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Effectiveness of occlusal splints and low-level laser therapy on myofascial pain

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Abstract

The present study was designed to evaluate the effects of low-level laser (Nd:YAG) therapy and occlusal splints in patients with signs and symptoms of temporomandibular disorders (TMD) characterized with myofascial pain (MP). A total of 30 patients were selected after being diagnosed with MP according to the Research Diagnostic Criteria for Temporomandibular Disorders (RDC/TMD). The patients were divided into three groups. The first group was occlusal splint (OS) group A (n = 10), the second was low-level laser therapy (LLLT) group B (n = 10), and the last group C was placebo (n = 10). LLLT (1,064 nm, 8 j/cm², 250 mW, Fotona) was applied to the patients in the study group once a day for 10 days, for a total of ten sessions. The same parameters and application times were used for placebo group, but the patients were not irradiated. The application was on the trigger points. The patients in the OS group were instructed to wear occlusal splints 12 h/day for 3 weeks. Functional examination was based on RDC/TMD, and pressure pain values were obtained with the Visual Analog Scale. Comparisons were made between the groups before and after the treatment according to Wilcoxon, Mann-Whitney U, and Kruskal-Wallis tests. The pain score values decreased significantly after both LLLT (p < 0.05) and occlusal splint therapy (p < 0.05) compared to placebo group (p < 0.05). There was no significant difference between LLLT and OS groups after treatment (p > 0.05). OS and LLLT are effective for decreasing MP. In addition, this particular type of LLLT is as effective as occlusal splint for pain relief.