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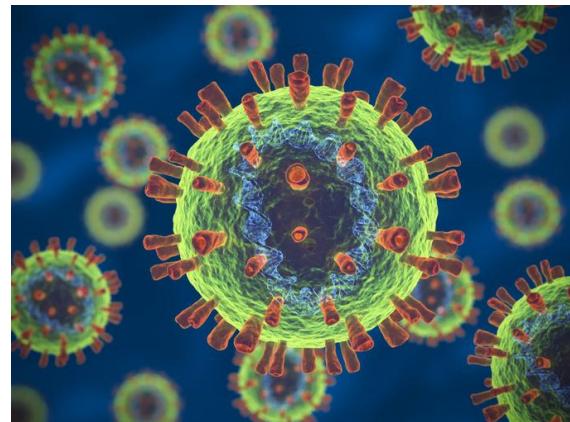


Thank you for entrusting in the compounding services at Madison Medical Compounding Pharmacy to help meet the unique medication needs of your patients. We are excited to share our monthly newsletter with you and look forward to working with you. Please don't hesitate to let us know how we can assist you and your practice.

LeAnn Chambers, Pharm.D. and Matthew Chambers, Pharm.D.

Oxytocin: Potential Adjuvant Therapy for COVID-19

Oxytocin has significant effects in the body beyond lactation and parturition. The oxytocin-secreting system closely interacts with classical immune system, integrating both neurochemical and immunologic signals in the central nervous system and in turn affects immunologic defense, homeostasis, and surveillance. Oxytocin is a neuromodulator, effective for stress, anxiety, social behavior, and depression. Significant data show that oxytocin can be useful in the treatment of COVID-19 pathogenesis. It is postulated that the reduction in plasma oxytocin due to acute and post-viral damage to the hypothalamus and oxytocinergic neurons contributes to the variable multi-system, remitting and relapsing nature of Long COVID. The intranasal route of oxytocin application was determined to be most appropriate and clinically relevant for the restoration of oxytocinergic function post COVID-19 infection. Raising oxytocin levels in the acute phase may help mitigate the frequency and severity of Long COVID due to oxytocin's multi-target protective mechanisms.
^{1,2,3}



Repurposing LDN for the Prevention and Treatment of Immunothrombosis in COVID-19

The unique properties of Low Dose Naltrexone (LDN) could be leveraged to reduce the immune-mediated thrombotic complications in COVID-19. Mechanistically, LDN can blunt

innate immune responses and Toll-Like Receptor (TLR) signaling, reducing interleukin1 (IL-1), tumor necrosis factor-alpha (TNF- α), and interferon (IFN) levels. Because of the immune-mediated thrombotic mechanisms that underlie COVID-19, researchers from the University of Michigan, Weill Cornell School of Medicine, and Icahn School of Medicine at Mount Sinai hypothesize that the immune-modulating and known pharmacologic properties of LDN could be leveraged as a novel therapeutic strategy in COVID-19.⁴

LDN in Long COVID

A single center interventional study explored the safety of Low Dose Naltrexone (LDN) in patients with Post COVID-19 Syndrome (PCS, Long COVID), defined as patients with ongoing symptoms 12 or more weeks after initial infections with SARS-CoV-2 where alternative explanation for symptoms cannot be found. Patients were recruited through a Post COVID clinic, had a baseline quality of life questionnaire, were prescribed 2 months (1 mg month one, 2 mg month two) of LDN and repeated the same questionnaire at the end of the second month. Patients were monitored for adverse events. In total, 52 patients participated of whom 40 (76.9%) were female. The median age was 43.5 years. The median time from diagnosis of COVID-19 until enrollment was 333 days. Thirty-eight participants (73.1%) started LDN, two of whom (5.3%) stopped taking LDN due to new onset diarrhea. In total 36 (69.2%) participants completed the questionnaire at the end of the two-month period. Improvement was seen in 6 of 7 parameters measured: recovery from COVID-19, limitation in activities of daily living, energy levels, pain levels, levels of concentration and sleep disturbance, and improvement in mood (which approached but was not significant p = 0.054). The study concluded LDN is safe in patients with Long COVID and may improve well-being and reduce symptomatology. Randomized controlled trials are needed to further explore this therapy.⁵

References:

- ¹ [J Neuroimmunol. 2015 Dec 15; 289:152-61.](#)
- ² [Endocr Metab Immune Disord Drug Targets. 2021; 21\(7\):1155-1162.](#)
- ³ <https://www.degruyter.com/document/doi/10.1515/hmbci-2021-0034/html>
- ⁴ [Eur Heart J Cardiovasc Pharmacother. 2022 Jun 8; 8\(4\):402-405.](#)
- ⁵ [Brain Behav Immun Health. 2022 Oct; 24:100485. Epub 2022 Jul 3.](#)

We welcome your questions.