DOI: 10.7860/JCDR/2025/80478.21614

Exploring the Effect of Magnetotherapy as a Non-invasive Treatment for Knee Orteoarthritis: A Systematic Review

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ABSTRACT

Knee Osteoarthritis (OA) is a prevalent degenerative joint disorder that significantly impacts the quality of life, particularly among older adults. Conventional treatments such as Nonsteroidal Anti Inflammatory Drugs (NSAIDs) and physical therapy often yield limited relief and may pose long-term side effects. This systematic review aims to evaluate the therapeutic potential of magnetotherapy, a non-invasive alternative that apply magnetic fields to alleviate knee OA symptoms. A database search was conducted using the following resources: PubMed, Cochrane, PEDro, SCOPUS, and WoS. The following MESH terms were used: [Pulsed Magnetic field AND/OR Rehabilitation] and [Pulsed Magnetic field AND/OR Knee OA], [Pulsed Electromagnetic field AND/OR Rehabilitation] and [Pulsed Electromagnetic field AND/OR Pain], per the guidelines of the PRISMA statement. Articles published between January 1, 2009 and December 31, 2018 were included as assessment of Knee OA pain conditions, randomised clinical trial including crossover and prospective design studies, focussing on the efficacy, safety, and underlying mechanisms of magnetotherapy in improving pain, joint function, and overall health in knee OA patients. Inclusion criteria encompassed studies utilising defined magnetic field parameters and validated outcome measures, including pain intensity and joint function assessments. A thorough literature search was conducted across multiple databases, employing a comprehensive set of keywords related to knee OA and magnetotherapy. The review will synthesise findings through qualitative and quantitative analyses, including risk of bias assessments and GRADE evaluations of evidence quality. Preliminary findings suggest that magnetotherapy may offer beneficial effects in pain reduction and functional improvement, although clinical evidence remains heterogeneous. This review seeks to clarify the clinical utility of magnetotherapy in knee OA management, highlight existing research gaps, and propose directions for future investigations, ultimately contributing to the development of more effective treatment strategies for this debilitating condition.

Keywords: Management, PRISMA, Nonsteroidal anti-inflammatory drugs