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Palmitoylethanolamide in the Treatment of Chronic Pain: A Systematic Review and Meta-Analysis of Double-Blind Randomized Controlled Trials

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Abstract

Chronic pain is a major source of morbidity for which there are limited effective treatments. Palmitoylethanolamide (PEA), a naturally occurring fatty acid amide, has demonstrated utility in the treatment of neuropathic and inflammatory pain. Emerging reports have supported a possible role for its use in the treatment of chronic pain, although this remains controversial. We undertook a systematic review and meta-analysis to examine the efficacy of PEA as an analgesic agent for chronic pain. A systematic literature search was performed, using the databases MEDLINE and Web of Science, to identify double-blind randomized controlled trials comparing PEA to placebo or active comparators in the treatment of chronic pain. All articles were independently screened by two reviewers. The primary outcome was pain intensity scores, for which a meta-analysis was undertaken using a random effects statistical model. Secondary outcomes including quality of life, functional status, and side effects are represented in a narrative synthesis. Our literature search identified 253 unique articles, of which 11 were ultimately included in the narrative synthesis and meta-analysis. Collectively, these articles described a combined sample size of 774 patients. PEA was found to reduce pain scores

relative to comparators in a pooled estimate, with a standard mean difference of 1.68 (95% CI 1.05 to 2.31, p = 0.00001). Several studies reported additional benefits of PEA for quality of life and functional status, and no major side effects were attributed to PEA in any study. The results of this systematic review and meta-analysis suggest that PEA is an effective and well-tolerated treatment for chronic pain. Further study is warranted to determine the optimal dosing and administration parameters of PEA for analgesic effects in the context of chronic pain.

Keywords: Impulsin; N-(2hydroxyethyl)-palmitamide; Palmidrol; analgesia; chronic pain; palmitoylethanolamide; quality of life.

Conflict of interest statement

The authors declare no conflict of interest.