

Medical PEMF Studies



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ARTHRITIS

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



Healthy knee joint



Osteoarthritis

1. Wien Klin Wochenschr. 2002 Aug 30;114(15-16):678-84.

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Comment in

Wien Klin Wochenschr. 2002 Nov 30;114(21-22):953; author reply 953.

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 a 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 a sample size estimation, 36 consecutive patients were

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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.