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ORIGINAL ARTICLE

Effect of Mobilization with Movement on Lateral Epicondylitis

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A B S T R A C T

Background: Lateral epicondylitis (tennis elbow) is a frequent complaint in primary care, and is judged an overload injury, affecting the common extensor muscles at the lateral humeral epicondyle. The prevalence and incidence rate is 1–3 % of the adult population.

Objectives: The objective of this study was to determine the effect of mobilization with movement (MWM) on pain and functional disability in lateral epicondylitis.

Methodology: This was a quasi- experimental study design. Study settings were Ch. M Akram Teaching Hospital & Research Centre and Jamiat Hospital, Lahore. Both Genders with age group of 20-35 years were equally inclusive in study. Study duration was six months. Patient –Rated Tennis Elbow Evaluation (PRTEE) tool was used to collect data. Two groups were enrolled as group (a) conventional therapy alone and group (b) MWM with conventional therapy. Treatment given to conventional group included ultrasound (pulsed mode), soft tissue release and strengthening exercises. In group (b) MWM was added in traditional treatment.

Results: Mean age was 31.66±3.15 of conventional group and 32.06±5.59 of MWM group. Intra-group (within groups) comparison of conventional group and MWM group showed significant improvement in pain with P-value of 0.001 and 0.001, P-value for functional disability in conventional group was 0.002 and in MWM group was 0.001, P-value for usual activities in conventional group was 0.001 and in MWM group was <0.001. .Inter-group comparison showed significant improvement in MWM group as post-treatment comparison with of pain in conventional group was 0.868 and in MWM group was 0.001, P-value of functional disability in conventional group 0.168 and in MWM group was <0.001, P-value of usual activities in conventional group was 0.379 and in MWM group was 0.001.

Conclusion: This study concludes that Mobilization with movement technique is more effective and better in reducing pain and gaining functional outcomes in the treatment of the lateral epicondylitis as compares to conventional Physical therapy alone.

Introduction

Tennis elbow is the complain of pain on lateral aspect of elbow that is due to degenerative delayed tendon healing rather than inflammatory in nature. It is swelling of tendons which are bands of tough tissue that connect the muscles of your lower end of arm to the bone[1].It is also known as Lateral epicondylalgia, rowing elbow, per tendinitis of elbow, archer elbow, and lateral epicondylitis.[2] It is more common in men with the prevalence and incidence rate of 1–3 % of the adult population. Symptoms of tennis elbow lasts between 6 months and 2 years, but it is a condition which recurs frequently.[3]

Some studies suggested that tennis elbow occur due to damage, weakening from overuse or formation of microscopic tears in the tendon of specific forearm muscle like extensor carpi radialis brevis. During bending and

straightening of elbow, the muscle faces friction against bony prominences. This can cause gradual injury of the muscle over time[4]. It includes the work requiring repetitive tasks and peculiarly those involving computer use, heavy lifting, forceful forearm pronation and supination, and repetitive vibration, Golfers, Baseball Players, Bowlers, Gardeners or Landscapers, House or Office cleaners (because of vacuuming, sweeping, and scrubbing), Carpenters Mechanics, and Assembly-line workers.[5]

Study was done by Anap D et al (2012), the experimental group treated with MWM and Ultrasound therapy, which showed significant change in the improvement. On the other hand, control group in which MWM did not applied and did not show remarkable change in pain and disability.[9]

Tennis elbow or pain at lateral side of elbow is one of the most common causes of injuries of forearm. One of the worst conditions, which was hard to treat, challenge for rehab and may take few weeks or months.[8] There are many ways to treat tennis elbow; most commonly used regimes are conventional method and mobilization with movement with conventional therapy. Positional faults are corrected readily by using mobilization with movement and hence evidences are present which showed that MWM restores the joint mobility.[10]

Methodology

The sample size was of 30 subject (15 in each group) using 5% level of significance and 90% power of test. This is Quasi experimental Study which was conducted at Chaudhary Muhammad Akram teaching hospital and Jamiat Hospital using convenient sampling technique, 6 month after the approval by institutional review board. Diagnosed and Referred patients from orthopedic departments (both gender) with lateral epicondylitis are included and with the age between 20 to 35 years. Patient with Recent elbow surgery/ trauma, congenital elbow anomalies, recent steroid injection for lateral epicondylitis, skin infection, Cervical radiculopathy and rheumatoid arthritis are excluded. Thirty patients who completed the selection criteria were enrolled in this study. Written informed consent was taken from every individual participating in this study prior to performing any examination. Two groups were made, group A was named as conventional therapy alone and group B was MWM with conventional therapy. Patient's level of pain and disability was assessed before application of MWM, using patient rated tennis elbow evaluation PRTEE for disability. MWM was applied on elbow in supine position, shoulder positioned as internal rotation, forearm pronation and elbow extension with 10 repetitions for 6 seconds with 15 seconds duration of rest. The frequency of physiotherapy sessions is important part of treatment while applying MWM. It varies with conditions but 3 to 6 sessions are required for the desired outcome. 7 Data was taken from the patients with lateral epicodyilis after an informed consent. It did not affect the patient ethical values; researcher follows all ethics of medical field

Results

Out of 15 patients in Control Group 13 (86.6 %) were male and 2 (13.3%) were females whereas in conventional Group 11 (73%) subjects were male and 4 (26%) were females .Mean age of subjects in conventional group was 31.66±3.15 and in MWM Group 32.06±5.59 (P=0.18).Subjects having right hand dominance in conventional group was 11(73%) and left was 4(26%).hand dominance in MWM group was the same.

Within group comparison of pain of conventional Group in pretreatment measurements was 32.20±3.42 .and in post treatment measurements was 20.73± 4.23(0.001*) showing significant improvements. MWM

Table I: Across the group comparison of pain, functional disability and usual activities

		Mean ± SD		
Variables	Group	**Baseline**	**Final**	**P value**
Pain	Conventional Physical Therapy	32.20±3.42	20.73±4.23	<0.001*
	Mobilization with Movement	32.00±3.07	13.20±3.40	<0.000*
Functional Disability	Conventional Physical Therapy	31.80±4.19	22.46±3.27	<0.002*
	Mobilization with Movement	34.13±4.80	13.06±5.53	<0.001*
Usual Activities	Conventional Physical Therapy	25.53±2.92	15.93±3.65	<0.001*
	Mobilization with Movement	24.60±2.79	11.13±3.35	<0.000*

		Study Group		
	Mean ± SD	Conventional Physical Therapy	Mobilization with Movement	P value
Pain	Pre Treatment	31.80±4.19	34.13±4.80	0.168
	Post Treatment	22.46±3.27	13.06±5.53	<0.001*
Functional Disability	Pre Treatment	31.80±4.19	34.13±4.80	0.168
	Post Treatment	22.46±3.27	13.06±5.53	<0.001*
Usual Activities	Pre Treatment	25.53±2.92	24.60±2.79	0.379
	Post Treatment	15.93±3.65	11.13±3.35	0.001

Group for pretreatment readings was 32.00±3.07 and in post treatment reading was 13.20±3.40 (<0.001*) showing significant improvement with the treatment of MWM Group.

Mean of pretreatment in conventional Group was 31.80±4.19 and in MWM Group was 22.46±3.27 (P=0001*) where as in post treatment measurement was 34.13±4.80 and in MWM group was 13.06±5.53 (p<0.001*), showing both groups were statistically different in post treatment readings and pretreatment readings in MWM Group. MWM have statistically significant effect in improving lateral epicondylitis in MWM group.

Mean values in conventional group in pretreatment measurements was 25.53±2.92 and in post treatment measurements was 15.93±3.65 (0.001*) showing significant improvement with intervention of conventional Group. Mean pretreatment values for MWM Group was 24.60±2.79 and in post treatment was 11.13±3.35 (<0.001*) showing significant improvement with the interventions of MWM Group.

Mean of pretreatment in conventional group was 32.20±3.42 and in MWM Group was 20.73±4.23 (P=0.868). Mean of post treatment measurements of conventional Group was 32.00±3.07 and in MWM Group was 13.20±3.40 (p<0.001*), showing both groups were statistically different in pretreatment and post-treatment readings.

Mean for pretreatment measurements of functional disability in conventional group was 31.80±4.19 and in MWM Group was 34.13±4.80 (P=0.168). Mean of post treatment measurements in conventional Group was 22.46±3.27 and in MWM Group was 13.06±5.53 (p<0.001*), showing both groups were statistically different in pretreatment and post treatment readings.

Mean of pretreatment measurements of usual activities of conventional group was 25.53±2.92 and in MWM Group was 24.60±2.79 (P=0.479). Mean of post treatment measurements of usual activities in conventional Group was 15.93±3.65 and in MWM Group was 11.13±3.35 (p<0.001*), showing both groups were statistically different in pretreatment and post treatment readings

Discussion

Aim of this study was to compare the effectiveness of mobilization with movement and conventional therapy for tennis elbow regarding pain, functional disability and usual activity. In present study, patients were divided into two groups and MWM and conventional treatment was given to both groups as an intervention. There were 30 subjects enrolled in this study. Other comparison was done between groups which also show significant difference with p-value less than 0.005. There is significant decrease in pain, functional disability and usual activity limitations in MWM group as compared to conventional group. Our conclusion confirm formerly issued trials on patients with pain in elbow. Same study was done by Anap D et al (2012), the experimental group treated with MWM and Ultrasound therapy, which showed significant change in the improvement. On the other hand, control group in which MWM did not applied and did not show remarkable change in pain and disability.[9]

Tennis elbow or pain at lateral side of elbow is one of the most common causes of injuries of forearm. One of the worst conditions, which was hard to treat, challenge for rehab and may take few weeks or months.[8] There are many ways to treat tennis elbow; most commonly used regimes are conventional method and mobilization with movement with conventional therapy. Positional faults are corrected readily by using mobilization with movement and hence evidences are present which showed that MWM restores the joint mobility.[10]

Conclusion

This study concludes that Mobilization with movement technique is more effective and better in reducing pain and gaining functional outcomes in the treatment of the lateral epicondylitis as compares to conventional Physical therapy alone.

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