

EFFICACY OF KINESIO TAPING IN PATIENT WITH TENNIS

ELBOW

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ABSTRACT

Objective: The aim of present study was to observe the immediate effects of Kinesio-taping on pain and function in tennis elbow.

Method: A total 30 patients with tennis elbow were included in the current study with age group between 25-50 years. Two sessions of kinesio taping each for 30 minutes were applied in a week. Outcomes measures were assessed using VAS (visual analogue scale) & PRTEE (Patient rated tennis elbow evaluation) questionnaire.

Result: Kinesio-taping was effective in reducing the pain and improving functional activities in individual with tennis elbow.

CONCLUSION: Application of kinesio taping was effective in reducing pain & improving the function in patients with tennis elbow.

INTRODUCTION:

Painful elbow syndromes encompass lateral, Medial and posterior elbow symptoms. The one commonly encountered is the lateral tennis elbow, which is known as the classical tennis elbow and is the pain and tenderness on the lateral side of the elbow, some well -defined and some vague that results from repetitive stress.[1]

Tennis elbow was first described in the medical literature by Runge in 1873. Rather than an inflammatory condition, it is a tendinosis (i.e., chronic symptomatic degeneration of the tendon) that affects the common attachment of the tendons of the extensor muscles of the forearm (extensor carpi radialis brevis, extensor digitorum, extensor digiti minimi and extensor carpi ulnaris) to the lateral epicondyle of the humerus.

In the United Kingdom it affects between 1% and 3% of the population, mainly those aged from 35 to 55 years, with an equal gender distribution. It is generally self-limiting, and most cases require no more than treatment with simple analgesia.[2]

Tennis elbow is characterised by superficial or deep macroscopic and microscopic tears at the tendinous origin of ECRB(extensor carpi radialis brevis)[3] and is commonly seen in racquet sports players with a reported incidence of 9-35% and a prevalence of 14-41% among tennis players [4]. Other activities such as, squeezing clothes, carrying suitcase, etc [5].

Tennis elbow is typically present with pain around lateral epicondyle which is result of the degenerative angio-fibroblastic hyperplasia of wrist extensor tendon due to repeated microtraumas [6].

Complexities associated with the anatomy, biomechanics, and pathophysiology of have resulted in numerous treatment options described in the literature. One of the challenges in managing tennis elbow is the wide range of prognoses among individuals with the condition. For many patients, symptoms are self-limiting, with randomized controlled trials indicating that 83% to 90% of patients assigned to a wait-and-see approach reported significant improvement, although not always complete resolution, in the condition within a year [7]. However, up to a third of patients have prolonged discomfort lasting in excess of 1 year despite interventions, and a considerable proportion of patients experience recurrence of their symptoms following the initial episode. [8] Estimates suggest that up to 5% of patients do not respond to conservative physical interventions and undergo surgery, with variable outcomes reported in the literature. [9]

Tennis elbow is a reasonably common musculoskeletal condition, which, as an epidemiological study has shown, accounts for 7 in every 1000 visits to the general medical practitioner. The treatment of tennis elbow is usually orientated to the management of pain, preservation of movement, improvement in grip strength, return to normal function, and control of further clinical deterioration. [11]

The word tennis elbow and lateral epicondylitis have been used synonymously and they refer to lateral humeral epicondylitis which is a more common and more serious problem than medial epicondylitis. In an epidemiological study lateral epicondylitis was reported to be 6 times more common than the medial epicondylitis, and right-sided epicondylitis was found to be twice as common as left-sided epicondylitis. [12]

MATERIALS AND METHODS :

SETTING :

This study was conducted in the outpatient physiotherapy department of University institute of health sciences CSJM university Kanpur.

SAMPLES:

A total number of 30 patients with tennis elbow diagnosed by the orthopaedician were referred to the University institute of health sciences outpatient physiotherapy department of age group between 25-50 years. All the patients were tested positive for cozen's & mill's test. Subjects were excluded if they had dysfunction in the cervical spine, shoulder and wrist joint, post-traumatic LE, previous surgery of the elbow, arthritis of elbow and wrist joint, neurological dysfunction of upper extremity and below 25 and over 50 year of age group.

STUDY DESIGN:-

Simple random sampling technique was used for study. The period of study was 04 -06 months. Kinesio taping was applied to all the subjects for study. The outcome measures were recorded before and after the treatment.

DATA COLLOECTION:

A) Screening sessions:

In the screening session, the patients selected from the different institute/hospital/clinics were screened. They were made aware of their participation in the research, and subject requested to follow the protocol of the treatment decided or allotted to them.

B)Material required:

For data collection materials required Kinesio-tape, scissors, Vaseline, VAS chart, PRTEE (patient rated tennis elbow evaluation) chart.

Pre -treatment measurement of the patient:

All the measurements were taken before the tests using tools mentioned below. Readings were kept safe for further evaluation once the data was analysed to find out the results.

Post treatment measurement:

Post treatment readings were taken after the completion of two kinesio-taping sessions on each subject. The readings were then compared with pre and post treatment findings in order to derive the results.

PROCEDURE:

Pre and post application of Kinesio-taping patients were assessed according to PRTEE (Patient rated tennis elbow evaluation) which also included VAS (Visual analog scale). Two sessions of kinesio-taping was applied within a week. After 30 minutes of each session pain and function level were measured according to PRTEE which included some of their daily activities chart.

Technique and Location of application of Kinesio-taping:

Muscle inhibition and fascia correction technique was used, and applied a long 'Y'-shaped strip to the wrist extensors from insertion to origin after stretching the 46 muscle with 15 to 25% tension [15]. We used this technique to inhibit the overused muscle function. With the fascia correction technique, 25-35% tension was applied by a short Y-shaped strip to support the fascia.

DATA ANALYSIS:

Data once collected, both findings were compared and interpretation was done using appropriate statistical tools. The statistical tool used was paired t-test. Following the data interpretation, results from the study conducted was derived. The normality of data was tested by Shapiro Wilks test and found data was normally distributed descriptive statistical analysis were conducted by using the SPSS 16.0 software. Microsoft Word, excel were used to generate graphs, tables.

RESULT

On comparison of mean SPECIFIC &USUAL ACTIVITIES between before and after treatment by paired t-test, the value of t- 14.316 and p- 0.000 is highly significant, $p<0.01$. Hence the mean $\pm S.d.$ of SPECIFIC &USUAL ACTIVITIES pre (19.10 ± 4.272) is significantly reduced to post (17.02 ± 4.129). However the VAS score and disability score significantly reduced after the treatment sessions.

DISCUSSION

The objective of the study was to evaluate the effectiveness of Kinesio-taping on pain and functional disability level. From the results obtained, it was observed that there was a statistically significant difference in the pain and functionality. Kinesio-taping was effective in reducing the pain and improving functional activities in individual with Lateral Epicondylitis. Total 40 patients were selected for the study, two sessions of muscle inhibition and fascia correction technique of kinesio-taping was applied within a week and after 30 minutes of each session the pain and functional activities assessed by using PRTEE Questionnaire.

As shown in Table 4, This improvement in pain and disability level could probably be due to the benefits of KT which include (1)a positional stimulus through the skin;(2) normalization of muscle tension resulting in fascia realignment;(3) expansion of the space by raising the fascia over the

inflammatory and pain core by the removal of the excess fluid, oedema, or bleed present beneath the skin;(4) reduction in the pain through neurological suppression and (5) elimination of edema by directing the toxins toward the lymph nodes.[14]

Taik J. Fatima et al. explored the short-term effects of KT on RCT in comparison to a placebo taping. The results of their study indicate that therapeutic and sham KT produced similar effects on disability and pain. Indeed, after taping, the DASH score improved (at both assessment times) by 21–22% for the KT group and 23% for the placebo group with no statistically significant difference between the two groups.[15]

Akram et al. stated in their study of LE that there is a repetitive strain at the area and overuse of the muscle. Application of KT reduced the tension over the muscle, thereby assisting in the reduction of the pain and increasing the grip strength.[16]

Our findings were similar to recently published study done by Gracias Alisha et al [6] and Erpala et al. Hence we may conclude that KT has significant improvement on treatment of LE.

CONCLUSION

The obtained findings of the present study indicate that there is a significant improvement on pain and functional disability level, immediately After the application of Kinesio-taping in patients with lateral epicondylitis. Hence, it may be concluded that KT has a positive and statistically significant effect in the treatment of LE and hence can be implemented in our clinical practice.

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