ABSTRACT:

OBJECTIVE: To determine the reduction of pain score, in patients with carpal tunnel syndrome after treatment with microamps TENS.

STUDY DESIGN: Quasi experimental.

PLACE AND DURATION OF STUDY: Neurology Department Dow University Of Health Sciences Civil Hospital Karachi, from 27th February 2008 to 27th August 2008

METHODOLOGY: Patients were evaluated between February 2008 and August 2008. Pre treatment pain score was assessed by the author with the help of a linear pain scale numbering 0-5. All patients received 4 weeks TENS therapy, (3 times a week, 45 minute of each session). Re-evaluation of pain score was done within one week of completion of treatment. Paired ‘t’ test was applied to compare mean significant difference between pre and post treatment pain score. Chi-square test was also applied to compare difference of post treatment pain score for gender and duration of symptoms. P ≥ 0.05 was considered level of significant.

RESULTS: Out of 51 CTS patients 37(72.5%) were female and 14(27.5%) were male. Mean ± SD difference in pre and post treatment pain score was 3.41±1.04 with 95% confidence interval 3.12 to 3.71 (t = 23.4; df = 50; p value 0.00).Duration of symptoms was statistically significant in reduction of post treatment pain score (Chi-Square= 12.07; df =3; P=0.007) while gender difference was not statistically significant. (Chi-Square= 3.96; df =3; P=0.265).

CONCLUSION: After treatment with transcutaneous electrical nerve stimulation pain was significantly reduced. Lesser the duration of symptoms better the outcome while gender difference was not proved to be statistically significant.

KEY WORDS: Carpal tunnel syndrome, median nerve, pain, microamps transcutaneous electrical nerve stimulation.

INTRODUCTION

Carpal tunnel syndrome (CTS) is the compression of the Median nerve at the wrist.1 It is an important cause of pain and functional impairment of hand. Prevalence of electrodiagnostically confirmed symptomatic CTS are 3% among women and 2% among men.2 In a study from South India CTS accounted for 7% of all peripheral nerve disorders.3

Current standard treatments are initially conservative, such as adjusting the work environment, using wrist splints and nonsteroidal anti-inflammatory drugs.4 Direct injection of steroids into the carpal tunnel may provide relief for 2-4 months5 and only 22% of patients remained symptom free for next 18 months.6 Surgical release of the transverse carpal ligament is performed in 40-50% of CTS patients.7 Following surgery, approximately one third of patients continued to experience pain and functional loss.8 Older individuals may not improve as much as younger patients.9 American Academy of Neurology advises noninvasive treatment during the early course of the disease.9 Microamps transcutaneous electrical nerve stimulation (TENS) is a noninvasive therapy to treat the painful symptoms of CTS. It increases the ATP concentration and protein synthesis at the cellular level.10 The success rate ranges from 88% in a controlled study11 to 92% in another study.12 TENS is more effective when administered within 6 to 12 months of onset of symptoms.11 It costs around $ 1000/patient.12 While without surgery the current estimated cost to treat one patient of CTS is around $12,000.12