



A STUDY ON EFFECTIVENESS OF WRIST EXTENSOR ECCENTRIC EXERCISE AND CONVENTIONAL EXERCISE IN COMPUTER PROFESSIONALS WITH CHRONIC LATERAL EPICONDYLITIS – COMPARITIVE STUDY

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ABSTRACT **Objective-** To compare effectiveness of wrist extensor eccentric exercise and conventional exercise in computer professionals with chronic lateral epicondylitis in reducing pain and disability. **Method-** A total 80 participants were selected and divided into two groups of 40 participants each. Group A was given wrist extensor eccentric exercise with conventional exercise and group B was given conventional exercise for 4 weeks. Outcome Measure- DASH (the disabilities of the arm, shoulder and hand) and numerical pain rating scale. **Result-** statistical analysis were done using paired t-test and unpaired t-test. The post intervention value obtained by performing unpaired t-test showed that pain and disability was comparatively more reduced in group A than in group B. **Conclusion-** From the study it was concluded that wrist extensor eccentric exercise is more effective in reducing pain and disability in computer professionals with lateral epicondylitis as compared to conventional exercise.

KEYWORDS : lateral epicondylitis, conventional exercises, eccentric exercises, pain

INTRODUCTION

Lateral epicondylitis is one of the common musculoskeletal problem involving pain and tenderness around elbow joint which lead to difficulty in performing daily activities. In this condition there is repetitive recruitment of wrist common extensor tendon, particularly extensor carpi radialis brevis.

In computer professionals many work related musculoskeletal disorders are seen. Lateral epicondylitis is one of the common problem reported by computer professionals. This may be due to long duration of working hours, sitting in incorrect posture or incorrect ergonomics at workplace.

Eccentric strength training is the rehabilitative component of rehabilitation in patients with lateral epicondylitis which effectively lengthen the muscle tendon.

These exercises also provide effect on neuromuscular facilitation and provide substantial benefit to tendon cell in generating collagen and enables tendon to get more power in activities. The purpose of eccentric treatment is pain relief, movement preservation and enhancement of flexibility, muscle strength and endurance.

MATERIALS AND METHODOLOGY

The study included 80 participants (male and female both) with lateral epicondylitis of age group 30-45 years.

Study Design- Comparative study

Study Duration- 6 Months

Treatment Duration- 4 Weeks

Sampling Technique- purposive sampling

INCLUSION CRITERIA

- 1) Computer professionals who are willing to participate and diagnosed with chronic lateral epicondylitis
- 2) Both male and females
- 3) Positive cozens and mills test
- 4) Minimum 4 days working in a week
- 5) Computer usage more than 4 hours per day

EXCLUSION CRITERIA

- 1) Computer professional with history of fracture, dislocation, surgery of upper limb, neurological impairment in upper limb
- 2) History of arthritis

EXERCISE PROTOCOL

Group A

Manual stretching of wrist

Finger extension with rubber band 15 repetition

Ball squeeze: 15 repetitions Wrist flexion and extension: 10 repetition

1 kg of weight Isolated wrist extensor eccentric exercise: 3 set of 10

repetition with 1 kg of weight, 1 minute of rest between 2 sets Forearm supination and pronation: 3 set of 10 repetition with 1 kg of weight, 1 minute of rest between 2 sets

Group B

Manual stretching of wrist Finger extension with rubber band with 15 repetitions Ball squeeze :15 repetition Wrist flexion and extension: 10 repetitions with 1 kg of weight Forearm supination and pronation: 3 sets of 10 repetition with 1 kg of weight, 1 minute of rest between 2 sets



OUTCOME MEASURES

1) DASH (disability of arm, shoulder and hand)

In this test the possible score ranges from 0 to 100 points. 0 points represent no disability of the upper extremity, while 100 points represent severe disability

2) Numerical pain rating scale

NPRS is used for pain assessment. The subject is asked to rate his pain from 0 -10, where 0 is no pain and 10 is severe pain.

DATAANALYSIS:

Paired t test was used to analysis pre- post difference within the group and Unpaired t test was used to analysis post- post difference between the 2 group.



RESULTS

The comparison of NPRS values pre and post in conventional group

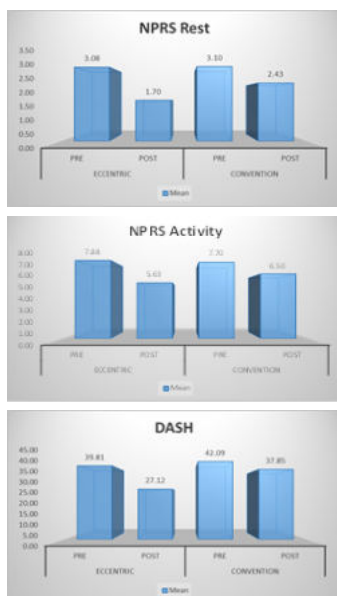
treatment p value is <0.05 which is significant. The pre-treatment mean for conventional group is 7.70 with SD value of 0.88, while post treatment mean is 6.50 with SD value of 0.99.

The comparison of NPRS value pre and post in eccentric treatment is < 0.05 which is significant. The pre-treatment mean for eccentric 7.88 with SD value of 0.79 while post treatment mean 5.63 with SD value of 1.03.

The comparison of DASH value in pre and post conventional treatment is <0.05 which is significant. The pre-treatment mean for conventional group is 42.09 with SD value of 2.04 and post treatment mean is 37.85 with SD value of 4.27

The comparison of DASH value in pre and post eccentric treatment is <0.05 which is significant. The pre-treatment mean for eccentric treatment is 39.81 with SD value of 4.44. The post treatment mean is 27.12 with SD value of 5.51.

Unpaired t test is carried for comparison with two groups, eccentric and conventional group. The P value for both is less than 0.05. This suggests that there is a statistical effect of wrist extensor eccentric group.



DISCUSSION

The major purpose of this study was to compare the effectiveness of wrist extensor eccentric exercise and conventional exercise in computer professionals with chronic lateral epicondylitis.

Lateral epicondylitis is one of the common disorder seen in upper extremity in computer professionals they result from overuse, which result in pain on activity, tenderness and difficult to tolerate tension leading to reduced functional strength.

It was study where 80 samples were chosen according to inclusion and exclusion criteria. The collected data was analysed as there were 2 groups, within the group paired t-test was done and pre and post values were compared. To compare post values of both values, unpaired t-test was done.

In the present study, it has been proven that conventional exercise has a significant effect in reducing pain and disability, which is well supported by a previous study of altan L effectiveness of conservative treatment in lateral epicondylitis which concludes that there is a significant effect of conventional exercise on chronic lateral epicondylitis.

In the present study it has also been proven that wrist extensor eccentric exercise has a significant effect in reducing pain and disability, this result is well supported by a study carried out by miguel ortegan-castillo, ivan-medina-porqueres effectiveness of the eccentric exercise therapy in physically active adults with symptomatic shoulder impingement or lateral epicondylitis. This study concluded that

eccentric exercises are effective for upper limb tendinopathies.

D, Stasinopoulos, K Stasinopoulos, M I Johnson an exercise program for the management of lateral elbow tendinopathy has stated that slow progressive eccentric exercises should be performed for lateral elbow tendinopathy. According to its three principles that are load, speed and frequency of contraction which help on the management of injured tendon.

CONCLUSION

This study concludes that wrist extensor eccentric exercise will be more effective than conventional exercise in reducing pain and disability in computer professionals with chronic lateral epicondylitis.

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