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Comparative Study to Evaluate the Efficacy of Krishana Mrittika Lepa and Anu Tailam Pratimarsha Nasya in Managment of Avabahuka w.s.r. to Frozen Shoulder

Dr. Vandana[1], Dr. Seema Rani[2], Dr. Mohit Sharma[3]
[1]P.G. Scholar, [2]Professor & Chairperson, [3]Assistant Professor, P.G. Department of Swasthavritta and Yoga, Institute for Ayurved Studies & Research, Faculty of Ayurved, SKAU, Kurukshetra, Haryana, India

Key words: Avabahuka; Frozen Shoulder; Adhesive Capsulitis; Krishana Mrittika; Anu Tailam; Pratimarsha Nasya; Ayurveda; Vata Vyadhi; Shoulder Pain; Range of Motion; Nasya Karma; Lepa Therapy; Randomized Controlled Trial; Ayurvedic Management.

I. INTRODUCTION

Ayurveda is the ancient traditional system of medicine and oldest holistic healing art. Since the time has been known, *Ayurveda* is showing the ideal way of living, which promises a disease free, happy and long life. All branches of *Ayurveda* have depth of knowledge in concise form. Elaborating the ideas and doing research on basic principles of *Ayurveda*, is the need of the present era.

Avabahuka is a disease that affects the *Amsa Sandhi* (shoulder joint) and is caused by the Vata Dosha. Even though the term *Avabahuka* is not mentioned in the *Nanatmaja Vata Vyadhi*, *Acharya Sushruta* and others have considered *Avabahuka* as a *Vata Vyadhi*. *Bahu Shosha*[1] can be considered as the preliminary stage of the disease where loss or dryness of the *Shleshaka Kapha* (one of the types Kapha) within the shoulder joints occurs. The next stage, that is, *Avabahuka*, occurs due to the loss of *Shleshaka Kapha* and symptoms like pain during movement and restricted movement are manifested. This is commented in the *Madhukosha Teeka* that Amsa Shosha is produced by *Dhatukshaya*, that is, *Shuddha Vatajanya*, and Avabahuka is *Vata-Kaphajanya*[2].

According to Acharya Sushruta[3]

"Ansadeshasthitovayu shoshayitvam ansabandhanam, shiracha aakunchaya tatrasto janayatava avabhahukam."

The symptoms of *Avabahuka* are often compared with the symptoms of adhesive capsulitis, which is commonly referred to as frozen shoulder.

Adhesive capsulitis refers to a mysterious fibrosis and inflammation of the glenohumeral joint capsule, manifested by diffuse, dull, aching pain within the shoulder and progressive restriction of motion, but usually no localized tenderness[4].

In early stages, the pain is worst at the hours of darkness and therefore the stiffness is limited to abduction and internal rotation of the shoulder. Later the pain is present most of the time with limited movements of the shoulder joint. The prevalence rate is two to five for general population.

Current study is focused on the application of Mrittika and administration of Anu Tailam Pratimarsha nasya in Avabahuka.

In Harita samhita 5 categories of Bhumi has been explained with their properties[5].

1) Krishna (black)
2) Rakta (red)
3) Sita (white)
4) Pita (yellow)
5) Nila (blue)

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Krishna Mrittika

Practically different Mrittika was used in different patients, but it was found that Krishna Mrittika can be used more because of following reasons:

Clayey texture therefore easy to make Krishna Mrittika patti and easy to apply on patients. This soil has high absorption property because of its black color.

Krishna Mrittika in Ayurvedic texts: the use of Krishna Mrittika is being explained in different context:

In *Bhaishajya Ratnvali*, Krishna Mrittika Potli Swedana has been indicated for the treatment of Shoola[6].

In *Bhava Prakash Nighantu*, use of krishana mrittika has been mentioned[7].

In *Sharangdhar Samhita*, black soil has been used for the treatment of inflammation[8].

Due to this anti-inflammatory property of *Krishana Mrittika*, its lepa is benefecial in managment of frozen shoulder.

It has been mentioned in chikitsa sutra of avabahuka according to *Acharaya Charaka*[9] and *Acharya Sushruta Snehika Nasya*[10] is indicated for *Avabahuka*. The aim of the present study was to evaluate the effectiveness of *Nasya karma* on *Avabahuka.*

Benefits of *Anu tailam* are[11] also mentioned in astanghridyum

Hence the study has been planned to evaluate the comparative effect of *krishana mrittika lepa* and *Anu tailam nasya* in *Avabahuka* (frozen shoulder).

II. AIM AND OBJECTIVE

To clinically compare the efficacy of *Krishana Mrittika lepa* and *Pratimarsha nasya* by *Anu tailam* in the management of *Avabahuka* (frozen shoulder).

III. OBJECTIVES

1) To study clinically the efficacy of *Krishana Mrittika lepa* and *Pratimarsha nasya* in *Avabahuka.*
2) Detail study of Krishana Mrittika lepa.
3) Detail study of Pratimarsha nasya by anu tailam.
4) To give symptomatic relief to patients with frozen shoulders.

IV. MATERIALS AND METHODS

A. *Study Design*

The present study is supposed to be

★ Level of the study-OPD
★ Study type- Comparative study, Clinical, Conceptual.
★ Timing- Prospective
★ Number of Groups- 2
★ Number of patients- 20 in both groups.
★ Duration of study- 20 days

B. *Source Of Data*

The whole study is planned according to medical research work it is divided into two parts:

- Conceptual Study
- Clinical Study

1) *Conceptual Study: Ayurvedic Samhita* and medical textbooks related to Swasthavritta, articles and journals, research paper etc. will be screened for information regarding the subjects and previous research work done on this subject.
2) *Clinical Source:* A clinical evaluation of patients will be done by collection of data through information obtained by history, physical examination and laboratory test for study. The Patients of either sex, sufferings from frozen shoulder fulfilling the diagnostic criteria will be selected for study from the OPD of IAS&R, *Kurukshetra* and from referral cases from other hospitals in vicinity of our hospital and nearby.

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C. Interventions-

- Krishana Mrittika for a group
- Anu tailam for another group

D. Preparation Of Krishana Mrittika

To be selected from natural source of *krishana mrittika* and approved from soil testing laboratories. Krishna Mrittika collected from non-contaminated land is separated from grass, stones and other impurities etc. Then it should be dried in the sun for 8 hours and later soaked in the water for 1-2 days. While drying, keep mixing it well by hand and superficial contaminated water is to be removed and fresh water is added. If large amount of mud is needed then, water of 2-3 feet has to be at the surface level after mixing with it. Then water is drained and the soil which is saturated with water is used for therapy.

Krishna Mrittika Powder: Processed wet mud is again, dried in sun for 1-2 days. After drying it is triturated in Khalva Yantra (pulverizer) and prepare the minute powder by sieving through a cloth and store in an airtight container.

How to use Krishna Mrittika

- First of all, where the patient has pain, a Mridu swedna is applied for 10 to 15 minutes at that organ.
- Then Krishna Mrittika Lepa applied.
- After 30–45 minutes of application, Lepa started Drying up. Then Lepa is removed, and the area is cleansed with lukewarm water[12]. Thickness of *lepa* applied- Approx 4-5 mm.

E. Anu Tailam Nasya (Pratimarsha Nasya)

As mentioned in samhitas, from a GMP certified company.

Dosage- 2 *Bindu* (1 ml in each nostril that is approximately 20 drops).

Selection of patients-

Sample size- Total 40 patients, 20 in each group will be randomly selected for the study, with ages ranging from 18 years to 70 years, irrespective of gender, religion, occupation, socio-economic status etc.

Intervention- Two groups will be made

One group of patients will be adviced to apply *lepa* in a day daily for 20 days. Total duration of therapy will be 20 days.

Other groups will be advised to administer 2 *bindu* of *anu tailam* in each nostril, BD.

Duration of study- 20 days. Including follow up period. Assessment of patient was done on the day of enrollment i.e. 0 day.

Follow up- After completing trial for 20 days, Patient will be reassessed every week.

V. ASSESSMENT CRITERIA

During the trial, the patient will be assessed with both the subjective and objective criteria. Severity of disease will be assessed by gradation of each criterion. Gradation will be done as follows-

A. Diagnostic Criteria

Diagnosis is done based on the clinical features of *Avabahuka* and frozen shoulder. **Investigations -**

- Serum Uric acid
- RA Factor
- X rays (AP View)

B. Subjective Parameters

The clinical features of frozen shoulder mentioned as per *Ayurvedic* texts were taken as the basis for diagnosis such as-

- Bahu Praspandida hara (impaired or loss of movement of the upper limb)
- Amsa Bandhana Shosha (muscle wasting)
- Shoola (pain)

C. Objective Parameters

Forward flexion, abduction of shoulder.

- Internal and external rotation of shoulder.
- Active and passive range of motion.
- X Rays

VI. SCORE ASSESSMENT CRITERIA

Assessment was mainly based on the condition of patients and improvement observed before and after treatment. All the signs and symptoms of Frozen shoulder were assigned score depending upon their severity.

1) Movement (By Goniometer)

CRITERIA	SCORE
Abduction	0 – 170 degrees
Adduction in extension	0 – 50 degrees
Forward flexion	0 – 165 degrees
Backward flexion	0 – 60 degrees

2) Rotations

CRITERIA	**SCORE**
External rotation in extension	**0 – 70 degrees**
Internal rotation in extension	**Yes/No**

VII. ASSESSMENT OF RESULTS

The assessment of progress will be observed after 20 days, after completion of the course of treatment. An assessment scale is a frame to assess the rate of improvement. At the end of the treatment the percentage of relief is calculated and classified under the following headings.

1) Good response: - more the 75% relief in presenting signs and symptoms.
2) Fair response: -75% to 50% Relief of sign and symptoms.
3) Poor response: - Below 50% Relief of sign and symptoms.
4) No response: - No response in presenting signs and symptoms of Frozen shoulder

VIII. STATISTICAL ANALYSIS

The observation and result will be analyses and presented on the basis of Respective and applicable statistical tests (paired t test).

IX. OBSERVATIONS AND RESULT

The subjective, objective parameters and laboratory finding, prior and after the clinical trial will be completed compounded statically analyzed and conclusion will be draw on the basis of result.

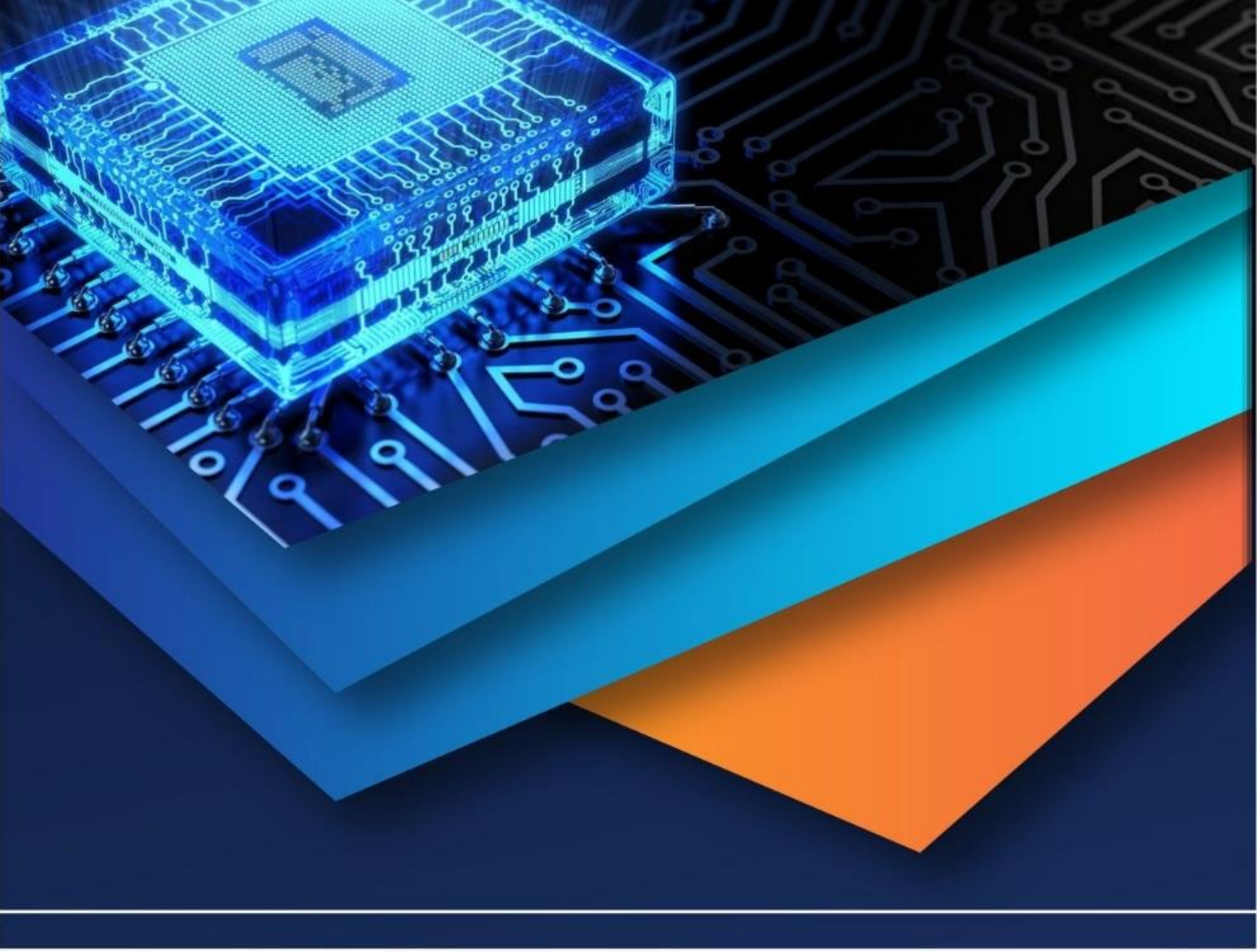
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