

# Efficacy and safety of ketamine in the treatment of neuropathic pain: A systematic review and meta-analysis of randomized controlled trials

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## Abstract

Neuropathic pain may develop after neuronal injury and distinguishes itself from other painful conditions due to its unique clinical characteristics and for being refractory to treatment with conventional analgesics and non-steroidal anti-inflammatory drugs (NSAIDs). N-methyl-D-aspartate receptors (NMDARs) are known for their relation to neuroplasticity and play a role in neuropathic pain and opioid induced hyperalgesia. Ketamine is a N-methyl-D-aspartate (NMDA) antagonist with strong analgesic and anti-hyperalgesic properties and its addition to the treatment of neuropathic pain may reduce pain intensity in the short and long term and may improve overall quality of life. Therefore, a systematic review and meta-analysis were performed to investigate the addition of ketamine to the treatment of patients with neuropathic pain. Methods: Randomized controlled trials (RCTs) investigating the effect of ketamine on pre-defined outcomes including pain intensity at several time points, multidimensional pain scales, quality of life, mood, impact on interpersonal interaction, quality of sleep, impact on general daily activities, impact on work, and adverse outcomes, such as nausea and vomiting, and psychedelic effects were searched in the following databases: MEDLINE, CENTRAL, LILACS and EMBASE, from inception to April 2021. Reviewers independently screened potentially eligible articles, extracted data and assessed the risk of bias among eligible articles. We used the GRADE approach to rate the overall certainty of the evidence for each outcome.

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