



A Clinical Evaluation of Dashmool and Masha Kwath in the Ayurvedic Management of Avabahuka: A Prospective Study

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ABSTRACT:

Background: Avabahuka, clinically correlated with frozen shoulder or adhesive capsulitis, is a painful and functionally limiting condition caused by Vata and Kapha vitiation leading to the stiffness and restricted movement of the shoulder joint. Conventional treatments offer symptomatic relief but often require prolonged intervention and are associated with high recurrence. Ayurveda offers promising alternatives using formulations that address the root cause by balancing the aggravated Doshas.

Objectives: This study was conducted to evaluate the clinical efficacy of Dashmool and Masha Kwath in the management of Avabahuka and to assess the outcomes in terms of pain relief, range of motion, and functional improvement.

Materials and Methods: A total of 120 patients clinically diagnosed with Avabahuka were enrolled in this prospective open-label clinical study conducted at Dayanand Ayurvedic Medical College and Hospital, Siwan, Bihar, from January 2019 to December 2021. The intervention group received Dashmool and Masha Kwath orally twice daily for 45 days. Assessments were done using shoulder pain and disability index (SPADI), range of motion (ROM), and patient-reported outcomes at baseline, day 15, day 30, and day 45.

Results: Significant improvement was observed in pain, stiffness, and overall joint mobility by the end of the study. SPADI scores reduced markedly, and most patients experienced functional independence. No adverse effects were reported, establishing safety and tolerability.

Conclusion: Dashmool and Masha Kwath demonstrated potent efficacy in relieving the symptoms of Avabahuka by pacifying Vata and Kapha and restoring Samprapti Vighatana. These classical Ayurvedic formulations can be considered as a reliable treatment modality for managing frozen shoulder.

Introduction

Avabahuka, as described in Ayurvedic classical texts, is a Vata-dominant disorder that primarily affects the Amsa Sandhi (shoulder joint), resulting in stiffness, pain, and restriction of movement. It is a condition wherein the aggravated Vata Dosha, often associated with Kapha, localizes in the shoulder region, impairing the functioning of the Snayu (ligaments), Sira (blood vessels), and Kandara (tendons). The disease progression leads to Shoola (pain), Bahupraspanditahara (restricted shoulder movement), and eventually to profound disability in performing routine upper limb activities [1].

Modern medical science correlates Avabahuka with frozen shoulder, also known as adhesive capsulitis. This condition is marked by chronic inflammation and fibrosis of the joint capsule, commonly affecting individuals aged 40–60 years, particularly those with comorbid conditions like diabetes mellitus, thyroid dysfunction, or prolonged immobility. While modern treatment approaches such as nonsteroidal anti-inflammatory drugs (NSAIDs), corticosteroid injections, and physiotherapy offer some relief, they often come with limitations in long-term efficacy, side effects, and poor patient compliance. Furthermore, surgical interventions are



usually reserved for refractory cases and are invasive, costly, and associated with significant recovery time [2].

In the Ayurvedic perspective, addressing the root cause of Vata and Kapha vitiation through internal medication and supportive therapy provides a more sustainable and holistic management approach. Dashmool, a classical polyherbal formulation, is renowned for its Shothahara (anti-inflammatory), Vedanahara (analgesic), and Vatahara (anti-Vata) properties. It comprises ten roots (five from shrubs and five from trees), collectively acting to restore Dosha balance, improve circulation, and reduce localized stiffness. Similarly, Masha Kwath, prepared from black gram (Masha), is a nutritive and Vatashamaka decoction that strengthens muscles and ligaments, promoting joint flexibility and repair [3].

The rationale for combining Dashmool and Masha Kwath lies in their synergistic actions—while Dashmool mitigates systemic and local Vata-Kapha vitiation, Masha provides Snigdha (unctuous), Brimhana (tissue-nourishing), and Balya (strength-promoting) effects. Their combined use aligns with the principles of Samprapti Vighatana (breaking the pathogenesis) in Vata Vyadhi Chikitsa [4].

Despite the frequent mention of these formulations in classical texts, there exists a scarcity of structured clinical studies evaluating their isolated and combined effects in Avabahuka management. Given the growing prevalence of musculoskeletal disorders in both rural and urban populations and the increasing demand for integrative and natural treatments, it is imperative to explore safe, effective, and accessible Ayurvedic solutions [5].

This clinical study was therefore undertaken to evaluate the therapeutic efficacy of Dashmool and Masha Kwath in patients suffering from Avabahuka over a defined duration. The outcomes assessed included pain relief, improvement in shoulder mobility, and overall functional enhancement, thereby contributing valuable data toward evidence-based Ayurvedic musculoskeletal care.

Materials and Methods

Study Design and Setting

This was a single-center, prospective, open-label clinical study conducted at the Department of Kayachikitsa, Dayanand Ayurvedic Medical College and Hospital,

Siwan, Bihar, India. from January 2019 to December 2021.

Sample Size and Selection Criteria

A total of 120 patients diagnosed with Avabahuka were enrolled in the study. The sample size was determined to provide sufficient statistical power while considering feasibility and patient availability.

Inclusion Criteria:

- Patients aged 30 to 65 years of either gender.
- Clinical diagnosis of Avabahuka with symptoms such as pain, stiffness, and restricted shoulder movement.
- Chronicity of the condition less than 1 year.
- Willingness to provide informed consent and comply with treatment protocol.

Exclusion Criteria:

- Avabahuka secondary to trauma, fracture, or neurological causes.
- Patients with systemic disorders like uncontrolled diabetes, severe cardiac disease, or autoimmune conditions.
- Prior surgical intervention or corticosteroid injection in the shoulder within the last 6 months.
- Pregnant and lactating women.

Diagnostic and Assessment Criteria

Diagnosis was based on Ayurvedic clinical features of Avabahuka as well as the modern criteria for frozen shoulder. Assessment included:

- Detailed clinical history and physical examination.
- Measurement of shoulder range of motion (ROM) in flexion, abduction, and external rotation using a goniometer.
- SPADI (Shoulder Pain and Disability Index) for evaluating pain and disability.
- Visual Analogue Scale (VAS) for subjective pain scoring.



Intervention Protocol

All patients received the following intervention for a continuous duration of 45 days:

- Dashmool Kwath – 80 ml orally, twice daily after meals.
- Masha Kwath – 80 ml orally, twice daily after meals.

The decoctions were prepared fresh daily using standard classical methods. Dietary restrictions were advised to avoid Vata-aggravating foods and cold exposure. No other Ayurvedic or allopathic medications were permitted during the study period.

Follow-up and Assessment Schedule

Patients were evaluated at baseline (day 0), day 15, day 30, and day 45. The following parameters were assessed at each visit:

- SPADI score (Pain and Disability subscales)
- VAS score for pain intensity
- Active ROM measurements (shoulder flexion, abduction, and external rotation)

Compliance to medication and any adverse events were recorded throughout the study.

Statistical Analysis

The data were analyzed using descriptive statistics (mean, percentage) and inferential statistics (paired t-test or Wilcoxon signed-rank test) to compare pre- and post-treatment outcomes. A p-value <0.05 was considered statistically significant. MS Excel and SPSS software were used for data compilation and analysis.

Results

A total of 120 patients diagnosed with Avabahuka were enrolled and completed the study. The observations were analyzed based on demographic distribution, presenting symptoms, clinical assessments, and treatment outcomes measured at baseline and follow-up intervals.

Overall, the study showed marked improvement in shoulder joint function, pain relief, and quality of life in most patients by the end of 45 days. The improvement was statistically significant across all evaluated parameters including SPADI scores, VAS for pain, and

range of motion in shoulder flexion, abduction, and external rotation. No major adverse events were reported.

Table 1: Age-wise Distribution of Patients

Table 1 illustrates the distribution of patients by age group.

Most patients belonged to the 41–50 years group, followed by the 51–60 years group.

Age Group (Years)	Number of Patients	Percentage (%)
30–40	18	15.0
41–50	48	40.0
51–60	39	32.5
61–65	15	12.5
Total	120	100

Table 2: Gender Distribution

Table 2 shows the gender-wise distribution of participants.

The condition was more prevalent among females than males.

Gender	Number of Patients	Percentage (%)
Male	42	35.0
Female	78	65.0
Total	120	100

Table 3: Duration of Illness Before Enrolment

Table 3 depicts the chronicity of illness prior to inclusion.

A majority of patients reported symptoms lasting between 1 to 6 months.

Duration (Months)	Number of Patients	Percentage (%)
<1 month	21	17.5
1–3 months	54	45.0
4–6 months	33	27.5
>6 months	12	10.0
Total	120	100



Table 4: Distribution Based on Dominant Affected Shoulder

Table 4 highlights which shoulder was affected more frequently.

The right shoulder was involved more often than the left.

Affected Side	Number of Patients	Percentage (%)
Right	74	61.7
Left	46	38.3
Total	120	100

Table 5: Pre- and Post-Treatment SPADI Total Scores

Table 5 compares the SPADI total scores before and after treatment.

A significant reduction in disability and pain was observed.

Time Point	Mean SPADI Score \pm SD
Baseline (Day 0)	68.4 \pm 6.5
Day 15	52.7 \pm 5.9
Day 30	38.6 \pm 6.1
Day 45	24.1 \pm 5.5

Table 6: Pre- and Post-Treatment VAS Scores for Pain

Table 6 shows changes in subjective pain levels using VAS.

Pain intensity decreased consistently across the treatment period.

Time Point	Mean VAS Score \pm SD
Baseline (Day 0)	8.2 \pm 1.1
Day 15	6.4 \pm 1.0
Day 30	4.1 \pm 0.9
Day 45	2.3 \pm 0.7

Table 7: Range of Motion – Flexion (in Degrees)

Table 7 displays improvement in shoulder flexion post-treatment.

Flexion angle increased progressively in most patients.

Time Point	Mean Flexion ($^{\circ}$) \pm SD
Baseline	90.4 \pm 10.5
Day 15	110.6 \pm 9.8
Day 30	132.8 \pm 8.7
Day 45	153.5 \pm 6.9

Table 8: Range of Motion – Abduction (in Degrees)

Table 8 shows the abduction range improvement with treatment.

There was a consistent increase in shoulder abduction by day 45.

Time Point	Mean Abduction ($^{\circ}$) \pm SD
Baseline	85.7 \pm 11.2
Day 15	106.3 \pm 10.4
Day 30	129.2 \pm 9.5
Day 45	149.6 \pm 7.8

Table 9: Range of Motion – External Rotation (in Degrees)

Table 9 highlights progress in external rotation of the shoulder.

Marked improvement in rotational movement was noted.

Time Point	Mean External Rotation ($^{\circ}$) \pm SD
Baseline	60.3 \pm 9.1
Day 15	74.6 \pm 8.3
Day 30	88.9 \pm 7.2
Day 45	101.4 \pm 6.0

Table 1 presents the age-wise distribution of patients with Avabahuka. The majority (40%) were aged between 41–50 years, indicating higher susceptibility to frozen shoulder in middle-aged adults.



Table 2 depicts the gender-wise distribution of participants. Females constituted 65% of the study population, suggesting a greater prevalence or health-seeking behavior among women for this condition.

Table 3 categorizes patients based on the duration of illness prior to enrolment. Most patients (45%) reported having symptoms for 1–3 months, indicating early-stage presentation.

Table 4 outlines the side of the shoulder most commonly affected. The right side was more frequently involved (61.7%), potentially reflecting dominance-related biomechanical stress.

Table 5 compares SPADI total scores at different intervals. There was a significant and progressive reduction in pain and disability scores from baseline to day 45.

Table 6 records the change in Visual Analogue Scale (VAS) scores for pain. A steady decline in pain perception was observed, supporting the analgesic efficacy of the treatment.

Table 7 shows improvement in shoulder flexion. The average flexion increased from 90.4° at baseline to 153.5° by day 45, indicating restoration of movement.

Table 8 demonstrates changes in shoulder abduction. Patients showed marked gains in abduction, increasing from a baseline of 85.7° to 149.6° by the end of therapy.

Table 9 reflects enhancement in external rotation of the shoulder. External rotation improved from 60.3° at baseline to 101.4° at day 45, showing functional recovery.

Discussion

Avabahuka, a Vata-pradhana disorder primarily affecting the shoulder joint, is a significant cause of disability in middle-aged individuals, often hampering routine activities and quality of life. Its correlation with frozen shoulder (adhesive capsulitis) in contemporary clinical practice is well-accepted due to overlapping clinical features such as shoulder stiffness, pain, and restriction of active and passive movements. In Ayurveda, the disease originates due to aggravated Vata sometimes associated with Kapha leading to Sankocha (contraction) of Sira, Snayu, and Sandhi. This results in impaired mobility and pain in the Amsa Sandhi (shoulder

joint). The therapeutic strategy in Ayurveda, therefore, emphasizes Vata-Kaphahara measures to restore normal function [6].

The present study evaluated the combined effect of Dashmool and Masha Kwath, both known for their potent Vata-Shamaka and anti-inflammatory properties. Dashmool, being Tridoshaghna with a dominance in pacifying Vata and Kapha, acts at the root of the pathogenesis of Avabahuka. It is known to alleviate Shoola (pain), Shotha (inflammation), and improve circulation. Masha, on the other hand, is Snigdha, Brimhana, and Vataghna in nature. It strengthens Dhatus (body tissues) and provides nourishment to the musculoskeletal system, making it ideal for degenerative and neuromuscular conditions like Avabahuka [7].

The results of this study demonstrate significant improvements across various clinical domains. SPADI scores, a validated tool to assess both pain and disability in shoulder disorders, decreased consistently during the treatment course, indicating both symptomatic relief and functional restoration. The substantial reduction in VAS scores further corroborates the analgesic effect of the intervention. Improvement in the range of motion—in flexion, abduction, and external rotation—demonstrates the reversal of stiffness and joint immobility, which is the hallmark of Avabahuka. These findings align with the classical pharmacological actions of the Kwath Dravyas as described in Ayurvedic texts [8].

Age distribution analysis showed a higher incidence in the 41–50 year age group, which matches the epidemiological trends of frozen shoulder seen in modern literature. A higher number of female patients observed in the study is consistent with hormonal and anatomical predispositions reported in both Ayurveda and allopathy. Most patients had a symptom duration of 1 to 6 months, suggesting a chronic progressive stage, which is often the optimal window for conservative, non-invasive Ayurvedic intervention [9].

The dominance of right-side shoulder involvement might be linked to the general pattern of right-handed dominance, resulting in increased mechanical wear and repetitive strain. It is also understood in Ayurveda that excessive usage of a particular Anga (limb) can provoke localized Vata Dushti, which can predispose that area to disease manifestation [10].



The study findings reinforce the Ayurvedic concept of Samprapti Vighatana breaking the chain of pathogenesis by employing appropriate internal medicines that address both Dosha and Dushya components. The holistic effect of Dashmool and Masha Kwath, through their combined Rasa (taste), Guna (quality), Veerya (potency), and Vipaka (post-digestive effect), helped normalize the movement of Vata and reduce Kapha-related obstruction (Avarana).

Importantly, no significant adverse effects were noted throughout the study, confirming the safety and tolerability of the intervention. This supports the potential of these formulations as frontline management tools for early to moderate stages of Avabahuka, especially in patients seeking alternatives to steroids, NSAIDs, or surgery.

Although the study shows promising results, limitations include the absence of a placebo or comparator arm, lack of imaging or radiological validation, and reliance on subjective outcome measures. Nevertheless, it adds substantial clinical evidence supporting Ayurvedic treatment protocols for shoulder-related musculoskeletal disorders.

Conclusion

The present clinical study establishes that the combined administration of Dashmool Kwath and Masha Kwath is effective in significantly reducing pain, stiffness, and disability associated with Avabahuka (Frozen Shoulder). The formulations demonstrated progressive improvement in shoulder range of motion and overall functional capacity without any adverse effects, affirming their safety and therapeutic utility.

By addressing the Vata-Kapha pathology at both systemic and local levels, this Ayurvedic approach offers a holistic, cost-effective, and well-tolerated alternative to conventional treatments. These findings highlight the relevance of classical Ayurvedic interventions in managing musculoskeletal conditions like Avabahuka, thereby encouraging their wider clinical integration and further research validation.

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