



Research Article

A COMPARATIVE CLINICAL STUDY TO EVALUATE THE EFFICACY OF NAAGARA GHRITA NASYA AND THINTHRINI TAILA NASYA FOLLOWED BY SHULAHARA KASHAYA IN APABAHUKA VIS-À-VIS FROZEN SHOULDER

Kirthana. K^{1*}, Mythrey. R C², Ananta S Desai³

*¹PG Scholar, ²Professor & HOD, ³Professor and HOD, Department of Post Graduate Studies in Kayachikitsa, Government Ayurveda Medical College, Mysore, Karnataka, India.

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ABSTRACT

Apabahuka is a *Vata-pradhana Nanatmaja Vyadhi* characterized by *Shula* (pain), *Stambha* (stiffness), and restriction of shoulder movements (*Bahupraspandita hara*). The clinical presentation closely resembles Frozen Shoulder (Adhesive Capsulitis) described in modern medicine. Frozen Shoulder is a common musculoskeletal disorder causing pain and progressive limitation of shoulder movements, significantly affecting quality of life. **Objectives:** To evaluate and compare the efficacy of *Naagara Ghrita Nasya* and *Thinthrini Taila Nasya* followed by *Shulahara Kashaya* in the management of *Apabahuka vis-à-vis* Frozen Shoulder. **Materials and Methods:** A comparative clinical study with pre-, mid- and post-test design was conducted on 40 subjects, divided equally into two groups. Group A received *Naagara Ghrita Nasya* followed by *Shulahara Kashaya* with *Prakshepaka dravya*, while Group B received *Thinthrini Taila Nasya* followed by the same *Shulahara Kashaya* regimen. Assessments were done before treatment, after completion of *Nasya*, and after *Shamanoushadi*. Statistical analysis was performed using Mann-Whitney U and Wilcoxon matched-pairs tests. **Results:** Both groups showed statistically significant improvement in pain, stiffness, and shoulder movements. Inter-group comparison revealed no statistically significant difference ($p > 0.05$), though Group B showed marginally better overall improvement. **Conclusion:** Both *Naagara Ghrita Nasya* and *Thinthrini Taila Nasya* followed by *Shulahara Kashaya* are effective in the management of *Apabahuka vis-à-vis* Frozen Shoulder. *Thinthrini Taila Nasya* demonstrated slightly superior clinical outcomes.

INTRODUCTION

Apabahuka is *Vedanapradhana Nanatmaja Vatavyadhi* affecting *Amsapradesha* with predominance of *Vatakapaha Dosh*^[1]. Cardinal features of *Apabahuka* are *Shula*, *Sthamba*, *Bahupraspandithahara*^[2]. These symptoms resemble with the frozen shoulder. Frozen shoulder, also called as adhesive capsulitis, is characterized by pain and restricted movement of shoulder, usually in the absence of intrinsic shoulder disease^[3]. This condition develops after prolonged immobility of arm. Signs and symptoms typically begin slowly, then get worse over

time which hampers the day-to-day activities like combing, bathing, writing etc making it an issue of concern.

The prevalence rate of Frozen Shoulder globally is around 2-5%. In Indian population it ranges between 15-25%. Among subjects with Diabetes mellitus 3-6% encounter frozen shoulder^[4]

Present contemporary treatment^[5,6] includes oral NSAIDS, Corticosteroids both orally and injectable forms. External therapies include hot and cold compression packs and Physiotherapy. According to estimation from World Health Organization, 80% of the world's population relies on traditional medicine for their primary health care^[7].

In classics the treatment of *Apabahuka* includes *Nasya*, *Uttarabhaktika Snehapana*^[8], *Swedana*^[9], *Nasapana*^[10] and *Shamanoushadi prayoga*.

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Nasya is the therapeutic procedure in which the administered intranasal drug strengthens the *Urdhvajatruavayava* and eliminate the aggravated *Doshas*^[11]. *Ghrita, Taila and Kashaya*, selected for the study have *Vatashleshmaprashamana, Sarvavata roghara* and *Shulanivaranam* properties. Considering all the above points, the study was undertaken to evaluate efficacy of *Naagara ghrita* and *Thinthrini taila Nasya* followed by *Shulahara kashaya* as *Shamanaprayoga*.

Present study was conducted on 40 subjects who fulfilled the diagnostic criteria *Apabahuka vis-à-vis* Frozen shoulder

Objective

1. To evaluate the efficacy of *Naagara Ghrita Nasya* followed by *Shulahara Kashaya* internally.
2. To evaluate the efficacy of *Thinthrini Taila Nasya* followed by *Shulahara Kashaya* internally.
3. To compare the efficacy of *Naagara Ghrita Nasya* and *Thinthrini Taila Nasya* followed by *Shulahara Kashaya* internally in the management of *Apabahuka vis-à-vis* Frozen shoulder.

MATERIALS AND METHODS

Study Design

Open-label, double-arm comparative clinical study with pre-,mid- and post-test design.

Sample Size

40 subjects (20 in each group).

Duration of the intervention-38 days

Diagnostic Criteria

Diagnosis was done based on cardinal signs and symptoms of *Apabahuka* (Frozen shoulder) mentioned in the classics such as:

- *Shula* (pain) in the *Amsapradesha*.
- *Sthamba* (stiffness) in the *Amsapradesha*.
- *Bahupraspandanahara* (restricted movements) in the *Amsapradesha*.

Inclusion Criteria

1. Subjects fulfilling Diagnostic criteria.
2. Subjects of 20-60 years of age group, irrespective of gender, caste, and region included.
3. Subjects fit for *Nasya* procedure included.

Exclusion Criteria

1. Subjects with the history of fracture and dislocation of shoulder joint excluded.
2. Subjects with uncontrolled Diabetes mellitus(>250mg/dl) excluded.
3. Subjects with blood pressure levels above the range of (150/100mmHg) excluded.
4. Subjects suffering from any other systemic disorders which interferes with the course of intervention excluded.
5. Pregnant and lactating women.

Assessment Schedule

First assessment- 0th day, before commencement of intervention

Second assessment-9th day, after completion of *Nasya*

Third assessment- 39thday, after completion of intervention (*Shamanoushadi*).

Assessment Criteria

The following parameters were considered. They were graded and the scores given as follows:

A. Subjective Parameters

- 1) *Shula* (Pain)
- 2) *Sthambha* (Stiffness)

Table 1: Scale for assessment of pain

Pain	Grade
No pain	0
Mild pain particularly on moving the shoulder but able to continue routine work without difficulty.	1
Moderate pain felt on movement and interfere routine works.	2
Severe pain felt on movement and also at rest, disturbing sleep, unable to carry most of the routine work.	3

Table 2: Scale for assessment of Stiffness

Stiffness	Grade
No stiffness	0
Mild stiffness particularly during shoulder movement, able to continue routine work without difficulty.	1
Moderate stiffness felt on movement and unable to continue work.	2
Severe stiffness particularly during shoulder movement and also at rest, interfering routine work.	3

Objective Parameters

- *BaahuPrasandahara* (Restricted movements)
- (Goniometer examination)

Anterior Elevation

Internal rotation

External rotation

Anterior Elevation

G0:>160<180

G1:>120<160

G2:>60<120

G3: >0<60

Internal Rotation

G0: No pain or stiffness, can touch upto mid scapular region.

G1: Mild pain and stiffness, can touch upto infrascapular region.

G2: Moderate pain and stiffness, can touch upto lower lumbar Vertebrae.

G3: Severe pain and stiffness, can't move the joint.

External Rotation

G0: No pain or stiffness, can touch upto infrascapular region.

G1: Mild pain and stiffness, can touch upto midscapular region.

G2: Moderate pain and stiffness, can touch upto suprascapular Region

G3: Severe pain and stiffness, can't move the joint.

Intervention

- **Group A:** *Naagara Ghrita Nasya* (8 Bindu/nostril for 8 days) followed by *Shulahara Kashaya* with *Yavakshara, Hingu* and *Lavana* as *Prakshepaka dravya* (24ml twice daily for 30 days).
- **Group B:** *Thinthrini Taila Nasya* (8 Bindu/nostril for 8 days) followed by *Shulahara Kashaya* with *Yavakshara, Hingu* and *Lavana* as *Prakshepaka dravya* (24ml twice daily for 30 days).

Statistical Analysis

The results were analysed statistically by using Descriptive statistics- Mean (SD), Median (IQR), Standard deviation, Percentile, Inferential testing – Mann – Whitney U test, Wilcoxon matched pairs test using service product for statistical solution (SPSS) for windows.

RESULTS

The data was collected from the subjects based on diagnostic criteria. The result were analysed statistically using Wilcoxon matched pairs test.

Table 3: Comparison at different time points with *Bahu Shoola* scores in Group A and Group B by Wilcoxon matched pairs test

Group	Changes from	Mean change	% of change	Effect size	Z-value	p-value
Group A	Day 0 -Day 9	1.5	56.60	2.55	3.9198	0.0001*
	Day 0-Day 39	2.4	90.57	4.09	3.9211	0.0001*
Group B	Day 0 -Day 9	1.8	61.02	8.05	3.9199	0.0001*
	Day 0-Day 39	2.7	91.53	12.07	3.9201	0.0001*

Bahushula scores showed statistically significant improvement in both groups at all assessment points. Group A showed mean improvement of 1.5 (56.60%) at Day 9 (Z=3.92, p=0.0001) and 2.4 (90.57%) at Day 39 (Z=3.92, p=0.0001), while Group B showed improvement of 1.8 (61.02%) at Day 9 (Z=3.92, p=0.0001) and 2.7 (91.53%) at Day 39 (Z=3.92, p=0.0001).

Table 4: Comparison at different time points with *Sthamba* scores in Group A and Group B by Wilcoxon matched pairs test

Group	Changes from	Mean change	% of change	Effect size	Z-value	p-value
Group A	Day 0 -Day 9	0.7	31.11	0.89	3.2958	0.0010*
	Day 0-Day 39	1.5	64.44	1.84	3.8230	0.0001*
Group B	Day 0 -Day 9	1.0	41.30	1.19	3.6214	0.0003*
	Day 0-Day 39	1.4	60.87	1.75	3.8230	0.0001*

Sthambha scores showed statistically significant improvement in both groups at all assessment points. Group A showed mean improvement of 0.7 (31.11%) at Day 9 (Z=3.30, p=0.0010) and 1.5 (64.44%) at Day 39 (Z=3.82, p=0.0001), while Group B showed improvement of 1.0 (41.30%) at Day 9 (Z=3.62, p=0.0003) and 1.4 (60.87%) at Day 39 (Z=3.82, p=0.0001)

Table 5: Comparison, at different time points with Anterior elevation scores in Group A and Group B by Wilcoxon matched pairs test

Group	Changes from	Mean change	% of change	Effect size	Z-value	p-value
Group A	Day 0 -Day 9	0.7	30.43	0.96	2.9818	0.0029*
	Day 0-Day 39	1.4	58.70	1.84	3.7236	0.0002*
Group B	Day 0 -Day 9	0.8	34.78	0.82	3.4078	0.0007*
	Day 0-Day 39	1.5	65.22	1.53	3.7236	0.0002*

Anterior elevation scores showed statistically significant improvement in both groups at all assessment points. Group A showed mean improvement of 0.7 (30.43%) at Day 9 (Z=2.98, p=0.0029) and 1.4 (58.70%) at Day 39 (Z=3.72, p=0.0002), while Group B showed improvement of 0.8 (34.78%) at Day 9 (Z=3.41, p=0.0007) and 1.5 (65.22%) at Day 39 (Z=3.72, p=0.0002).

Table 6: Comparison, at different time points with External rotation scores in Group A and Group B by Wilcoxon matched pairs test

Group	Changes from	Mean change	% of change	Effect size	Z-value	p-value
Group A	Day 0 -Day 9	0.8	29.09	1.45	3.5162	0.0004*
	Day 0-Day 39	1.5	52.73	2.64	3.8230	0.0001*
Group B	Day 0 -Day 9	0.9	32.08	1.45	3.6214	0.0003*
	Day 0-Day 39	1.6	58.49	2.64	3.8230	0.0001*

External rotation scores showed statistically significant improvement in both groups at all assessment points. Group A showed mean improvement of 0.8 (29.09%) at Day 9 (Z=3.52, p=0.0004) and 1.5 (52.73%) at Day 39 (Z=3.82, p=0.0001), while Group B showed improvement of 0.9 (32.08%) at Day 9 (Z=3.62, p=0.0003) and 1.6 (58.49%) at Day 39 (Z=3.82, p=0.0001).

Table 7: Comparison, at different time points with Internal rotation scores in Group A and Group B by Wilcoxon matched pairs test

Group	Changes from	Mean change	% of change	Effect size	Z-value	p-value
Group A	Day 0 -Day 9	0.8	30.77	1.34	3.5162	0.0004*
	Day 0-Day 39	1.5	55.77	2.42	3.8230	0.0001*
Group B	Day 0 -Day 9	1.1	38.89	1.84	3.7236	0.0002*
	Day 0-Day 39	1.8	64.81	3.06	3.9199	0.0001*

Internal rotation scores showed statistically significant improvement in both groups. Group A showed mean improvement of 0.8 (30.77%) at Day 9 (Z=3.52, p=0.0004) and 1.5 (55.77%) at Day 39 (Z=3.82, p=0.0001), while Group B showed greater improvement of 1.1 (38.89%) at Day 9 (Z=3.72, p=0.0002) and 1.8 (64.81%) at Day 39 (Z=3.92, p=0.0001).

Overall Assessment

Table 8: Overall changes from Day 0 to Day 39 in Group A and Group B

Group	Changes from	% of change
Group A	Day 0 -Day 9	35.60
	Day 0-Day 39	64.44
Group B	Day 0 -Day 9	41.61
	Day 0-Day 39	68.18

DISCUSSION

Nasya is considered the prime therapy for disorders above the clavicle, acting directly on *Urdhvajatrugata Vata*.

Probable Mode of Action of Naagara Ghrita^[12,13]

In frozen shoulder, *Naagara Ghrita* acts as *Vata-Kapha nashaka*, *Ama-shula nashaka*, and

Agnivardhaka, reducing pain, stiffness, and capsular restriction. Its *Snigdha* and *Rasayana* properties nourish periarticular tissues, while *Yogavahi* action enhances drug delivery. *Naagara* inhibits COX, LOX, and NF-κB pathways, and *Ghrita* improves bioavailability, collectively countering inflammatory and fibrotic changes.

Probable Mode of Action of *Thinthrini Taila*^[14]

Thinthrini Taila described as *Sarvavatahara* in *Phalashruti* pacifies *Vata-Kapha*, removes *Kapha avarana*, and alleviates *Shula* and *Stambha* through its *Snehana*, *Shulahara*, and *Srotoshodhana* actions. Herbs like *Dashamula*, *Devadaru*, *Kuṣṭha*, *Tagara*, *Bala*, and *Atibala* exhibit anti-inflammatory, analgesic, muscle-relaxant, and neuromodulatory effects, while *Tila Taila* enhances penetration, lubrication, and capsular flexibility, countering inflammatory-fibrotic changes of adhesive capsulitis.

Probable Mode of Action of *Shulahara Kashaya*^[15]

Shulahara Kashaya pacifies *Vata-Kapha*, removes *Avarana* and *Ama*, and alleviates *Shula* and *Stambha*. Drugs like *Eranda*, *Sahachara*, *Nirgundi*, *Punarnava*, *Panchakola*, and *Gokshura* exert anti-inflammatory, analgesic, antioxidant, and anti-fibrotic actions, while *Brimhana* drugs nourish periarticular tissues, collectively restoring shoulder mobility and function. *Prakshepaka dravyas* such as *Yavakshara*, *Saindhava Lavana*, and *Hingu* enhance bioavailability through *Yogavahi* action, improve *Agni*, reduce *Ama*, and clear *Srotorodha*. By pacifying *Vata-Kapha* and potentiating *Shulahara* effects, they accelerate relief from pain, stiffness, and restricted movements in frozen shoulder.

CONCLUSION

The present study concludes that both *Naagara Ghrita Nasya* and *Thinthrini Taila Nasya* followed by *Shulahara Kashaya* are effective in managing *Apabahuka vis-à-vis* Frozen Shoulder. *Thinthrini Taila Nasya* showed marginally superior results, suggesting its better efficacy in restoring shoulder mobility and reducing pain.

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***Address for correspondence**

Dr. Kirthana. K

P.G Scholar,
Department of Kayachikitsa,
Government Ayurveda Medical
College, Mysuru, Karnataka
E-mail: drkirthanak@gmail.com

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