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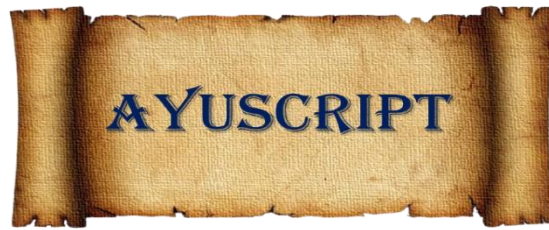
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ॐ नमो भगवते वासुदेवाय ॥ १ ॥ विश्वकर्मो एमाहूयपुरीहाटकनि  
र्मेता ॥ तत्रयोऽशिसाहस्रस्त्रीणां चैव वराधिकम् ॥ ११ ॥ भवनानि मनोज्ञानि  
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राः ॥ १३ ॥ यत्किंचित्त्रिभुलोकेषु सुन्दरं न च दृश्यते ॥ स वा जित प्रज्ञेनात्पो  
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सिंहासने भिरमधरं सवाजिनं सवाचकं ॥ चरं हृदि प्रसन्नं स्मितं यत्नेन नमसि







## International Journal for Empirical Research in Ayurveda

### Clinical Study of Dashmool and Masha Kwath in the Management of Avabahuka (Frozen Shoulder)

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#### ABSTRACT:

Avabahuka (Frozen Shoulder) is a Vata-dominant musculoskeletal disorder characterized by pain. Ayurvedic texts describe the condition with symptoms like pain ("Shula") and stiffness ("Stabdghata") in the shoulder joint. This randomized controlled trial investigated the efficacy of Dashmool and Masha Kwath in treating Avabahuka (Frozen Shoulder). Sixty patients were divided into two groups: Group A, treated with Triyodashang Guggul, and Group B, treated with Dashmool and Masha Kwath. Clinical assessments, including pain intensity and range of motion, were conducted before and after the intervention. Results indicated that both treatments alleviated symptoms, but Dashmool and Masha Kwath demonstrated superior improvements across most outcome measures.

**Keywords:** Avabahuka, Frozen Shoulder, Dashmool, Masha Kwath, Triyodashang Guggul, Ayurveda, Clinical Trial

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## Introduction

Frozen Shoulder, known as Avabahuka in Ayurveda, is characterized by pain and restricted movement of the glenohumeral joint. This condition can significantly impair daily activities, particularly in populations relying on physical labor. Ayurvedic texts describe Avabahuka as a Vata Vyadhi,<sup>1</sup> emphasizing the role of aggravated Vata dosha in its pathogenesis<sup>2</sup>. This study explores the therapeutic potential of Dashmool and Masha Kwath, a formulation that balances Vata and nourishes tissues, in managing Frozen Shoulder.<sup>3,4</sup>

In Avabahuka Vata is the main dosha, the text suggests that other doshas, such as Pitta and Kapha, can also be involved. This is because the shoulder joint ("Sandhi") comprises various tissues (bones, ligaments, tendons, etc.) which can be influenced by other doshas. Modern factors that are similar to the Ayurvedic causative factors include excessive Usage (similar to Ati Vyayama), Irregular Movements (similar to Vishama Chestha), Any injury to the shoulder including tendinitis, bursitis and rotator cuff injury (similar to Marma Abhighata).<sup>6</sup>

Ayurvedic literature classifies diseases based on dosha involvement. Avabahuka is primarily a Vata disorder, though other doshas may be involved. The texts mention symptoms like pain (Shula) and stiffness (Stabdhata) in the shoulder joint. Factors such as improper diet (Mithya Ahara), excessive exercise (Ati Vyayama), and trauma (Marma Abhighata) are considered causative. While primarily a Vata disorder, the text acknowledges the potential involvement of other doshas (Pitta and Kapha) as the "Sandhi" (joint) is composed of various tissues.<sup>7</sup>

Ayurvedic treatment modalities, including "Ruksha Chikitsa" (dry therapy) for Kapha involvement. "Sira Vedha" (venesection) in specific conditions. "Nashya" (nasal administration) and Shamana Chikitsa like the use of formulations like Dashmool and Masha Kwath, which aims to pacify Vata and strengthen tissues.<sup>8</sup>

Dashmool, a combination of ten roots, is traditionally used to pacify Vata, reduce inflammation, and relieve pain. Masha (black gram) is known for its nourishing and strengthening properties. The Kwath (decoction) form allows for better absorption and bioavailability of the herbal extracts.

## Aims and Objectives

1. This study aimed to evaluate and compare the efficacy of Dashmool and Masha Kwath and Triyodashang Guggul in the management of Avabahuka (Frozen Shoulder).

### The primary objectives were:

2. To assess the reduction in pain and stiffness in patients with Avabahuka in both group.
3. To evaluate the improvement in the range of motion of the shoulder joint following treatment in both group.
4. To compare the effectiveness of Dashmool and Masha Kwath and Triyodashang Guggul in managing the clinical symptoms of Avabahuka.

## Materials and Methods

**Study Design :** The study was designed as a randomized controlled trial.

**Study Setting:** The research was conducted in the outpatient and inpatient departments of the hospital.

**Participants:** Sixty patients diagnosed with Avabahuka were recruited for the study. The **inclusion criteria were:**

- Patients aged between 20 and 70 years.
- Patients with a clinical diagnosis of Avabahuka (Frozen Shoulder).
- Patients willing to provide informed consent.

The exclusion criteria were:

- Patients below 20 or above 70 years of age.
- Patients with other systemic diseases affecting the shoulder joint.
- Patients unwilling to participate in the study.

### Interventions

The eligible patients were randomly assigned to one of the two treatment groups, with 30 patients in each group:

#### Group A (Triyodashang Guggul):

Patients received 500 mg of Triyodashang Guggul twice daily before meals with warm water.

**Group B (Dashmool and Masha Kwath):** Patients received 50 ml of Dashmool and Masha Kwath twice daily before meals.

#### Preparation of Dashmool and Masha Kwath

The Kwath was prepared using the following method: Dashmool and Masha were coarsely powdered. The powder was added to 16 times its weight of water. The mixture was boiled until it was reduced to one-fourth of the original volume. The decoction was then filtered and administered.

### Treatment Protocol

Both treatment groups received their respective interventions for a specified period. Patients were advised to follow a prescribed diet and lifestyle regimen.

### Assessment Criteria

The assessment criteria used in the study to evaluate the effectiveness of the treatments

were based on the changes in the symptoms and the range of motion of the shoulder joint.

**Symptom Assessment:** The severity of the main symptoms was graded using a numerical scale:

#### Bahu Chesta Nash (Loss of Arm movement):

- 0: No difficulty in activities
- 1: Difficulty in hard activities
- 2: Significant difficulty in normal activities
- 3: Inability to perform any activity

#### Sira Sankoch (Contraction of veins):

- 0: No contraction
- 1: Mild contraction
- 2: Moderate contraction
- 3: Severe contraction, inability to perform any activity

#### Bahu Shosh (Atrophy of the arm):

- 0: No atrophy
- 1: Mild atrophy
- 2: Significant atrophy, difficulty in activities
- 3: Severe atrophy, inability to perform activities

#### Sthanik Shoph (Local swelling):

- 0: No swelling
- 1: Mild swelling
- 2: Moderate swelling
- 3: Severe swelling

#### Sparshan Pida (Tenderness):

- 0: No pain
- 1: Mild pain
- 2: Moderate pain
- 3: Severe pain

### Range of Motion Assessment

The range of motion of the shoulder joint was measured in degrees for:

#### Forward flexion:



- i) 180°
- ii) 135°
- iii) 90°
- iv) 45°
- v) Absence of flexion

**Hyper extension:**

- i) 50°
- ii) 30°
- iii) 10°
- iv) Absence of extension

**Abduction:**

- i) 180°
- ii) 135°
- iii) 90°
- iv) 45°
- v) Absence of abduction

**Internal Rotation:**

- i) 90°
- ii) 60°
- iii) 30°
- iv) No movement

**External Rotation:**

- i) 90°
- ii) 60°
- iii) 30°
- iv) No movement

**Overall Improvement**

The overall improvement in the condition was categorized based on the percentage of relief in symptoms and improvement in the range of motion:

**A) Extreme improvement:** 75% improvement in disease and symptoms. Improvement in the range of motion

**B) Moderate improvement:** 50% improvement in disease and symptoms. Improvement in the range of motion

**C) Mild improvement:** 25% improvement in disease and symptoms. Improvement in the range of motion

**D) Very mild improvement:** Less than 25% improvement in disease and

symptoms. No visible improvement in symptoms

**Data Collection and Analysis:** Data were collected at baseline and at the end of the treatment period. Statistical analysis was performed using appropriate software to compare the outcomes between the two groups.

**Observations****Demographic Characteristics**

**Age:** The highest number of patients (33.34%) was in the 51-60 year age group.

**Gender:** Males (80%) were more affected than females (20%).

**Religion:** The study population comprised Hindus (33.33%) and Muslims (66.67%).

**Education:** Most patients had completed intermediate level education (40%).

**Marital Status:** A majority of the patients were married (86.67%).

**Economic Status:** Most patients belonged to the middle class (63.33%).

**Occupation:** A significant proportion of patients were employed (36.67%).

**Dietary Habits:** Most patients were vegetarian (70%).

**Taste Preference:** A majority of the patients preferred pungent taste (36.67%).

**Sleep Patterns:** Many patients had disturbed sleep (56.67%).

**Bowel Habits:** Constipation was prevalent (66.67%).

**Addictions:** Tea consumption was common (43.33%).

**Digestive Health:** Most patients had a harsh bowel (66.67%).

**Constitution:** The predominant constitution was Vata-Kapha (56.67%).

**Strength:** Most patients had moderate strength (73.33%).

**Body Frame:** A majority of the patients had a moderate body frame (56.67%).

**Mental Strength:** Many patients had moderate mental strength (50%).

**Exercise Capacity:** A large proportion of patients had low exercise capacity (76.67%).

**Digestive Fire:** Most patients had low digestive fire (50%).

**Causative Factors:** Vata-aggravating diet was a major contributing factor (63.33%).

**Affected Side:** The right shoulder was more commonly affected (66.67%).

**Symptoms:** The main symptoms were restricted movement and pain (100%).

### Clinical Outcomes

**Shoulder Joint Stiffness:** Both groups showed a reduction in shoulder joint stiffness, but Group B exhibited a more significant decrease ( $p < 0.0001$ ) compared to Group A ( $p < 0.01$ ).

**Restriction in Arm Movement:** Both groups demonstrated improvement in arm movement, with Group B showing a greater degree of improvement ( $p < 0.0001$ ) than Group A ( $p < 0.0001$ ).

**Shoulder Wasting:** Group B had a more significant improvement ( $p < 0.0001$ ) in

shoulder wasting compared to Group A ( $p < 0.001$ ).

**Swelling and Tenderness:** Both groups experienced a reduction in swelling and tenderness, with Group B showing a more pronounced effect ( $p < 0.0001$ ) than Group A ( $p < 0.001$ ).

### Range of Motion:

**Forward Flexion:** Both groups improved, with Group B showing greater improvement ( $p < 0.0001$ ) compared to Group A ( $p < 0.0001$ ).

**Hyper Extension:** Group B showed more significant improvement ( $p < 0.001$ ) than Group A ( $p < 0.01$ ).

**Abduction:** Group B exhibited greater improvement ( $p < 0.001$ ) than Group A ( $p < 0.001$ ).

**Internal Rotation:** Group B demonstrated more significant improvement ( $p < 0.001$ ) than Group A ( $p < 0.01$ ).

**External Rotation:** Group B showed greater improvement ( $p < 0.001$ ) compared to Group A ( $p < 0.01$ ).

You're right to ask for "better." The tables I provided are accurate to the source, but they can be presented with more clarity and context. Here's a revised presentation of the tables, aiming for better understanding:

**Table 1: Effect of Treatment on Shoulder Joint Vein Contraction (अंश संधि सिरा संकोच)**

This table shows the effect of the treatments on the severity of shoulder joint vein contraction.

Measure	Group A – Before	Group A – After	Group C – Before (	Group C – After
Mean	1.63	0.93	1.76	0.76
Difference Mean	—	0.467	—	1
SD ±	1.02	0.78	1.08	0.68
Difference SD	—	0.24	—	0.4
SE ±	0.19	0.14	0.20	0.12
Difference SE	—	0.05	—	0.08
T value	—	5.64	—	7.92
P value	—	<0.001	—	<0.0001
(Effect)	—	Significant	—	Highly Significant

**Table 2: Effect of Treatment on Loss of Hand Movement**

This table shows the effect of the treatments on the severity of loss of hand movement.

Measure	Group – A Before Treatment	Group – A After Treatment	Group – B Before Treatment	Group – B After Treatment
Mean	1.56	0.93	1.87	0.83
Difference Mean	—	0.63	—	1.04
SD ±	0.96	0.77	0.98	0.69
Difference SD	—	0.19	—	0.29
SE ±	0.18	0.14	0.18	0.13
Difference SE	—	0.04	—	0.05
T value	—	5.43	—	8.51
P value	—	<0.0001	—	<0.0001
Effect	—	More Effective	—	More Effective

**Table 3: Effect of Treatment on Atrophy of the Shoulder**

This table shows the effect of the treatments on the severity of shoulder atrophy.

Measure	Group – A Before Treatment	Group – A After Treatment	Group – B Before Treatment	Group – B After Treatment
Mean	1.56	0.90	1.63	0.70
Difference Mean	—	0.66	—	0.93
SD ±	1.1	0.79	1.1	0.58
Difference SD	—	0.31	—	0.52
SE ±	0.20	0.14	0.20	0.11
Difference SE	—	0.06	—	0.09
T value	—	5.29	—	8.00
P value	—	<0.001	—	<0.0001
Effect	—	Significant	—	Highly Significant

**Table 4: Effect of Treatment on Local Swelling**

This table shows the effect of the treatments on the severity of local swelling.

Measure	Group – A Before Treatment	Group – A After Treatment	Group – B Before Treatment	Group – B After Treatment
Mean	1.66	1.06	1.26	0.63
Difference Mean	—	0.60	—	0.63

<b>SD ±</b>	0.94	0.83	0.83	0.62
<b>Difference SD</b>	—	0.11	—	0.21
<b>SE ±</b>	0.17	0.15	0.15	0.11
<b>Difference SE</b>	—	0.02	—	0.04
<b>T value</b>	—	5.18	—	6.02
<b>P value</b>	—	<0.001	—	<0.0001
<b>Effect</b>	—	Significant	—	Highly Significant

**Table 5: Effect of Treatment on Tenderness**

This table shows the effect of the treatments on the severity of tenderness.

<b>Measure</b>	<b>Group – A Before Treatment</b>	<b>Group – A After Treatment</b>	<b>Group – B Before Treatment</b>	<b>Group – B After Treatment</b>
<b>Mean</b>	1.60	0.96	1.70	0.73
<b>Difference Mean</b>	—	0.64	—	0.97
<b>SD ±</b>	1.09	0.73	0.82	0.68
<b>Difference SD</b>	—	0.36	—	0.14
<b>SE ±</b>	0.20	0.13	0.15	0.12
<b>Difference SE</b>	—	0.10	—	0.13
<b>T value</b>	—	0.07	—	10.43
<b>P value</b>	—	<0.01	—	<0.0001
<b>Effect</b>	—	Significant	—	Highly Significant

### Comparative Analysis

A comparative analysis of the two treatment groups revealed that Dashmool and Masha Kwath (Group B) was more effective in reducing pain, stiffness, and improving the range of motion compared to Triyodashang Guggul (Group A).

### Discussion:

The results of this study indicate that both Dashmool and Masha Kwath and Triyodashang Guggul are beneficial in the management of Avabahuka (Frozen Shoulder).<sup>9</sup> However, Dashmool and Masha Kwath demonstrated a statistically significant improvement in most of the

clinical parameters<sup>10</sup> Efficacy of Dashmool and Masha Kwath: The superior efficacy of Dashmool and Masha Kwath can be attributed to the combined effects of Dashmool's Vata-pacifying and anti-inflammatory actions and Masha's nourishing and strengthening properties. This combination effectively addresses the underlying Vata imbalance and supports tissue repair in Avabahuka.<sup>11,12</sup> Efficacy of Triyodashang Guggul: Triyodashang Guggul, containing Guggul and other anti-inflammatory herbs, also showed positive effects, particularly in reducing inflammation and pain<sup>13</sup>. Demographic Factors: The demographic analysis provided insights into the prevalence of



Avabahuka in specific populations. Factors such as age, gender, occupation, and dietary habits appear to influence the occurrence of the condition.

### Limitations

The study had some limitations, including a relatively small sample size and a short treatment duration. Further studies with larger sample sizes and longer follow-up periods are needed to confirm these findings and explore the long-term efficacy of Dashmool and Masha Kwath in managing Avabahuka.

### Conclusion

This study demonstrates that both Dashmool and Masha Kwath and Triyodashang Guggul are effective in treating Avabahuka (Frozen Shoulder). However, Dashmool and Masha Kwath showed superior results in reducing pain, stiffness, and improving the range of motion. These findings suggest that Dashmool and Masha Kwath can be a valuable therapeutic intervention for Avabahuka.

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