

Effects of low-level laser and plyometric exercises in the treatment of lateral epicondylitis.

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Abstract

OBJECTIVE:

This study was undertaken to compare the effectiveness of a protocol of combination of laser with plyometric exercises and a protocol of placebo laser with the same program, in the treatment of tennis elbow.

BACKGROUND DATA:

The use of low-level laser has been recommended for the management of tennis elbow with contradictory results. Also, plyometric exercises was recommended for the treatment of the tendinopathy.

METHODS:

Fifty patients who had tennis elbow participated in the study and were randomised into two groups. Group A (n = 25) was treated with a 904 Ga-As laser CW, frequency 50 Hz, intensity 40 mW and energy density 2.4 J/cm², plus plyometric exercises and group B (n = 25) that received placebo laser plus the same plyometric exercises. During eight weeks of treatment, the patients of the two groups received 12 sessions of laser or placebo, two sessions per week (weeks 1-4) and one session per week (weeks 5-8). Pain at rest, at palpation on the lateral epicondyle, during resisted wrist extension, middle finger test, and strength testing was evaluated using Visual Analogue Scales. Also it was evaluated the grip strength, the range of motion and weight test. Parameters were determined before the treatment, at the end of the eighth week course of treatment (week 8), and eighth (week 8) after the end of treatment.

RESULTS:

Relative to the group B, the group A had (1) a significant decrease of pain at rest at the end of 8 weeks of the treatment ($p < 0.005$) and at the end of following up period ($p < 0.05$), (2) a significant decrease in pain at palpation and pain on isometric testing at 8 weeks of treatment ($p < 0.05$), and at 8 weeks follow-up ($p < 0.001$), (3) a significant decrease in pain during middle finger test at the end of 8 weeks of treatment ($p < 0.01$), and at the end of the follow-up period ($p < 0.05$), (4) a significant decrease of pain during grip strength testing at 8 weeks of treatment ($p < 0.05$), and at 8 weeks follow-up

($p < 0.001$), (5) a significant increase in the wrist range of motion at 8 weeks follow-up ($p < 0.01$), (6) an increase in grip strength at 8 weeks of treatment ($p < 0.05$) and at 8 weeks follow-up ($p < 0.01$), and (7) a significant increase in weight-test at 8 weeks of treatment ($p < 0.05$) and at 8 weeks follow-up ($p < 0.005$).

CONCLUSION:

The results suggested that the combination of laser with plyometric exercises was more effective treatment than placebo laser with the same plyometric exercises at the end of the treatment as well as at the follow-up. Future studies are needed to establish the relative and absolute effectiveness of the above protocol.