

Short-term efficacy of physical interventions in osteoarthritic knee pain. A systematic review and meta-analysis of randomised placebo-controlled trials

Jan M Bjordal^{1,2} ✉, Mark I Johnson³ ✉, Rodrigo AB Lopes-Martins⁴ ✉, Bård Bogen⁵ ✉, Roberta Chow⁶ ✉ and Anne E Ljunggren² ✉

¹ Faculty of Health and Social Sciences, Institute of Physiotherapy, Bergen University College, Moellendalsvn. 6, 5009 Bergen Norway

² Department of Public Health and Primary Health Care, Section of Physiotherapy Science University of Bergen, Kalfarveien 31, 5018 Bergen, Norway

³ Faculty of Health, Leeds Metropolitan University, Civic Quarter, Leeds, LS1 3HE, UK

⁴ Department of Pharmacology, Institute of Biomedical Sciences, University of São Paulo. Av. Prof. Lineu Prestes, 1524, Butantan, 05508-900 São Paulo – SP, Brazil

⁵ Haraldsplass Deaconal Hospital, Physiotherapy Unit, Ulriksdal 10, 5009 Bergen, Norway

⁶ Castle Hill Medical Center, 103 Malton Rd, Beecroft, New South Wales, 2119 Australia

✉ author email ✉ corresponding author email

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Abstract

Background

Treatment efficacy of physical agents in osteoarthritis of the knee (OAK) pain has been largely unknown, and this systematic review was aimed at assessing their short-term efficacies for pain relief.

Methods

Systematic review with meta-analysis of efficacy within 1–4 weeks and at follow up at 1–12 weeks after the end of treatment.

Results

36 randomised placebo-controlled trials (RCTs) were identified with 2434 patients where 1391 patients received active treatment. 33 trials satisfied three or more out of five methodological criteria (Jadad scale). The patient sample had a mean age of 65.1 years and mean baseline pain of 62.9 mm on a 100 mm visual analogue scale (VAS). Within 4 weeks of the commencement of treatment manual acupuncture, static magnets and ultrasound therapies did not offer statistically significant short-term pain relief over placebo. Pulsed electromagnetic fields offered a small reduction in pain of 6.9 mm [95% CI: 2.2 to 11.6] (n = 487). Transcutaneous electrical nerve stimulation (TENS, including interferential currents), electro-acupuncture (EA) and low level laser therapy (LLLT) offered clinically relevant pain relieving effects of 18.8 mm [95% CI: 9.6 to 28.1] (n = 414), 21.9 mm [95% CI: 17.3 to 26.5] (n = 73) and 17.7 mm [95% CI: 8.1 to 27.3] (n = 343) on VAS respectively versus placebo control. In a subgroup analysis of trials with assumed optimal doses, short-term efficacy increased to 22.2 mm [95% CI: 18.1 to 26.3] for TENS, and 24.2 mm [95% CI: 17.3 to 31.3] for LLLT on VAS. Follow-up data up to 12 weeks were sparse, but positive effects seemed to persist for at least 4 weeks after the course of LLLT, EA and TENS treatment was stopped.

Conclusion

TENS, EA and LLLT administered with optimal doses in an intensive 2–4 week treatment regimen, seem to offer clinically relevant short-term pain relief for OAK.

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