

Acute Effects of Laser and Combined Therapy on Low Back Pain

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The majority of the world's population has or will experience back pain in at some time during their lives. The use of laser technologies may be an important resource for treatment of back pain. The aim of this study was to investigate the acute effects of laser combined with mechanical systems on pain, isometric strength and flexibility in patients with low back pain. A clinical trial was conducted. Thirty-five patients with low back pain participated in this study. The treated groups were: 1- Vacuum therapy combined with laser (VL); 2- Roller combined with laser (RL); 3- Ultrasound combined with laser (USL); 4- Punctual Laser (L) and; 5- Placebo Laser (P). All treatments were performed on posterior trunk, totalizing 20 minutes. Pressure pain threshold (PPT) on lumbar region (right and left sides of the L1, L2, L3, L4 and L5 vertebrae) and the strength isometric of the trunk flexors and extensors were performed with a digital portable system based on algometer and dynamometer [the values were expressed in Newton (N)]. Moreover, fingertip-to-floor test was performed to evaluate the flexibility of trunk and the distance between the patient's right long finger and the floor were measured using a measuring tape [the values were expressed in centimeters (cm)]. The evaluations were carried out before and after single session intervention. Shapiro-Wilk and Wilcoxon tests were used for statistical analysis. There was a significant increase in PPT for VL, RL, USL and L, indicating reduced pain. In addition, there was a significant reduction in the distance between the finger and the floor during trunk flexion in VL, RL and USL, indicating better flexibility. Moreover, there was no significant difference in the isometric force for all groups. It is the first study that showed immediate effects of the synergistic application of laser with negative pressure or positive pressure or ultrasound on analgesia and greater flexibility of the trunk in patients with low back pain.