

The Great Paradox: A Case of Low Dose Naltrexone and Opioid Coadministration

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Introduction

- Low-dose naltrexone (LDN) continues to show promise as an off-label treatment for refractory chronic pain and inflammatory conditions.
- As a full opioid antagonist, it is FDA-approved to treat substance use disorder at 50-100mg doses. However, when given in lower doses (1-9mg), it appears to paradoxically modulate pain mechanisms contributing to central sensitization.
- There is a paucity of literature assessing concomitant use with opioid agonists in patients with chronic pain.

Case Description

63-year-old female with chronic pain disorder, fibromyalgia, lumbar facet arthropathy, peripheral diabetic neuropathy, post-herpetic neuralgia, and 1st MCP osteoarthritis. She had persistent pain despite a regimen of tramadol 200mg ER daily, gabapentin 1200mg TID, tramadol 50mg IR BID PRN, and lidocaine patch 5% PRN. She was started on LDN 4.5mg daily and at her two-month follow up her Pain Disability Index score decreased from 20 to 15 and her MME intake was down trending from 33 to 26. She reported significant improvement in pain, felt that tramadol became much more effective, and noted improvement in mood and relief of widespread pain at both follow up visits. She did not report any adverse effects and continued on LDN due to her sustained improvement.

Figure

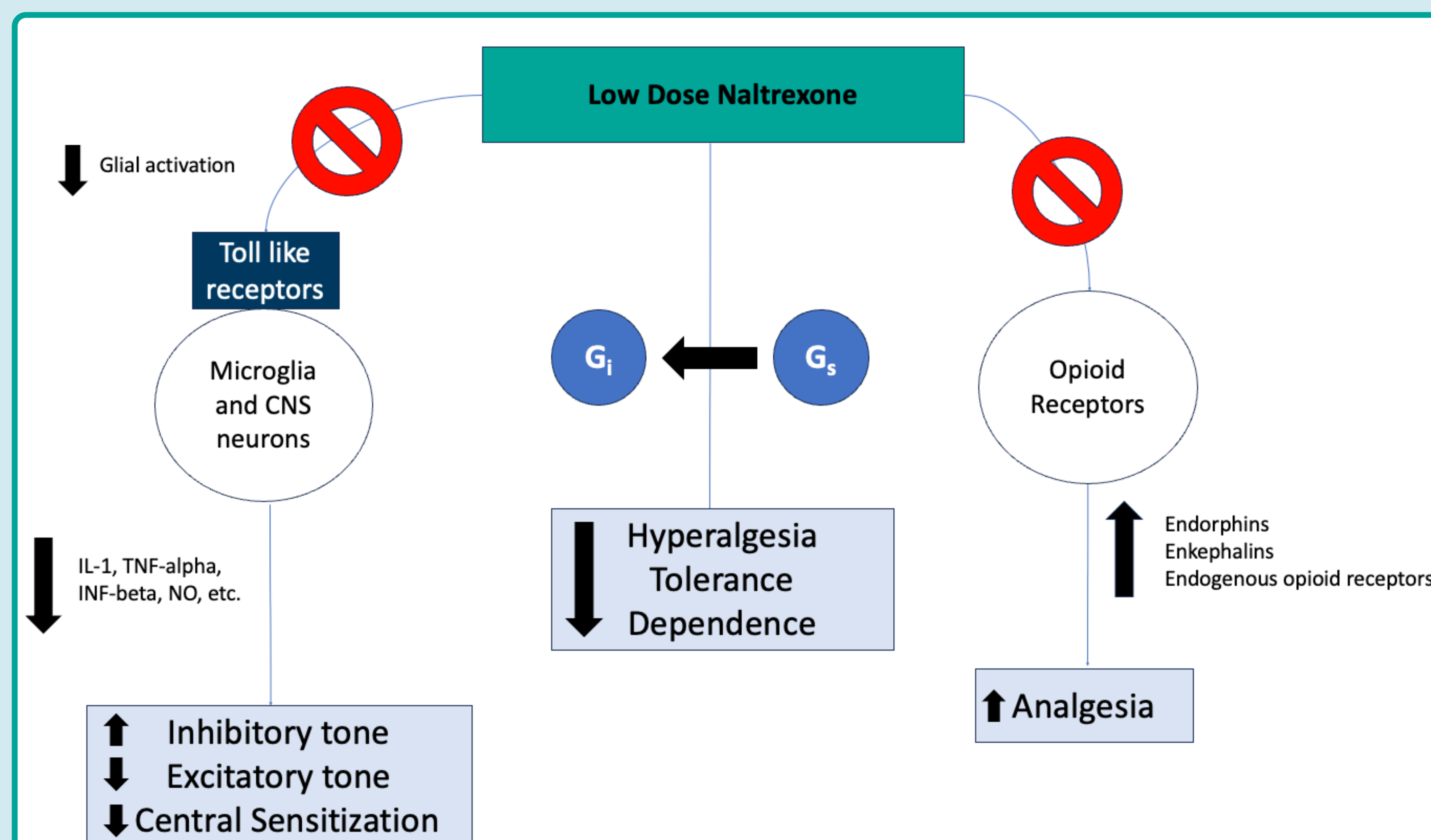


Fig 1. Low Dose Naltrexone proposed mechanism of action

Results/Conclusion

- This case highlights the potential for improvement in pain, mood, and quality of life when LDN is added to a regimen of a weak opioid agonist.**
- The purported increase in analgesic effect with the addition of LDN allows for increased pain control and potential opioid reduction.**

Discussion

- Concomitant use of LDN with opioids may maximize the analgesic effect of prescribed opioids, thereby reducing a patient's opioid burden.
- LDN has been shown to improve functional outcomes and quality of life metrics for patients with fibromyalgia, inflammatory bowel disease, and complex regional pain syndrome, peripheral neuropathy, and multiple sclerosis.
- LDN rapidly reverses and prevents the conformational changes in the G-protein coupled opioid receptors to a stimulatory state that can lead to eventual hyperalgesia, withdrawal symptoms, and tolerance.
- The antagonistic effect of LDN can upregulate basal opioid signaling leading to increased endogenous analgesia. LDN acts on the toll like receptor 4 of microglial cells which reduces neuroinflammation through decreased proinflammatory cytokines – addressing a suspected underlying component of central sensitization.
- These actions, as well as its excellent safety profile and tolerability, suggest that further study of LDN holds promise as an opioid-sparing adjunct and a targeted means to address the proposed mechanisms of chronic pain.

References

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