



Management Of Frozen Shoulder In Diabetes Mellitus Through *Valuka Sveda* (*Ushma* Method) –A Case Series

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ABSTRACT: -

Frozen shoulder is a clinical syndrome characterized by painful restriction of both active and passive movements of shoulder. It is having an incidence of 2% in general population and 10-30% in diabetes mellitus. *Svedana* is one of the most common procedure done in *Panchakarma*, is practiced as an important preparatory measure before *Sodhana* therapy. In addition, it is an independent therapeutic measure for the management of many diseases. *Valuka* is an important, easy and effective material for *Rooksha Sveda*, and is mentioned in both *Tapa* and *Ushma Sveda* in classics. The aim of the current study was to clinically evaluate the *Ushma* method of *Valuka Sveda* in the management of Frozen shoulder of diabetes mellitus. This case series includes 13 diagnosed patients of Frozen Shoulder of Diabetes mellitus and was received *Ushma* method of *Valuka Sveda* for 14 days. The assessments were done on Shoulder Pain and Disability Index (SPADI), and Goniometry before trial, after trial and after follow up. After the course of treatment significant results were found in reducing SPADI score and in improving range of movements.

Key words: Frozen shoulder of diabetes mellitus, Case series, *Svedana*, *Avabahuka*, *Ushma Valukasveda*,



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INTRODUCTION

Adhesive capsulitis commonly referred to as Frozen shoulder is a condition characterized by progressive pain and stiffness in the shoulder joint, with severe global loss of motion of unknown etiology [1]. In this condition, the shoulder capsule, the connective tissue covering the glenohumeral joint become inflamed and stiff, greatly restricts the motion, particularly the external rotation. The pain is often worse at night and when trying to lie down on the affected arm. The prevalence rate in general population is approximately 2-10% and in diabetic population is 10-30% [2].

Svedana being one among the *Purvakarma* of *Panchakarma*, is practised for both *Sodhana* and *Samana* purpose. By application of *Svedana*, it can facilitate the excretion of stagnated mala which in turn helps in the normal functioning of the skin and musculoskeletal system. So the procedure *Svedana* is widely used as an important treatment for various musculoskeletal disorders. *Vagbhata* and *Susruta* mentioned four varieties of *Svedana karma* - *Tapa*, *Ushma*, *Drava* and *Upanaha Sveda* [3],[4]. This classification of *Svedana* is based on the method of administration and the nature of heat produced. Based on the *Guna* of the *Dravya* used, *Svedana* is classified into *Rooksha*, *Snigdha* and *Rooksha-Snigdha*. Among this, *Rooksha sveda* is indicated for *Kapha* dominant diseases, *Snigdha Sveda* for *Vata* and *Rooksha-snigdha* for *Vatakphadhika* conditions [5]. *Valuka* is an important, easy and effective material for *Rookshasveda*, and is mentioned in both *Tapa* and *Ushmasveda* in classics [6].

Since Frozen shoulder of diabetes mellitus can be correlated with *Avabahuka* in *Ayurveda* and can be considered as a *Kapha* involved condition. *Susruta* and *Madhavakara* description of

Avabahuka has been interpreted by commentators in support of this view [7],[8]. Based on clinical symptoms in frozen shoulder, the second and third stages (3-9 months and 9-15 months respectively) are characterised by significant global restriction of movement and dull to nominal pain. This suggests the dominance of *Stambha* over *Soola*, there by underlining need for *Svedakarma*. While *Tapa* method of *Valukasveda* is common in practice, one can find references about *Ushma* method of *Valukasveda. ie; Vrindamadhava* has mentioned about *Ushma* method of *Valukasveda* in *Vatakapha* disorders [9]. Similarly, *Astanga sangraha* also mentioned about *ūṣma vāluka sveda* [10]. A review of current management approaches for Frozen shoulder of Diabetes mellitus in modern medicine suggest that there is no single effective treatment for this disease. Here a study is planned to clinically evaluate the effect of *Ushma* method of *Valukasveda* in frozen shoulder of diabetes mellitus.

AIM

To clinically evaluate the *Ushma* method of *Valuka Sveda* in the management of Frozen shoulder of diabetes mellitus

METHODOLOGY

The present study is a case series prepared with the details of 13 patients aged between 40 to 70 years who were attended the OPD of Vaidyaratnam PS Varrier Ayurveda College, Kottakkal during the period of 2020 to 2021 with the signs and symptoms of Frozen Shoulder of Diabetes mellitus. Participants were received *Ekanga Valukasveda* in *Ushma* method for a period of 14 days. Out of the 13 participants, one participant was dropped in the initial stages of the study and 12 participants were completed the

course of treatment.

Diagnostic criteria

1. Pain and stiffness in shoulder which becomes worse at night when lying on the affected side.
2. Limitation of both active and passive movements of shoulder particularly external rotation
3. A Normal A-P radiograph of glenohumeral joint.
4. Having Diabetes mellitus of Type1 or Type 11.

Inclusion criteria

Participants satisfying all the following criteria..

1. Age 40-70 years.
2. Having clinical features of stage 2 and 3 of frozen shoulder.
3. Fit for *Svedana karma*.
4. Participants who have given informed consent

Exclusion criteria

1. History of trauma to shoulder.
2. History of surgery on the particular shoulder.
3. Clinical findings of Rotator cuff lesion.
4. Any neurological condition affecting shoulder.
5. FBS value more than 200.
6. Any other known cases of systemic illness.
7. Pregnant and lactating women

Investigations for screening

- Blood test for FBS
- X-ray AP view of glenohumeral joint
- **Details of intervention-** 13 participants satisfying the diagnostic criteria of Frozen Shoulder of Diabetes Mellitus were selected from the OPD of Pañchakarma, VPSV Ayurveda

College Hospital, Kottakkal. After Informed consent had been obtained, investigations were carried out and the details were recorded in the case record form. A detailed examination was done on the day zero. Participants will be advised to continue the current anti-Diabetic intervention.

Participants were received *Ekanga Valukasveda* in *Ushma* method. ie; the participant was made to sit on *the droni* with the legs well extended. Roasted *Valuka* made in to *Potali* and *Svedana* done to the affected shoulder to hand by dipping the *potali* in heated *Dhanyamla* for a period of 30 minutes in sitting posture. After the procedure, *Rasnadi choorna* applied over the vertex and patient was covered with a blanket and was allowed to take rest for about 15 minute in a close room. *Potali* were changed after every 3 days. This was continued up to relief of symptoms or maximum 14 days. Observation was taken after the final day of treatment and a follow up assessment was done after 14 days of completion of treatment.

OBSERVATIONS AND RESULTS

The effect of therapy was assessed using Shoulder Pain and Disability Index and Goniometry of shoulder joint for Range of mobility, prior starting the treatment, after completion of treatment and after 14 days of completion of treatment. The outcome was measured using Friedman's test and Wilcoxon Signed Rank test.

1.Shoulder Pain And Disability Index (SPADI)

Table 1. Effect of therapy on SPADI score

	Mean	Std. Deviation	Mean Rank	Z value	p value
BT	53.66	24.17	3.00	23.13	0.000
AT	27.33	21.41	1.91		
AF	23.00	19.73	1.08		

Table 2. Comparison of mean SPADI score between BT, AT and AF

	<i>BT - AT</i>	<i>AT - AF</i>	<i>BT - AF</i>
Z value	-3.061	-2.317	-3.062
p value	0.002	0.018	0.002
Z value	-3.062	-2.820	-3.061
p value	0.002	0.005	0.002

Mean score of SPADI was 53.66 before treatment which reduced to 27.33 after treatment and to 23.00 after follow up indicating the

significance of intervention ($p < 0.001$). There was 49% reduction in SPADI score after treatment and 57% reduction after follow-up.

2.Range of movement

Table 2. Effect of therapy on Range of movement

	BT(Mean \pm SD)	AT(Mean \pm SD)	AF(Mean \pm SD)	P VALUE
Flexion	122.5 \pm 19.4	138.3 \pm 17.6	142 \pm 18	0.000
Extension	51.6 \pm 5.3	58.7 \pm 3.1	59.1 \pm 2.8	0.000
Abduction	110.4 \pm 22.2	131.6 \pm 21.2	135.8 \pm 17.2	0.000
Adduction	40.0 \pm 0.00	40.4 \pm 1.4	40.4 \pm 1.4	0.368
Int. Rotation	62.9 \pm 9.6	70.0 \pm 0.00	70.0 \pm 0.00	0.002
Ext.Rotation	52.9 \pm 10.3	70.0 \pm 9.5	71.66 \pm 9.3	0.000

Table 3. Comparison of Range of Movement between BT, AT and AF

	BT-AT(P VALUE)	AT-AF(P VALUE)	BT-AF(P VALUE)
Flexion	0.002	0.041	0.002
Extension	0.006	0.317	0.005
Abduction	0.003	0.059	0.003
Adduction	0.317	1.000	0.317
Int. Rotation	0.026	1.000	0.026
Ext. Rotation	0.003	0.317	0.002

In case of Flexion, Extension, abduction, internal rotation and external rotation 13%, 12%, 19%, 14% and 36% were respectively the percentage of improvement was noted after treatment. And after follow up, the percentage of improvement was 16%, 13%, 23%, 14% and 39% respectively. In Adduction, there was no significant improvement after treatment and after follow up. The data revealed that, the increase in percentage level of range of movement was highly significant after the therapy which was almost maintained during follow up period.

DISCUSSION

The major features of frozen shoulder of diabetes mellitus correlates to the symptoms of *Margavaranajanya Avabahuka (Kaphaavruta Vata)* and the symptoms includes *Soola, Sthambha and Bahupraspanditahara*. So the treatment should be aimed to reduce *Kapha* and *Vata*. Thus in order to pacify the *Kapha* along with *Vata*, treatment that are *Kaphahara* and that which also consider *Vata* has to be utilized. Thus *Rooksha* along with *Ushna* becomes the treatment of choice.

Here, by the *Ushnaguna* of *Svedana*, it can increase the temperature of localized tissue, with the result that vascular dilation can be promoted and the pain threshold elevated. Such vascular improvement may also reduces the inflammation by increasing nutrition and oxygen supply, and

by removing metabolites and waste products. Heat is also act as a counter irritant ie; the thermal stimulus may affect the pain sensation. All these can lead to a decrease in pain. By the *Ruksha* and *Ushnaguna* of *Svedana*, it reduces the *Kapha* and there by clears the obstruction (*Sthambha/Srotorodha*). In addition to that, heating can produce muscle relaxation there by reducing resistance to stretches. Thus it can also help in improving the range of movements at shoulder joint.

In *Ushma Svedana*, the mode of heat transfer is wet. The heat transferred in *Ushmasvedana* is through the conduction and convection. So in *Ushmasveda* the heat that is provided is deep compared to the *Tapa* method. The researches shows that moist heat modalities transfer heat much faster than dry heat modalities and they cause much faster heat penetration than dry heat. The heat thus transferred has the effect in the deep tissues and can maintain the temperature in the tissues, the temperature maintained can help in stimulating the process of drainage of the waste materials. The mediator of *Ushma Svedana* ie, *Dhanyamla* also has a crucial role. Due to the *Ushna Teekshna Guna*, *Dhanyamla* is *Kaphahara* and *Amapachana*, thus *Dhanyamala* could be a best choice to pacify *Vata* associated with *Kapha*. Hence, *Ushma* method of *Valuka Sveda* having a good role in reducing the symptoms of Frozen Shoulder of Diabetes

mellitus.

CONCLUSION

The present study was intended to explore the role of *Ushma* method of *ValukaSveda* in relieving the symptomatology in Frozen shoulder of diabetes mellitus. It has been observed that the local treatment in the form of *Ushma ValukaSveda* has shown considerable reduction in the scoring of SPADI, and improvement in flexion, extension, abduction, internal rotation and external rotation after treatment. It has proven that *Ushma Valuka Sveda* considerably reduces pain, stiffness, and associated symptoms of frozen shoulder of diabetes mellitus. Hence, this study concludes that *Ushma* method of *Valuka Sveda* can be considered as a safe and effective line of treatment for management of the frozen shoulder of diabetes mellitus.

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