The efficacy of high-intensity laser and short-wave diathermy both combined with exercises in patients with knee osteoarthritis: a randomized comparative study

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Lasers in Medical Science

Aims and scope

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Abstract

The present study aimed to investigate the effects of high-intensity laser therapy and short-wave diathermy, both with exercise, on pain, physical function, and quality of life in patients with knee osteoarthritis and compare the efficacy of these modalities. This head-to-head randomized study included sixty patients diagnosed with primary knee osteoarthritis (OA) according to the American College of Rheumatology (ACR) criteria and radiologically evaluated as Kellgren-Lawrence stages 2 and 3 bilateral OA patients were divided into two groups according to the therapy: high-intensity laser (HILT) with exercise (n = 30) and short-wave diathermy (SWD) with exercise (n = 30) in which patients treated for 2 weeks (5 days a week for a total of 10 sessions). Visual Analogue Scale (VAS), The Western Ontario and McMaster Universities Arthritis Index (WOMAC), Timed Up and Go, Stair Climb, 30-s chair-stand, 40-meter Fast-paced Walk, and Short Form Survey (SF-36) tests were performed before and after treatments. Compared to pretreatment, HILT + exercise therapy improved all the test results, while SWD + exercise therapy also improved test scores except for the 30-s chair-stand and 40-meter Fast-paced Walk tests. When HILT + exercise therapy was compared with SWD + exercise therapy, HILT treatment was more effective in all tests except the Stair Climb and 40-meter Fast-paced Walk tests. Although the treatments applied with exercise were effective in both groups, HILT was more effective than SWD in terms of pain, physical, functional, and quality of life. HILT was recommended in the treatment plan of patients with stage 2–3 knee osteoarthritis.

Clinical trial number

Not applicable.

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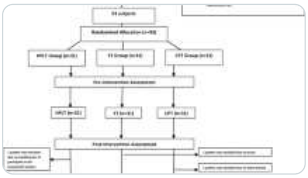

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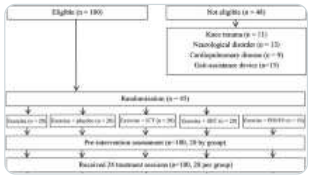

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Data availability

No datasets were generated or analysed during the current study.

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Contributions

Z.C. Conceptual design, Methodology, Data collection, Manuscript writing and editing; Ş.B.K. Conceptual design, Methodology, Data analysis, Manuscript editing.

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Ethics declarations

Ethical approval

Human Ethics and Consent to Participate declarations were obtained. Every human participant were informed about the procedure to be performed and their written informed consent was obtained. The study was carried out in accordance with the principles of the Declaration of Helsinki. The study protocol was approved by Kırıkkale

University Clinical Research Ethics Committee (2019/22) and Turkish Medicines and Medical Devices Agency (TITCK.KA.2019 - 142).

Competing interests

The authors declare no competing interests.

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Knee osteoarthritis · High-intensity laser therapy · Short wave diathermy · VAS · WOMAC · SF-36