



## A CLINICAL STUDY TO EVALUATE THE EFFECT OF MASHA TAILA AND PHYSIOTHERAPY IN THE MANAGEMENT OF AVABAHUKA W.S.R.TO FROZEN SHOULDER

Prerna Ramoul<sup>1</sup>, Anil Sharma<sup>2</sup>, Suman Sharma<sup>3</sup>

<sup>1</sup>Assistant professor in Shalya Tantra Department at Chaudhary Devi Lal College of Ayurveda , Jagadhari ,Yaumnagar,Haryana ,India Pin 135101., <sup>2</sup>Professor in P.G.Dept of Shalya Tantra at Rajiv Gandhi Govt. Ayurvedic Medical College and Hospital Paprola , Distt. Kangra , Himachal Pradesh , India Pin 176115 , <sup>3</sup>Assosiate Professor in P.G.Dept of Shalya Tantra at National Institute of Ayurveda , Jaipur, India Pin 302002.

Corresponding Author: [prernaramoul007@gmail.com](mailto:prernaramoul007@gmail.com)

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### ABSTRACT

**Introduction :** Paradoxically shoulder joint privileged as the most mobile joint in the body has its nemesis because of this advantage i.e. it become more vulnerable to injuries. Frozen shoulder is a clinical syndrome characterized by painful restriction of both active and passive shoulder movements due to abnormalities within the shoulder joint or remote. Prevalence of this disease is around 2.1 - 5% and women suffer more than men between age group of 40-60 years .According to *Ayurvedic* principles, frozen shoulder can be taken as“*Avabahuka*”(Frozen shoulder), as its clinical features are almost similar. *Ayurvedic* principles of management for these diseases are more effective than other pathies . In modern medicine the current management has many side effects and having success rate of 58% only.Even on surgical decompression recurrence is also there. **Aim:-** To determine the effect of *Masha Taila(oil)* and physiotherapy in the management of *Avabahuka* w.s.r.to Frozen Shoulder. **Materials and method :** The study was conducted on 30 patients in two groups with symptoms of Frozen shoulder. **Statistical Analysis used :** Observations of the study were analyzed, and findings were evaluated by using statistical methods. **Result:** Group I:-Among 15 patients, 11 patients (73%) had markedly improved .Group II:-Among 15 patients, 2 patients (13.33%) had markedly improved. **Conclusion:** In group I: -*Masah Taila (Matar Vasti(Enema) and Sthanic*

*Snehna(Oleation)* along with physiotherapy gave better results ,in less duration of time then physiotherapy alone in group II.

**Keywords:** Avabauka ,Frozen shoulder,*Snehna,Masha Taila* ,physiotherapy .

## INTRODUCTION

Shoulder joint is the most mobile joint in the human body and its mobility makes it vulnerable to injury<sup>[1]</sup>, hence has demerit because of this formation. Frozen shoulder is a clinical syndrome characterized by a painful restriction of both active and passive shoulder movements due to abnormalities within the shoulder joint or remote.

According to Ayurvedic principles, the “Avabahuka”<sup>[3],[4]</sup> can be taken as frozen shoulder.as its clinical features like *Shosh(inflammation)* and *Vedna(pain)* are almost similar . Treatment of “Avabahuka” includes modalities such as *Snehana*, *Upanaha(poultice)* and *Vasti* <sup>[5]</sup> etc.

**Duple**y first described P.A.shoulder in 1872 and called it **Humeroscapularperi**arthritis. In 1934 **Codman** coined the term “**Frozen shoulder**” and in 1954 **Neulaser** gave the name adhesive capsulitis<sup>[2]</sup>. Statistical analysis shows that prevalence of frozen shoulder disease in general community is around 2.1 to 5%. This condition commonly affects people between the age of 40-60 years. Women suffer more than men. There are three classical stages of frozen shoulder - **Stage 1** – Stage of acute pain along with decreased movements.

**Stage2-** In this stage pain gradually decreases and the patient complains of stiffness in shoulder joint.

**Stage3-** It is the stage of recovery, where shoulder movements improve. It lasts for 6 months to 24 months. Shoulder movements are very painful and

ultimately, makes the life of the patient miserable as it affects the daily routine activities<sup>[2]</sup>.

In modern medicine the current management include NSAIDs and corticosteroids initially<sup>[2]</sup>. Even after surgical decompression, complications like rotator cuff injury,<sup>[6]</sup> severe scar, tenderness may occur, and recurrence is also one of the most common among them.

**Aim of the trial** to assess the efficacy of *Masha Taila* along with physiotherapy in the management of *Avabahuka w.s.r.* Frozen shoulder to reduce the time duration and severity of diseases.

### Objectives

1. To explore more *Ayurvedic* management principles for Frozen shoulder.
2. To reduce severity of the disease and duration of the treatment.
3. To provide an effective, safe and non-invasive treatment modality for this disease.

### Material and Methods

The patients, their profile and the drug prepared in pharmacy of R.G.G.P.G. *Ayurvedic* college were the materials of this clinical study.

### Trial Drug

Drug is prepared in Pharmacy of R.G.G.P.G *Ayurvedic* College Paprola keeping all classical aspects in mind during its preparation for internal as well as external use of the same drug. *Masha Taila* is the drug used in trial.

**Table No.1 Showing the contents of Masha Taila** <sup>[7]</sup>: -

S. No.	Name	Botanical Name	Family	Part used	Quantity
1	<i>Til</i>	<i>Sesamum indicum</i>	<i>Pedaliaceae</i>	Seed oil	40 Part
2	<i>Shoth</i>	<i>Zingber officinale</i>	<i>Zingiberaceae</i>	Rizom	1 Part
3	<i>Pipali</i>	<i>Piper longum</i>	<i>Piperaceae</i>	Fruit	1 Part
4	<i>Soof</i>	<i>Foenieulum vulgare</i>	<i>Apiaceae</i>	Seed	1 Part
5	<i>Erandha</i>	<i>Ricinus communis</i>	<i>Euphorbiaceae</i>	Root bark	1 Part

6	<b>Punarnava</b>	<i>Boerhavia diffusa</i>	Nyctaginaceae	Root	1 Part
7	<b>Prsarani</b>	<i>Paederia foetida</i>	Rubiaceae	Leaves	1Part
8	<b>Rasna</b>	<i>Pluchea lanceolata</i>	Asteraceae	Leaves	1 Part
9	<b>Guduchi</b>	<i>Tinospor acordifolia</i>	Menispermaceae	Tuber	1 Part
10	<b>Kutki</b>	<i>Picrorhiza kurroa</i>	Scrophulariaceae	Root	1 Part
11	<b>Bala</b>	<i>Sida cordifolia</i>	Malvaceae	Root	1 Part
12	<b>Masha</b>	<i>Phaseo lusingo</i>	Leguminasae	Seed	3.35 Part
13	<b>Atsi</b>	<i>Linumu sitatissimum</i>	Linaceae	Seed	3.35 Part
14	<b>Sahchar</b>	<i>Barleriaprionitis</i>	Acanthaceae	Five parts	3.35 Part
15	<b>Yauv</b>	<i>Hordeum vulgrae</i>	Poaceae	Seeds	3.35 Part
16	<b>Kantkari</b>	<i>Solanum surattense</i>	Solanceae	Five parts	3.35 Part
17	<b>Shyonaka</b>	<i>Oroxylum indicum</i>	Bignoniaceae	Root bark	3.35 Part
18	<b>Gokshuru</b>	<i>Tribulus terrestris</i>	Zygophyllaceae	Fruits	3.35 Part
19	<b>Kevach</b>	<i>Mucuna prurita</i>	Leguminasae	Seeds	3.35 Part
20	<b>Kapas</b>	<i>Gossyium herbaccum</i>	Malvaceae	Seeds	3.35 Part
21	<b>Shan</b>	<i>Crotalaria juncea</i>	Leguminasae	Seeds	3.35 Part
22	<b>Kultha</b>	<i>Vignaunquiniclata</i>	Leguminasae	Seeds	3.35 Part
23	<b>Badhar</b>	<i>Ziziphus mauritiana</i>	Rhamnaceae	Stem bark	3.35 Part
24	<b>Got's meat</b>	<i>Capra aegagrushircus</i>	Bovidae	Masa Rasa	40 Part

Table No.2 Following are the *Til tail murchana dravya*<sup>[8]</sup>:-

	Name of the Drug	Botanical name	Family	Part used	Proportion
1	<b>Manjistha</b>	<i>Rubia cordifolia</i>	Rubiaceae	Root	1/16 <sup>th</sup> part
2	<b>Lodhra</b>	<i>Symplocos recemosa</i>	Symplocaceae	Stem Bark	1/64 <sup>th</sup> part
3	<b>Dalchini</b>	<i>Cinnamomum zeylanicum</i>	Lauraceae	Stem Bark	1/64 <sup>th</sup> part
4	<b>Haridra</b>	<i>Curcum longa</i>	Zingberaceae	Tuber	1/64 <sup>th</sup> part
5	<b>Nagrmotha</b>	<i>Cyperus rotundus</i>	Cyperaceae	Tuber	1/64 <sup>th</sup> part
6	<b>Haritki</b>	<i>Terminalia chebula</i>	Combretaceae	Fruit	1/64 <sup>th</sup> part
7	<b>Vibitki</b>	<i>Terminalia bellrica</i>	Combretaceae	Fruit	1/64 <sup>th</sup> part
8	<b>Amlki</b>	<i>Emblica officinalis</i>	Combretaceae	Fruit	1/64 <sup>th</sup> part
9	<b>Haribair</b>	<i>Juniperus communis</i>	Pinaceae	Fruit	1/64 <sup>th</sup> part
10	<b>Ketaki</b>	<i>Pandanisorototissims</i>	Pandaceae	Flower	1/64 <sup>th</sup> part
11	<b>Vata</b>	<i>Ficus bengalensis</i>	Moraceae	Shoot tip	1/64 <sup>th</sup> part

### Clinical Study

Clinical study is the main part of the study which was carried out in R.G.G.P.G. Ayurvedic Hospital Paprola (H.P.) on 30 patients from shalya tantra OPD after taking informed consent.

#### Criteria for Selection of Patient: -

##### Inclusion Criteria

1. Age: Patients of both sex from 40 yrs. to 60 yrs.
2. Consent: Ready to give informed written consent.

3. Chronicity: Shoulder pain at least from 30 days to six months duration.

Painful (all or some) movements of the shoulder.  
Generalized tenderness over the humeral head and bicipital groove.

##### Exclusion criteria

1. Patients having congenital or acquired deformity at shoulder joint. Locally deformed or diseased bones.
2. Recent h/o trauma/fracture/dislocation/manipulation immobilization/ surgery of the affected shoulder joint.

3. Any type of the specific or non-specific arthritis of affected shoulder.

**Method of study**

**Sample size**–30 patients, 15 patients in each group. Study has been accomplished by dividing patients in 2 groups.

**Trial Group I**

15 patients were enrolled in trial **Group I** and which were given *Matra vasti*<sup>[9]</sup> and *Sthanik Snehna*<sup>[10]</sup> (*Abhyang*) with *Masha Taila* once daily for 10 day and subsequent two sittings of same schedule each with an interval of 5 days along with Physiotherapy.

**Trial Group II**

15 patients were enrolled in trial **Group II** were given Physiotherapy<sup>[2],[6][11]</sup> in the form of

- i) Hot water fomentation
- ii) Shoulder wheel exercise.
- iii) Pendulum stretch exercise.
- iv) Towel stretch exercise etc.

**Follow up:** All the patients had two follow up at an interval of seven days. During the clinical study including the follow up as well, patients were assessed on the basis of subjective improvements.

**Criteria of assessment**

- Subjective
- Objective

**Subjective parameters:** - Grading and scoring system was adopted for assessing each symptom before the commencement of the trial and after the completion of trial.

**Table No.3 Showing the overall score of each symptom as recorded during the study:**

Sr . No.	Symptoms	0	1	2	3	4
1.	<b>Pain</b>	No Pain	No Pain at rest but occurs after physical work	Pain also presents at rest but mild	Pain also presents at rest but moderate	Pain also presents at rest but severe
2.	<b>Tenderness</b>	No pain on palpation	Pain occurs on deep palpation	Pain occurs on light palpation	Doesn't allow to touch the affected part	-
3.	<b>Loss of function</b>	Can actively do all the routine work.	Can do daily routine work but have to take rest intermittently	Can do daily routine work but have to take rest very oftenly	Can't do daily routine work	
4.	<b>Restricted movements</b>	Full free movements	Painful movements after 75% of total range	Painful movements after 50% of total range	Painful movements after 25% of total range	Painful movements below 25%

						of total range
5.	Verbal descriptive scale	No pain	Mild pain	Uncomfortable	Distressing	Excruciating and horrible
			- 1			

### Objective criteria of assesment -

Hematological parameters – Hb%, TLC, DLC, ESR, FBS, S. uric acid, RA factor, VDRL, HIV and X-ray shoulder (if required to exclude other pathology)

### Discussion on Observations and Results

#### Demographic data:

Maximum patients (64%) were belonging to the age from 45 to 55 yrs. Females suffer more (76.66%) which shows that the disorder is more common in females than males. Whole of the study sample was showing the supremacy of Hindus i.e. 90.00%. All the patients (100.00%) were married. Mostly patients (60%) were matriculate or were having secondary education. This study revealed that maximum patients were housewives, (63.33%) seems too due to such household activities which put stress on shoulder joint. All the registered patients (100%) were belonging to rural area as the institution is situated in rural area. 87.50% were belonging to the middle-class family. 66.66% were having the mixed dietary habits. Maximum patients (70.00%) were of 1-2 months duration chronicity. Maximum patients 58.33% were of *Madhyama Vyayama(Exercise) Shakti(Endurance)* reflecting more wear and tear during *Vyayama*.

**The probable mode of action of drug** can be explained on the basics of following properties of the ingredients<sup>[12]</sup> of *Mash tail*.

Overall *Rasa(Taste) Guna(Quality) Virya(Potency) and Vipaka(After Taste)* of the *Masha Taila* is:

**Rasa :-Madhur(Sweet)**

**Guna :-Snigdha(Unctuous), Guru(Heavy)**

**Virya :-Ushana(Hot)**

**Vepaka :-Madhur(Sweet)**

**Mukhya Karma – Vednasthapaka(Analgesic)**

As per *Ayurvedic* classical text *Madhur Rasa, Snigdha, Guru Guna, Ushan Virya* and *Madhura Vipaka* all are *Vata Shamak(Depressant)*<sup>[13]</sup> in nature and hence very effective in *Avabhuka*. **Vasti is mentioned as best chikitsa**<sup>[14]</sup> for *Vataj Roga(Disease)* by many *Acharyas* and *Sthanik snehna*<sup>[15]</sup> is also very useful in *Vataroga*.

1. Most of the drugs used in formulation of *Masha Taila* are having anti-inflammatory and antioxidant effect.
2. *Mash Tail* when given through anal canal get absorbed more effectively because splanchnic circulation (blood circulation of G.I.T.) bypasses the liver metabolism of lipid soluble substances<sup>[16]</sup>.
3. Massage can increase the fresh oxygenated blood supply to the muscles and organs and the drainage of venous blood, promoting the removal of waste products from the body, by increasing the flow of lymphatic material. Waste removal is also aided, and white blood production is increased, boosting one's natural immunity.<sup>[17]</sup>

#### Results: -

The relief in pain and improvement in range of movements were statistically analyzed and was found significant. *MashaTaila (Matarvasti and Sthanik Snehna)* along with physiotherapy gave better results and has got a significant role in management of pain and improving range of movement in Frozen Shoulder.

### Statistical analysis -

**Table No.4 Showing the Subjective criteria of assessment: -  
(on B.T./A.T. scale) Group I**

Sr. No	Signs and Symptoms	N	Mean		X (d) BT-AT	%age Relief	SD±	SE±	T	P
			BT	AT						
1.	Pain	15	3.00	0.80	2.200	73.33%	0.676	0.175	12.602	0.001
2	Loss of Function	15	2.60	0.73	1.867	71.80%	0.834	0.215	8.671	0.001
3.	Tenderness	15	2.53	0.47	2.067	81.60%	0.458	0.118	17.486	0.001
4.	Verbal Descriptive Scale (VDS)	15	3.27	0.87	2.400	73.61%	0.632	0.163	14.697	0.001
5.	Movements	15	2.67	0.53	2.133	79.97%	0.640	0.165	12.91	0.001

**Table No.5 Showing the Subjective criteria of assessment :-  
(on B.T./A.T. scale)Group II :-**

Sr. No	Signs and Symptoms	N	Mean		X (d) BT-AT	%age Relief	SD±	SE±	t	P
			BT	AT						
1.	Pain	15	2.40	1.00	1.400	58.33%	0.507	0.131	10.963	0.001
2	Loss of Function	15	2.44	1.53	0.867	35.55%	0.352	0.090	9.539	0.001
3.	Tenderness	15	2.20	1.13	1.067	48.50%	0.458	0.118	9.025	0.001
4.	Verbal Descriptive Scale (VDS)	15	3.40	1.73	1.667	49.02%	0.724	0.187	8.919	0.001
5.	Movements	15	2.93	1.53	1.400	47.32%	0.507	0.131	10.693	0.001

**Table No.6 Showing the Intergroup Comparison Over Criteria of Assessment :-**

Symptoms	Percentage relief		Diff. in %age	S.D	S.E	Unpaired 't' test	P	Result
	Gr. I	Gr. II						
Pain	73.33%	58.33%	15.00%	0.597	0.508	1.06	>0.05	NS
Loss of Function	71.80%	35.55%	36.55%	0.577	0.32	0.931	<0.05	S
Tenderness	81.60%	48.50%	33.10%	0.409	0.252	1.317	<0.05	S
Verbal De- scriptive Scale (VDS)	73.61%	49.02%	24.59%	0.679	0.226	1.061	<0.05	S
Movements	79.97%	47.32%	32.97%	0.452	0.288	1.593	<0.05	S

**Intergroup Comparison over Criteria of Assessment:-**

**1. Effect on Pain:** Group I showed 15% more relief in pain than Group II but there was no statistically significant difference between the two groups. (p>0.05).

**2. Effect on loss of function:** Group I showed 36.55% more relief than group II and was statistically significant also. (p<0.005).

**3. Effect on Tenderness:** Group I showed 33.10% more relief than group II and was statistically significant also. (p<0.005).

**4. Effect on VDS:** Group I showed 24.59% more relief than group II and was statistically significant also. ( $p < 0.005$ ).

**5. Effect on Movement:** Group I showed 32.97% more relief than group II and was statistically significant also. ( $p < 0.005$ ).

Hence intergroup comparison over criteria of assessment showed that Group I had statistically significant results.

**Table No.7 Showing the Overall effect in two groups in 30 patients.**

Sr.no	Assessment	GP-I Patients	GP-I %age	GP-II Patients	GP-II %age	Total	%age
1.	Cured	00	00	00	00	00	00
2.	Markedly improved	11	73.33%	2	13.33%	13	43.33%
3.	Improved	4	26.66%	13	86.66%	17	56.66%
4.	Unimproved	00	00	00	00	00	00

**Interruption: -**

**Group I: -**

Among 15 patients, 11 patients (73%) had markedly improved, and 04 (26.66%) patients improved. There was no patient who was unimproved.

**Group II:-** Among 15 patients, 2 patients (13.33%) had markedly improved and there were 13 patients (86.66%) who were improved. There was no patient cured and unimproved.

## CONCLUSION

To conclude, Frozen shoulder, disease mainly affects the middle-aged women. It causes pain especially in people who use their shoulder especially right shoulder joint in strenuous work. It is not cured by internal medicines and patient's satisfaction is less. For desperate patients, *Masha Taila (Matra Vasti and Sthanik Snehna)* along with physiotherapy is used to give better results. It is very effective in relieving almost all the symptoms in less duration of time than physiotherapy alone. Frozen shoulder can be managed effectively by this modality. It is very simple, safe, cost effective, time saving and there were no complications.

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