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TO COMPARE THE EFFECT OF MAITLAND MOBILIZATION TECHNIQUE VERSUS MYOFASCIAL RELEASE ALONG WITH HEATING PAD IN ADHESIVE CAPSULITIS.

Physiotherapy

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ABSTRACT

Background and Objectives: Adhesive capsulitis, commonly known as frozen shoulder, is characterized by pain, stiffness, and reduced range of motion in the shoulder joint. It significantly affects daily activities and quality of life. **Objectives:** To evaluate the effectiveness of Maitland Mobilization and myofascial release , each combined with heating pad, in reducing pain and improving shoulder mobility in patients with adhesive capsulitis. **Methods:** 60 patients with adhesive capsulitis, ASSIGNED into two Group A (maitland mobilization+ heating pad) and Group B (myofascial release + heating pad)for four weeks intervention were given once a day , three days a week, The VISUAL Analogue scale , the shoulder pain and disability index was used to measure functional status ,and a Universal Goniometer was used to measure shoulder range of motion . paired and independent t tests were used to assess pre and post – intervention data ,with a significance level of $p < 0.05$. **Results:** Following the intervention, both groups showed statistically significant improvements in pain, range of motion, and functional status ($p<0.05$), Group A demonstrated a higher percentage improvement in VAS and ROM than Group B **Conclusion:** For patients with adhesive capsulitis ,both maitland mobilization along with heating pad and myofascial release along with heating pad are useful in lowering discomfort and enhancing shoulder function.

KEYWORDS

Adhesive Capsulitis, Frozen Shoulder, Maitland Mobilization, Myofascial Release, Heating Pad, VAS, SPADI, ROM

1. INTRODUCTION

Shoulder pain is a very frequent and most common musculoskeletal disorder, which is recognized as the third most prevalent musculoskeletal complaint after low back pain and neck pain. Amongst shoulder pain, one of the most common and disabling orthopedic disorder is "ADHESIVE CAPSULITIS".[1]

Adhesive capsulitis frequently develops between the age group of 40-65 years and rarely occurs in persons younger than 40 years of age. Its incidence is more in females than in males.[2,3]

The clinical features of adhesive capsulitis include pain & stiffness in the shoulder which can be poorly localized, dull ache and may radiate into the biceps.[4]

According to Smita Bhimrao [2014] adhesive capsulitis affects 3% to5 %of general population and up to 20% of population with diabetes further the unilateral adhesive capsulitis increases the risk of contralateral shoulder between 5% to 34% [5]

Myofascial Release

Myofascial release techniques always help in reducing restrictions further it facilitate the release of the fascia Myofascial release uses specific techniques to release fascia deep down in to the joint structure. While using this technique the therapist uses their hands as a tool (fingers ulnar border of hand finger or thumb pad) which is used to sink into the soft tissue. contact the first barrier restricted layer of the soft tissue further put in a line of tension and engage the fascia by taking up the slack in the tissues. At last, finally move or drag the fascia across the surface while staying in touch with the underlying layers. exit gracefully means apply for 5 seconds on and 2-3seconds off until the patient reports pain reduction in local area until 2 minutes for each muscles[6]

Maitland Mobilization

Maitland Mobilisation Maitland's technique includes the application of accessory oscillatory movements to treat stiffness of the joint description of grades of joint movement has been a major contribution to manual therapy Grade 1 and 2 are primarily used for treating joints limited by pain. Whereas Grade 3 and 4 oscillatory movements are used for joint stiffness as stretching manoeuvres [7]

Heating Pad

For the heating pad group an electrical heating pad sized 35.5 68.5 cm was used to deliver superficial heating.

The temperature was set at 63C.the subjects were informed that the only purpose of the heating was to produce a feeling of comfortable warmth if they felt that the heat was excessive the temperature of electrical heating pad was adjusted immediately to ensure that the heat remained at a comfortably warm level only through out the treatment[8]

2. Materials and Methods:

Study Design: Comparative analysis of experiments.
Study Setting: Kempegowda Institute of Physiotherapy and Kempegowda Institute of Medical Sciences Hospital, Bangalore.
Sample Size: There were sixty patients with frozen shoulder.
Participants: After obtaining informed agreement, patients with unilateral frozen shoulder between the ages of 40 and 65 who satisfied the inclusion criteria were enlisted

Inclusion Criteria:

- Both male and female patients are included in this study
- Patient who are able to comprehend. command and willingness to participate in the study
- Patients who had restricted range of motion and patient who has fascia tightness

Exclusion Criteria:

- History of shoulder surgery or dislocation
- No patients will be taken in the study unwillingly
- History of neurological involvement
- History of accidental injuries

Intervention Protocol

Group A:

1. Glenohumeral Caudal Glide
2. Gleno Humeral Caudal Glidde Progression
3. Gleno Humeral Anterior Glide

Group B:

a tool (fingers ulnar border of hand finger or thumb pad) which is used to sink into the soft tissue. contact the first barrier restricted layer of the soft tissue further put in a line of tension and engage the fascia by taking up the slack in the tissues. At least, finally move or drag the fascia across the surface while staying in touch with the underlying layers. exit gracefully means apply for 5 seconds on and 2-3seconds off until the patient reports pain reduction in local area until 2 minutes for each shoulder muscles (The treatment was given thrice a week for 4 weeks) [9]

Heating Pad

For the heating pad group an electrical heating pad sized 35.5, 68.5 cm was used to deliver superficial heating.

The temperature was set at 63C. The subjects in the heating pad received respective treatment each treatment session lasted for 20minutes. (The treatment was given thrice a week for 4 weeks)[10]

Outcome Measures

Visual Analogue Scale (VAS)

The patients are presented with a 10cm line on a piece of paper and a pen. They are instructed to mark their perceived level of pain intensity on the line. the patient marked the pain intensity he/she felt on a 10-cm line; the left end indicated no pain (0 points), and the right end indicated the maximum pain intensity (10 points')[11]

The Shoulder pain and disability index (SPADI): is a shoulder pain disability index, which contains 13 items describing common situation that may induce symptoms in patients with shoulder disorder. The smaller the score, the lighter the shoulder pain and the level of dysfunction applicable category should be used when the situation at issue has not occurred during the preceding 24hrs [12]

Statistical Analysis:

SPSS version 26 was used to analyse the data. For within-group analysis, the paired t-test was utilized, and for between-group comparison, the independent t-test. For categorical variables, the chi-square test was used. The significance threshold was set at $p<0.05$

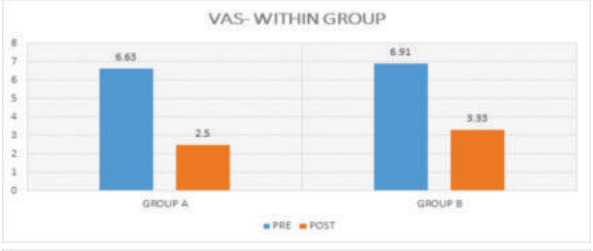
3. RESULTS

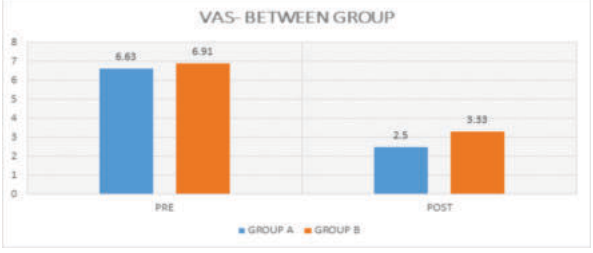
Visual Analogue Scale

Table 4- Between and Within Group Comparison of 'VAS'

		GROUP A	GROUP B	T Value (t Test)	P Value
VAS	PRE	6.63±1.51	6.91±1.31	0.77	0.44
	POST	2.5±1.02	3.33±1.31	2.73	0.008*
DIFFERENCE		4.13±1.34	3.58±1.31		
T VALUE		12.41	10.58		
P VALUE(Paired T test)		0.0001*	0.0001*		
Percentage difference		62.2%	51.8%		

Pain levels, measured using the Visual Analogue Scale (VAS), significantly improved in both groups from pre- to post-treatment. greater reduction in VAS scores in Group A compared to Group B (mean difference: 4.13 ± 1.34 vs. 3.58 ± 1.31), with an independent t-test result of t = 2.73, p = 0.008. The percentage reduction in VAS scores was also greater in Group A (62.2%) than in Group B (51.8%).



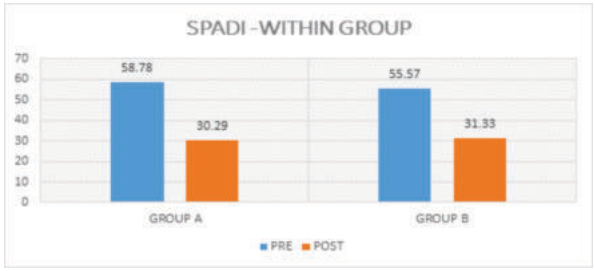


Graph 4: VAS Comparison Between Group A and Group B

Table 5 - Between and within Group Comparison of 'SPADI'

		GROUP A	GROUP B	T Value (t Test)	P Value
SPADI	PRE	58.78±11.14	55.57±13.18	1.01	0.31
	POST	30.29±6.31	31.33±9.16	0.49	0.62
DIFFERENCE		28.49±8.34	24.24±11.45		
T VALUE		12.27	8.32		
P VALUE (Paired T test)		0.0001*	0.0001*		
Percentage difference		48.4%	43.6%		

Although Group A showed a slightly greater reduction in SPADI scores (mean difference: 28.49 ± 8.34) compared to Group B (24.24 ± 11.45), the between-group difference was not statistically significant (t = 0.49, p = 0.62). The percentage improvement was higher in Group A (48.4%) than in Group B (43.6%).



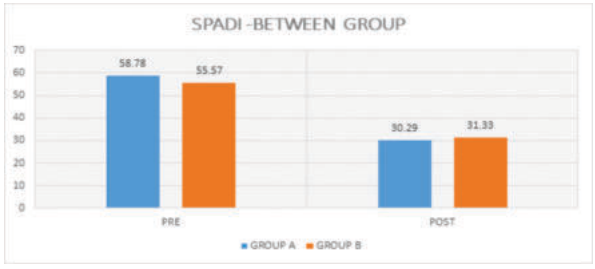
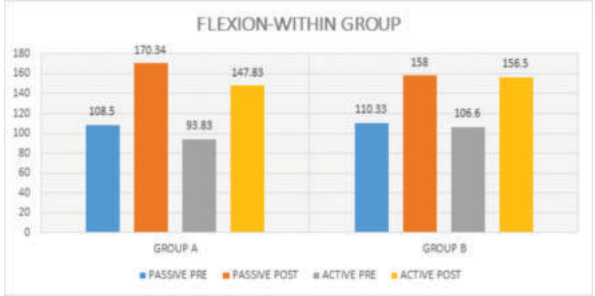
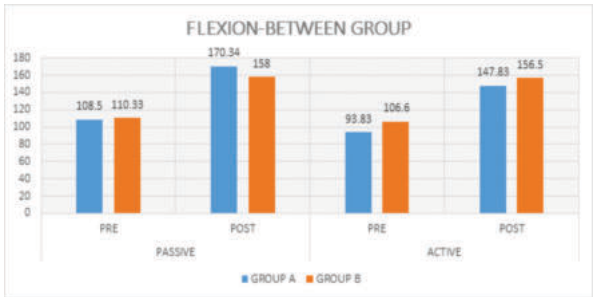


Table 6 - Between and Within Group Comparison of 'FLEXION'

		GROUP A	GROUP B	T Value (t Test)	P Value
PASSIVE	PRE	108.5±19.45	110.33±19.61	0.36	0.71
	POST	170.34±11.75	158±16.91	3.29	0.003*
DIFFERENCE		61.84±14.36	47.67±18.63		
T VALUE		14.93	10.09		
P VALUE (Paired T test)		0.0001*	0.0001*		
Percentage difference		56.9%	43.21%		
ACTIVE	PRE	93.83±17.01	106.6±19.53	2.11	0.06
	POST	147.83±21.86	156.5±18.41	1.66	0.11
DIFFERENCE		54±18.95	49.9±18.88		
T VALUE		10.67	10.22		
P VALUE (Paired T test)		0.0001*	0.0001*		
Percentage difference		57.5%	46.8%		

For passive flexion, Group A improved from a mean of 108.5 ± 19.45 degrees to 170.34 ± 11.75 degrees, while Group B improved from 110.33 ± 19.61 to 158 ± 16.91 degrees. However, the between-group difference in active flexion was not statistically significant, with t = 1.66 and p = 0.11, despite Group A showing a slightly greater percentage improvement (57.5% vs. 46.8%).





4. DISCUSSION

The results of this study show that both intervention procedures work well for treating Adesive capsulitis. The effect of maitland mobilization along with heating pad may be responsible for Group A's improvement. Group B also shown notable improvements.. The slightly better results in Group A imply that treating maitland mobilization in addition to deep heating techniques may provide further therapeutic benefits.

5. Clinical Implications:

The results of this study indicate that for the treatment of Adhesive capsulitis Maitland mobilization with heating pad is a more successful physiotherapeutic strategy than Myofascial relesse with heating pad . By restoring may increase shoulder range of motion, reduce discomfort, and promote improved functional recovery.

6. CONCLUSION:

In patients with frozen shoulder, both intervention procedures were successful in lowering discomfort, increasing shoulder range of motion, and improving functional capacity.. According to the results, Maitland mobilization with heating pad may offer more clinical advantages in the treatment of frozen shoulder.

7. Limitations:

- Brief duration of the intervention.
- Absence of long-term monitoring.
- One-centre research.

8. Recommendations

It is advised that future research include functional performance testing, longer follow-up times, and larger sample groups.

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