The Efficacy of Low-Level Laser Therapy for Shoulder Tendinopathy: A Systematic Review and Meta-Analysis of Randomized Controlled Trials.

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BACKGROUND AND PURPOSE: Low-level laser therapy (LLLT) is proposed as a treatment for tendinopathies. This is the first systematic review focusing solely on LLLT treatment effects in shoulder tendinopathy. METHODS: A systematic review with meta-analysis and primary outcome measures pain relief on 100-mm visual analogue scale (VAS) and relative risk for global improvement. Two independent assessors rated the included studies according to the PEDro scale. Intervention quality assessments were performed of LLLT dosage and treatment procedures according to World Association for Laser Therapy guidelines. The included trials were sub-grouped by intervention quality and use of other physiotherapy interventions. RESULTS: Seventeen randomized controlled trials (RCTs) met the inclusion criteria, and 13RCTs were of high and 4 RCTs of moderate methodological quality. Significant and clinically important pain relief was found with weighted mean differences (WMD) over placebo, for LLLT as monotherapy at20.41 mm (95% CI: 12.38 to 28.44) and as adjunct to exercise therapy at 16.00 mm (95% CI: 11.88 to20.12). The WMD when LLLT was used in a multimodal physiotherapy treatment regime reached statistical significance over placebo at 12.80 (95% CI: 1.67-23.94) mm pain reduction on VAS. Relative risks for global improvement were statistically significant at 1.96 (95% CI: 1.25-3.08) and 1.51 (95% CI:1.12-2.03), for laser as

monotherapy or adjunctive in a physiotherapy regime, respectively. Secondary outcome measures of shoulder function were only significantly in favour of LLLT when used as monotherapy. Trials performed with inadequate laser doses were ineffective across all outcome measures. CONCLUSION: This review shows that optimal LLLT can offer clinically relevant pain relief and initiate a more rapid course of improvement, both alone and in combination with physiotherapy interventions. Our findings challenge the conclusions in previous multimodal shoulder reviews of physiotherapy and their lack of intervention quality assessments.

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