ADVANCES IN MANAGING HYPERKERATOTIC CONDITIONS

A review of a new formulation to manage keratosis pilaris and damaged and cracked heels.
The new SA Renewing Lotion from CeraVe is formulated with salicylic acid, ammonium lactate and vitamin D3 to repair, restore and renew skin, making the product ideal for dry, cracked heels or keratosis pilaris. This article reviews these two conditions, the new CeraVe SA Renewing Lotion and the ways in which the new lotion helps patients with these conditions.

Hyperkeratotic Conditions: Dry, Cracked Heels or Keratosis Pilaris

Hyperkeratosis is a condition marked by thickening of the outer layer of the skin.¹ The condition’s etiologies include eczema (chronic inflammation), X-linked ichthyosis/ichthyosis vulgaris (genetic disorders) and corns/calluses (normal use).¹ Going barefoot and biomechanical factors (increased body weight) also play important roles in its development. It occurs because of hypertrophy of the stratum corneum.²

Dry, cracked heels or keratosis pilaris are two types of hyperkeratotic conditions. Dry, cracked heels occur for a number of reasons, according to Joseph Bikowski, MD, FAAD, of Bikowski Skin Care Center in Sewickley, PA, including the anatomic features of the heels, skin dryness and trauma, which is often minor, or a combination of these factors.

The convex shape of the heel causes tension, which contributes to the phenomenon of cracked heels (see Figure 1), and is why the fingertips can also crack, Dr. Bikowski explains. Keratosis pilaris (KP) (see Figure 2) causes rough patches and small, acne-like bumps on the skin — on the facial cheeks and, most commonly, on the arms, thighs and buttocks.³ KP is a genetic disorder of keratinization of hair follicles of the skin⁴ that can also be associated with dryness and, sometimes, perifollicular erythema, according to Dr. Bikowski.

Neither condition is associated with increased morbidity or mortality.³⁴ Effective treatment options are limited, according to Dr. Bikowski. The primary treatment option is moisturizing.

“Moisturizing is key, with the ultimate goal, in the case of dry, cracked heels, to restore hydration and encourage proper barrier function,” Dr. Bikowski says. “In the case of KP, topical moisturizers help to relieve the dry, rough feel often associated with the condition. Application of moisturizers under occlusion can also help enhance skin hydration. Patients apply a thick moisturizing agent to the affected areas, then place a clean sock over top. This should be done at bedtime.”
Both conditions may also benefit from the use of keratolytics, Dr. Bikowski explains. Keratolytics are used to soften skin and facilitate the removal of epidermal cells; some examples include salicylic acid and urea. Keratolytics “desquamate the thick, keratinized skin of the heels and increase suppleness, to withstand trauma,” Dr. Bikowski explains. “In KP, keratolytics can help to unplug the pores and reduce the formation of bumps.”

According to Dr. Bikowski, cracked heels and feet may be mediated by other factors, such as dermatophyte infections. In the case of infection, he explains, inflammation and a compromised epidermal barrier may heighten the likelihood of trauma and dryness. No known factors for KP are within a patient’s control, Dr. Bikowski explains.

CeraVe SA Renewing Lotion

What is the SA Renewing Lotion?

The new SA Renewing Lotion from CeraVe is used for extremely dry, rough, bumpy skin, making it a good moisturizer for patients with cracked heels or KP. The product was formulated in conjunction with dermatologists and is designed to exfoliate, smooth and soften extremely dry skin. In the case of dry, cracked heels or KP, SA Renewing Lotion can serve a dual purpose, by helping to slough off damaged skin cells and encourage the growth of new, healthy skin.

As with all CeraVe products, the new SA Renewing Lotion includes ceramides, which help to restore, repair and maintain the skin barrier. The new lotion is also formulated with salicylic acid and ammonium lactate, two key ingredients that help to loosen and exfoliate dead skin cells. This process lets the moisturizing agents penetrate the deeper layers of the skin for enhanced effectiveness. Also included in SA Renewing Lotion is vitamin D, another key ingredient that helps to keep skin looking smooth and hydrated.

How do the key ingredients work?

Salicylic acid is a member of the beta hydroxy acid family. This lipid-soluble agent is used for epidermal exfoliation. Salicylic acid breaks up keratin in hyperkeratotic conditions, enhances the shedding of thick skin and softens newly growing skin. SA Renewing Lotion contains 3% salicylic acid.

“Salicylic acid is one of the most commonly prescribed agents used to treat KP,” Dr. Bikowski explains.

CASE STUDY

Joseph B. Bikowski, JR, MD, FAAD

A 39-year-old moderately obese Caucasian female presented with a many-year history of dry, painful heels. She reported that a number of over-the-counter medications had been ineffective. A KOH preparation for dermatophytes was negative and, on examination, the weight-bearing sides of the heels were dry, flaking and cracked.

The patient was instructed to apply CeraVe SA Renewing Lotion to the affected area twice a day for 2 weeks. Upon her return visit after 2 weeks of twice-daily application of the lotion, the skin of the heels was essentially normal in appearance and feel (see Figures 3a and 3b).
“Its incorporation into a moisturizing, barrier-supporting topical lotion is a benefit for patients.”

**Ammonium lactate** is a combination of alpha hydroxy acid (AHA) and lactic acid that is neutralized with ammonium hydroxide. Ammonium lactate relieves dry skin by increasing the moisture content of the stratum corneum, the skin’s outermost layer. AHA acts as a humectant and has a normalizing effect on the skin. Lactic acid has also been shown to reduce the thickened stratum corneum that results from hyperkeratotic conditions. SA Renewing Lotion contains 3.5% ammonium lactate.

“Ammonium lactate also helps restore moisture while reducing skin thickness and roughness,” explains Dr. Bikowski.

**Vitamin D₃** helps to maintain healthy skin that is firm and supple. Analogs of vitamin D₃ such as calcipotriene and becocalcidiol have been shown to be effective in psoriasis; it was particularly effective for resistant plaques and lesions on the face. Vitamin D₃ has also been effective for the treatment of vitiligo, scleroderma and actinic keratosis. It’s said to have antipruritic, anti-inflammatory and healing properties in psoriasis treatment. All these factors may play a role in the use of vitamin D₃ for skin conditions.

**The role of multivesicular emulsion technology**

CeraVe skincare products feature multivesicular emulsion (MVE) technology (see Figure 4), a patented process that delivers CeraVe products into the skin over a period of time, rather than all at once. This delivery method also “locks in” moisture.

“The MVE technology facilitates slow release of ceramides over time, which means continuous skin moisturization,” Dr. Bikowski explains. “This is a practical benefit for both cracked heels or KP, as patients are unlikely to remove their shoes or clothing to re-apply moisturizer multiple times throughout the day.”

Additional benefits for patients with cracked heels or KP

The ingredients in CeraVe SA Renewing Lotion work together to exfoliate and remove dead skin cells and help soften the new skin that is regenerated. The MVE technology allows for a continuous dispensation of products, which is crucial for patients with hyperkeratotic skin conditions. SA Renewing lotion is also non-comedogenic and non-irritating.

“The unique combination of these exfoliating keratolytic agents and humectants within a formulation containing barrier-supporting ceramides is expected to optimize patient response and enhance healing,” Dr. Bikowski says.

**Disclosure:** Dr. Bikowski is a consultant for Valeant.

**References**

7. When your skin hits a bumpy patch, change direction with new CeraVe SA Renewing Lotion! [press release]. New York, NY: The Lane Communications Group; February 6, 2012.