Steroids represent a mainstay in dermatologic therapy. For decades, multiple steroids have been used in various manners to treat a range of diseases and inflammatory disorders. While they are generally beneficial to patients, clinicians and researchers have learned of potential adverse effects of corticosteroid use that are important to consider when prescribing these agents. Furthermore, effective alternative and adjunct therapies have emerged. At the 2010 Winter Clinical Dermatology Conference in Hawaii, several experts shared insights on use and application of steroids and the overall management of patients with steroid-responsive dermatoses. This article compiles a number of clinical pearls from the conference.

**Maintenance Therapy with TCIs**

Topical calcineuron inhibitors (TCIs) as an alternative to topical corticosteroids are still a treatment of interest. Interestingly, data show that use of tacrolimus 0.1% ointment (Protopic, Astellas) as an intermittent maintenance therapy reduced exacerbations and was cost-effective, compared to vehicle. As noted by Amy Paller, MD, the study found over a 12-month period a significant reduction in the incidence of AD flares among adults who applied tacrolimus two times per week compared to those who applied the ointment vehicle only. Utilization costs were lower in the active maintenance group.

An additional clinical benefit of TCIs, Dr. Paller noted, is that they serve as an alternative to corticosteroids that may improve compliance (and subsequently response) among patients who express safety concerns about topical corticosteroids.

**Barrier Care and Repair**

Barrier function has been a topic of significant interest in recent years in dermatology, particularly in relation to topical steroids. Dr. Paller observed that topical corticosteroids compromise barrier function within two to three days of use. They decrease epidermal proliferation and differentiation, decrease synthesis of lipids and lipid lamellae, and increase kallikrein expression. Dr. Paller also observed that, while the concomitant

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**Take-Home Tips.** Corticosteroids are a mainstay in the management of various dermatoses, but adjunctive and alternative therapies are important. For maintenance therapy in AD, TCIs may be cost-effective and provide good long-term results. In psoriasis, agents such as tazarotene can reverse steroid-induced atrophy, while additional of topical vitamin D analogues can provide enhanced efficacy. The notion of Barrier Care (Barrier Repair and/or Barrier Protection) continues to gain prominence, with data showing that a topical hand protectant can reduce the incidence of contact dermatitis. Patient/family education, patience, and frequent regimen review may be key to long-term therapeutic compliance.
steroid-induced suppression of inflammation leads to improvement of dermatoses, patients usually rebound if corticosteroid therapy is stopped.

Enter barrier care agents. Importantly, barrier care agents are classified as medical devices rather than drugs, noted Linda Stein Gold, MD. She observed that barrier enhancing agents do not achieve their intended used through chemical reaction. Instead, according to FDA designation, they are classified among devices intended for diagnosis, cure, mitigation, or prevention of disease by affecting the structure or any function of the body. Therefore, clinical trials may not always be required for a barrier agent to be on the market.

James Q. Del Rosso, DO noted that there are two elements of barrier care: barrier repair (the treatment of skin disease) and barrier protection (preventing skin disease). Barrier repair constitutes the replenishment of the intercellular lipid membrane. According to Dr. Del Rosso, barrier repair creams are typically ceramide-based topical emulsions that maintain hydration of the stratum corneum and reduce TEWL.

Barrier Repair. Barrier repair creams are ceramide-rich formulations that restore the skin barrier by replacing lipids. According to Dr. Stein Gold, Mimyx (Stiefel) has been shown to reduce AD flares when used along with steroids, to prolong remission, and to reduce steroid use by 62 percent. Other barrier repair creams include Atopiclair (Graceway), which has been shown to improved EASI scores and decrease the need for rescue steroids, Eletone (Ferndale), and EpiCeram (Promius), which has been shown to confer similar efficacy to fluticasone propionate cream. In a 28-day study, patients applied either EpiCeram to body and face twice-daily or fluticasone propionate 0.05% cream to body and hydrocortisone 2.5% cream to face twice daily. By day 28, patients receiving EpiCeram experienced a 56 percent SCORAD reduction, as compared to fluticasone-treated patients who experienced a 67 percent reduction. In addition, EpiCeram-treated patients had a 59 percent reduction in pruritus at 28 days, while fluticasone-treated patients saw a 66 percent reduction in pruritus. Finally, 74 percent of the EpiCeram group had reduced sleep disturbance, as compared to 88 percent of fluticasone-treated patients.

Barrier Protection. According to Dr. Del Rosso, barrier protection agents reduce contact allergy and irritation by blocking exposure. Barrier protection agents reduce positive patch tests in patients with known sensitivity, he noted, and are known for having very low irritancy potential and not exacerbating dermatitis, he said.

Tetrix (Coria) is an aluminum-magnesium hydroxide stearate-based barrier protection cream indicated to manage and relieve burning associated with eczematous, according to Dr. Del Rosso. In a 21-day cumulative irritation study, Tetrix received a mild rating under semi-occlusion and rated lower than negative control. It also protected against common allergens and improved contact dermatitis. Moreover, the study showed that substantivity is established just 15 minutes after handwashing.

Corticosteroids in Psoriasis

Cutaneous Atrophy Risks. Potent corticosteroids are associated with adverse events, such as cutaneous atrophy in the treatment of psoriasis. Mark Lebwohl, MD observed that tazarotene (Tazorac, Allergan) has been shown to reduce the effects of steroid-induced epidermal atrophy.

Glucocorticoids and Hemangiomas

There is rising interest in glucocorticoids as a potential therapy for conditions varying from alopecia to hemangiomas. June K. Robinson, MD presented data on the low risk of adrenal insufficiency following systemic glucocorticoid therapy in infants with hemangiomas. In an 18-month study of 16 infants treated with systemic glucocorticoids for hemangioma matched with 10 healthy controls, treated patients received prednisone at a starting dose of 2-3mg/kgd for four weeks, followed by a tapering period. The mean duration of GC treatment was 7.2 months. Results showed that just one out of the 16 patients had adrenal insufficiency by corticotropin testing.
Intertriginous Psoriasis. To treat psoriasis of the face and intertriginous areas low-potency fluticasone propionate ointment 0.005% may be a reasonable option, according to Dr. Lebwohl. In one study, he said, patients experienced significant results with fluticasone treatment at two weeks, and recurrence rates were lower on face and intertriginous areas.

Corticosteroid Compatibility with Vitamin D Therapies. Given the recent interest in topical vitamin D analogues, compatibility with other topical medications, such as corticosteroids, still linger. The effects of pH and temperature influence the stability of calcipotriene (Dovonex, Leo Pharma), Dr. Lebwohl said, and he noted that the agent is not compatible with many corticosteroids (hydrocortisone valerate ointment is an example). However, data indicate that using calcipotriene with a potent steroid often yields more significant results than does either agent alone. Calcipotriene ointment and halobetasol ointment in combination have also been shown to offer significant improvement in long-term psoriasis.

Clobetasol Spray (Clobex, Galderma) combined with calcitriol (Vectical, Galderma) was found to clear or almost clear psoriasis in 80 percent of patients at week 2 and in 94 percent of patients at week 4. Dr. Lebwohl also noted that a study presented at the 2007 AAD meeting regarding the chemical stability of topical psoriasis medications indicated that calcitriol and Clobetasol are compatible.

Dealing with Non-compliance
A major factor in the success of all topical therapeutic regimens, particularly topical treatments, is compliance. Dr. Paller therefore recommended that physicians review use of medications with patients at each visit rather than assume that the patient is or is not taking the medication. Reviewing medications frequently also allows repetition that may affect patient’s willingness to take the medications. Also helpful, according to Dr. Paller, is to ask the patient to bring the medication to each visit. Finally, Dr. Paller suggested the possibility of

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Steroid Responsive Dermatoses

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Case Report: Using a Skin Barrier Treatment as First Line Monotherapy for Severe Atopic Dermatitis

By Ellen Frankel, MD and Amylynne Frankel, MD

Atopic dermatitis is a chronic, cyclical, inflammatory skin condition identified by pruritus, typical lesion morphology and distribution, family history, and relapsing course. Prevalence of atopic dermatitis is estimated between 16 to 23 percent of school children and three percent of the total population of the United States. In practice, topical corticosteroids are the standard of care in managing the inflammation of atopic dermatitis, but problems with their usage, such as cutaneous complications, HPA axis suppression, and tachyphylaxis, limit the long-term use of these agents. Additionally, emollients are the standard of care in maintenance and prevention therapy and have been proven steroid-sparing. However, there is a lack of evidence evaluating the effectiveness of emollients as first line monotherapy in inflammatory conditions.

Recent research indicates that atopic patients have a genetic predisposition for epidermal barrier dysfunction that allows easy penetration of irritants/allergens and excessive transepidermal water loss (TEWL); inevitably leading to pruritus and inflammation. Clinically, many patients describe their acute flares as a period of severe pruritus followed by atopic manifestations (i.e., rashes), thus supporting the aforementioned hypothesis. For this population of atopic patients, it may be appropriate to focus treatment efforts on restoring epidermal barrier function, relieving itch, and replenishing hydration to the stratum corneum.

In recent corneometry and TEWL analysis, three commercially available, prescription-strength barrier therapies were evaluated: a hyaluronic acid based emollient foam (Onset Therapeutics), a ceramide-rich emulsion (Promius Pharmaceuticals), and a PEA-containing cream (Stiefel Laboratories). All three products were similarly effective in reducing transepidermal water loss, but their ability to deliver rapid and sustained hydration was distinctive (Figure 1)

This article describes the first case report using a prescription-
employing “patient logs,” so that the patient becomes used to administering medication consistently.

Importantly, explore reasons for treatment failure when patients are not compliant with therapy, Dr. Paller urged. There are many reasons for non-compliance, from insufficient parent involvement, avoidance of conflict, and the nature of the medication itself. That’s why she suggested that physicians should maintain a more positive approach and empower patients and families to be more pro-active about taking medications and maintaining health.

3. Stiefel, Data on file
4. Graceway, Data on file
7. Del Rosso, JCAD 2009
13. Galderma data on file

Case Report
An eight-year, two-month old Caucasian male presented with severe atopic dermatitis. The patient's parent reported the child's tumultuous history of atopic dermatitis since an early age of two months. Most recently, the patient's severe pruritus was ineffectively treated with hydroxyzine hydrochloride (antihistamine) and aluminum acetate (astringent solution) by his pediatrician. The patient's mother expressed frustration with the failure of previous treatments and was alarmed by the level of severe excoriation and lichenification that had resulted from incessant scratching over the past several weeks. Despite reporting a moderate level of pain, there was no mention of sleep disruption. Given the history of failure with multiple topical therapy regimens, including topical steroids and topical immunomodulators, a decision was made to try a different topical-based approach.

On physical examination, the patient had a body surface area involvement of 18 percent, with severe oozing, crust, and excoriation. Furthermore, the patient suffered from moderate population, lichenification, and dryness, resulting in a SCORAD of 55.4 and investigator global assessment of “severe” (5 out of 6). The patient’s guardian was instructed to discontinue all previous treatments and was prescribed a new regimen. A nonsteroidal, pH-neutral, hyaluronic acid-based emollient foam (Onset Therapeutics), was prescribed for twice daily (or as needed) use. (Figure 2)

After two weeks of therapy there, was marked improvement in almost every clinical sign of atopy (papulation, oozing/crust, excoriation, and lichenification), a 2-point improvement in investigator global assessment to “mild” (3 out of 6), and a 48 percent reduction...
in SCORAD. This improvement continued with a 79.1 percent reduction in SCORAD after four weeks of treatment, advancing recovery to an IGA score of “almost clear” (2 out of 6) with only one percent of the total body surface area affected. (Figure 3) The treatment was effective in reducing most clinical signs of atopy, however erythema was only marginally affected.

After two weeks, the patient’s mother reported a 79.3 percent reduction in his itch, using a visual analogue scale. Furthermore, the guardian noted that the two-week improvement was “excellent” as the new regimen achieved “good control” of her son’s eczema while eradicating the previously reported pain. Her enthusiasm for the regimen continued after four weeks of treatment with high satisfaction ratings and a 93.1 percent reduction in itch VAS. (Figure 4)

Discussion
Atopic dermatitis is a common, chronic relapsing inflammatory condition that often affects children. Topical corticosteroids are the gold standard in managing the inflammatory lesions of atopy, but there are several reasons an alternative approach may be necessary. There are risks associated with corticosteroid use over long periods, for large body surfaces and intertriginous regions. Furthermore, a recent study reveals that during an active atopic flare, corticosteroids have a positive affect on improving barrier function, but during an atopic remission, corticosteroids can be detrimental to epidermal barrier function as they can promote barrier breakdown. If contemporary opinion indicating that epidermal barrier dysfunction is the fundamental precursor to the pruritus and inflammation of atopic dermatitis holds true, then there is a need for clinically proven therapeutic alternatives.

Recently, barrier therapy has emerged as an effective adjunct treatment for patients with active atopic dermatitis. An effective barrier therapy should establish a superficial barrier that protects against potential irritants/allergens, normalizes transepidermal water loss, restores stratum corneum hydration, and supports the skin’s natural recovery from barrier dysfunction.

This article reports the first case of using a new, hyaluronic acid–based, pH–neutral, nonsteroidal emollient foam as a first line monotherapy for severe atopic dermatitis. The patient presented with widespread, severe atopic dermatitis. Following four weeks of treatment, the patient was almost clear of all signs of atopy. While the patient’s mild erythema was unaffected by the treatment, the severe pruritus (excoriation) and moderate lichenification, papulation, oozing/crust, and dryness were significantly improved. Although more clinical work is needed, the positive therapeutic outcome in this patient suggests that barrier treatments may be a safe and effective alternative for first line, monotherapy treatment of atopic patients with mild erythema and severe clinical manifestations of pruritus.

Dr. Ellen Frankel has received honoraria from Medicis, Candela, Amgen, Wyeth, and Onset. Dr. Amylynne Frankel has no financial interests to report.