



## A PILOT STUDY OF AGNI KARMA ON FROZEN SHOULDER (AVABAHUKA)

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### ABSTRACT

Frozen shoulder, also known as Periarthritis or Adhesive capsulitis causes a significant loss of motion this typically occurs in cycle of 3 stages, painful phase, stiff phase and thawing phase. In textual references of *Ayurveda* Frozen Shoulder is closely related to *Avabahuka*. In this condition, *Vata* is localized in the shoulder region, getting aggravated, dries up the bindings (ligaments) of the shoulders, constricts the *siras* present there and causes *Avabahuka*. Modern medical science plays very less role in the management of Frozen Shoulder. In *Ayurveda* various para-surgical procedures were mentioned for diseases of *Vata* and *Kapha*, in which *Agni karma* is one amongst them, that has been recommended in various musculoskeletal disorders. Hence a study was conducted to evaluate the effectiveness of *Agnikarma* in *Avabahuka*. In this study mixture of *Ghrita*, *Madhu* and *Guda* were used for *Agnikarma*. It *Ushan*, *Sukshma*, *Ashukari guna* probably pacifies vitiated *vata kapha dosha*. In this clinical research 30 patients were randomly selected and divided into two groups i.e. trial and control group, treated with *Agnikarma* and Wax bath therapy respectively. Comparatively more relief found in trial group.

**Key words:** *Agnikarma*, Wax bath therapy, *Avabahuka*.

### INTRODUCTION

Frozen shoulder<sup>1, 2</sup> is a common troublesome problem among the therapeutic disorders for both patients and orthopedicians. Although the disease is not fatal but its duration and attack of pain at night makes the life of sufferer miserable and crippled. As far as modern medical science is concerned no promising management is available in frozen shoulder and when the disease condition become worse steroid therapy is advised which have more adverse effects. Though, conservative treatment deriving limited benefits, the traditional way of *Agni karma* (Para-surgical procedure) in the management of frozen Shoulder is a new thrust

area. In *Ayurvedic* literature description of *Agni karma*<sup>3, 4</sup> as Para-surgical procedure is a unique therapeutic procedure because of its preventive, primitive, prophylactic properties. With reference to *Sushruta Samhita*, *Agni karma* is advocated in joint disorders because of *ushna guna* & *vata-kapha* subduing property of *Agni*. In this study mixture of *Ghrita*, *Madhu* and *Jaggery* were used for *Agnikarma*, hence, a pilot study was proposed and sincere attempt was made to evaluate *Agni karma* & its effect on *Avabahuka*<sup>5, 6</sup> with special reference to frozen shoulder.

### **Aim and Objectives:**

- To evaluate the effect of *Agni karma* in the Management of Frozen Shoulder.
- To explore the literature regarding *Agni karma* in *Ayurvedic* and Modern Text.

### **MATERIAL AND METHODS**

Sources of data: Patients were selected from O.P.D. & I.P.D. of shalya tantra department of Sri Siddharoodha Charitable Hospital attached to N.K.J.Ayurvedic Medical College & P.G.Centre, Bidar.

### **Inclusion Criteria:**

Co-operative patients of either sex above the age of 25 years were selected, with, typical clinical features pertaining to the Frozen Shoulder like: stiffness, pain, restricted AROM, PROM, tenderness. Patients with controlled diabetes mellitus were also included in the study.

### **Exclusion Criteria:**

Patients below 25 yrs, not willing to undergo trial, suffering from tubercular arthritis, osteoarthritis, and gouty arthritis with some other joints pathology, pregnancy and obesity, uncontrolled diabetes mellitus & those who were contraindicated for *Agni karma* were excluded.

The study was conducted on 30 diagnosed cases of *Avabahuka* (Frozen shoulder) patients were randomly divided into two groups: total 15 patients in trial group i.e. *Agnikarma* group and 15 patients in control group i.e. wax bath therapy group.

An assessment was made on changes in clinical features before and after treatment. The scoring was given to each symptom ranging from 0 – 10. The criteria were made to assess the effect of therapy i.e. Cured: 100% relief of the complaint, no recurrence during the follow up, Markedly improved:

More than 75% and less than 100% relief in the complaint, Moderately improved: More than 50% and less than 75% relief in the complaint, Mild improved -25% and less than 50% relief in the complaint and Unchanged 0 -25% relief in the complaints.

**Materials required :** *Madhu*, *Ghrita*, *Guda*, wax bath heater, thermometer, mortar & pistil, spatula, container, paper napkin and measuring glass.

**Trial Group (*Agnikarma*):** Each patient was counselled and given explanation about the procedure in order to make them aware about the process of treatment. Written Consent of the patient was taken. Most tender spot of the shoulder joint was thoroughly cleansed with normal water and *abhyanga* was given with *til-taila* for 15 minutes in the direction of hairs for the purpose of *snehana*. The trial drug was prepared by mixing *Guda* (Jaggery), *Madhu* and *Ghrita* in 4:2:1 ratio and heated for 10-15 minutes to be maintained at a temperature of about 40<sup>0</sup>-44<sup>0</sup> C. The temperature of the mixture checked before rendering the treatment. The prepared mixture applied on the affected region of shoulder joint with the help of spatula or brush. After 3-4 mint the mixture should be wiped out and repeated for 3 times. After the procedure *ghritkumari* pulp should be applied. Patients were advised to keep the area dry, clean, avoid exertion and trauma. Same procedure continued up to 15 days.

**Control Group (Wax Bath Therapy):** Patients were treated with Wax Bath Therapy. Paraffin wax melted (M.P 44<sup>0</sup>C) and applied on the affected shoulder joint with the help of spatula or brush. After 3-4 minute it was dried & wiped out. Similarly, the same pro-

cedure was repeated for 3 times per day up to 15 days.

All patients (both trial and control group) were advised to follow same food regimen and passive shoulder exercise to improve ROM, up to the patient's tolerance. The patients were assessed thoroughly about pain, its intensity, tenderness, and other clinical features and any untoward effects or complications were noted down. The observations were analyzed on the basis of assessment criteria critically and clinically before treatment, on 5<sup>th</sup> day, 10<sup>th</sup> day & 15<sup>th</sup> day of treatment. The duration of the study was maximum 15 days. Patients were called for follow up after one month for the study of recurrence.

**OBSERVATION & RESULTS**

Maximum patients 26.6% were found between the age group 40 to 60 years. The majority of the patients 73.33% were males. Regarding occupational status 70% patients were Service class. In 90% of pa-

tients the progress of the disease was gradual onset. On Inspection 76.66% patients were have *shosha* (atrophy). Regarding the history of addiction 50 % were addicted to Tobacco.

**Overall effect of Trial group (Agnikarma):**

Clinical analysis showed that out of 15 patients 1 patient had no improvement, 1 patient had mild improvement, and 3 patients had moderate improvement where as 8 patients shows maximum improvement and 2 patients were completely cured.

**Overall effect of Control Group (Wax Bath Therapy):**

This group was treated with Wax Bath Therapy. Out of 15 patients 2 patients had no improvement, 1 patient had mild improvement, and 2 patients had moderate improvement where as 9 patients had maximum improvement and 1 patient was completely cured.

In the present Clinical study the results of all the cases were noted on the basis of following points.

**Table No. 1: Effect of Trial Group (Agnikarma)**

Sign Symptom	Mean ± S.E.	Assesment	Mean± S.E.	df	t-value	p-value	Effectiveness %	Remark
	BT							
Pain	2.2±1.06	1	1.33±0.12	14	6.30	<0.001	39.39	HS
		2	0.86±0.09		8.03	<0.001	60.60	HS
		3	04±0.13		9.81	<0.001	81.81	HS
Stiffness	1.73±0.20	1	1.13±0.09		3.62	>0.001	34.61	S
		2	0.8±0.10		4.44	<0.001	53.84	HS
		3	0.4±0.13		5.59	<0.001	76.92	HS
Local Tenderness	2.46±0.133	1	1.33±0.12		8.16	<0.001	45.94	HS
		2	0.66±0.12		11.72	<0.001	72.97	HS
		3	0.26±0.11		18.87	<0.001	89.18	HS
Mobility	2.26±0.20	1	1.33±0.12	5.92	<0.001	41.17	HS	
		2	0.73±0.11	6.29	<0.001	67.64	HS	
		3	0.33±0.12	7.50	<0.001	85.29	HS	

**Table No.3: Effect of Control Group (Wax Bath Therapy)**

Sign Symptoms	Mean ± S.E.	Assessment	Mean ± S.E.	df	t-value	p-value	Effectiveness %	Remark
	BT							
Pain	2.4±0.16	1	1.53±0.13	14	7.607	<0.001	37.83	HS
		2	0.73±0.11		10.71	<0.001	70.27	HS
		3	0.4±0.13		10.77	<0.001	83.78	HS
Stiffness	1.66±0.12	1	1.13±0.09		3.93	>0.001	32	S
		2	0.73±0.11		5.92	>0.001	56	S
		3	0.4±0.13		6.74	<0.001	76	HS
Local tenderness	2.53±0.13	1	2±0.13		2.75	<0.05	21.05	S
		2	0.93±0.06		11.53	<0.001	63.15	HS
		3	0.53±0.13		11.187	<0.001	78.94	HS
Mobility	2.46±0.13	1	1.6±0.13		9.11	<0.001	35.13	HS
		2	0.8±0.16		12.43	<0.001	67.56	HS
		3	0.4±0.13		10.77	<0.001	83.78	HS

**Overall clinical assessment of therapy**

Result	GROUP-I A.T						GROUP-II A.T					
	5th day	%	10th day	%	15th day	%	5th day	%	10th day	%	15th day	%
Cured	0	0	0	0	2	13.33	0	0	0	0	1	6.66
Max.Improved	0	0	3	20	8	53.33	0	0	3	20	9	60
Mod.Improved	2	13.33	7	46.66	3	20	4	26.66	6	40	2	13.33
Mild Improved	5	33.33	3	20	1	6.66	3	20	2	13.3	1	6.66
Not Improved	8	53.33	2	13.33	1	6.66	8	53.33	4	26.6	2	13.33

**Discussion**

The disease *Avabahuka* is *Vata-Kapha* dominant. The change of life style, heavy weight lifting will lead to vitiation of *Vata* which produces the disease like *Avabahuka*. It was recorded that 90% of the patients reported a gradual onset and only 10% with sudden onset. As *dhatu kshaya* starts slowly favouring to a gradual onset. Maximum numbers of patients (50.00%) were tobacco chewers, 26.66% were smokers and 23.33% were alcoholics. As the smoking and tobacco chewing leads to *vata prakopa*, this may be the reason for above incidence.

In the present study, the effect of the therapy was assessed on each sign symptom of *Avabahuka* and observed that pain was

reduced by 87.17 % in Trial Group & 63.15% in Control Group. Both the groups showed significantly high improvements with p-value of < 0.001. Improvement of Stiffness in Trial Group was up to 85.71% & in Control Group up to 58.33%. Result of both the groups was highly significant. Range of motion was increased by 87.23 % in Trial Group and 56.25% in Control Group. Restricted movement is produced by muscular spasm which is mainly due to pain. Local tenderness was reduced by 88% in Trial Group and 61.22% in Control Group.

**Mode of Action of Agnikarma:**

*Avbahuka* (Frozen Shoulder) is produced by vitiated *vata dosha* with *anubhandha* of *kapha*, so *Agnikarma* is considered as best

therapy to pacify these dohas. Due to *Ushan, Sukshma, Ashukari guna* it pacifies vitiated *vata kapha dosha*.

Pain receptors are located in the skin and the motor end plates of the muscles. These pain receptors are stimulated by application of heat at about 45°C. Pathway for transmission of thermal signals and pain signals are almost parallel, but terminate at same area. So out of these two i.e. thermal and pain only the stronger one can be felt (Samson Wright's applied physiology), so on therapeutic application of heat, relief of pain can be explained by complete exclusion of pain impulses by heat impulses due to occupying a final common pathway.

## CONCLUSION

*Avabahuka* is one of the most common problems which effect mostly in middle age group of patients. After *Agni karma* there is relief of signs and symptoms of Frozen Shoulder especially on local tenderness and stiffness. No untoward effects were observed during the course of treatment. The treatment applied was simple, economical and required no hospitalization and could be done at OPD level. *Agni karma* was effective in the management of frozen shoulder and hypothesis behind the study was found to be correct. Since the clinical study was conducted on a limited number of patients, it may not be claimed as final. Detailed study on a large sample size should be conducted to evaluate the efficacy of *Agni karma* in the management of Frozen Shoulder.

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Source of support: Nil

Conflict of interest: None Declared