Effectiveness of monopolar dielectric transmission of pulsed electromagnetic fields for multiple sclerosis-related pain: a pilot study

A Hochsprung 1, S Escudero-Uribe 1, A J Ibáñez-Vera 2, G Izquierdo-Ayuso 3

Affiliations

1 Fisioterapeuta. Sala de Neurofisioterapia. Unidad de EM del Hospital Virgen de la Macarena. Sevilla, Spain.
2 Fisioterapeuta. Universidad de Jaén. Departamento de Ciencias de la Salud, Área de Fisioterapia. Jaén, Spain. Electronic address: ajibanez@ujaen.es.
3 Neurólogo. Unidad de EM del Hospital Virgen de la Macarena. Edificio Policlínico, Planta 1ª, Puerta nº106, 3 Avenida de Doctor Fedriani, 41009, Sevilla, Spain.
PMID: 34238526 DOI: 10.1016/j.nrleng.2018.03.003

Abstract

Introduction: Pain is highly prevalent in patients with multiple sclerosis (MS); it is chronic in 50% of cases and is classified as nociceptive, neuropathic, or mixed-type. Pain affects quality of life, sleep, and the activities of daily living. Electrotherapy is an interesting alternative or complementary treatment in the management of pain in MS, with new innovations constantly appearing.

Material and methods: This study evaluates the effectiveness of treatment with monopolar dielectric transmission of pulsed electromagnetic fields (PEMF) for pain associated with MS. We performed a randomised, placebo-controlled clinical trial including 24 patients, who were assessed with the Brief Pain Inventory, the Multiple Sclerosis International Quality of Life questionnaire, the Beck Depression Inventory, and the Modified Fatigue Impact Scale.

Results: Statistically significant improvements were observed in maximum and mean pain scores, as well as in the impact of pain on work, personal relationships, and sleep and rest. Not significant differences were found between the treatment and placebo groups.

Conclusions: Treatment with PEMF may be effective in reducing pain in patients with MS, although further research is necessary to confirm its effectiveness over placebo and to differentiate which type of pain may be more susceptible to this treatment.

Keywords: Dolor; Dolor neuropático; Electroterapia; Electrotherapy; Esclerosis múltiple; Multiple sclerosis; Neuralgia trigémino.; Neuropathic pain; Pain; Radiofrecuencia; Radiofrequency; Trigeminal neuralgia.