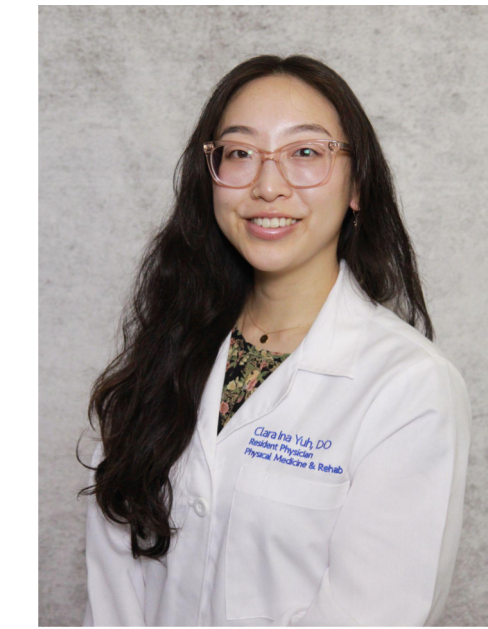


Low Dose Naltrexone for Chronic Polyneuropathy and Neuropathic Pain: A Case Report of a Patient with worsening neurologic symptoms after COVID-19



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INTRODUCTION:

We present a patient with new onset polyarthralgia and myalgia after recent COVID-19 infection.

METHODS

Patient informed consent was obtained for submission of a case report.

CASE REPORT

A 37 year old female with a history of chronic numbness and tingling in hands and feet endorsed new bilateral upper and lower extremity weakness and worsening numbness around the abdomen and bilateral arms and legs after recent COVID-19 infection.

The patient was subsequently found to have worsening gait instability and started mobilizing with a wheelchair. She endorsed diffuse polyarthralgia and myalgias across neck, arms, legs. She described her pain as a stabbing, sore, throbbing, dull, aching, sharp 10/10 pain that is worse with activity and better with rest and medications: gabapentin, tylenol, motrin, topical creams. Upon examination with neurology, the patient's gait showed severe sensory ataxia with $\frac{4}{5}$ muscle strength throughout. The patient endorsed decrease in sensation to light touch in right greater than left bilateral upper and lower extremities. She was also found to have worsening speech and drooling.

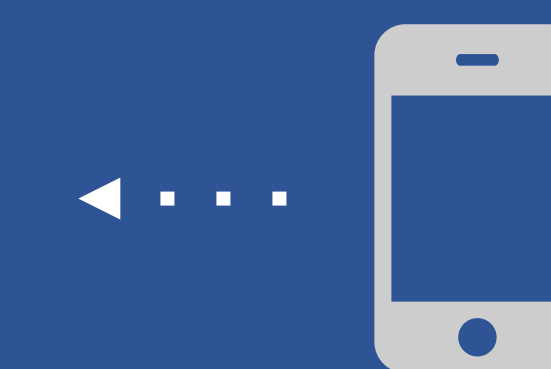
After her outpatient pain visit, the patient was started on cyclobenzaprine 5mg twice daily as needed for muscle cramping and spasms, lidocaine patches daily, and low dose naltrexone (LDN) 4.5 mg nightly for generalized pain control.

On follow up, patient endorsed that cyclobenzaprine provided relief with her muscle aches, but her trial with LDN caused worsening weakness in her legs.

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Patient treated with Low Dose Naltrexone for polyneuropathy and neuropathic pain lead to worsening weakness in bilateral legs



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DISCUSSION

LDN works by antagonizing Toll-like receptor 4 (TLR-4) which inhibits proinflammatory states. The medication has a remarkable safety profile, especially at low doses. Workup of the condition of our reported patient is ongoing as the final etiology of her pathology is still inconclusive. Neurologists are considering potential nutritional deficiencies versus chronic inflammatory demyelinating polyneuropathy as the origin of the patient's deficits. Given the potential inflammatory cause of this patient's pathology, we saw this patient as a good candidate for LDN. There are no known investigations in the use of LDN for the treatment of CIDP or neuropathies secondary to nutritional deficiencies. However, there are several studies showing that LDN can decrease pain in inflammatory conditions such as Crohn's, multiple sclerosis, and fibromyalgia.^{2,3,4}

A RCT evaluating multiple sclerosis and the utility of LDN found significant improvement in quality of life for patients while on the medication.² Another investigation reported that MS patients taking LDN experienced a significant decrease in spasticity.¹ Additionally, one cohort study found the use of LDN in Post-COVID-19 Syndrome helped improve six out of the seven parameters measured (improvement of COVID symptoms, pain, energy levels, limitation in daily activities, sleep disturbance, and level of concentration; no statistical significance for improvement in mood).⁵ Systematic reviews continue to support the use of LDN in treating centralized chronic pain syndromes, and it is evident that it improves pain symptoms and overall outcomes in patients with neuroinflammatory conditions.³ Of course, further high quality studies, especially RCTs, need to be conducted on the use of LDN establishing its ability to treat specific neuroinflammatory conditions.

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