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Pulsed electromagnetic field therapy effectiveness in low back pain: A systematic review of randomized controlled trials

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Abstract

Background: Low back pain is a worldwide prevalent musculoskeletal condition in the general population. In this sense, the pulsed electromagnetic fields (PEMF) therapy has shown significant clinical benefits in several musculoskeletal conditions.

Objective: To assess the effectiveness of the PEMF therapy in reducing pain and clinical symptomatology in patients with low back pathological conditions.

Methods: It was performed a comprehensive database search using Pubmed, Scopus, Cochrane Library and PEDro databases to assess the effectiveness of the PEMF therapy in reducing pain and clinical symptomatology in patients with low back pathological conditions. The search was performed from January 2005 to August 2015 and conducted by two independent investigators, which scrutinize the reference list of most relevant studies. The methodological quality was assessed by the PEDro scale and the level of evidence was set according Oxford Center for Evidence-Based Medicine scale.

Results: Six studies were eligible inclusion on the qualitative analysis and five into the quantitative analysis, scoring an overall 6.8 points according the PEDro scale. The studies showed heterogeneity concerning the intervention protocols. Nevertheless, the effect sizes' indicated a clear tendency to reduction of the pain intensity favoring the PEMF groups, reaching a minimal clinically important difference.

Conclusion: PEMF therapy seems to be able to relieve the pain intensity and improve functionality in individuals with low back pain conditions. Further research is needed regarding PEMF effects on the different conditions of low back pain, with standardized protocols, larger samples and adjustment for low back pain confounders in order to achieve stronger conclusions.

Keywords: Low back pain; Musculoskeletal; Pulsed electromagnetic fields; Therapy.

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Fig. 1. PRISMA flow diagram of the...

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