting the generalizability of the results. The follow-up period was short, preventing assessment of long-term recurrence or sustained clinical benefits. Imaging-based outcome measures and biochemical inflammatory markers were not included. Future multicentre randomized controlled trials with larger sample sizes, longer follow-up periods, and objective biomarkers are recommended to further validate these findings and strengthen the evidence base for Ayurvedic interventions in non-specific low back pain.

Overall, the study demonstrates that both Sadya Virechana and Dashmoola Niruha Basti are highly effective in managing Kaphanubandhi Katishoola. Given its comparable efficacy, simplicity, shorter treatment duration, lower procedural burden, and greater patient convenience, Sadya Virechana may be considered a practical first-line Shodhana therapy for carefully selected patients with acute and subacute non-specific low back pain. These findings support the integration of evidence-based Ayurvedic interventions into contemporary clinical practice while encouraging further high-quality research in this field.

Strengths and Limitations

Strengths

- This study is one of the few randomized controlled trials comparing Sadya Virechana directly with Dashmoola Niruha Basti in patients with Kaphanubandhi Katishoola.
- Both subjective (Angagauravata and Tandra) and objective (VAS and Roland–Morris Disability Questionnaire) outcome measures were used.
- The study evaluated a simple, economical, and patient-friendly Panchakarma procedure that has potential for wider application in outpatient practice.
- The randomized parallel-group design reduced selection bias and enhanced the internal validity of the findings.

Limitations

- The sample size was relatively small (n = 60), limiting the generalizability of the findings.
- The follow-up period was short (6 days), preventing assessment of long-term efficacy and recurrence.
- Blinding was not feasible because of the nature of the Panchakarma interventions.
- Radiological assessment and inflammatory biomarkers were not included.
- The study was conducted at a single center.

Clinical Implications

The findings suggest that Sadya Virechana with Eranda Taila and payah(warm milk) is comparable to Dashmoola Niruha Basti in reducing pain, disability, Angagauravata, and Tandra in patients with Kaphanubandhi Katishoola. As Sadya Virechana is simpler to administer, less time-consuming, cost-effective, and well accepted by patients, it may be considered a practical first-line Shodhana therapy in appropriately selected patients with acute and subacute non-specific low back pain. Its use may improve accessibility to Panchakarma services, particularly in outpatient settings and resource-limited healthcare facilities.

Conclusion

The present randomized controlled clinical trial demonstrated that both Sadya Virechana and Dashmoola Niruha Basti produced statistically highly significant improvements in pain intensity, functional disability, Angagauravata, and Tandra among patients with Kaphanubandhi Katishoola. Intergroup comparison revealed no statistically significant difference, indicating comparable therapeutic efficacy. Considering its ease of administration, shorter treatment duration, lower procedural complexity, cost-effectiveness, and favorable patient acceptability, Sadya Virechana with Eranda Taila and warm milk may be recommended as an effective first-line Shodhana intervention for carefully selected patients with acute and subacute non-specific low back pain associated with Kapha predominance. Larger multicenter studies with longer follow-up and objective outcome measures are warranted to further strengthen the evidence supporting this approach.

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