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Low-energy Pulsed Electromagnetic Field Therapy Reduces Pain in Fibromyalgia: A Randomized Single-blind Controlled Pilot Study

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Abstract

Objectives: Fibromyalgia symptoms have a significant impact on the quality of life and respond poorly to medications. It has been hypothesized that the use of low-energy pulsed electromagnetic field (PEMF) induces neuroprotective effects that may interfere with pain perception. We explored the efficacy of PEMF in patients affected by fibromyalgia.

Methods: Twenty-one females (median age 59 years, interquartile range [IQR] 16.5) affected by fibromyalgia were randomized to receive pulsed electromagnetic field-triple energy pain treatment

(PEMF-TEPT) or placebo at T0 and at 4 weeks and 8 weeks. Fibromyalgia impact questionnaire (FIQ), widespread pain index (WPI), visual analog score (VAS) pain, symptom severity (SS) scale, and short form 36 (SF-36) health survey questionnaire have been evaluated.

Results: Patients in the PEMF-TEPT group had a significantly higher reduction of WPI compared to placebo (mean difference $-12.90 \pm$ standard deviation [SD] 5.32 vs. -1.91 ± 4.55 , difference in difference [DD] of -10.99 ; $P < 0.001$), of SS score (-4.10 ± 4.85 vs. -2.00 ± 2.32 ; DD = -2.1 ; $P < 0.05$), of VAS pain (-48 ± 30.75 vs. -16.82 ± 23.69 ; DD = -31.18 ; $P < 0.01$). They also reported a higher improvement of FIQ and SF-36, albeit not reaching statistical significance.

Conclusion: In our pilot controlled study, PEMF-TEPT appeared to be safe and improved fibromyalgia symptoms.

Keywords: diffuse pain syndrome; fatigue; quality of life; widespread pain.

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Figures

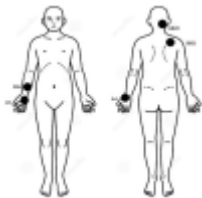


Figure 1 Selected target points for PEMF...

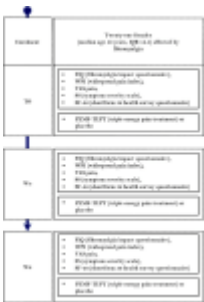


Figure 2 Study flow. For each timepoint...



Figure 3 WPI, SS score, VAS for...

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