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Effects of low-level laser therapy and eccentric exercises in the treatment of recreational athletes with chronic achilles tendinopathy.

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Abstract

BACKGROUND: Eccentric exercises (EEs) are recommended for the treatment of Achilles tendinopathy, but the clinical effect from EE has a slow onset.

HYPOTHESIS: The addition of low-level laser therapy (LLLT) to EE may cause more rapid clinical improvement.

STUDY DESIGN: Randomized controlled trial; Level of evidence, 1.

METHODS: A total of 52 recreational athletes with chronic Achilles tendinopathy symptoms were randomized to groups receiving either EE + LLLT or EE + placebo LLLT over 8 weeks in a blinded manner. Low-level laser therapy ($\lambda = 820$ nm) was administered in 12 sessions by irradiating 6 points along the Achilles tendon with a power density of 60 mW/cm² and a total dose of 5.4 J per session.

RESULTS: The results of the intention-to-treat analysis for the primary outcome, pain intensity during physical activity on the 100-mm visual analog scale, were significantly lower in the LLLT group than in the placebo LLLT group, with 53.6 mm versus 71.5 mm ($P = .0003$) at 4 weeks, 37.3 mm versus 62.8 mm ($P = .0002$) at 8 weeks, and 33.0 mm versus 53.0 mm ($P = .007$) at 12 weeks after randomization. Secondary outcomes of morning stiffness, active dorsiflexion, palpation tenderness, and crepitation showed the same pattern in favor of the LLLT group.

CONCLUSION: Low-level laser therapy, with the parameters used in this study, accelerates clinical recovery from chronic Achilles tendinopathy when added to an EE regimen. For the LLLT group, the results at 4 weeks were similar to the placebo LLLT group results after 12 weeks.

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