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Low-level laser therapy- Does it affect hand function and quality of life in carpal tunnel syndrome?

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Objective: To evaluate the effects of low-level laser therapy (LLLT) on clinical and electrophysiological parameters and health-related quality of life in patients with idiopathic carpal tunnel syndrome (CTS).

Design: A prospective randomized, controlled clinical trial

Setting: Outpatient clinic of a university-affiliated hospital

Participants: A total of 98 hands of 52 female patients with a clinical and electrophysiological diagnosis of CTS were included in the study.

Interventions: The patients were randomly assigned into two groups. Group 1 received 12 sessions of LLLT (670 nm, 4 J per session) over the carpal tunnel area for 4 weeks. Group 2 was given only neutral wrist splint. Patients in both groups were not permitted to receive any medical treatment or any other physical treatment for CTS during the study.

Main Outcome Measures: Clinical assessment included the Tinel, Phalen and Buda tests, sensory evaluation, motor evaluation, hand grip and pinch grip strengths, Symptom Severity Scale, Functional Status Scale and levels of health-related quality of life were determined by using the Short Form-36. Electrophysiological test included nerve conduction studies and needle electromyography. Clinical evaluations of the patients included in the study were performed at the baseline, after the treatment and 3 months follow-up. Electrophysiological studies were performed before and 3 months after the treatment by the same physiatrist.

Results: The hand-pinch grip strength, Functional Status Scale and Short Form-36 scores improved only in the LLLT group at post-treatment and at 3 months follow-up. Additionally, electrophysiological parameters showed significant improvement in the LLLT group. There was no statistically significant difference in terms of any other parameters between the two groups.

Conclusions: These results suggest that LLLT may be a good conservative treatment method for CTS patients due to the improvement in clinical and electrophysiological parameters and quality of life.

Biography

Oya Umit Yemisci, MD is an Associate Professor of Physical Medicine and Rehabilitation, and is currently working at the Department of Physical Medicine and Rehabilitation, Baskent University Hospital, Ankara, Turkey. She is actively involved in education, residency training, research and clinical treatment at the inpatient rehabilitation hospital especially in the field of rehabilitation medicine including cerebrovascular events and spinal cord injury. She is also currently performing electrodiagnosis and involved in research and residency training at the electroneuromyography (ENMG) laboratory.

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