



**ORIGINAL RESEARCH PAPER**

**Physiotherapy**

**IMMEDIATE EFFECT OF MYOFASCIAL RELEASE V/S POSITIONAL RELEASE TECHNIQUE ON LEVATOR SCAPULAE TRIGGER POINTS IN YOUNG ADULTS**

**KEY WORDS:** Myofascial Release Technique (MFR), Positional Release Technique (PRT), Myofascial Trigger points (MTrPs).

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**ABSTRACT**

**Context :** Myofascial release is the gentle manual application of sustained pressure to release fascial restriction. One of the cervical spine pain healing methods is Trigger point therapy with positional release method.

**Aim:** To compare the efficacy of Immediate Effect of Myofascial Release and Positional Release techniques on levator scapulae trigger points in young adults.

**Method And Material:** Study involved 30 subjects that were divided into 2 groups. Group A (n=15) Myofascial Release technique and Group B (n=15) Positional Release technique.

**Results:** The data was analysed using statistical method of paired 't'-test between the pre and post interventional study of pain and range of motion. Result showed statistically significant improvement (p<0.05) and visible difference in the post intervention.

**Discussion And Conclusion:** From the present study we conclude that Myofascial release is more efficient in reducing pain whereas Positional Release Technique is more efficient in increasing the cervical ROM, both Active lateral flexion and Cervical rotation.

**INTRODUCTION**

Cervical spine pain is one of the most common health problems among adults. The factors contributing to the cervical pain include: improper musculoskeletal system strain (lack of ergonomics), absence of active rest and proper prevention. Because of incorrect exploitation TrP (trigger points) creation occurs in soft tissues<sup>1</sup>.

Levator Scapulae muscles are located on either side of the neck. This muscle is originated from posterior tubercle of transverse process of C1-C4 vertebrae, and inserted at superior part of medial border of scapula; nerve supply to it is cervical nerves (C3&C4) and dorsal scapular nerve (C5). This muscle helps in various action of neck, shoulder and scapula; mainly elevation, abduction and downward rotation of scapula and flexion, extension, side flexion and rotation of the cervical spine<sup>2</sup>.

A MTrP is a hyperirritable spot, associated with a taut band of a skeletal muscle that is painful on compression or stretch, and that can give rise to a typical referred pain pattern as well as autonomic phenomena. MTrPs are typically located by physical examination and palpation<sup>3</sup>.

The diagnosis of a MTrP is accomplished by physical exploration by an experienced therapist, who must take into account the physical signs demonstrated<sup>3</sup>, including: presence of a palpable taut band in a skeletal muscle; the presence of a hypersensitive tender spot in the taut band; palpable or visible local twitch response on snapping palpation, and/or needling of the MTrP<sup>3</sup>.

There are mainly two trigger points located in the lower half of the Levator scapulae muscles<sup>5</sup>. When pressure is applied to a TP, "a jump sign" or "jump response" is elicited whereby the patient reacts with facial grimacing, by a verbal response, or by jumping away from the examiner to cause neck and upper back pain<sup>6</sup>.

Myofascial release is a soft tissue mobilization technique, defined as "the facilitation of mechanical, neural and psycho physiological adaptive potential as interfaced via the myofascial system"<sup>7</sup>.

PRT is an indirect (the body part moves away from the resistance barrier, i.e., the direction of greatest ease) and

passive (the physiotherapist performs all the movements without help from the patient) method of treatment<sup>8</sup>.

**MATERIAL AND METHODOLOGY**

**MATERIALS**

- VAS scale
- Universal Goniometer
- Assessment chart
- Couch and plinth
- Chair

**METHODOLOGY**

**Study Setting:** This study was carried out in Aburoad at Shri U.S.B. College of Physiotherapy, Aburoad, Rajasthan, India.

**Study Design:** It is a comparative study design.

**Sample size:** A total of 30 patients of both sexes fulfilling inclusion criteria are taken from from Aburoad, Shri U.S.B. College of Physiotherapy. The purpose of the study was explained to each subject and informed consent was taken from each subject.

**Sample Format:** The study sampling was convenient sampling and were assigned into two groups, group A and group B.

**Inclusion Criteria:**

- Young adults with age group 18-25yrs of both genders.
- Patients having trigger points in Levator scapulae muscle
- Palpable tender spots characterized by JUMP SIGN
- Visual Analogue Score of less than 6
- No other Physiotherapy or Medical Intervention taken prior for this condition

**Exclusion Criteria:**

- Patients with history of degenerative disease of cervical spine.
- Patients with inflammatory conditions around neck region.
- Disabled patients in any form or Hypermobile joints.
- People who are taking pain killers.
- Sensory disturbance in levator scapulae area.

**METHOD OF COLLECTION OF DATA**

**Group A: MFR:** The participants were made to sit in a

comfortable position in a chair, the position of the therapist was behind the participant.

The trigger point release consist of lengthening the muscle to the point of increasing resistance within the comfort zone and then apply gentle, gradually increasing pressure on the trigger point until the finger encounters a definite increase in tissue resistance or a barrier<sup>9</sup>.

The pressure sustained and maintained till 60-90 seconds/ counts or 1 minute, participant should feel a degree of discomfort but should not experience pain, until therapist feels slight release of tension under the finger.

The therapist then increases the pressure to a new barrier and repeat the procedure again. Immediate post assessment of pain was taken with the help of Visual analogue scale, and range of motion with the help of a goniometer<sup>10</sup>.

**Group B: PRT:** Place the patient prone.

With your farhand move the arm through abduction while palpating the inferior fibres of the levator scapulae through the overlying trapezius fibres with the near hand.

Stabilize the arm against the edge of the treatment table with your leg.

Place the thenar aspect of your far hand at the lower lateral border of the scapula with your fingers oriented over the superior scapular angle.

With your far hand translate the scapula upward, then apply rotation with your dominant hand. Tilt the superior angle of scapula downwards with the fingers of your far hand<sup>11</sup>.

**RESULTS**

- All statistical analysis was done by using SPSS statistics version 25.0 for windows software. Microsoft excel was used to calculate graphs and tables.
- P value <0.05 is taken up for statistical significance.

**Comparison Of VISUAL ANALOG SCALE Within GROUP A and GROUP B.**

The sample size for Group A was taken 15 (N=15). Group A , Mean for VAS Pre test : 5.2000 and Post test: 1.8000 (Standard Deviation for Pre test : 0.77460 and Post test : 0.77460) .P value : 0.007 (very significant) and T value: 20.821.

The sample size for Group B was taken 15 (N=15). Group B , Mean for VAS Pre test : 4.8667 and Post test: 1.9333 (Standard Deviation for Pre test : 0.74322 and Post test: 0.79881. P value : 0.003 (highly significant) and T value : 19.138.

**Comparison of Cervical ROM (Active Lateral Flexion) within GROUP A and GROUP B**

The sample size for Group A was taken 15 (N=15) and Group B was taken (N=15).

Group A , Mean for Active lateral flexion Pre test : 43.4667 and Post test : 51.4667 (Standard Deviation Pre test: 8.76573 and Post test: 5.89723) .P value : 0.006 and T value : -4.789 .

Group B , Mean for Active lateral flexion Pre test : 40.9333 and Post test : 49.1333 (Standard Deviation Pre test: 7.05556 and Post test: 8.64264) .P value : 0.000 and T value : -6.973

**Comparison of Cervical ROM (Rotation) within GROUP A and GROUP B.**

The sample size for Group A was taken 15 (N=15) and Group B was taken (N=15). Group A , Mean for Rotation Pre test : 73.9333 and Post test:

80.1333 .(Standard Deviation Pre test : 8.30204 and Post test: 4.43793) .P value : 0.000 and T value : -4.786. Group B , Mean for Rotation Pre test: 72.7333 and Post test: 79.5333 (Standard deviation Pre test: 7.33355 and Post test: 6.22055) .P value: 0.001 and T value : -5.405.

**Table-1: Pairwise Comparison Of Vas In Group A And Group B**

VAS	MEAN	S.D.	P VALUE
GRP A	3.4000	.63246	.000
GRP B	2.9333	.59362	

Interpretation: Pairwise comparison of VAS in group A and B shows that group A is more efficient in pain reduction than group B

**Table 2 :- Pairwise Comparison Of Active Lateral Flexion In GRP A And GRP B**

ALF	MEAN	S.D.	P VALUE
GRP A	-8.0000	6.46971	.000
GRP B	-8.2000	4.55443	

Interpretation: Pairwise comparison of group A and group B shows that group B is more efficient in increasing the Active lateral flexion post treatment.

**Table 3:- Pairwise Comparison Of Cervical Rotation In Group A And Group B**

C.ROT.	MEAN	S.D.	P VALUE
GRP A	-6.2000	5.01711	.000
GRP B	-6.8000	4.87266	

Interpretation: Pairwise comparison of group A and group B shows that group B is more efficient in increasing the cervical Rotation post treatment. P value is extremely significant.

**DISCUSSION**

The effectiveness was evaluated by using the Paired't' tests to compare pre and post values of pain and range of motion.

Mean±S.D difference for VAS is more in group A. Mean±S.D difference for (Active lateral flexion) and (Cervical rotation) are higher in group B.

On analyzing the statistical values there is a difference between the parameters among group A and group B. It was found out that Myofascial trigger point release had immediate effect in pain reduction and Positional release technique was more effective in increasing the Cervical ROM -Active lateral flexion and Cervical Rotation immediately post treatment.

**CONCLUSION**

During the course of this study it has been concluded that Myofascial Release Technique is found to be more effective in reducing pain through VAS score, whereas Positional Release Technique is found to be more effective in increasing the cervical ROM , both Active Lateral Flexion and Cervical Rotation through ROM values in patients with Levator scapulae trigger points.

Hence rejecting the null hypothesis and accepting the alternative hypothesis.

**LIMITATIONS**

- Sample size taken was small.
- Patient may not follow the advice in a correct manner.
- Shoulder ROM was not considered.
- Time period of treatment is limited to see proper prognosis.

**FUTURE RECOMMENDATIONS**

- Study can be done with a larger sample size and longer study duration.
- Treatment can be given for longer duration with follow up.
- Study can be done on different age group and/ comparison between gender groups.

- Study can be extended by comparing with other treatment techniques and modalities using a control group.
- Future studies using both techniques in the same subjects to know the combined effects are also recommended.

#### CLINICAL IMPLICATION

Results have suggested that patients suffering from Levator scapulae trigger points have mild type of pain, so VAS and ROM scores are easily applicable tools which can be applied for assessing the patients. Myofascial Release Technique is more effective in reducing VAS and Positional Release technique is more effective in increasing the Cervical ROM.

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