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PO-088 - (23962) - LASER EFFECT ON GROWTH ASSOCIATED PROTEIN 43 EXPRESSION IN SCIATIC NERVE

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There is no conflict of interest.

There is evidence that the expression of GAP-43 is associated with axonal regeneration and neuronal sprouting. The aim of this study was to quantitatively assess the effect of low-energy laser irradiation on GAP-43 expression transcripts in injured rat sciatic nerve.

Sprague Dawley rats were used. The nerve was surgically isolated and compressed with a pressure clamp controlled a constant force of 40N for 3 minutes on a 10mm section. 24 hours post-injury, the sector corresponding to the nerve pathway was irradiated transcutaneously with a gallium arsenide laser (904 nm; 10 mW) at an energy density of 2 and 10 J/cm2, for 14 consecutive days. The nerve was extracted and sectioned and processing for RNA extraction. Expression levels were assessed using the relative quantification "ΔΔCt" method

The infrared laser, induced an increase of GAP-43 transcripts compared to the unirradiated control. In the proximal portion the highest expression level was found at day 7 post-treatment, decreasing to more than half at day 14. In the distal portion, however, an increase was observed in the time-dependent expression, with higher expression at day 14 than at day 7 post-treatment.

Some studies indicate that the laser alter intracellular calcium levels, which could induce intracellular signaling pathways involved in GAP-43 expresión. Is worth noting that there is evidence of non-neural GAP-43 expression in Schwann cells therefore, the expression levels of the GAP-43 transcript shown in our results could be influenced by extra-axonal expression.

Palavras-chave : Low energy laser, sciatic nerve, GAP-43