Knee Pain and Osteoarthritis Therapy with PEMF

Pulsed magnetic field therapy for osteoarthritis of the knee –a double-blind sham-controlled trial.

Nicolakis P,
Kollmitzer J,
Crevenna R,
Bittner C,
Erdogmus CB,
Nicolakis J.
Department of Physical Medicine and Rehabilitation, AKH Wien, University of Vienna, Vienna, Austria. Peter.nicolakis@akh-wien.ac.at

BACKGROUND AND METHODS: Pulsed magnetic field therapy is frequently used to treat the symptoms of osteoarthritis, although its efficacy has not been proven. We conducted a randomized, double-blind comparison of pulsed magnetic field and sham therapy in patients with symptomatic osteoarthritis of the knee. Patients were assigned to receive 84 sessions, each with duration of 30 minutes, of either pulsed magnetic field or sham treatment. Patients administered the treatment on their own at home, twice a day for six weeks. RESULTS: According to sample size estimation, 36 consecutive patients were enrolled. 34 patients completed the study, two of whom had to be excluded from the statistical analysis, as they had not applied the PMF sufficiently. Thus, 15 verum and 17 sham-treated patients were enrolled in the statistical analysis. After six weeks of treatment the WOMAC Osteoarthritis Index was reduced in the pulsed magnetic field-group from 84.1 (+/- 45.1) to 49.7 (+/- 31.6), and from 73.7 (+/- 43.3) to 66.9 (+/- 52.9) in the sham-treated group (p = 0.03). The following secondary parameters improved in the pulsed magnetic field group more than they did in the sham group: gait speed at fast walking [+6.0 meters per minute (1.6 to 10.4) vs. -3.2 (-8.5 to 2.2)], stride length at fast walking [+6.9 cm (0.2 to 13.7) vs. -2.9 (-8.8 to 2.9)], and acceleration time in the isokinetic dynamometry strength tests [-7.0% (-15.2 to 1.3) vs. 10.1% (-0.3 to 20.6)]. CONCLUSION: In patients with symptomatic osteoarthritis of the knee, PMF treatment can reduce impairment in activities of daily life and improve knee function.

PMID: 12602111 [PubMed - indexed for MEDLINE]

Clin Rheumatol. 2007 Jan;26(1):69-74. Epub 2006 Apr 22.