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

## Vaginal Hyaluronic Acid for Vaginal Dryness: Comparison to Estriol

In a multicenter, randomized, controlled, open-label, parallel- group trial, hyaluronic acid vaginal gel was compared to estriol vaginal cream in women with vaginal dryness due to various causes. A total of 144 postmenopausal women below age 70 years were randomized in a 1:1 ratio to either receive hyaluronic acid vaginal gel (5 g per application) or estriol vaginal cream (0.5 g cream per application = 0.5 mg estriol) every 3 days for a total of ten applications, respectively. 133 women completed the study. At baseline, participants' characteristics did not differ significantly. Mean age was 54 years, time since menopause was 5 years on average, and cause of menopause was mostly natural. However, mean menstrual cycle days were also reported, although according to inclusion criteria only postmenopausal women were eligible for the study. During telephone contact after the third administration, an improvement in vaginal dryness was reported by about 49 % of women using hyaluronic acid vaginal gel, and by 53 % of women using estriol vaginal cream. At the final visit after the tenth administration (V2), the percentage improvement rates were 84 and 89 %, respectively. Improvement rates for vaginal itching, burning, and dyspareunia at V2 were about 86, 85, and 57 % for hyaluronic acid vaginal gel, and 82, 87, and 62 % for estriol vaginal cream, respectively. After treatment, vaginal pH was significantly lower in estriol-treated women compared to those having received hyaluronic acid. Endometrial thickness did not differ between groups. The proportion of women whose abnormal vaginal microecological results became normal was higher in women using estriol vaginal cream. Adverse events that were



suspected to be related to the investigational compounds were minor and included vaginal infection and genital itching. The authors concluded that hyaluronic acid vaginal gel was not inferior to estriol vaginal cream in women presenting with vaginal dryness. They suggested using hyaluronic acid vaginal gel not only as an alternative treatment to vaginal estrogens, but also to consider its general use in women presenting with vaginal dryness of any cause.

***Hyaluronic acid vaginal gel and estriol vaginal cream can be compounded by prescription.***

[Arch Gynecol Obstet. 2013 Dec;288\(6\):1199-201.](#)

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## Low Dose Naltrexone (LDN) for the Prevention and Treatment of Immunothrombosis in COVID-19

Coronavirus disease 2019 (COVID-19) is characterized by striking dysregulation of the immune system, with evidence of hyperinflammation, an impaired induction of interferons, and delayed adaptive immune responses. In addition to dysfunctional immune responses, thrombosis is a hallmark of severe COVID-19. Because traditional anticoagulation strategies are associated with increased bleeding, novel strategies that address both the immune and thrombotic dysfunction associated with COVID-19 would be of tremendous benefit. Pitt et al. of the University of Michigan, Weill Cornell School of Medicine, and Icahn School of Medicine at Mount Sinai discussed the unique properties of low dose naltrexone (LDN) which 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- $\alpha$ ), and interferon (IFN) levels.

The adaptive immune system is made up of natural killer cells, T-lymphocytes, B-lymphocytes and antibodies. In contrast to higher naltrexone doses, LDN stimulates T, B, and NK function.

Because of the immune-mediated thrombotic mechanisms that underlie COVID-19, they hypothesized that the immune-modulating and known pharmacologic properties of LDN could be leveraged as a novel therapeutic strategy in COVID-19.

[Eur Heart J Cardiovasc Pharmacother. 2022 Feb 18. Online ahead of print.](#)

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## COVID-19 Mortality in Women on HRT

Recent observational data has suggested that there may be a protective effect of estrogen on the severity of COVID-19 disease. A retrospective cohort study using routinely collected computerized medical records from the Oxford-Royal College of General Practitioners (RCGP) Research and Surveillance Centre (RSC) primary care database identified a cohort of 1,863,478 women over 18 years of age from 465 general practices in England. There were 5,451 COVID-19 cases within the cohort. Hormone Replacement Therapy (HRT) prescription within 6 months of a recorded diagnosis of COVID-19 infection was associated with a reduction in all-cause mortality.

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