EFFECT OF MYOFASCIAL TRIGGER POINT RELEASE THERAPY AND ACTIVE STRETCHING ON PAIN AMONG LATERAL EPICONDYLITIS PARTICIPANTS

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ABSTRACT: OBJECTIVE: To find effectiveness of myofascial trigger Point release therapy and active stretching on pain among lateral epicondylitis participants.

MEASURES: Pain (NPRS) scale used for pre-test and post-test. Paired t-test will be used to compare the pre and post test values.

RESULT: From statistical analysis made with the quantitative data revealed statistically significant difference between the Group A and Group B and also within the group. The post test mean value of NPRS scale in Group A is 4.67 and in group B is 6.07. This shows that NPRS scores in group A were comparatively less than group B, P<0.0001. Statistical Analysis of post test, Numerical pain rating (NPRS) scale revealed that there is less statistically significant difference seen between group A and group B.

CONCLUSION: Through our study MFR therapy and active stretching were shown effective in reducing pain and improves function when it was compared with active stretching only, although both the groups are shown similar improvement, the MFR group shown an additional benefit in the management of lateral epicondylitis.

Key Words: Myofascial release, Ultrasound therapy, Stretching.

INTRODUCTION:
Lateral epicondylitis is also referred to as lateral epicondylalgia, or tennis elbow. It is one of the common musculoskeletal lesions in the elbow(1). It is a prevalent musculoskeletal disorder that is characterized by lateral elbow pain often associated with gripping tasks, it affects at the age group of 30—60 years. It is a soft tissue lesion affecting equally both genders. It affects approximately 4—7% of patients per 1000 patients in a general practice and prevalent of 2—3 % in adults per year. It occurs as frequently as the medial epicondylitis, the ratio ranges from 4:1 to 7:1.

Literatures(5,6) suggest that extensor muscle groups are affected primarily in the lateral epicondylitis. The studies discussed that extensor carpiradialis brevis is affected due to repeated wrist motions. Tear of the tendon at the junction between the muscle and bone leads to poor healing of the tissues this is due to lack of overlying periosteal tissues. Repetitive movement creates micro trauma which may occur due to overuse or abnormal joint biomechanics, leading to overload of the repairing tissues, this mechanically distort scar tissue and thus stimulate free nerve endings to evoke mechanical nociceptive pain(7). There will be a fibroblastic proliferation of the tendon which will result in degenerative process or failed reparative process result more than acute inflammation(8).

Symptoms of lateral epicondylitis occurs following any activity like gripping, lifting on the painful side, door knob turning, lifting bags, and shaking hands that produce pain over the lateral epicondyle. These symptoms are exacerbated by activities involving repeated wrist extension while gripping a thin object. (eg: picking up a cup).

Myofascial release therapy (MFR) is one of the common techniques which is used by physical therapist in managing the symptoms in lateral epicondylitis(9,10), however the success rate of the therapy is not well addressed(15). MFR is applied with low load, long duration stretch on the fascial complex, which intended to restore optimal length, decrease pain and improve function . Though there are various treatment methods that show its beneficial effects in the management of lateral epicondylitis(16), there are a few studies conducted to investigate the effect of MFR and its role on grip strength. This study is focused to find out the effect of myofascial release therapy and active stretching on pain and grip in lateral epicondylitis.
Stretching exercise is stretching a given muscle tendon unit by slowly placing maintaining it in a maximal position of stretch. Self-stretching exercise is carried out independently by a patient after instruction and supervision by therapist. This form of stretching is often an integral component of a home exercise program and is necessary for effective and efficient long-term self-management of many musculoskeletal disorders.

Ultrasound therapy is used for soft tissue injuries but also for a variety of more chronic conditions with the view to promote healing and relieving pain. Most common frequencies of 1-3 MHz are used. Ultrasound energy is emitted in pressure waves from a piezoelectric crystal as a result of an applied electrical voltage across the crystal, the energy can be emitted in a continuous mode or pulse mode.

Ultrasound therapy utilizes acoustic vibration at a very high frequency that are above the audible range of the human ear directly applied to an external surface of human body, its is applied to break up scar tissue, promote healing and increase blood flow in the area, at the frequency of 1 MHz-3 MHz commonly used.

MATERIAL AND METHODS:

PROCEDURE:

Selected samples were grouped into two groups. GROUP-A experimental group and GROUP-B conventional group. The procedure will be explained in detail to all the subjects after obtaining the consent form from each subject. Then pre-test and post-test of NPRS will be taken and documented before and after 4 weeks of duration and tabulated for statistical analysis. A positive cozen test resistive contraction of wrist or finger extensor reinforced the presence of tennis elbow.

Intervention group received Myofascial Release therapy and Ultrasound therapy, and control group received Ultrasound therapy with Active stretching.

The proposed work was carried out with Ultrasound therapy unit, Treatment couch.

### Table: Pre test and post test values of group A

<table>
<thead>
<tr>
<th>Group A</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPRS scale in (cms)</td>
<td>Pre test</td>
<td>7.07</td>
<td>1.16</td>
<td>18.3303</td>
</tr>
<tr>
<td>Post test</td>
<td>4.67</td>
<td>1.18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Graph: Graph showing pre and post test values of group A

![Graph showing pre and post test values of group A](image)

### Table: Pre test and post test values of group B

<table>
<thead>
<tr>
<th>Group B</th>
<th>Mean</th>
<th>Standard deviation</th>
<th>t value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>NPRS scale (cms)</td>
<td>Pre test</td>
<td>7.27</td>
<td>1.16</td>
<td>8.2902</td>
</tr>
<tr>
<td>Post test</td>
<td>6.07</td>
<td>1.28</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table : 3 Comparison between Myofascial Trigger point release therapy, Active stretching and Active stretching Exercises for Group A & B

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Mean (cms)</th>
<th>S.D. (cms)</th>
<th>t-value</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Myofascial trigger point release therapy and active stretching Group (Group A)</td>
<td>5.00</td>
<td>1.36</td>
<td>2.4286</td>
<td>P=0.0218</td>
</tr>
<tr>
<td>Active stretching Exercise Group (Group B)</td>
<td>6.13</td>
<td>1.19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

RESULT:
From statistical analysis made with the quantitative data revealed statistically significant difference between the Group A and Group B and also within the group. The post test mean value of NPRS scale in Group A is 4.67 and in group B is 6.07. This shows that NPRS scores in group A were comparatively less than group B, P<0.0001.

Statistical Analysis of post test, Numerical pain rating (NPRS) scale revealed that there is less statistically significant difference seen between group A and group B.
DISCUSSION:

In this study it shows that the Post test value (1.18) of myofascial trigger point release therapy, active stretching Group and Post test value (1.28) of active stretching Group shows reduction of pain and improvement of function in lateral epicondylitis Patients.

Among both the groups myofascial trigger point release therapy and active stretching Exercises show better improvement compared to active stretching Exercises. So clinically we can suggest that the Rehabilitation Program may include with lateral epicondylitis conditioning.

Myofascial trigger point release therapy is used to treat all fascial problem, studies have reported that the plastic, viscoelastic, and piezoelectric properties of the connective tissue are regained through the application of MFR in lateral epicondylitis, MFR helps to reduce pain, by there application of treatment there will be substantial elongation of the fascia and the fascia back to its normal length, studies has also provides evidence that MFR is most effective in controlling pain, studies done by Ajimsha et al., 2012 and khuman et al., 2013 has shows similar results to our study, that MFR plays important role in reducing pain and improving functional performance in lateral epicondylitis patient, MFR plays major role in relaxing the deeper tissue and provides lasting, effective relief of pain, when pain reduces there will be reduction of the muscle tightness and the muscle were relaxed and produces good amount of contraction.

Stretching exercise are beneficial in the management of injured tendons, research has found that static stretching performed in ECRB results in reduction of pain and lengthening of the tendon, research found that 80% of muscle tendon unit length can be obtained after four repetition of a static stretch, this study has found that MFR and stretching was effective in relieving pain and improves functions when compared with stretching only, similar studies done by parthtrivedi et al., 2014 shows that that MFR and active release therapy were effective in management of lateral epicondylitis, furthermore the MFR was found to be superior, khuman et al, 2013, concluded that 4 weeks MFR was effective in reducing pain and improving in function or this study shows, Ust, myofascial trigger point release therapy and active stretching has faster benefit in lateral epicondylitis it reduces and improves functional activities.

CONCLUSION:

Through our study MFR therapy and active stretching were shown effective in reducing pain and improves function when it was compared with active stretching only, although both the groups are shown similar improvement, the MFR group shown an additional benefit in the management of lateral epicondylitis.

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CONFLICT OF INTEREST:

The authors declare no conflict of interest.

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