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

## 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. 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 benefits for patients who have plateaued with standard therapies.

[Pediatric Dermatology Vol. 34 No. 3 322–325, 2017](#)

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## Compounded Glycyrrhizin for Psoriasis Vulgaris and Generalized Vitiligo

Psoriasis vulgaris is a chronic skin condition affecting patients' quality of life. Long-term use of conventional therapy increases risks of unwanted side effects. A review of 11 randomized controlled trials which compared oral compounded glycyrrhizin (OCG) plus conventional therapy to conventional therapy alone for psoriasis vulgaris evaluated the efficacy and safety of compounded glycyrrhizin. Oral compounded glycyrrhizin in conjunction with conventional therapy enhances clinical response, and compounded glycyrrhizin as add-on therapy does not appear to pose any additional risk in the treatment of psoriasis vulgaris.

Several modalities have been used to treat generalized vitiligo in the active stage. Oral trimethylpsoralen plus sunlight showed variable results in several independent studies. Psoralens must be used with caution because of their phototoxic properties; other known side effects of this class of drugs include nausea, pruritus, and increased contrast between the lesion and normally pigmented skin. L-Phenylalanine plus UVA has been reported to yield good results in patients with slowly spreading vitiligo, but results have not been confirmed. The administration of systemic steroids in children has alleviated vitiligo in some cases, especially the rapidly progressing type, but the risk of suppression of the adrenal cortex should not be underestimated. While steroids can adequately control the condition, treatment interruption is difficult and vitiligo lesions can recur easily after interruption. Several studies suggest using methotrexate to control active vitiligo, but the side effects of this drug are significant (myelosuppression and hepatotoxicity) and it is not well tolerated by all patients. Topical steroids or topical tacrolimus are sometimes used, with variable results, to treat limited areas in patients with extensive vitiligo. Therefore, researchers have suggested there is a need for some type of combination therapy or an individualized approach to treatment because there is still no safe and effective commercially available therapy to treat patients who are in the active stage and who have not satisfactorily responded to conventional therapy.

OCG (oral compounded glycyrrhizin) has been used for years to treat several dermatologic disorders including mild to moderate alopecia areata because it effectively inhibits CD4+ and CD8+ cells and their cytokine generation. A 68-year-old male who had erythrodermic psoriasis with bullous pemphigoid was successfully treated using a combination of methotrexate and OCG.

The pathogenesis of vitiligo is not clear, but studies have demonstrated that altered cellular immunity is present in vitiligo, in addition to and perhaps in combination with a humoral immune response, and inflammation is present in the dermis. OCG can inhibit inflammatory actions and regulate T cell activation. OCG acts like corticosteroids with almost no side effects. The results of a study indicate that OCG plus narrow-band UVB or 308-nm excimer laser therapy can represent a valuable option for treating vitiligo in the active stage. The treatment may result in improved cosmetic appearance and psychosocial functioning of vitiligo patients. OCG can help stabilize the disease and narrow-band UVB treatment can promote quick pigment recovery.

When OCG combined with narrow-band UVB was administered, the percentage of patients achieving overall repigmentation was 87.5%, which is promising for active-stage vitiligo

patients. Most of the patients who did not respond to previous treatments showed excellent repigmentation after therapy with OCG and narrow-band UVB. The face and neck showed the best results, whereas the trunk and proximal extremities exhibited moderate repigmentation. In contrast, the acral sites (fingers, feet), and areas of bony prominences and with lower hair density (wrists, ankles, and joints), showed little repigmentation. Vitiligo has a negative impact on patients' quality of life, and the repigmentation of white patches, especially those on the face and other exposed areas, significantly reduced the effect of the disease on daily life. In the group treated with OCG alone, there was a 77.1% overall repigmentation rate. Therefore, those patients who are allergic to, or refuse to receive UVB treatment, can opt for OCG only.

There were some limitations to this study, such as the small sample size and relatively short investigative period. Therefore, a multicenter, randomized controlled trial is still needed to substantiate these findings. Properly designed follow-up studies should investigate the permanency of OCG plus narrow-band UVB therapy-induced repigmentation in acute-stage vitiligo.

[Curr Med Res Opin. 2016 Nov 10:1-9.](#)

[Braz J Med Biol Res. 2016; 49\(8\): e5354.](#)

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