Efficacy of Multiwave Locked System Laser on Pain and Function in Patients with Chronic Neck Pain: A Randomized Placebo-Controlled Trial

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Abstract

Background: Multiwave locked system (MLS) laser therapy utilizes the synchronized emission of an 808 nm continuous laser and a 905 nm pulsed laser. It is postulated that MLS enables greater penetration and therapeutic benefit than single-wavelength low-level laser therapy (LLLT). Objective: The aim of this research was to evaluate the efficacies of MLS laser therapy and the 830 nm laser in the treatment of patients with chronic neck pain (CNP). Materials and methods: Seventy-five patients with CNP (mean age 46.28 ± 5.89, weight 83.78 ± 5.65 kg, height 1.72 ± 4.96 m, and duration of illness of 5.98 ± 1.44 months). They were randomized into three groups. Group I received MLS laser therapy and exercises, Group II received LLLT and exercises, and Group III received placebo laser therapy plus exercises (PL+EX). Neck pain levels and neck function were measured using the visual analogue scale (VAS) and neck disability index (NDI), respectively. Results: Both VAS and NDI were significantly reduced post-treatment for all treatment groups. After 6 weeks of treatment, MLS plus exercise showed a significantly greater decrease in pain and disability scores (ΔVAS (6.68) and ΔNDI (39.84)) compared to both LLLT plus exercise group (ΔVAS (5.72) and ΔNDI (37.88)) and PL + EX (ΔVAS (4.84) and ΔNDI (36.68)). Conclusions: MLS laser therapy in conjunction with exercises decreased pain and increased functional activity following 6 months of therapy. MLS laser therapy in combination with exercises is a more effective therapy for CNP compared to exercise plus LLLT or exercise alone.

Keywords: chronic neck pain, MLS laser therapy, neck disability index

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