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Efficacy of prolonged application of low-level laser therapy combined with exercise in knee osteoarthritis: a randomized controlled double-blind study

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Objectives: To investigate the effect of prolonged low-level laser therapy application combined with exercise on pain and disability in patients with osteoarthritis of the knee.

Design: A randomised controlled trial. **Setting:** Special Rehabilitation Services. **Subjects:** Forty-three participants with knee osteoarthritis. **Intervention:** Participants were randomly allocated in the laser group (n=22, 44 knees) received low-level laser therapy while the placebo group (n=21, 42 knees) received placebo therapy three times a week for three weeks following initial assessment. Both groups received low-level laser therapy combined with exercise three times a week for the following 8 weeks. **Main outcome measures:** The primary outcome was the change in knee pain and disability (Lequesne). Secondary outcomes included change in mobility (Timed Up and Go test), range of motion (goniometer), muscular strength (dynamometer), activity (Western Ontario and McMaster Universities Osteoarthritis questionnaire) and medication intake relief. **Results:** The patients' average age was 63.02 (9.9) years. Pain scores at baseline, 3 weeks, 11 weeks, and 6 months follow-up were 9.1 (1.3), 2.6 (2.3), 0.2 (0.9) and 0.2 (0.8) for the Laser Group and 9.5 (8.0), 7.7 (5.3), 5.6 (2.4) and 7.4 (5.0) for the Placebo Group, respectively. Disability scores at baseline, 3 weeks, 11 weeks, and 6 months follow-up were 14.9 (4.7), 7.6 (4.8), 3.9 (4.2) and 3.5 (4.1) for the Laser Group and 17.8 (14.7), 15.2 (11.5), 11.6 (6.4) and 15.8 (11.9) for the Placebo Group, respectively. **Conclusion:** In patients with osteoarthritis of the knee, the isolated application of low-level laser therapy in the initial three weeks and combined with exercises in the final eight weeks reduced pain, disability, and intake of medication over a six-month period.

Keywords: Knee, osteoarthritis, low level laser therapy, exercises.

Clinical Trial Registration number: CT01306435.

Ethics Research Committee (protocol n°0775/08)