



Influence of low level laser therapy versus pulsed electromagnetic field on diabetic peripheral neuropathy

Rabab A. Mohamed^{1*}, Ghada A. Abdallah², Heba A. Abdeen³ and Ayman A. Nassif⁴

*Correspondence: rabab_ali1978@hotmail.com



CrossMark

← Click for updates

^{1,2}Basic Science Department, Faculty of Physical Therapy, Cairo University, Giza, Egypt.

³Lecturer of Physical Therapy for Cardiovascular/ Respiratory Disorder and Geriatrics, Faculty of Physical Therapy, Cairo University, Egypt.

⁴Physical Therapy for Neuromuscular disorders and its surgery Department, Faculty of Physical Therapy, Cairo University, Giza, Egypt.

Abstract

Background: Peripheral neuropathy is a common complaint of diabetes, leading to pain and reduced motor nerve conduction velocity. Clinical symptoms of peripheral neuropathy are present in approximately 25% of diabetic individuals, while nearly all diabetics have a reduction of nerve conduction velocity.

Purpose: This study aimed to evaluate and compare the effect of low-level laser therapy (LLLT) versus pulsed electromagnetic field (PEMF) on pain intensity and motor nerve conduction velocity (MNCV) in patients with diabetic neuropathy.

Methods: Thirty patients with type II diabetes suffering from diabetic peripheral neuropathy, participated in this study for 4 weeks (3 sessions/week), and were chosen randomly from the diabetes and endocrine institution. Patients were randomized equally into two groups: Group A (LLLT group): received LLLT for lower extremities for 12 sessions at a frequency of 3 sessions/week. Group B (PEMF): received pulsed electromagnetic field for 12 sessions at a frequency of 3 sessions/week.

Results: At the end of the study; there was non-significant difference between two groups post-study in pain level where P-values was (0.606). There were no significant differences between two groups in amplitude, distal latency and MNCV of RT side post-study, where P-values were (0.082), (0.911) and (0.342) respectively. There were no significant differences between two groups in amplitude, distal latency and MNCV of LT side post-study, where P-values were (0.265), (0.550) and (0.334) respectively.

Conclusions: The study findings indicate that both LLLT and PEMF could be effective therapeutic modalities in the treatment of painful diabetic neuropathy in that they are able to modify pain, and some electrophysiological parameters of peripheral nerve function.

Keywords: Low-level laser therapy, Pulsed electromagnetic field, Neuropathy, Diabetes