**Effects of pompage technique, whether combined or not with LED Photobiomodulation, on Pain and Disability in Patients with Chronic Neck Pain: A Protocol for a Controlled, Randomized and Blind Study.**

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Chronic neck pain is a persistent condition affecting the spinal region, resulting in pain and restricted mobility. The management of neck pain often involves manual therapies, encompassing both passive and active interventions, aimed at alleviating pain, enhancing function, improving mobility, motor control, and reducing inflammatory processes. This pain can persist for at least three months and is considered non-specific when it is not associated with any specific underlying condition, such as inflammatory rheumatic disease, osteoporosis, cancer, or radiculopathy. The use of lasers and LEDs for photobiomodulation (PBM) represents an advantageous approach to treating neck pain, given their demonstrated therapeutic efficacy in the literature. Moreover, these resources are non-invasive and easy to apply, making them an attractive option for both patients and healthcare professionals. Therefore, the aim of this study is to evaluate the effects of Pompage associated or not with PBM, using a cluster of LEDs, on pain and neck disability. This controlled, randomized, and blinded clinical study includes participants of both genders, aged 18 to 45, with non-specific chronic neck pain will be included. Participants will be randomized into two groups: (1) Pompage (n=28) focusing only on manual therapy through Pompage technique and (2) Pompage + PBM Group (n=28) involving the same procedures as the first group, followed by PBM with a LED cluster applied for 10 minutes to the neck region. The treatment protocol consists of 10 sessions, three times per week, excluding weekends. For PBM, a cluster comprising 264 LEDs (8 mW; 4.89J; 9.6 J/cm2; 16 mW/cm² per LED) will be used, with 132 red (660nm) and 132 infrared (850nm) LEDs. Pain and functional disability will be assessed using the visual analog scale (VAS) and Neck Pain Disability Index before and after the intervention. The resulting data will be submitted to statistical analysis considering α=0.05.

Keywords: neck pain, photobiomodulation, LED, Pompage technique, manual therapy.



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