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Low-dose naltrexone, an opioid-receptor antagonist, is a broad-spectrum analgesic: a retrospective cohort study

Samuel J Martin [1 2], Heath B McAnally [1 3], Paul Okediji [4], Moshe Rogosnitzky [4]

Affiliations

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Abstract

Aim: To evaluate the use of low-dose naltrexone (LDN) as a broad-spectrum analgesic. **Methods:** Retrospective cohort study from a single pain management practice using data from 2014 to 2020. Thirty-six patients using LDN for ≥2 months were matched to 42 controls. Pain scores were assessed at initial visit and at most recent/final documented visit using a 10-point scale. **Results:** Cases reported significantly greater pain reduction (-37.8%) than controls (-4.3%; $p < 0.001$). Whole sample multivariate modeling predicts 33% pain reduction with LDN, with number needed to treat (for 50% pain reduction) of 3.2. Patients with neuropathic pain appeared to benefit even more than those with 'nociceptive'/inflammatory pain. **Conclusion:** LDN is effective in a variety of chronic pain states, likely mediated by TLR-4 antagonism.

Keywords: TLR-4; central sensitization; chronic pain; low-dose naltrexone; opioid-induced hyperalgesia.

Plain language summary

Naltrexone has historically been used to treat various substance use disorders, but recent discoveries have sparked interest in using low-dose naltrexone (LDN) to manage chronic pain. This study compared pain levels reported by patients before and after at least 2 months of LDN treatment to those reported by patients with the same painful diseases, who did not take LDN. Overall, patients who took LDN reported significantly more pain relief than patients who did not take LDN. How LDN alleviates pain seems complex, but apparently involves an anti-inflammatory effect on cells in the brain and spinal cord. LDN is extraordinarily safe, with no known risks (unlike most standard pain medications), and should be studied more in the treatment of chronic pain.

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