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## Greetings!

Thank you for entrusting in the compounding services at MD Custom Rx to help meet the unique medication needs of your patients. We are excited to share our monthly newsletter with you and look forward to continuing to be your medication problem solvers. Please don't ever hesitate to let us know how we can be of further assistance to you and your practice.

Sincerely,  
*Dan, Monica and John*



## Combination Antimicrobial, Steroid, Moisturizer for Atopic Dermatitis

Atopic dermatitis (AD, eczema) often affects adults, especially those over 70 years of age. AD is characterized by pruritus, impaired skin barrier, and dysbiosis. Guidelines concur that moisturizers to improve barrier function and topical corticosteroids to reduce inflammation and itch are of central importance in AD therapy, but there is disagreement regarding the use of topical antimicrobials. The American Academy of Dermatology concludes that topical antimicrobials are generally not recommended, whereas the Joint Task Force states that an anti-inflammatory agent combined with an antiseptic may help patients colonized with *Staphylococcus aureus*. This recommendation has important implications given that approximately 70% of lesional skin is colonized with *S. aureus* and that colonization is correlated with disease severity. *S. aureus* colonization precedes AD flares, impedes skin barrier, and may drive inflammation.



Physicians from Brown University, in Providence, RI and Northwestern University, Chicago, evaluated the degree of improvement in the severity and extent of AD lesions after using a compounded antibacterial (mupirocin), steroid (betamethasone valerate), and moisturizer (vanishing cream base) combination (CASM). This was a nonblinded

retrospective review of 116 patients with AD. Multiple patients in the study had previously failed mid- or higher-potency topical steroids, systemic immunosuppressives, or phototherapy. Patients were instructed to apply the compound four times daily to the affected areas for the first 5 to 7 days, twice daily for the next 3 to 5 days, and then once daily if needed to any remaining areas for up to 1 week. They were asked to stop the medication when their symptoms cleared but could restart if they experienced a flare-up. Patients were assessed at baseline and at one follow-up visit, with an average follow-up period of 49.5 days.

Despite using a weaker steroid, almost 70% of the patients previously taking medium-potency steroids or stronger responded to CASM. Although CASM was applied more frequently than traditional therapy, the simplified treatment regimen facilitated compliance. The physicians concluded CASM may offer additional benefit for patients who have plateaued with standard therapies.

“In summary, CASM appears to be an innovative approach to treating AD, including refractory cases. With a sound scientific rationale and relatively limited safety concerns, CASM warrants further study for the treatment of AD.”

**Pediatric Dermatology Vol. 34 No. 3 322–325, 2017**

*Talk to our pharmacist today about compounded medications to meet each patient's specific needs.*

## Customized Hydroxyurea Dosing for Sickle Cell Disease

Sickle cell disease (SCD) is a serious, inherited blood disorder associated with significant morbidity and early mortality. SCD affects approximately 100,000 persons in the USA and millions of persons worldwide. The clinical sequelae of SCA begin within the first few years of life, therefore disease-modifying treatments are warranted in children with SCA, even in the absence of obvious clinical signs and symptoms. In the 1990s, hydroxyurea emerged as a promising pharmacologic therapy for SCA, and over the past 30 years has become the primary disease modifying treatment modality. More recently, hydroxyurea has been associated with improved survival for both adults and children with SCA.

Pilot studies demonstrated that hydroxyurea treatment could preserve splenic and brain function, and did not result in delayed growth or other serious toxicities. These pilot studies led to the multicenter BABY HUG study which was a Phase III double-blinded, placebo-controlled randomized trial of infants 9–17 months of age with SCA; enrollment intentionally did not require clinical severity. Although the primary study endpoints of preventing organ damage were not met, BABY HUG demonstrated positive results in almost every secondary study endpoint, whether related to acute clinical complications or measures of organ function. Infants taking hydroxyurea had fewer episodes of dactylitis and other painful vaso-occlusive events, fewer transfusions, and reduced numbers of hospitalizations. These results were especially impressive given that the study used a relatively low, fixed-dose of hydroxyurea (20 mg/kg/day) without escalation to maximum tolerated dose (MTD).

In 2014, the NHLBI released new evidence-based clinical guidelines for the management of patients with SCA and now recommends that adults be treated for many clinical indications; further, all children with SCA should be offered hydroxyurea therapy beginning at 9 months of age, regardless of clinical severity.

Experts Patrick T McGann, MD, MS and Russell E Ware, MD, PhD of Division of Hematology, Department of Pediatrics, Cincinnati Children's Hospital Medical Center advocate that hydroxyurea now be an integral part of the standard care package for all persons with SCA. There is no clearly defined or observed negative impact of hydroxyurea therapy upon fertility, and no clinical evidence of teratogenicity, but further investigation is certainly warranted as more treated patients reach adulthood. As

hydroxyurea becomes more widely accepted as the standard of care to prevent both acute and chronic complications of SCA, infants who receive hydroxyurea therapy at a very young age will represent a 'new generation' of SCA patients who live healthier and longer lives.

**Expert Opin Drug Saf. 2015; 14(11): 1749–1758.**

***Our compounding pharmacy can prepare hydroxyurea 100mg/ml oral suspension to make it easy to modify the dose based on weight. The suspension can have a beyond-use date of up to 120 days.***

## Treating Dysbiosis of the Vaginal Microbiome

Maintaining homeostasis of the vaginal microbiome, which consists of both bacteria and fungi, is essential to the health of a woman's reproductive system. Dysbiosis can be caused by behavioral (wearing tight clothing, use of vaginal lubricants, sexual activity, douching, smoking, hormone use) or biological variables (menstruation, lack of immune response). Pathologic bacteria and fungi flourish on the biofilms they create, and affect conception, pregnancy, delivery, development of infections or sexually-transmitted diseases, and the overall health of the woman.

If the cause of a vaginal infection is suspected to be bacterial or an azole-resistant fungus, then a boric acid suppository inserted vaginally at bedtime for 14-21 days may be prescribed to decrease the vaginal pH and inhibit the growth of pathogens. If the infection persists, treatment with a flucytosine vaginal cream for 14 days may be considered. "Treatment with a vaginal cream containing EDTA 0.5% and boric acid 30% for 14 to 21 days can also be effective because that compound binds calcium ions (in some pathogens, this inhibits conversion to the [disease-causing] hyphal form) and disrupts fungal biofilms." A combination of intravaginally-applied estriol and Lactobacillus acidophilus can benefit women with vaginal dryness and atrophy and repopulate the vaginal flora.

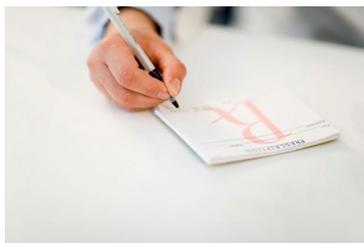
**Int J Pharm Compd. 2018 Nov-Dec;22(6):456-465.**

***Clinicians often consult compounding pharmacists to formulate preparations to treat vaginal diseases and re-establish homeostasis when commercially available products have failed or are unavailable. Our pharmacist will work together with healthcare providers and their patients to customize a therapy to meet the needs of each individual.***

***Bring us your medication problems!***

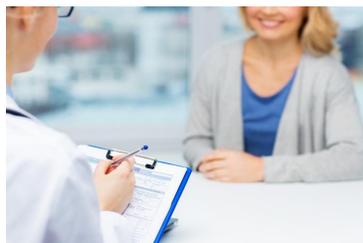
## MD Custom Rx Educational Events

We regularly offer educational events at the pharmacy. Be sure to share our events with your patients. **VISIT OUR WEBSITE** to see our schedule and to register. If you are interested in speaking on a topic, please contact the pharmacy.



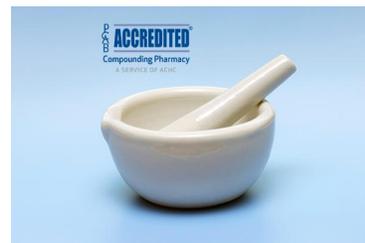
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