

MAKING MELASMA MORE MANAGEABLE

New approaches to treatment are helping dermatologists achieve better results.

Bonnie Darves, Contributing Editor

Dealing with severe or refractory melasma can be challenging for all concerned. It's understandably distressing to patients. And it's often frustrating for dermatologists when patients either have unrealistic expectations for treatment or fail to follow the recommended self-care regimen to avoid exacerbations or decrease recurrence.

RECOGNIZING THE PROBLEM

There's still no cure on the horizon for this common and often chronic disorder, which recent research suggests may have both an epidermal and dermal component as well as a genetic underpinning that is not just based on race or skin type.

Some dermatologists, however, are making substantial progress toward achieving long-term remission by employing a stepwise strategy of tailored combination therapies. Prescription topicals with hydroquinone, tretinoin

and a range of acids, and possibly corticosteroids, have long been the mainstay of melasma treatment. Today, cosmeceuticals are receiving a boost from chemical peels and microdermabrasion and, of late, targeted laser therapy using both new and standard devices. This combination appears promising as a new avenue for melasma treatment.

This broad-swath approach, when combined with aggressive initial patient

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education and frequent “re-education” to improve patient self-care, provides a good chance for keeping hyperpigmentation at bay, says Seattle dermatologist Jennifer

Reichel, MD, who teaches dermatologic surgery at the University of Washington.

“I've always relied heavily on topicals and still do, and even if I will also treat patients with laser or chemical peels, I am insistent that they stay on combination tretinoin and hydroquinone because it's that combination that maintains the ‘new’ skin and reduces recurrence,” says Dr. Reichel.

The use of laser therapy, which remains

controversial because of the risks of worsening hyperpigmentation, is a relatively recent add-on for Dr. Reichel. And it's been a winner. In particular, she is obtaining



good results from conservative application of Fraxel Dual's new 1927 wavelength.

"It's the first laser I've had consistent success and results with in treating melasma," she says.

Dr. Reichel, who sees a lot of melasma patients in part because of the large Asian population in Seattle, developed a keener interest in treating the condition when she developed it a decade ago after taking birth-control pills.

"At the time, I went off the pill and treated myself with a combination of IPL photofacial and topical medications — and it never came back," Dr. Reichel says. "But I know I was incredibly lucky, because I know that 95% of the time, once you get it, you deal with it over a lifetime."

WITH LASER, START LOW AND GO SLOW

New York City dermatologist Arielle Kauvar, MD, has also added laser to her existing melasma armamentarium and sees laser as the modality of choice for refractory cases when used cautiously.

"I've developed a procedure combining microdermabrasion, Q-switched YAG laser and topical hydroquinone that produces excellent improvement in melasma with minimal risk and no downtime," says Dr. Kauvar, director of New York Laser & Skin Care and clinical professor of dermatology at NYU School of Medicine. "I also stress adequate sun protection — with not just sunscreen but also a broad-brimmed hat — which I believe is one of the most important components in the treatment plan to obtain good clearance."

The key to clearing melasma, Dr. Kauvar maintains, is avoiding high-energy laser treatment such as non-ablative or ablative fractional lasers, IPL or high-energy, Q-switched laser treatment. "Those can actually exacerbate melasma and cause hypopigmentation in darker phototype skin," Dr. Kauvar cautions. The laser she uses is a low-fluence 1064-nm Q-switched Nd:YAG (Candela TriVantage).

In her quest for appropriate combination therapies in hard-to-treat patients, Dr. Kauvar recently studied the Q-switched laser in concert with microdermabrasion and tailored topical regimens and saw very good results. Fully three-quarters (81%) experienced



Figure 1A. Patient's pronounced melasma prior to the combination treatment. Photo courtesy of Joel L. Cohen, MD.



Figure 1B. Patient after IPL treatment, a superficial non-ablative fractionated erbium:glass laser resurfacing and a chemical peel on the same visit. Photo courtesy of Joel L. Cohen, MD.

a 75% improvement and 40% achieved 95% or greater clearance.

The patients, 27 females (phototypes II to IV but predominantly III) with refractory mixed-type or dermal melasma, underwent microdermabrasion and between two and four laser treatments

The combination-therapy approach appears to work, Dr. Kauvar proposes, because microdermabrasion speeds epidermal cell turnover and decreases laser light scattering and the Q-switched laser, even at low fluences, directly affects both melanocytes and melanosomes.

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monthly. Patients with normal skin were treated topically with 4% hydroquinone daily in combination with tretinoin and 40 SPF sunscreen. In those with sensitive skin, ascorbic acid was substituted for tretinoin. The treatment was repeated at 4-week intervals (with a mean of 2.6 treatments) and follow-up assessment occurred 3 to 12 months after the final treatment.

"The reason this [treatment strategy] works so well is because it doesn't cause inflammation or trauma in the skin," Dr. Kauvar says, which can exacerbate melasma.

All patients in the study said that the treatment was not painful and reported minimal pinkness, Dr. Kauvar notes. A few experienced partial recurrence of their melasma, which was readily cor-



Figure 2A and 2B. Patient before (left) and after 11 weeks (right). Patient received four PCA Peel with Hydroquinone and Resorcinol treatments (14% lactic acid, 14% salicylic acid, 14% resorcinol, 2% hydroquinone, 3% kojic and citric acid) in addition to daily use of PCA SKIN Facial Wash (aloe and lactic acid-based cleanser), Pigment Gel (2% hydroquinone, kojic acid and azelaic acid treatment gel), C-Quench (15% ascorbic acid serum), A&C Synergy Serum (retinol treatment serum), ExLinea (peptide wrinkle reducer), Apres Peel Hydrating Balm (nighttime hydrator), and Hydrator Plus SPF 25 (sunscreen moisturizer). *Photos courtesy of Jennifer Linder, MD.*

rected with continued use of the topical regimen. The study has been submitted for publication.

Some dermatologists, especially those who have “inherited” patients who have been over-treated with light therapies in other offices, aren’t inclined to jump on the laser bandwagon. Sonia Badreshia-Bansal, MD, a clinical instructor with UC San Francisco who maintains a private practice in Danville, CA, is among the naysayers.

“I believe that laser and light therapies, especially the common IPL and [fractionated] laser treatments, can, in fact, exacerbate melasma, since heat is considered a trigger,” she says, adding that she has seen several cases of worsened melasma post-laser treatment.

“It is difficult with dark skin to find treatments that provide substantially effective results for moderate-to-severe melasma [that also carry] very low risk of post-inflammatory hyperpigmentation,” Dr. Badreshia-Bansal says.

Pearl Grimes, MD, director of the Vitiligo and Pigmentation Institute of Southern California in Los Angeles, is also skeptical about laser’s utility in melasma.

“We can laser resurface from here until doomsday and the melasma will still come back, I think,” Dr. Grimes says. “Besides, whatever physical modality you use, if you don’t proceed cautiously, you can make melasma worse.”

Even while acknowledging the possible overtreatment risks, Dr. Reichel

contends, that in the right hands and with the right patient (skin type III or lower), laser is a good first-line treatment. In her view, laser is fast becoming preferable to chemical peels as a first-line treatment, despite the fact that she uses peels heavily to treat a range of conditions, including melasma.

NEW PEELS, COMBINATION-TOPICALS APPROACHES EMERGING

For both Drs. Grimes and Badreshia-Bansal, topical regimens — both standard and newer therapies — in combination with chemical peels or microdermabrasion comprise the foundation of optimal treatment, supported by strict sun protection.

Among the peels, Dr. Badreshia-Bansal’s current preference is an ar-

butin/retinol peel (Melanage) that she cautions that she uses the latter acid sparingly and cautiously because of its risk, however slight, of causing hyperpigmentation and stinging. Dr. Badreshia-Bansal uses microdermabrasion before, during and after active treatment to enhance penetration of both the topicals and the peels.

Some dermatologists are finding success in trying out various combinations of and application schedules for topicals to achieve sustained remission without side effects. In patients with moderate-to-severe melasma, Dr. Grimes may start with either topical bleach or a combination formulation of fluocinolone acetonide 0.01%, hydroquinone 4% and tretinoin 0.05% (Tri-Luma).

For many patients, Dr. Grimes uses hydroquinone initially as a mainstay,

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butin/retinol peel (Melanage) that she finds improves the superficial components of melasma while minimizing long-term or transient side effects such as scarring because arbutin has low cytotoxicity. Most peels that aid in exfoliation — those containing lactic, salicylic or mild glycolic acid, for example — can be effective, she adds. But

adding a retinoid at night. Sometimes, she switches patients from hydroquinone to bleach about 6 months into treatment when hydroquinone has a tendency toward reduced efficacy in many patients.

“I usually prime the skin with prescription home care and stringent sun protection/avoidance,” Dr. Badreshia-

Bansal explains, and a zinc-based sunscreen in addition to the microdermabrasion. In hydroquinone-sensitive patients, she may use second-line combinations including azelaic acid, kojic acid, arbutin, niacinamide or soy, sometimes in combination with exfoliants such as glycolic acid, vitamin C or retinoids.

Dr. Badreshia-Bansal, who has written extensively on skin-lightening cosmetics (see Resources), is actively trying emerging products but cautions that dermatologists should look at the data before fully embracing them. In particular, she had moderately high hopes for hydroquinone-free products containing lignan peroxidase, which causes decolorization in trees due to lignan degradation and reportedly has a similar molecular structure to melanin. However, besides the lack of data on effectiveness, her experience with such products has shown minimal results to date.

Regardless of the topical regimen used, it's important to make it as simple as possible for the patient by prescribing combination formulations or user-friendly skin-care systems, Dr. Reichel urges. In the latter category, she has seen good results over the long term with Obagi products.

"I don't want to market particular skin care lines, but this one works well, and, as a system, it's well above and beyond [prescribing] the tube of hydroquinone and a tube of retin A," she says. "It's much better, in part because patients tend to actually use it because it's a system."

Depending on the patient's treatment timeline, Dr. Reichel usually starts with laser and moves on to the hydroquinone-containing topical regimen after 2 weeks. If the patient is in a rush, she adds a peel into the mix early on. Her current preferences in that category are combination acid peels that utilize high-dose retin A (about 14%), such as SkinMedica.

"Those peels target the melasma a bit better than others on the market, I think, but they can carry a risk of over-treatment," Dr. Reichel cautions.

When treating melasma with either single or combination therapies, avoiding overtreatment and exercising extreme caution with patients at risk for that outcome is the name of the game, Dr. Badreshia-Bansal maintains. She explains that patients who have sensitive skin, concomitant rosacea or sensitivity



Figures 3A and 3B. Patient before (left) and after 14 weeks (right). Patient received seven PCA Peel with Hydroquinone treatments (14% lactic acid, 14% salicylic acid, 2% hydroquinone, 3% kojic and citric acid) in addition to daily use of PCA SKIN Facial Wash (aloe and lactic acid-based cleanser), Nutrient Toner (antioxidant and lactic acid-based astringent), Pigment Gel (2% hydroquinone, kojic acid and azelaic acid treatment gel), Brightening Therapy with TrueTone (arbutin, undecylenol phenylalanine and phenylethyl resorcinol treatment lotion), ReBalance (nighttime hydrator) and Protecting Hydrator SPF 25 (sunscreen moisturizer). Photos courtesy of Jennifer Linder, MD.

to glycolic acids and hydroquinones are especially prone to the effects of over-treatment — and may possibly develop other skin problems. Extended (and/or unsupervised) use of potent hydroquinone creams, especially when combined with the corticosteroid creams readily found in other countries, can lead to steroid acne, steroid rosacea and ochronosis, Dr. Badreshia-Bansal cautions.

every appointment while also stressing the role the patient must play in preventing melasma recurrence or exacerbation. Female patients, especially, should be constantly reminded of the importance of avoiding or discontinuing all triggers — hormone pills, heat and sun — and of practicing meticulous daily sun protection with zinc oxide, Dr. Badreshia-Bansal urges.

"You have to sit with patients and have that conversation, ensuring they understand that there's no cure for melasma and that it's a chronic condition. You tell them that ... you can make it better, but you can't cure it."

~Pearl Grimes, MD



PREVENTING EXACERBATIONS, RECURRENCE REQUIRES VIGILANCE

For dermatologists who treat many patients with melasma, one of the chief challenges is managing unrealistic expectations regarding effectiveness. In this, the Internet age, when cyberspace is replete with promises of instant "miracle cures" for a range of dermatologic conditions, Dr. Grimes notes that educating patients about the reality of melasma is especially important.

"You have to sit with patients and have that conversation, ensuring they understand that there's no cure for melasma and that it's a chronic condition," she says. "You tell them that with current technology and maintenance [treatment] you can make it better, but you can't cure it."

Both Drs. Reichel and Grimes report that they repeat the education with

"The bottom line for patients," Dr. Reichel says, "is understanding that sunscreen alone — even those containing zinc oxide or titanium oxide — is not enough with melasma, and that even a brief exposure can set them back. They must have shade, so they need a broad-brimmed hat and protective clothing." ■

Bonnie Darves is a freelance health-care writer based in Seattle.

RESOURCES

"Laser Eradication of Pigmented Lesions: A Review," Polder et al, *Dermatologic Surgery*, May 2011.

"Insight into Skin Lightening Cosmetics for Women of Color," Badreshia-Bansal et al, *Journal of Drugs in Dermatology*, January 2007.