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**P Nithya**  
MPT Student, Aarupadaiveedu  
College of Physiotherapy  
Pondicherry, India

**Dr. G Mohanraj**  
Professor, Aarupadaiveedu  
College of Physiotherapy  
Pondicherry, India

**J Raja Vijaya Arivazhahan**  
Associate Professor,  
Department of Physiotherapy,  
Aarupadaiveedu College of  
Physiotherapy Pondicherry,  
India

**Correspondence**  
**Dr. G Mohanraj**  
Professor, Aarupadaiveedu  
College of Physiotherapy  
Pondicherry, India

## **A study to find and compare the effectiveness of integrated neuromuscular inhibition technique and conventional physiotherapy techniques on Myofascial trigger point in the management of pressure pain threshold and pain and functional disability among lateral epicondylitis patients**

**P Nithya, Dr. G Mohanraj and J Raja Vijaya Arivazhahan**

### **Abstract**

**Background:** Lateral epicondylitis also known as tennis elbow, is a condition characterized by pain at the lateral aspect of the elbow, referred pain into the dorsal forearm and pain on resisted dorsiflexion of the wrist. It is generally work related or sport related pain disorder of the forearm. Repetitive extension-flexion or pronation-supination activity leads to overuse injury. Myofascial trigger point may develop after an initial injury to muscle fibers. This injury may include a noticeable traumatic event or repetitive micro trauma to the muscles. A trigger point causes pain and stress in the muscle or muscle fibers. As the stress increases, the muscles become fatigued and are more susceptible to activation of additional trigger points. Integrated neuromuscular inhibition technique (INIT) is a combination of ischemic compression (IC), strain counter strain (SCS) and muscle energy technique (MET), in which IC decreases the sensitivity of painful nodules in muscle and equalizes the length of sarcomeres in the involved MTrP.

**Keywords:** Tennis elbow, integrated neuromuscular inhibition technique, pressure Algometer, patient rated tennis elbow evaluation

### **Introduction**

The purpose of the study is to find out study to find and compare the effectiveness of integrated neuromuscular inhibition technique and conventional physiotherapy techniques on myofascial trigger point in the management of pressure pain threshold and pain and functional disability among Lateral epicondylitis patients.

**Study Design:** Pre and Post-test, randomized control study

### **Method**

24 clinically diagnosed Lateral epicondylitis patients were selected for the study who fulfilled the inclusion and exclusion criteria and randomly divided into 2 groups; Group A received Integrated neuromuscular inhibition technique and Group B Conventional physiotherapy The total duration of the study was 3 months. In Group A, the duration of treatment for each individual patient was 20 minutes of INIT, one session per day with alternate days in 3 weeks with total 9 sessions of treatment. In Group B, the duration of treatment for each individual patient was 20 minutes of Conventional physiotherapy (Ultrasound therapy + static stretching +progressive strengthening exercise). One session per day with alternate days in 3 weeks with total 9 sessions of treatment. Pressure pain threshold was measured by Algometer for 3 times, with a rest interval of approximately 30sec between measurements; the average of the 3 values was taken for analysis. Pain and functional disability by Patient Rated Tennis Elbow Evaluation was done Total score out of 100 was measured in which best score was 0 and worst score was 100. Total score = pain subscale (50) + functional subscale (100/2).

Post-test was taken at the end of 3 month. The collected data were analyzed by paired 't' test to find out the significant difference between pre and post-test values of experimental designs.

## Results

**Analysis of dependent variable pressure pain threshold by pressure Algometer in Group A:** The calculated paired 't' value of pressure pain threshold is 13.27 and the 't' table value is 3.106 at 0.005 level of significance. Hence, the calculated 't' value is greater than the 't' table value and there is significant difference in pressure pain threshold following integrated neuromuscular inhibition technique among lateral epicondylitis patients.

**Analysis of dependent variable pressure pain threshold by pressure Algometer in Group B:** The calculated paired 't' value of pressure pain threshold is 7.74 and the 't' table value is 3.106 at 0.005 level of significance. Hence, the calculated 't' value is greater than the 't' table value and there is significant difference in pressure pain threshold following conventional physiotherapy techniques among lateral epicondylitis patients.

## Analysis of the independent variable pressure pain threshold by pressure Algometer between Group A and Group B

The calculated Unpaired 't' value of pressure pain threshold is 3.80 and the 't' table value is 2.819 at 0.005 level of significance. Since the calculated 't' value is more than the table 't' value it is concluded that there is a significant difference between integrated neuromuscular inhibition technique and conventional physiotherapy techniques on trigger point in the management of pressure pain threshold among lateral epicondylitis patients.

When comparing the mean difference values of group A and B, group A subjects treated with integrated neuromuscular inhibition technique showed more difference than group B subjects treated with conventional physiotherapy technique. Hence it is concluded that integrated neuromuscular inhibition technique on trigger points is more effective than conventional physiotherapy technique in the management of pressure pain threshold among lateral epicondylitis patients.

**Analysis of dependent variable pain and functional disability by Patient rated tennis elbow evaluation in Group A:** The calculated paired 't' value of pain and functional disability is 26.00 and the 't' table value is 3.106 at 0.005 level of significance. Hence, the calculated 't' value is greater than the 't' table value and there is significant difference in pain and functional disability following integrated neuromuscular inhibition technique among lateral epicondylitis patients.

**Analysis of dependent pain and functional disability by patient rated tennis elbow evaluation in Group B:** The calculated paired 't' value of pain and functional disability is 17.20 and the 't' table value is 3.106 at 0.005 level of significance. Hence, the calculated 't' value is greater than the 't' table value and there is significant difference in pain and functional disability following conventional physiotherapy techniques among lateral epicondylitis patients.

## Analysis of the independent variable pain and functional disability by patient rated tennis elbow evaluation between Group A and Group B

The calculated unpaired 't' value of pain and functional disability is 3.718 and the 't' table value is 2.819 at 0.005 level of significance. Since the calculated 't' value is more than the table 't' value it is concluded that there is a significant difference between integrated neuromuscular inhibition technique and conventional physiotherapy techniques on trigger point in the management of pain and functional disability among lateral epicondylitis patients.

When comparing the mean difference values of group A and B, group A subjects treated with integrated neuromuscular inhibition technique showed more difference than group B subjects treated with conventional physiotherapy technique. Hence it is concluded that integrated neuromuscular inhibition technique on trigger points is more effective than conventional physiotherapy techniques in the management of pain and functional disability among lateral epicondylitis patients

## Conclusion

The result of the current study shows that there is statistically significant difference in all the subjects post the treatment techniques on myofascial trigger point in lateral epicondylitis. But when comparing both techniques integrated neuromuscular inhibition technique shows more difference in pressure pain threshold and pain and functional disability.

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