There is much ado about the use of a compounded antibacterial, steroid, and moisturizer (CASM) cream to treat atopic dermatitis (AD) on the Internet, and many patients with recalcitrant eczema swear by this treatment, also known as the Aron Regimen (“Regime” in the UK and elsewhere).

The regimen, named for Richard Aron, MD, a dermatologist in London who has long prescribed this combination for AD, first came to my attention when a patient asked to try it. In learning about it, I found that while the precise ratio of each ingredient is tailored to the patient, the amount of moisturizer is typically 10-fold greater than the amount of steroid (usually betamethasone) and the antibacterial (mupirocin in the US and fusidic acid in the UK and abroad) in the final compound. Upon hearing this, my initial response was one of profound skepticism. However, these are generic medications and relatively inexpensive to have prepared by a local compounding pharmacy, so it seemed reasonable—and reasonably safe—to honor the patient’s wishes.

About a week later I received a startling phone call: the patient was crying into the phone, telling me “this was the best thing I had ever done for her.”

Given the significant morbidity that even moderate atopic dermatitis can have on quality of life, as well as the adverse effects (both real and perceived) associated with the long-term use of topical corticosteroids, any treatment that can minimize risk and possibly improve quality of life seems worth investigating. With this in mind, as well as the glowing report from my initial patient, I sought out further experience with CASM in patients who were struggling or not satisfied with their current treatment regimens.

To that end, we recently published a case series looking at the efficacy of this compound in 116 AD patients, and found that it may be even more effective than some conventional approaches, at least in some patients.

Importantly, multiple patients in the study had previously failed mid- or high-potency topical steroids, and many had been on systemic immunosuppressants or phototherapy. We dubbed these the “standard therapy group” to differentiate them from treatment-naïve patients and those who had only been treated with mild corticosteroids in the past. Patients were assessed at baseline and at one follow-up visit, with an average follow-up period of 49.5 days. We included all patients with AD in the database who were prescribed CASM and had one subsequent follow-up appointment, and excluded patients who had newly started a systemic immunosuppressant or phototherapy at the time of beginning CASM.

We explained to each family that we were skeptical that CASM would work—and that it really shouldn’t work—as many had been on similar, often more potent, medications and regimens and plateaued.

**WE WERE WRONG.**

We found a decrease in mean disease severity of 1.4 points on a 6-point scale and an average decrease in body surface area (BSA) affected of 23.2 ± 2.5 percent after CASM treatment in the main group, and—surprisingly—a decrease in mean severity of 1.4 points and average decrease in BSA affected of 19.7 ± 2.8 percent in the “standard therapy group,” i.e., those who had been already been treated more aggressively.

Despite the low potency of the compounded steroid and the diluted mupirocin, almost 70 percent of patients who previously used medium potency or stronger steroids responded to CASM. And, perhaps more telling than the numbers was the fact that we heard echoes of the initial...

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**THE ARON REGIMEN**

Developed by Richard Aron, MD. The precise ratio of each ingredient is patient-specific.

- Moisturizer (typically 10-fold greater than the amount of steroid and antibacterial)
- Steroid (usually betamethasone)
- Antibacterial (mupirocin in the US and fusidic acid in the UK and abroad)
“Although many questions linger, it seems that the Aron Regimen may hold some keys to improving our therapeutic armamentarium—especially for those patients who are unhappy with their conventional therapy.”

patient report from others over and over: “This is the best thing you have ever done for us.” Such good improvement from an approach that may lower the risks associated with steroid use seemed worth reporting.

ANTIBIOTICS VERSUS BLEACH BATHS?

An initial thought as to the reason this lower potency preparation is effective is that the antibiotic is playing a key role. However, using an antibiotic in uninfected AD is controversial as modern guidelines discourage antibiotic use due to concerns of antibiotic resistance. Increasingly, however, consensus suggests that the microbiota is abnormal in AD and that this abnormality is not simply an epiphenomenon. Recently a toxin (“delta toxin”) produced by the abnormal but nearly ubiquitous Staphylococcus aureus bacteria on the skin has been shown to actually induce eczematous changes in healthy skin.²

Mupirocin resistance is certainly concerning, and undoubtedly antiseptics such as bleach would be superior in this role, removing the risk of resistance. However, more recent data have begun to converge on a strange phenomenon. Recently a toxin (“delta toxin”) produced by the abnormal but nearly ubiquitous Staphylococcus aureus bacteria on the skin has been shown to actually induce eczematous changes in healthy skin.

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In a cross-over trial of 40 patients, Hon, et al.³ concluded that a “regime of diluted bleach baths is not more useful than water baths in reducing S. aureus colonization/infection and improving AD.”

And in a randomized, placebo-controlled clinical trial in 21 children, Gonzalez, et al. demonstrated that treatment with a topical corticosteroid with or without bleach bath led to “similar significant clinical improvements, associated with restoration of microbial diversity and decreased numbers of total bacteria,” suggesting that the bleach baths did not actually add any additional antimicrobial effect.⁴

Moreover, a study by Perez-Nazario, et al.⁵ sought to characterize the mechanism of action of bleach baths. They noted that after 12 weeks, “the majority of atopic dermatitis patients were still culture positive after bleach treatment.” They concluded that “the benefit observed with bleach baths is likely mediated by improvement in skin barrier function... and reduction in itch intensity but not in normalization of the skin microbiome...” Thus, for the appropriate patient where there is such a need, the risk of mupirocin resistance may be outweighed by the potential clinical benefits, especially in the face of far more worrisome types of resistance with oral agents.

RELATIVE SIMPLICITY

With the Aron Regimen, the compound is applied four to six times per day in the first week, and then tapered down over time based on the severity of the eczema and the response. And indeed, such frequent applications of even moisturizer alone may account for some of the improvement noted here.

At face value, applying the cream so frequently may seem pretty high maintenance. But this is counterbalanced by the fact that, as an all-in-one, CASM is a single-step application. This is as opposed to multi-step regimens that include soaking, patting dry, applying the medicine, a moisturizer, a damp layer, and a dry layer. This simplicity may be another reason it works so well: by simplifying the regimen, adherence improves.

Although many questions linger, it seems that the Aron Regimen may hold some keys to improving our therapeutic armamentarium—especially for those patients who are unhappy with their conventional therapy. Its relatively low cost and simplicity makes it even more attractive for those who continue to suffer with AD. Perhaps with more study, the fruits of new understanding of AD will emerge from these somewhat controversial beginnings.

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