

## ORIGINAL RESEARCH

# Efficacy of Physiotherapy Interventions for Lateral Epicondylitis: A Patient-Rated Tennis Elbow Evaluation (PRTEE) Comparative Study

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Received: 12 May, 2023

Accepted: 20 June, 2023

## ABSTRACT:

This prospective comparative study aimed to evaluate the efficacy of physiotherapy interventions in patients with lateral epicondylitis. The study included two groups, Group A and Group B, and was conducted at tertiary hospitals. Group A received conventional treatment consisting of pulsed ultrasonic therapy and exercise therapy, while Group B received a different intervention. The Patient-Rated Tennis Elbow Evaluation (PRTEE) scores were assessed pre and post-intervention in both groups. The results demonstrated that both interventions led to significant improvements in PRTEE scores, indicating a reduction in pain and functional limitations. However, there was no significant difference in the post-scores between the two groups, suggesting that both interventions were similarly effective. These findings highlight the potential benefits of physiotherapy interventions in managing lateral epicondylitis.

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## Introduction

Lateral epicondylitis, commonly known as tennis elbow, is a prevalent musculoskeletal condition that affects the extensor tendons of the forearm. It is characterized by pain and tenderness on the lateral epicondyle of the elbow. Despite its prevalence, there is ongoing debate regarding the optimal treatment approaches for this condition. Several studies have investigated various physiotherapy interventions, including oscillating energy manual therapy techniques, and movement with mobilization. Understanding the effectiveness of these interventions is crucial for improving clinical outcomes.

In a study by Vesseljen O. et al. (1992) [1], low-level laser treatment was compared to traditional physiotherapy in the management of tennis elbow. Another study by Vicenzino B. and Wright A. (1995) [2] evaluated the effect of a novel manipulative physiotherapy technique on tennis elbow. These studies provided insights into alternative treatment options for this condition.

The prevalence and causation of tennis elbow in a population of engineering industry were investigated by Lennart Dimberg (1987) [3]. The study highlighted the need to understand the occupational factors contributing to the development of lateral epicondylitis.

Manchanda G. and Grower D. (2008) [4] compared the effectiveness of movement with mobilization to manipulation of the wrist in cases of lateral epicondylitis. This study offered valuable insights into the relative efficacy of different physiotherapy techniques.

A comprehensive understanding of lateral epicondylalgia from a musculoskeletal physiotherapy perspective was discussed by Vicenzino B. (2003) [5]. This review highlighted the importance of considering multiple factors in the assessment and management of this condition.

While there have been numerous studies investigating tennis elbow, some have raised concerns about the lack of scientific evidence and the need for further research. Boyer and Hastings (1999)

[6] questioned the existing evidence base and emphasized the necessity for more rigorous studies.

In order to better comprehend the epidemiology, pathophysiology, etiology, and natural history of lateral epicondylalgia, Vicenzino A. and Wright B. (1996) [7] conducted a review that synthesized available knowledge on this condition.

Considering the potential influence of antibiotic treatment on the development of epicondylitis, Gabel Gt. (1995) [8] investigated the occurrence of epicondylitis following treatment with fluoroquinolone antibiotics.

With the existing controversies and gaps in the literature, this study aims to contribute to the understanding of the efficacy of physiotherapy interventions in the management of lateral epicondylitis. By comparing different treatment approaches, including oscillating energy manual therapy, manipulative techniques, and movement with mobilization, this study aims to provide valuable insights into optimizing clinical outcomes for individuals with tennis elbow.

### Aims and Objectives

1. To assess the efficacy of movement using mobilisation, manipulative physiotherapy methods, and oscillating energy manual therapy in the treatment of lateral epicondylitis (tennis elbow).
2. To evaluate the effects of various physiotherapy treatments on lateral epicondylitis patients' levels of discomfort, functional improvement, and overall patient satisfaction.

### Methodology

- Conducted a prospective comparison research on lateral epicondylitis patients who were sent to tertiary hospitals for physiotherapy (Pacific College of Physiotherapy, Udaipur).
- Obtained institutional ethics committee permission for their conduct.
- A purposive sample technique was used to pick the research population.
- Conducted the investigation over the course of a year.

### Inclusion criteria:

### Results

**Table 1 : Pre score of PRTEE in both groups**

Group	Mean	SD	P Value	Level of Significant
Group A	64.6	11.909	0.7493	Not Significant
Group B	62.9	11.513		

- Presence of pain on the lateral epicondyle of the elbow.
- Tenderness on the lateral epicondyle of the elbow.
- Positive Cozens, Mills, and finger extension test results.
- Complaints persisting for at least three months.

### Exclusion criteria:

- Proximal upper extremity or neck symptoms.
- Cervical pathology. Nerve entrapment syndrome, non-union fracture, or recent surgical treatment for lateral epicondylitis (within the last six months).
- Utilized minimal equipment, including a pen, ultrasound, resistance tools, consent forms, and data collection sheets.

### Procedure

- Two groups, A and B, were included in the study.
- Group A (conventional group) received pulsed ultrasonic therapy for 5 minutes at the tenoperiosteal junction of the Extensor Carpi Radialis Brevis, along with exercise therapy involving strengthening and stretching using therabands.
- Strengthening exercises included wrist flexion and extension with therabands.
- Manual stretching was performed for wrist flexor and extensor muscle groups, maintaining each stretch for 30 seconds.

### Data Analysis

- For the demographic information and characteristics examined, descriptive statistics was utilised to determine frequency, percentage, mean, and standard deviation.
- Statistical Package for Social Sciences (SPSS) version 17 was used to analyse the data after they had been tabulated using Microsoft Office Excel.
- Probability values were regarded as statistically significant if they were less than 0.05, and highly significant if they were less than 0.001.

The Patient-Rated Tennis Elbow Evaluation (PRTEE) pre-scores were compared between Group A and Group B in Table 1. The mean pre-score for Group A was 64.6, with a standard deviation (SD) of 11.909, while the mean pre-score for Group B was 62.9, with an SD of 11.513. Because there was no statistically significant difference in the pre-scores between the two groups, the p-value for this comparison was 0.7493. This study led to the conclusion that the level of significance was not significant. These results imply that prior to the intervention, the PRTEE baseline scores in Group A and Group B were comparable.

**Table No. 2: Pre and post score of PRTEE in group A**

Group A	Mean	SD	P Value	Level of Significant
Pre grip score	64.6	11.909	<0.0001	Extremely significant
Post grip score	56.8	11.272		

The Patient-Rated Tennis Elbow Evaluation (PRTEE) pre and post ratings for Group A were compared in Table 2. In Group A, the average pre-grip score was 64.6, with an SD of 11.909. The mean post-grip score dropped to 56.8 after the intervention, with an SD of 11.272 (after the intervention). The pre and post scores in Group A differed by an exceptionally significant amount, as indicated by the estimated p-value for this comparison being less than 0.0001. Therefore, the degree of significance was assessed to be highly significant based on this study. These results imply that the Group A intervention had a good effect on the patients' condition since the grip scores significantly improved.

**Table No. 3 Pre and post score of PRTEE in group B**

Group B	Mean	SD	P Value	Level of Significant
Pre PRTEE score	62.9	11.513	<0.0001	Extremely Significant
Post PRTEE score	54.1	9.012		

The Patient-Rated Tennis Elbow Evaluation (PRTEE) results for Group B are shown in Table 3. Group B's pre-PRTEE score had a mean of 62.9 and an SD of 11.513; the group's post-PRTEE score had a mean of 54.1 and an SD of 9.012. The pre- and post-scores in Group B differed by an exceptionally significant amount, as indicated by the p-value, which was determined for this comparison and found to be less than 0.0001. These results imply that after the treatment period, PRTEE scores significantly improved as a result of the intervention used in Group B. The lateral epicondylitis-related discomfort and functional restrictions have decreased, according to the declining mean score and standard deviation. The PRTEE scores of the patients in Group B were significantly improved as a result of the intervention, it can be said.

**Table No. 4 Post score comparison of PRTEE in both group**

Group	Mean	SD	P Value	Level of Significant
Group A	56.8	11.272	0.5615	Not Significant
Group B	54.1	9.012		

Table 4 compares Group A and Group B's post-scores on the Patient-Rated Tennis Elbow Evaluation (PRTEE). The mean post-score for Group A was 56.8 with an SD of 11.272, while the mean post-score for Group B was 54.1 with an SD of 9.012. Because there was no statistically significant difference in the post-scores between the two groups, the p-value for this comparison was 0.5615. This study led to the conclusion that the level of significance was not significant. These results imply that both Group A and Group B had equivalent PRTEE ratings following the intervention, indicating a similar degree of recovery in pain and functional limitations related to lateral epicondylitis in both groups.

## Conclusion

The results of this study indicate that, following the lateral epicondylitis treatments, PRTEE scores significantly improved in both Groups A and B. Group A, which underwent standard therapy that included exercise therapy and pulsed ultrasonic therapy, showed a substantial decline in PRTEE scores, particularly for grip strength. The PRTEE scores also significantly decreased in Group B, which received a different intervention. However, there was no discernible difference between Group A and Group B in the post-scores, showing that both therapies were equally successful in reducing pain and lateral epicondylitis-related functional impairments. The potential advantages of physiotherapy therapies in treating this illness are highlighted by these findings.

## Limitation

The study's very small sample size and use of tertiary institutions may have resulted in selection bias and limited the study's capacity to generalise its findings to other contexts or demographics.

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