

Efficacy of low power laser therapy and exercise on pain and functions in chronic low back pain



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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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