

Low-level laser therapy for acute neck pain with radiculopathy: a double-blind placebo-controlled randomized study.



Authors: Ljubica M. Konstantinovic, MD, PhD, Milisav R. Cutovic, MD, PhD, Aleksandar N. Milovanovic, MD, PhD, Stevan J. Jovic, MD, PhD, Aleksandra S. Dragin, MS, Milica Dj. Letic, MS, Vera M. Miler, MS

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Abstract

The objective of the study was to investigate clinical effects of low-level laser therapy (LLLT) in patients with acute neck pain with radiculopathy. Double-blind, randomized, placebocontrolled study. The study was carried out between January 2005 and September 2007 at the Clinic for Rehabilitation at the Medical School, University of Belgrade, Serbia.

Sixty subjects received a course of 15 treatments over 3 weeks with active or an inactivated laser as a placebo procedure. LLLT was applied to the skin projection at the anatomical site of the spinal segment involved with the following parameters: wavelength 905 nm, frequency 5,000 Hz, power density of 12 mW/cm², and dose of 2 J/cm², treatment time 120 seconds, at whole doses 12 J/cm². The primary outcome measure was pain intensity as measured by a visual analog scale. Secondary outcome measures were neck movement, neck disability index, and quality of life. Measurements were taken before treatment and at the end of the 3-week treatment period.

Statistically significant differences between groups were found for intensity of arm pain ($P = 0.003$, with high effect size $d = 0.92$) and for neck extension ($P = 0.003$ with high effect size $d = 0.94$).

Conclusion

The suitability of LLLT (wavelength of 905 nm and dose of 2 J per point) as a monotherapy for the treatment of acute neck pain with radiculopathy was examined. Patients treated with LLLT showed a greater improvement in local neck movements, a more significant reduction of pain intensity and related disability, and a greater improvement in quality of life, in comparison with patients treated with a placebo LLLT procedure. In addition, no major side effects were observed.

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