

Treatment of Pain with Low Dose Naltrexone in a Patient with Ehlers-Danlos Syndrome: A Case Report

BACKGROUND

Ehlers-Danlos Syndrome (EDS):

- A genetic disorder with 13 different subtypes with distinct features, and all are characterized by joint hypermobility, skin hyperextensibility, and tissue fragility [1].
- Nearly 90% of EDS patients report some type of chronic pain, which may be diffuse or localized to specific limbs [2].
- Additional commonly associated symptoms include postural orthostatic tachycardia (POTS) and mast cell activation syndrome (MCAS) [3]
- Pain management in EDS can be challenging due to its complexity.

Low Dose Naltrexone (LDN):

- Mechanism: primarily a mu-opioid receptor antagonist and a weaker antagonist at the kappa and delta-opioid receptors [4].
- At standard doses ranging from 50 to 100 mg daily, it is used to treat alcohol and opioid use disorder [4].
- At low doses between 1 to 5 mg, it provides analgesic effects listed in **Figure 1**.

CASE DESCRIPTION

Chief Complaint

- 24-year-old female with EDS, POTS, MCAS, and polycystic ovarian syndrome initially presented with six months of severe chronic myofascial pain across multiple regions (neck, shoulders, elbow, hip, pelvis) significantly limiting her daily activities.

Prior Treatments:

- Conservative : PT, acupuncture, massage, transcutaneous electrical nerve stimulation.
- Pharmacologic:
 - Failed naproxen, amitriptyline, duloxetine, pregabalin (adverse effects)
 - Minimal relief with methocarbamol and meloxicam
- Procedural: trigger point injections without significant relief.

Intervention:

- 4mg LDN was added to her medication regimen.

Result

- improvement in overall pain

FIGURES/TABLES

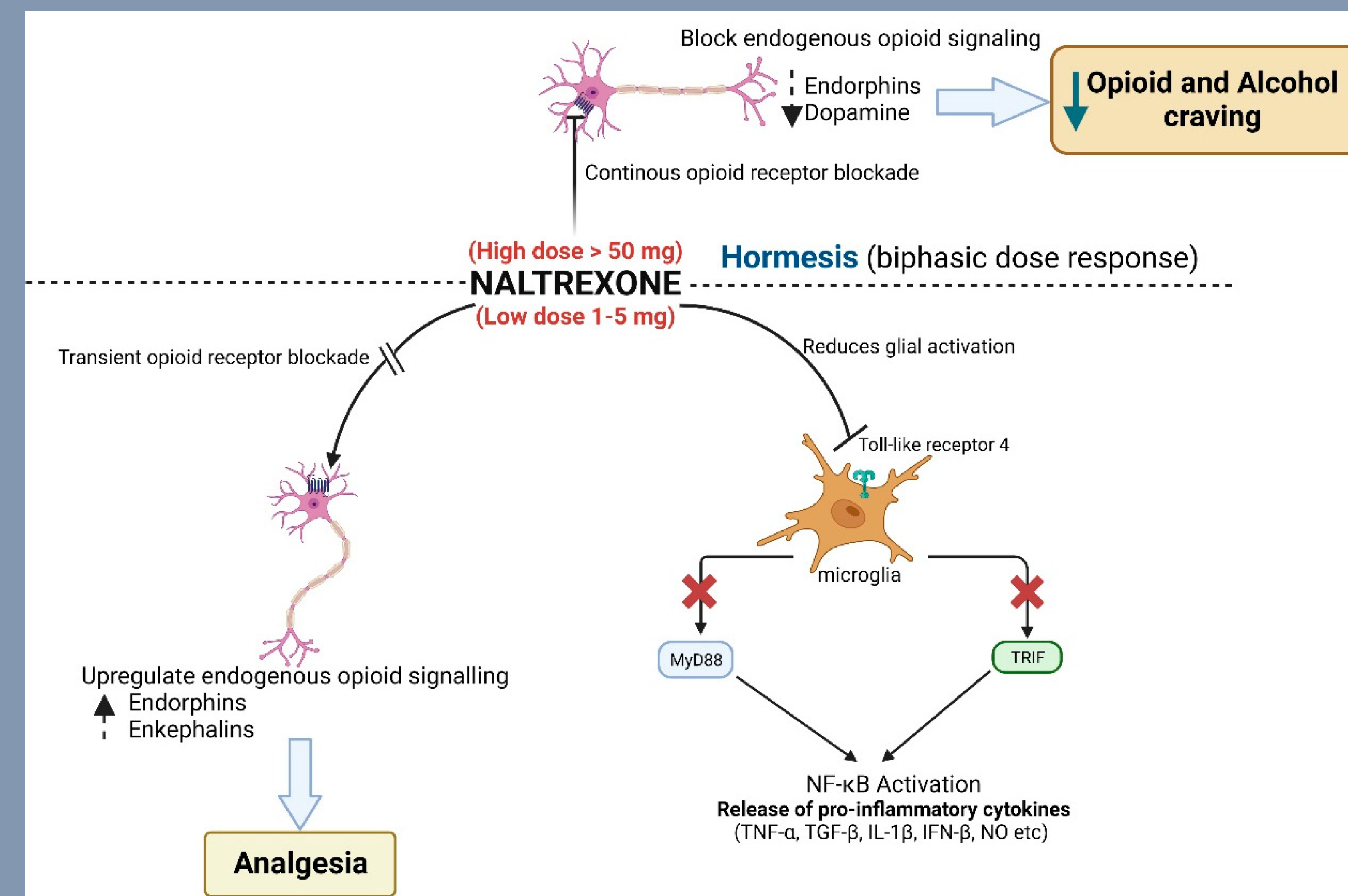


Figure 1. Illustration depicting the dose-dependent differences in mechanism of low-dose naltrexone [7]

DISCUSSION

- LDN has a role in chronic pain management. At doses of 1 to 5 mg, naltrexone modulates Toll-Like-Receptor 4 signaling to reduce the inflammatory response of the central nervous system. It also transiently blocks opioid receptors upregulating endogenous opioid signaling [4, 5]. Micro doses in the range of 2 to 4 mcg have shown to enhance analgesia [6].
- When compared to commonly used analgesic medications including NSAIDs, opioids, muscle relaxants, and anticonvulsants, LDN has a safer side effect profile of mild gastrointestinal symptoms and vivid dreams [5]. Therefore, LDN has become more widely used for centrally mediated pain syndromes (fibromyalgia, complex regional pain syndrome, opioid-induced hyperalgesia), multiple sclerosis, Crohn's disease, and cancer.

DISCUSSION (cont.)

- While limited literature regarding its use in EDS exists, studies demonstrating NSAIDs' potentiation of MCAS, opioid's limited effectiveness in this population, coupled by EDS's shared characteristic with other centrally mediated pain syndromes helped support our decision to add LDN as a treatment modality [3].
- As our case demonstrates, the addition of low-risk LDN continues to have a lasting positive impact in our patient and should be considered when managing pain in patients with EDS.
- Further research should be focused on larger, controlled studies of LDN for patients with EDS to further validate the efficacy and safety of LDN, alongside efforts to promote LDN as a standard of care to ensure insurance coverage for this medication.

CONCLUSION

LDN is potentially a low-risk and effective option in patients with EDS showing promise for improving patient outcomes and enhancing quality of life.

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