

The influence of low-level laser irradiation on spinal cord injuries following ischemia- reperfusion in rats¹

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ABSTRACT

PURPOSE:

To investigate if low level laser therapy (LLLT) can decrease spinal cord injuries after temporary induced spinal cord ischemia-reperfusion in rats because of its anti-inflammatory effects.

METHODS:

Forty eight rats were randomized into two study groups of 24 rats each. In group I, ischemic-reperfusion (I-R) injury was induced without any treatment. Group II, was irradiated four times about 20 minutes for the following three days. The lesion site directly was irradiated transcutaneously to the spinal direction with 810 nm diode laser with output power of 150 mW. Functional recovery, immunohistochemical and histopathological changes were assessed.

RESULTS:

The average functional recovery scores of group II were significantly higher than that the score of group I (2.86 ± 0.68 , vs 1.38 ± 0.09 ; $p < 0.05$). Histopathologic evaluations in group II were showed a mild changes in compare with group I, that suggested this group survived from I-R consequences. Moreover, as seen from TUNEL results, LLLT also protected neurons from I-R-induced apoptosis in rats.

CONCLUSION:

Low level laser therapy was be able to minimize the damage to the rat spinal cord of reperfusion-induced injury.

Key words: Laser Therapy, Low-Level; Ischemic, Reperfusion; Spinal Cord; Rats