ejpmr, 2024, 11(2), 480-485

SJIF Impact Factor 6.222

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Research Article

ISSN 2394-3211

EJPMR

EFFECT OF MODIFIED AGNIKARMA (VIDDHAGNIKARMA) AND TENS THERAPY IN THE MANAGEMENT OF PAIN IN AVABAHUKA W.S.R TO FROZEN SHOULDER – A COMPARATIVE CLINICAL STUDY

Dr. Vismaya M.[1]*, Dr. Shivalingappa J. Arakeri[2], Dr. Mohasin Kadegaon[3] and Dr. Ashwini Hallad[4]

[1]PG Scholar, Department of Shalya Tantra, Taranath Government Ayurvedic Medical College, Ballari (Karnataka, India).

[2]Professor & HOD, Department of Shalya Tantra, Taranath Government Ayurvedic Medical College, Ballari (Karnataka, India).

[3,4]Assistant Professor Department of Shalya Tantra, Taranath Government Ayurvedic Medical College, Ballari (Karnataka, India).

***Corresponding Author: Dr. Vismaya M.**

PG Scholar, Department of Shalya Tantra, Taranath Government Ayurvedic Medical College, Ballari (Karnataka, India).

Article Received on 20/12/2023 **Article Revised on 10/01/2024** **Article Accepted on 30/01/2024**

ABSTRACT

Avabahuka is one among Vatavyadhi which affects shoulder joint and characterised by Amsasandhi Stabdhata, Amsasandhi shoola, Bahupraspandanahara. Several treatment techniques are explained for Frozen shoulder for reducing pain in this condition. TENS therapy is widely used method for pain relief. In Ayurveda, Agnikarma is indicated for painful conditions. So to compare the efficacy of Modified agnikarma (Viddhagnikarma) and TENS therapy in the management of pain in Avabahuka w.s.r to Frozen shoulder, this study has taken. **Materials and Methods:** A total number of 40 patients diagnosed as Avabahuka of either sex was selected from OPD and IPD of Taranath Government. Ayurvedic medical college and hospital, Ballari and was randomly allotted into 2 groups namely Group-A (Modified Agnikarma-Viddhagnikarma) and Group-B (TENS therapy) with 20 patients each. **Results:** Viddhagnikarma was more effective in reducing the pain and improving restricted range of movements in Avabahuka condition when comparing to TENS therapy. **Conclusion:** Modified Agnikarma is more efficacious than TENS therapy in the management of Avabahuka.

KEYWORDS: *Viddhagnikarma, Avabahuka, modified agnikarma, Frozen shoulder.*

INTRODUCTION

Avabahuka is one among Vatavyadhi which affects shoulder joint and characterised by Amsasandhi Stabdhata, Amsasandhi shoola, Bahupraspandanahara[1] and Amsabandanashosha.[2] It is explained one among the vatarogas. The clinical features of Avabahuka can be correlated with that of Frozen shoulder.

Frozen shoulder is a condition with shoulder pain and discomfort that is slow in onset and located around the deltoid insertion.[3] It affects individuals between 40-60years age, with female predominance. The incidence is upto2%- 5% in the general population. Nevertheless, those with diabetes, prolonged shoulder immobility or systemic diseases are at higher risk.[4]

In modern medicine, acute pain management is by NSAIDs, steroids, local injection of glucocorticoids, and other physiotherapy techniques. Complications like incomplete pain relief, nerve damage and other infections occur from this. Transcutaneous electrical nerve stimulation (TENS) is a non-pharmacologic treatment used to treat a variety of neurogenic painful conditions.[5] TENS reduces pain through both peripheral and central mechanisms.

Treatment of Avabahuka as per ayurveda includes Nasya, Snehapana, Agnikarma, etc.[6] Agnikarma is the most effective therapy in the management of painful conditions especially musculo-skeletal disorders. Acharyas have described many dahanopakaranas in which suchi is one.[7]

Here modified method of Agnikarma is designed and the most tender points are elicited and pierced with hollow needles. Heat is produced by means of touching needles with diathermic cautery. The treatment is having combined effect of Acupuncture and heat therapy. The properties of Agni includes tikshna, ushna, sukshma gunas which helps in decreasing the doshas present and also it relaxes the muscle fibres.

Usually Agnikarma acts on superficial fibers and blocks the pain stimulus. Here with the help of viddhagnikarma we are pricking the muscle fibers at the affected site. This creates stimulation at the level of deep fibers and gives more effective pain relief. Thats why modified method of Agnikarma has been choosen. Cosmetic aspect of viddhagnikarma shows no scar marks, while usual agnikarma leaves burn marks over the area.

Viddhagnikarma is simple and patient friendly treatment procedure. Vata kapha avarana is removed with this method. Pain and stiffness are relieved which improves the quality of life of patients. So to provide pain relief for the suffering patients modified form of agnikarma is adapted and applied in Avabahuka conditions.

AIMS AND OBJECTIVES

- To evaluate the efficacy of Modified Agnikarma (Viddhagnikarma)in the management of Avabahuka w.s.r to Frozen shoulder
- To evaluate the efficacy of TENS therapy in the management of Avabahuka w.s.r to Frozen shoulder.
- To compare the efficacy of Modified Agnikarma (Viddhagnikarma) and TENS therapy in the management of Avabahuka w.s.r to Frozen shoulder.

MATERIALS AND METHODS

A. Study design

A comparative clinical study containing 40 patients diagnosed as Avabahuka w.s.r to Frozen shoulder, were included for the study and was randomly allotted into 2 groups namely Group-A (Modified Agnikarma-Viddhagnikarma) and Group-B (TENS therapy) with 20 patients each.

B. Source of patients

A total number of 40 patients diagnosed as Avabahuka of either sex was selected from OPD and IPD of Taranath Government. Ayurvedic medical college and hospital, Ballari.

DIAGNOSTIC CRITERIA

Inclusion Criteria

- Patients with signs and symptoms of Frozen shoulder i.e pain, stiffness and restricted movements.
- Selection of patients was done irrespective of sex and religion.
- Patients age group 16- 70years.
- Patients with controlled Diabetes mellitus.

Exclusion Criteria

- Patients with acute traumatic injury of shoulder joint
- Subluxations or recurrent dislocations of the shoulder joint.
- Patients suffering from Tuberculosis, HIV, Cardiac disorders, Hypertension, Leprosy, Pregnancy, lactating women and other infections.
- Those who are contraindicated for Agnikarma.

INVESTIGATIONS

- CBC, ESR, RBS, CT, BT, HBs Ag, HIV 1&2, X-ray.

MATERIALS REQUIRED FOR STUDY

Fig no.1: Materials required for Modified Agnikarma (Viddhagnikarma).

Fig no 2 – Materials required for TENS therapy.

Table No. 1: Showing materials require for the study.

Surgical gloves	Q.S
Sterile gauze pieces	Q.S
Drape	• 1
Goniometer	1
26-Gauge ½ inch needles	Q.S
Plaster	Q.S
TENS machine	1
Diathermy cautery	1

PROCEDURE

Group A

Purvakarma

Patient was advised to take pichhila anna before procedure.

Pradhana karma

Patients were made to sit comfortably and with gentle palpation most tender avascular areas are identified. The 26-gauge sterile needles were pricked at the depth of 1mm -3mm at marked tender points with uniform distance of 1cm length and width. Diathermy cautery was gently touched to the needles. Total 3 rounds of agnikarma were done.

Paschatkarma

After that the needles are removed followed by application of Madhu and ghrita done. Likewise, 3 sittings were done with interval of 1 week.

Group B

Patients were made to sit comfortably. Electrodes are placed where the pain is located or trigger points after palpation. With frequency 1Hz-4Hz, pulse width 150 μs to 250 μs and intensity adjusted according to patient's threshold. Stop the machine after 15 min and remove the electrodes.

Same was continued daily for 14 days and follow up on 21st day.

ASSESSMENT CRITERIA

Assessment is based on subjective and objective parameters, assessed before and after the treatment.

Table No. 02: Showing the assessment parameters.

<table>
<tr><td rowspan="2">Subjective Parameter</td><td>Pain</td><td colspan="3">P_0 – No pain -0
P_1- Mild pain- 1-3
P_2- Moderate pain – 4-6
P_3- Severe pain -7-10</td></tr>
<tr><td>Stiffness</td><td colspan="3">No stiffness-0
Mild stiffness, particularly during shoulder movement, able to continue routine work (1- 10mins)-1
Moderate stiffness, able to continue work with difficulty(20-30mins)-2
Severe stiffness, felt on movement and also at rest, interfering routine work (more than 30mins)-3</td></tr>
<tr><td rowspan="18">Objective parameter</td><td>Tenderness</td><td colspan="3">T0- No tenderness
T1- Mild tenderness
T2- Moderate tenderness and patient winces
T3- Severe tenderness, patient winces and withdraws the limb</td></tr>
<tr><td rowspan="17">Range of movements of shoulder joint by goniometer.</td><td>ROM using Goniometer</td><td>Observation (in degrees)</td><td>Scale</td></tr>
<tr><td rowspan="4">Flexion</td><td>161-180</td><td>0</td></tr>
<tr><td>141-160</td><td>1</td></tr>
<tr><td>121-140</td><td>2</td></tr>
<tr><td><120</td><td>3</td></tr>
<tr><td rowspan="4">Extension</td><td>51-60</td><td>0</td></tr>
<tr><td>41-50</td><td>1</td></tr>
<tr><td>31-40</td><td>2</td></tr>
<tr><td><30</td><td>3</td></tr>
<tr><td rowspan="4">Abduction</td><td>161-180</td><td>0</td></tr>
<tr><td>141-160</td><td>1</td></tr>
<tr><td>121-140</td><td>2</td></tr>
<tr><td><120</td><td>3</td></tr>
<tr><td rowspan="4">Internal rotation</td><td>71-90</td><td>0</td></tr>
<tr><td>51-70</td><td>1</td></tr>
<tr><td>31-50</td><td>2</td></tr>
<tr><td><30</td><td>3</td></tr>
<tr><td rowspan="4">External rotation</td><td>71-90</td><td>0</td></tr>
<tr><td>51-70</td><td>1</td></tr>
<tr><td>31-50</td><td>2</td></tr>
<tr><td><30</td><td>3</td></tr>
</table>

RESULTS

Table No. 03: Overall effect in Group A and Group B.

Effect of Treatment			
Class	**Grading**	**No. of Patients in Group A**	**No. of Patients in Group B**
0-25%	Poor Response	0	0
26-50%	Mild Response	0	0
51-75%	Moderate Response	3	7
76-100%	Marked Response	17	13

Overall effect of treatment

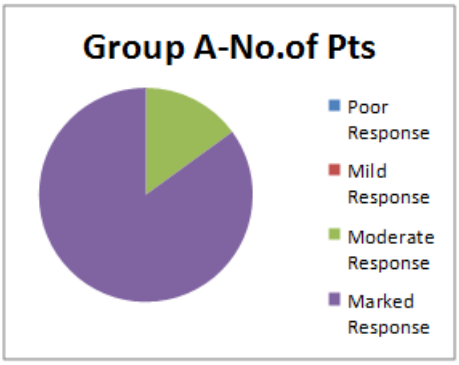


Figure 3: Showing overall effect in Group A.

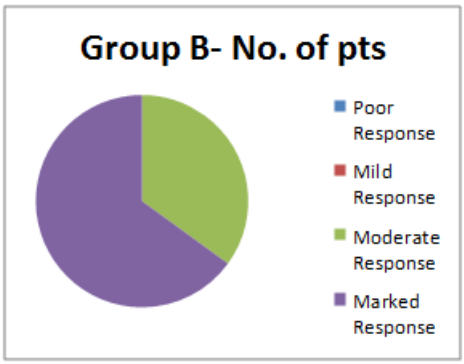
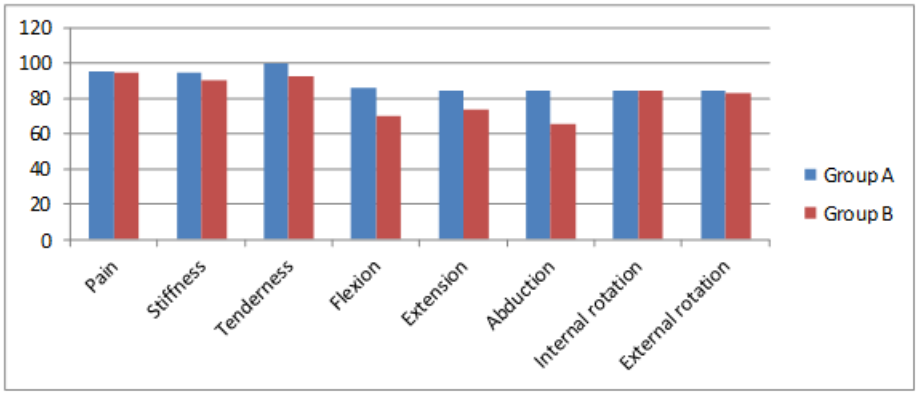


Figure 4: Showing overall effect in Group B.

Table No 05: Showing the overall comparative results of Group A and Group B.

Parameter	GroupA (%)	Group B (%)
PAIN	95.8	94.66
STIFFNESS	94.9	90.8
TENDERNESS	100	92.5
FLEXION	85.8	70
EXTENSION	85	74
ABDUCTION	84.44	65.8
INTERNAL ROTATION	85	85
EXTERNAL ROTATION	85	83.33



MODIFIED AGNIKARMA(VIDDHAGNIKARMA) PROCEDURE

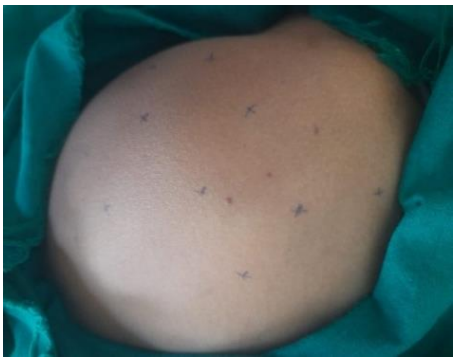


Fig. no. 5: Marking tender points.

Fig. no. 6: pricking 26G needles.

Fig. no.7: Conduction of heat with electric cautery.

Fig. no. 8: Removal of needles.

Fig no.9: Application of Madhu, Ghrita.

TENS THERAPY PROCEDURE

Fig. no.10: Placement of electrodes.

Fig. no. 11: Papation of tender area.

Fig. no.12: On the machine & set measurements.

Fig. no.13- Off the machine.

Fig. no.14: Remove the electrodes.

Fig. no.15: After procedure.

DISCUSSION

Probable mode of action of *Viddhagnikarma*

- Diffuse Noxious Inhibitory Controls (DNIC) by acupuncture effect.
- Aδ-fibers are activated under thermal or mechanical stimuli and result in a short-lasting-pricking type of pain sensation. The activation of C-fibers is stimulated by thermal, mechanical or chemical stimuli, which often results in poor localization and dull pain sensation.
- *Ushna Guna* of *Agnikarma causes Vataghna*
- *Removes kapha avarana thereby reduces the stiffness*
- *Dhatwagni utklesha causes* Amapachana and doshapachana which leads to removal of Toxins from the body.
- *Agnikarma* increases the blood flow and lymphatic circulation at the affected site.
- Heat produces a direct effect on capillaries, arterioles etc causing them to dilate. It increases the metabolic rate at cellular level. Metabolic wastes and P-substances which are accumulated will be pumped back and thereby relief of pain.
- Heating of tissues in a therapeutic temperature (40-45^{0}C) helps to reduce the muscle spasm. Thereby improves range of movements in avabahuka patients.
- Vant Hoff's law:Metabolic rate may increase by 13% for each 1^0 C rise in temperature. Increasing the tissue temperature helps in increasing of enzymatic activity to a peak value.
- Activates endogenous opioid system causes suppression of pain

Probable mode of action of TENS therapy

- Gate control theory
  The electrical stimulation from the TENS unit is believed to activate the nerves in the treated area, which then interferes with the transmission of pain signals to the brain, essentially closing the gate where pain is received and reducing pain perception.
- TENS uses classical descending inhibitory pathways activating opioid, GABA, serotonin and muscarinic receptors to reduce dorsal horn neuron activity and the consequent pain.
- TENS also reduces central neuron sensitization and release of the excitatory neurotransmitters glutamate and substance P.
- The intention of TENS is to stimulate small diameter, high threshold peripheral afferents (A-delta) in order to activate extrasegmental descending pain inhibitory pathways. Non-painful muscle twitches occur during stimulation causing activity in small diameter muscle afferents.

CONCLUSION

- Overall effect of treatment in Group A(Viddhagnikarma) is 89% and in Group B(TENS therapy) is 82.5%.
- The study showed marked response in the management of pain in Avabahuka patients.
- Based on the observations and results the following hypothesis was accepted; "Modified Agnikarma is more efficacious than TENS therapy in the management of Avabahuka."

REFERENCES

1. Acharya Sushruta. Sushrutha Samhita.(Nibhanda Sangraha commentary of Dalhana acharya and NyayaPanjika commentary of Gayadasa). Edited by Yadavji Trikamji, 1st Edition., Varanasi; Chaukamba Sanskrit Samsthana, Nidana sthana, 2nd chapter verse no., 2014; 4: 271.
2. Acharya Vagbhata. Ashtanga Hrudaya, Edited with Nirmala. Hindi Commentary, by Dr.Brahmananda Tripathi, Chaukambha Sanskrit sansthan, Varanasi, Nidana sthana, 7th chapter. verse no.1, 477.
3. Acharya Sushruta. Sushrutha Samhita. (Nibhanda Sangraha commentary of Dalhana acharya and NyayaPanjika commentary of Gayadasa). Edited by Yadavji Trikamji, 1st Edition., Varanasi; Chaukamba Sanskrit Samsthana, Sutra sthana, 33rd chapter verse no., 2014; 4: 144.
4. S. Das. Concise Textbook of Surgery.9th Edition. 45th Chapter, 2014; 1074.
5. SRB's Manual of Surgery, 6th Edition. 25th Chapter, 2019; 962.
6. Acharya Sushruta. Sushrutha Samhita. (Nibhanda Sangraha commentary of Dalhana acharya and NyayaPanjika commentary of Gayadasa). Edited by Yadavji Trikamji, 1st Edition., Varanasi; Chaukamba Sanskrit Samsthana, Chikitsa sthana, 6th chapter verse no.3, 2014; 430.
7. Acharya Sushruta. Sushrutha Samhita.(Nibhanda Sangraha commentary of Dalhana acharya and NyayaPanjika commentary of Gayadasa). Edited by Yadavji Trikamji, 1st Edition., Varanasi; Chaukamba Sanskrit Samsthana, Sutra sthana, 11th chapter verse no.5, 2014; 45.
8. Acharya Sushruta. Sushrutha Samhita.(Nibhanda Sangraha commentary of Dalhana acharya and NyayaPanjika commentary of Gayadasa). Edited by Yadavji Trikamji, 1st Edition., Varanasi; Chaukamba Sanskrit Samsthana Sutra sthana, 37th chapter verse no.13, 2014; 161.
9. Acharya Sushruta. Sushrutha Samhita. (Nibhanda Sangraha commentary of Dalhana acharya and NyayaPanjika commentary of Gayadasa). Edited by Yadavji Trikamji, 1st Edition., Varanasi; Chaukamba Sanskrit Samsthana, Chikitsa sthana, 6th chapter verse no.4, 2014; 431.