Cosmetic Management of Patients with Rosacea

A discussion of optimal uses for rosacea products and non-prescription care.

BY DIANE S. BERSON, MD, FAAD

While there are many therapeutic options available for the treatment of rosacea, none are curative; continuous flares characterize the condition. The most validated topical therapies include metronidazole, azelaic acid, and sodium sulfacetamide-sulfur, whereas others, such as benzoyl peroxide, clindamycin, and retinoids, show varying degrees of success. Management of these patients is multifactorial, including counseling regarding triggers, skin care, prescription therapies, and in-office procedures.

COSMETIC AND PSYCHOLOGICAL IMPACT

Facial appearance plays a large role in a patient’s quality of life (QOL), including self-perception and interaction with others, and the visible aspects of rosacea can affect patients’ self image.

The application of decorative cosmetics was found to increase patients’ QOL and can complement the treatment of disfiguring skin diseases. One study assessed factors associated with health-related QOL in 73 women with visible facial skin lesions from rosacea, acne, dermatosis papulosis, hypopigmentation, lentigines, melasma, vascular proliferations, and other facial scars. The study showed that severe facial blemishes of any cause have a significant impact on women’s QOL, and the effect of these lesions is mediated in part by psychological characteristics related to self-perception and self-presentation.

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Patients with rosacea suffer from body image disturbances and low self-esteem and often have expectations of “immediate gratification,” leaving dermatologists at a loss. Not only must dermatologists appreciate and understand this emotional aspect when choosing an appropriate treatment plan, but patients must be realistic. Overall, compliance and adherence to a regimen are key to improvement.

THE ROSACEA REGIMEN

Cleanse. Cleansing will help emulsify and solubilize dirt, sebum, and irritants, allowing them to be rinsed away. Surfactants can damage the stratum corneum, leading to a decrease in lipids and natural moisturizing factor. In turn, the barrier is compromised and transepidermal water loss (TEWL) is increased. Thus, recommend moisturizing syndet and lipid-free cleansers that contain mild synthetic surfactants and emollients. Patients should avoid abrasive, harsh scrubs and alcohol-based products.

Moisturize. Epidermal barrier repair products can improve tolerability without compromising efficacy of topical therapies. Emollients and moisturizing ingredients, such as physiologic lipids, ceramides, cholesterol, and free fatty acids, will restore the compromised bar-
rier. Moisturizers with humectant and occlusive ingredients help maintain healthy, hydrated skin. Humectants include glycerin, propylene glycol, and hyaluronic acid, which attract water to the stratum corneum. Occlusives will seal and therefore decrease TEWL. Patients may feel more comfortable with “oil-free” products with silicone or dimethicone, which are commonly non-comedogenic and non-acneigenic. Patients can use their medication first and then apply moisturizer. However, some patients find applying a thin layer of moisturizer under the topical medication is helpful.

Protect. Sun exposure exacerbates rosacea flares, and some medications for rosacea may increase sun sensitivity. Inorganic, or physical, sunscreens scatter and reflect solar radiation across a broad spectrum in the UV and visible ranges and usually include zinc oxide or titanium dioxide. New filters and technologies (e.g., adding antioxidants and anti-inflammatory or light-scattering beads) help these agents minimize visible light scattering and help make the particles appear less visible on the skin. Patients find those formulations with microfine particles to be smooth, light, non-greasy, transparent, and cosmetically appealing. Irritant or sensitization reactions rarely develop with either agent, and they are typically recommended in patients concerned with contact sensitivity.4-6 Regardless of popular reports to the contrary and modifications to the US Food and Drug Administration’s sunscreen monograph, research suggests these particles of zinc and titanium in sunscreen do not penetrate the skin past the stratum corneum and are safe to use.7-10

COSMETICS
Mineral makeup has become one of the fastest growing sectors in the cosmetics market.11-13 Its popularity also extends to patients with rosacea. Encouraging makeup use not only shows patients that it is fine to camouflage rosacea, but also can improve treatment compliance. Mineral makeup products can also provide protection from UV light. Some popular mineral makeup products include as their base titanium dioxide, zinc oxide, or bismuth oxychloride, a micronized powder that deflects light and helps reduce the appearance of pores and fine lines. Vinyl dimethicone crosspolymer is a silicone derivative that lubricates and absorbs sebum, while talc microspheres absorb oil and dimethicone serves as a mattifying stabilizer. Typically, mineral makeup is considered non-comedogenic, hypoallergenic, and less fragrant than other products.

ANTI-INFLAMMATORIES
Overall, patients with rosacea suffer from sensitive skin—easily irritated and inflamed, with defective barrier and vasomotor instability. Endogenous anti-microbial peptides (i.e., cathelicidin and β-defensin) are increased. Neutrophils release potent inflammatory mediators, including reactive oxygen species (ROS) and matrix metalloproteinases. ROS and other free radicals may contribute to intrinsic and extrinsic aging, both of which accentuate clinical manifestations of rosacea.14

There are anecdotal benefits of cosmeceutical anti-inflammatoryatories. Niacinamide (β3) is an antioxidant and humectant that improves barrier function and increases the synthesis of lipids (e.g., ceramides, free fatty acids) and epidermal proteins (e.g., keratin, filaggrin). Flavonoid polyphenols have their benefits as well: soy has been shown to increase skin thickness; green tea can reduce sunburn cells and erythema; and coffee berry can also reduce UV-induced erythema. Botanicals decrease proinflammatory mediators (e.g., cytokines, prostaglandin). Examples of botanicals in skincare include oats (avenanthramides), feverfew, olive oil, chamomile, aloe vera, licorice extract, curbumin, lycopene, mangosteen, and caffeine.

Cassia alata, a leaf extract from the ringworm bush, has anti-fungal, anti-microbial, and anti-inflammatory properties; when combined with a photostabilizer, it aids in photoprotection for patients with rosacea.

BIOAVAILABILITY
Advances in formulations and vehicles or reformulations of existing actives have led to more appealing preparations and novel delivery systems for topical therapies. Vehicles now feature more humectants and emollients (e.g., glycerin, hyaluronic acids, dimethicone) and emollient foams with dimethicone. The microencapsulation of actives through microsponges or the use of microspheres leads to slower, controlled release and improved tolerability. Liposomes are spherical vesicles that fuse with stratum corneum;

**PIGMENT LIGHTENING**

<table>
<thead>
<tr>
<th>Pigment Lightening Agent</th>
<th>Effect</th>
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<tr>
<td>Hydroquinone</td>
<td>inhibits tyrosinase activity</td>
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<tr>
<td>Kojic acid</td>
<td>decreases melanin content in vitro</td>
</tr>
<tr>
<td>Vitamins C and E, azelaic acid</td>
<td>decreases tyrosinase activity</td>
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<tr>
<td>Ellagic acid (polyphenol)</td>
<td>decreases tyrosinase</td>
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<tr>
<td>Pycnogenol</td>
<td>decreases UV pigmentation</td>
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<td>Fatty acids (linolic acid)</td>
<td>tyrosine degradation</td>
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<tr>
<td>Niacinamide (β3)</td>
<td>inhibits transfer of melanosomes to epidermal keratinocytes</td>
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<td>Soy (STI)</td>
<td>reduces melanin transfer</td>
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Two vasoconstrictors have the potential to reduce the symptoms of rosacea. Brimonidine tartrate gel, based on a molecule currently approved for glaucoma, was found to reduce redness, flushing, blushing, and general erythema in patients with moderate-to-severe rosacea.1 Results show a novel topical formulation of oxymetazoline, currently approved only as a nasal spray, is a vasoconstrictor that can help treat the erythema and flushing associated with rosacea as well.2

NEW OPTIONS

The altered production of anti-microbial peptides may be implicated in the pathogenesis of various human diseases such as psoriasis, atopic dermatitis, and rosacea.15 Cathelicidin dysfunction is a central factor in the pathogenesis of rosacea, in which cathelicidin peptides are abnormally processed to induce inflammation.16 Dermocorticosteroids have anti-inflammatory, vasoconstrictor, anti-proliferative, anti-synthetic, and immunosuppressive actions.17 They may be used for very brief courses as rescue therapy to calm inflamed rosacea and reduce redness. However, prolonged treatment will actually worsen the condition.

Topical vasoconstrictors should soon be approved for the treatment of erythematotelangiectatic rosacea. Brimonidine tartrate is currently approved for glaucoma and oxymetazoline as a nasal spray. Clinical trials have shown encouraging results with improvement of erythema in a short amount of time. Research also suggests the use of topical botulinum toxin type A gel may help treat facial sweating and flushing, which may be helpful for patients with rosacea.18

PROCEDURES AND PEELS

Intense pulsed light and vascular lasers can be used for reduction in redness and flushing, improved skin texture, and fewer breakouts.19 In addition, patients with rosacea can see improved results when standard regimens are supplemented with salicylic acid (SA) peels and lotions.20 SA peels are helpful for acne, post-inflammatory hyperpigmentation, enlarged pores, and improving surface texture. The newer polyhydroxy and bionic acids offer the benefits of alpha hydroxy acid without irritation, making them suitable for use on sensitive skin, rosacea, and after cosmetic procedures.21

PRODUCTS AND TREATMENTS TO AVOID

In treating patients with rosacea, it is best to avoid harsh cleansers, exfoliations, scrubs, or those with alcohol or witch hazel ingredients. Dermatologists should also advise patients to avoid self-treatment. In addition, over-the-counter (and some prescription) medications can cause irritant reactions. Oil-based moisturizers and even hair styling products should be eliminated as well to avoid the potential for exacerbated inflammation.

Dr. Berson serves as a consultant for Calderma, Allergan, Medicis, Neutrogena, La Roche Posay, and Procter & Gamble.

Diane S. Berson, MD, is an Assistant Professor of Dermatology at Weill Medical College of Cornell University in New York.