

Comparative Study Between Dry Needling Technique Versus Kinesio Taping With TENS In Tennis Elbow

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Abstract-

Background: Tennis elbow or lateral epicondylalgia is a common painful condition of elbow which leads to pain over common extensor origin, muscle weakness, and reduction in upper limb function. There are very few researches are on muscle activity in the tennis elbow and the treatment of dry needling and Kinesiotaping with TENS. **Objective:** To examine the effectiveness of dry needling versus kinesio taping in patients with tennis elbow. **Design:** Quasi Experimental design

Methodology: It has two groups: Group A – Dry Needling and Transcutaneous electrical nerve stimulation (n = 15) and Group B – Kinesiotaping and transcutaneous electrical nerve stimulation (n = 15), age: 17 to 50 years, genders, RAMA University Kanpur.

Outcome Measures: Pain Pressure Threshold and Patient Rated Tennis Elbow Evaluation (PRTEE)

Result and Conclusion: From the results this is found that there was no significant difference of Pain Pressure Threshold and Patient Rated Tennis Elbow Evaluation between the Group A and Group B but there was significant difference of Pain Pressure Threshold and Patient Rated Tennis Elbow Evaluation within the Group. This concludes that there was effect in both dry needling and Kinesiotaping among patients with tennis elbow

Keywords- Tennis elbow, Dry needling, Kinesiotaping, Pain pressure threshold, PRTEE

I. INTRODUCTION

Tennis elbow is a common painful condition in which outer aspect of the elbow becomes sore and tender at the lateral epicondyle. It often occurs after the strenuous overuse of muscles and tendons of forearm near the joint. Tennis elbow is responsible in affecting daily activities and job due to pain. Not surprisingly, playing tennis or other racquet can cause this condition. However several other sports activities can also put you at risk.

Lateral epicondylitis involves the muscle and tendons of the forearm. Forearm muscle extends the wrist and fingers. The forearm tendons are the extensors which attaches to the bone on the lateral epicondyle. The tendon usually involved is extensor carpi radialis brevis. The overuse of extensor carpi radialis brevis leads to this condition^{1, 4, 8, 10}.

Lateral epicondylitis is directly related to activities that increase the tension and hence the stress of the wrist extensor and supinator muscles resulting in muscular contractile overloads that may occur concentrically or eccentrically. This clearly describes an overuse syndrome that is characterized by excessive forearm use with respect to intensity and duration¹¹.

Also known as myofascial trigger point needling, dry needling is the invasive procedure of the use of either filiform needles or hollow-core hypodermic needles for releasing the tension and myofascial pain.

It is a physiotherapy procedure which helps in treating abnormality caused due to trigger points. It is an effective therapy to treat muscular tension and spasm. Many researches prove to be beneficial in treating lateral epicondylitis. Several articles concludes that 5-6 additional follow ups improves the pain and ADL activities^{1, 2, 4, 6, 7}. The region why TENS has a modulating effect on pain is that it is associated with blocked nociceptive transmission of the spinal cord.

Kinesiology tape is a thin, stretchy, elastic cotton strip with acrylic adhesive which is mainly used for treating athletic injuries and many of the physical disorder. For the first decade after introduction, practitioner in Japan were the main user of this therapy and by 1988 the tape had been adopted by Japanese Olympic and professional athletes. It relieves pain, reduces swelling and inflammation, accelerates recovery from bruises and contusions, prevents muscle spasm and cramping etc.^{8,10} Kinesio taping has proved to be effective in treating pain intensity, grip strength and also increasing functional performances of the patient^{9, 10}.

So the purpose of the study is to compare the effectiveness of Dry needling versus Kinesiotaping among tennis elbow patients.

II. METHODOLOGY

This study was a quasi experimental study; the type of the study was pre and post type. The inclusion criteria were based on population with both genders, patients presenting with pain over lateral side of the elbow, sub- acute patients (7th to 45th day). The patients with positive mills maneuver were included and with any of the trigger points over extensor carpi radialis, extensor carpi ulnaris, brachioradialis, extensor digitorum and supinator. The exclusion criteria was based on any recent injury to lateral side of the elbow, fractures and dislocations to elbow, hyper sensitive skin, any neurological symptoms, patients allergic to metal, uncontrolled diabetes mellitus and needle phobia. 10 patients were selected in the study, Group A (n=15) and Group B (n=15). The sampling method used was convenient sampling.

Procedure

30 subjects who fulfilled the inclusion criteria were recruited. Subjects were assigned conveniently into two groups and got informed consent. Group A as Dry needling and TENS Group A – N = 15 and Group

B as Kinesiotaping and TENS – N = 15. The subjects in the Group A and Group B were evaluated on the starting and at the end of the taping. Informed consent was taken from the subjects before the treatment. The subjects in the Group A and Group B were evaluated on the starting and at the end of the treatment. Pain Pressure Threshold and Patient Rated Tennis Elbow Evaluation (PRTEE) were assessed for all the subjects before the treatment and after the 1 week of treatment.

Group A: Dry Needling²

The patient position was in sitting with forearm in mid prone position. Then Needle size was 25 mm. Most commonly Affected Muscles: Extensor digitorum, Extensor carpi radialis longus, Extensor carpi radialis brevis, Supinator. Therapist has to check for trigger point and needling has to be done on those muscles for 1 – 2 minutes. After the dry needling procedure over the muscle attachment and myofascial trigger points of muscle belly and musculo-tendinous junction the areas were examined for post needling bleeding.

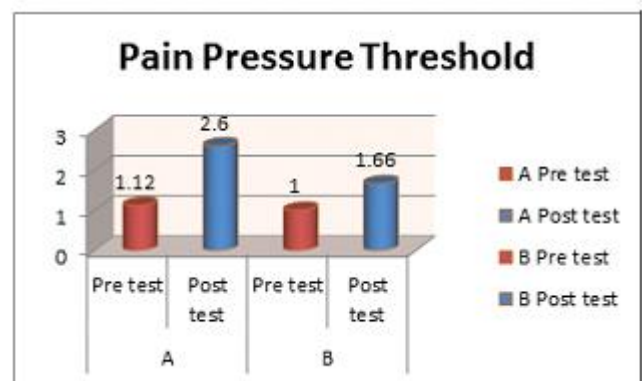
Group B: Kinesiotaping¹²

The kinesiotaping technique was Inhibitory technique (insertion to origin) and the tension was Paper– off tension (15 – 25%). Placing the base of kinesio Y strip near the wrist in the region of the radius styloid process, with no tension. The elbow should be in slight flexion with wrist in neutral position. Have the patient move in to elbow and wrist extension with wrist ulnar deviation. The inferior strip should follow the inferior aspect of the common muscle group. The superior strip should follow the superior aspect of the common muscle group. Both tails should end directed towards the lateral epicondyle of the humerus. Lay down the distal 1 – 2 inches with no tension. Initiate glue activation prior to any further patient movement. Apply a space correction technique, tension on base, for the area of pain. Being by placing the base of the kinesio Y strip below the area of pain with the elbow in neutral position. Do not cross over the lateral border of ulna – this may cause pain in this region.

After two weeks of treatment the post test will be assessed.

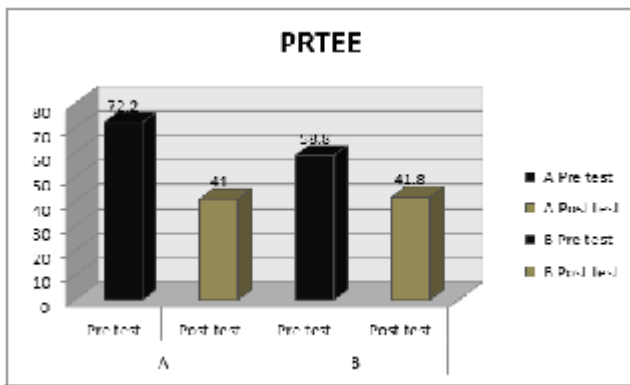
III. DATA ANALYSIS

The observed data were calculated tabulated using SPSS (version 25)



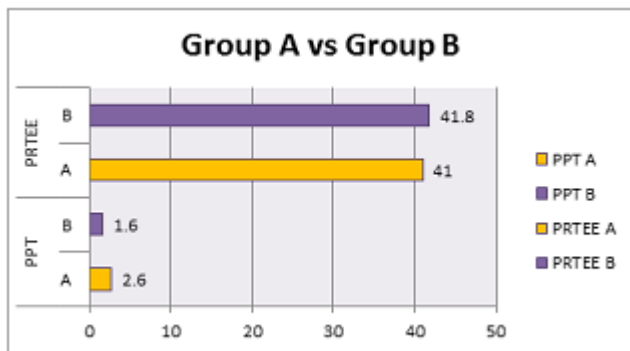
Graph 1: Pre and Post test values of Pain pressure threshold test among Group A subjects treated with dry needling and Group B subjects who treated with kinesiotaping.

This graph shows that there exist a significant difference between Pre and post-test of Pain Pressure Threshold among Group A and B



Graph 2 : Pre and Post test values of PRTEE among Group A subjects who treated with Dryneedling and Group B subjects who received Kinesiotaping

This graph shows that there exist a significant difference between Pre and post-test of Patient Rated Tennis Elbow Evaluation among Group A and B



Graph 3: Comparison of PPT and PRTEE between Group A and Group B

This graph shows that there is no significant difference between comparison of PPT and PRTEE between group A and group B.

IV. DISCUSSION

The aim of our study is to find out the effect of dry needling and Kinesiotaping in patients with tennis elbow, and compare the effectiveness of dry needling versus Kinesiotaping in patients with tennis elbow.

Our study results show that there was significant difference in PPT and PRTEE within groups of A and B. The Group A PPT values are Pretest $M=1.12\pm0.36$ and Post test $M=2.60\pm0.49$, $t=-22.31$ and $P= .000$. The PRTEE values are Pretest $M=72.2\pm11.07$ and Post test $M=41\pm06.67$, $t=12.69$ and $P= .000$. The Group B PPT values are Pretest $M=1\pm0.36$ and Post test $M=1.66\pm0.42$, $t=-6.887$ and $P= .002$. The PRTEE values are Pretest $M=58.80\pm14.41$ and Post test $M=41.80\pm13.55$, $t=-6.208$ and $P= .003$.

Our study results show that there was no significant difference in PPT and PRTEE between Group A and Group B. The PPT values of Group A was $M=2.6\pm0.49$ and Group B was $M=1.6\pm0.42$, $t=3.205$ and $P= .013$. The PRTEE values of Group A was $M=41\pm6.67$ and Group B was $M=41.8\pm13.55$, $t=-0.118$ and $P= .909$.

Sukumar et al (2014)¹ concluded that both dry needling and low level laser therapy shows improvement in functional performance and reducing in pain. In this study also there was a improvement within group which is significant and between group it was no significant which same like our study.

Paras Joshi (2017)¹² done a single case study using Tailor Made Physiotherapy Protocol with Dry Needling And Kinesio Taping and he found the results Pain came down to 0.5 from 9 on NPRS. Full ROM achieved at elbow. There was absolutely no complaint in performing daily activities. Chronic tennis elbow can be treated with tailor made physiotherapy treatment.

In our study most of the patient felt immediate pain relief after the dry needling treatment when compare to Kinesiotaping undergone patient. Our protocol was 3 session for 1 week, if it may keep for 2 weeks we could able to drastic improvements.

V. CONCLUSION

This study concluded that there was effect in both dry needling and Kinesiotaping among patients with tennis elbow.

VI. LIMITATIONS

Threshold Measurement in Patients with Myofascial Pain. *Journal of Hand Therapy*. 2018.

Limitation of this study was the sample size was small and the duration of the treatment session was less.

VII. RECOMMENDATIONS

The future recommendation was to have larger sample and longer duration. They can analyze the pre and post of muscle activity after the dry needling and Kinesiotaping in tennis elbow patients using EMG.

Ethical Clearance: Taken from the committee

Source of Funding: Nil

Conflict of Interest: Nil

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