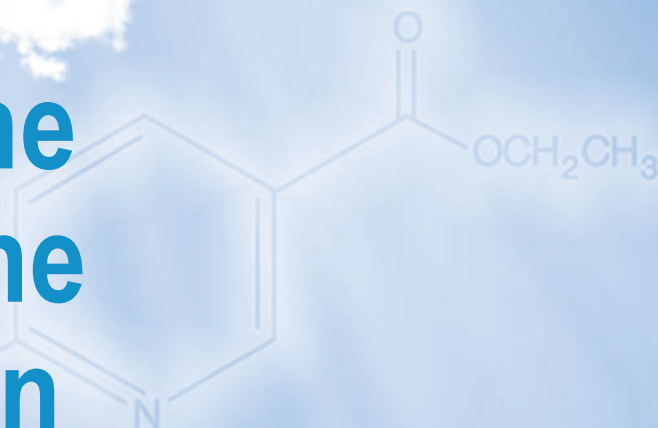


Experts Define the Role of Tazarotene in Anti-Aging Skin Treatment Regimens



What is the history of tazarotene, and how has the science evolved?

Mitchel Goldman, M.D. – Tazarotene was first developed for the treatment of psoriasis and acne. It was later found that in addition to its efficacy in the treatment of psoriasis and acne, tazarotene minimized the appearance of wrinkles and photodamage in a similar way to other retinoids such as tretinoin (Retin-A).

Mary Lupo, M.D. – Tazarotene was first used in the early 1990s for psoriasis. After tazarotene was used for psoriasis, it then received FDA approval for acne. Within the past two years it has been FDA approved for photoaging.

Emil Tanghetti, M.D. – Tazarotene was first approved for psoriasis. It also turns out that tazarotene is the most effective drug for the treatment of acne. It is effective for both inflammatory and non-inflammatory acne.

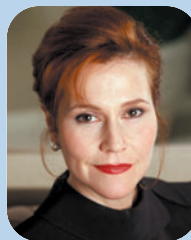
How does tazarotene work from a biochemistry standpoint?

Dr. Goldman – Basically, tazarotene activates the retinoid's intercellular receptors to cause photorejuvenation.

Dr. Lupo – Tazarotene works like any other topical retinoid. It improves the process of keratinization. But it also has a number of anti-inflammatory effects on the skin. Moreover, tazarotene probably actually improves the environment for collagen regeneration

and improves cellular messaging for collagen regeneration. It also breaks up melanin and decreases clumping of melanosomes to improve the dyspigmentation that we see in photoaged skin. Because of tazarotene's beneficial effect on keratinization, we see an improvement in the appearance of pores.

“Moreover, tazarotene probably actually improves the environment for collagen regeneration and improves cellular messaging for collagen regeneration.” - Mary Lupo, M.D.



Dr. Tanghetti – Tazarotene stimulates fibroblasts to make new collagen and ground substance. It also normalizes differentiation of epidermal cells, which include melanocytes. So it helps to correct the abnormal dyspigmentation very effectively. In short, tazarotene works in a multiplicity of ways.

How do you use retinoids in your clinical practice?

Dr. Goldman – Patients apply retinoids nightly. They are also used in conjunction with all of our other rejuvenation strategies, including the use of lasers or

intense pulsed light (IPL), with or without photodynamic therapy (PDT). Retinoids are also used in conjunction with growth factors, such as the TGF-beta-1 growth factor (CRS cream from Topix).

"It is my opinion that tazarotene is less photosensitizing than tretinoin and slightly more efficacious in the reduction of photodamage."



- Mitchel Goldman, M.D.

Dr. Lupo – Retinoids comprise the foundation of most of my anti-aging photoaging skincare protocols. I use Avage® to improve the appearance of the skin, decrease fine lines, help with mottled hyperpigmentation, improve the texture of the skin and minimize the appearance of the pores. Along with sunscreen, Avage is probably my most important and consistent skincare product to prescribe clinically. However, I do add cosmetics to my photoaging protocols because I find they actually improve the tolerance of retinoids. Therefore, people use it more frequently.

When starting any retinoid, I use a mask protocol, whereby the retinoid is applied and left on five minutes initially, then rinsed off. Afterwards, a cosmetic is used. As patients become acclimated to the retinoid, I increase the amount of time that it is left on the skin. Eventually, the product is left on all night long. This process may take three to six months. The mask protocol has improved compliance and there are virtually no side effects of desquamation, and yet I am seeing clinical efficacy.

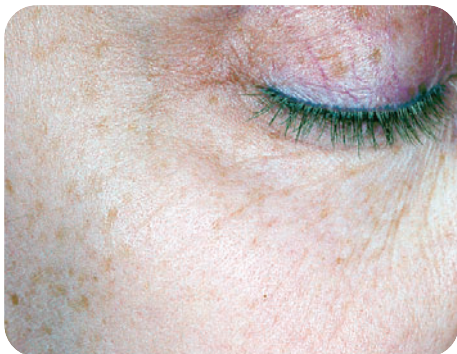
Dr. Tanghetti – Retinoids are really the mainstay of my clinical practice with photodamaged skin. If you look at the data objectively for topical retinoids, the efficacy in photodamaged skin is unquestionably and clearly documented. On the other hand, with lasers and other light-based devices, efficacy is certainly always open to question. The data that is generated in our studies on light-based devices has been anything but convincing, I believe, up until this point. The only convincing data has been generated by CO₂ resurfacing. The rest of the non-ablative field is still open to a lot of question.

Leslie Baumann, M.D. – I put every single patient on retinoids for aging-prevention purposes.

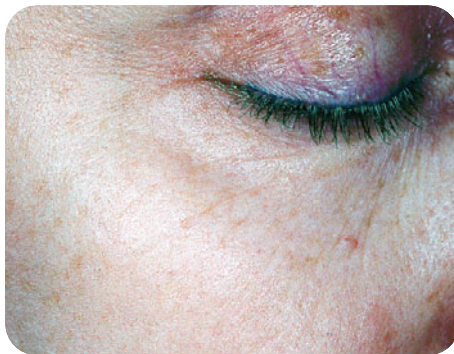
What is the clinical difference between tazarotene and tretinoin?

Dr. Goldman - It is my opinion that tazarotene is less photosensitizing than tretinoin and slightly more efficacious in the reduction of photodamage.

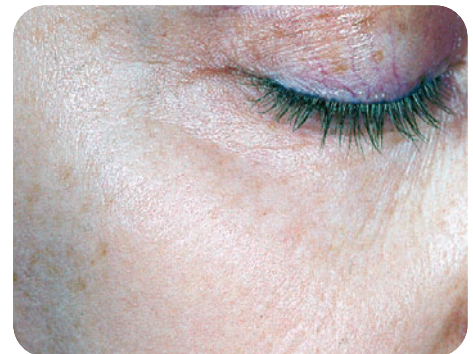
Dr. Tanghetti – As for the difference between tazarotene and tretinoin, the receptor affinity for tazarotene is much more selective. The most important receptor in the skin that we are concerned about is the gamma receptor. Tazarotene restricts its activity to the beta in the gamma receptors. In contrast, tretinoin stimulates a series of receptors: alpha, beta, gamma. Tretinoin also stimulates some of the retinoid X receptors to a lesser extent. While wrinkles are important, pigmentation has always been a big issue. I am engaged in a pigmentation trial with Avage. This drug is showing itself as being probably far superior to anything we have in normalizing pigmentation.



Before Tx



12 weeks after Avage Tx



24 weeks after Avage Tx

Clinical Roundtable

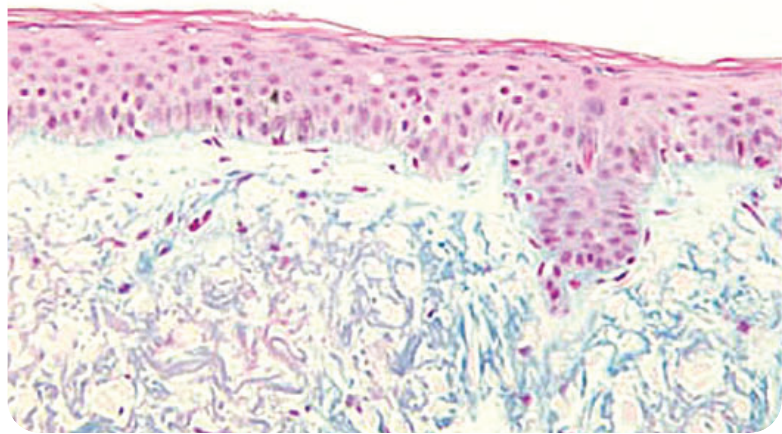
Dr. Lupo - Tazarotene works faster than tretinoin and the minimization of pores is greater. Furthermore, down here in the South with our heat and flushing, I find that tretinoin causes a bit of telangiectasia formation in some people. However, I do not see this with the tazarotene.

Dr. Baumann - I believe that Avage is slightly more efficacious than tretinoin. I think it works faster than Retin-A. I also believe that patients like trying something new. Many have tried Retin-A before and don't like the effect.

What are the optimum treatment protocols with tazarotene?

Dr. Goldman - Apply once nightly. Patients will usually notice a clinical improvement between four and six weeks after beginning treatment.

Dr. Lupo - Optimally, patients use Avage nightly. I also like to combine Avage with topical antioxidants in the morning. I am a particular fan of topical vitamin C, along with the sunscreens. At night, I may suggest the new mimetic peptides, such as the metrixyl derivatives that are in Olay Regenerist. I may also use very inexpensive emollient creams. It is all about maintaining the barrier of the skin while retinizing the skin. This allows the retinoid to be better tolerated. Overall, patients see an improvement in the texture and feel of their skin, typically within four weeks. The skin looks better and feels softer.



Dr. Tanghetti - The optimum treatment protocol is to get someone on tazarotene for six months and see what happens. Getting the patient retinized has always been the challenge in medicine. If you just give the patient a prescription and say "Go ahead and use it," you're almost guaranteeing yourself failure. This applies to all of these drugs. You have to understand how people wash and take care of their skin so that you can normalize barrier function.

For example, if you strip your skin and then apply a retinoid, it is going to get over-absorbed. Therefore, our mainstay is non-soap cleansers for any topical retinoid. We don't want patients to strip their skin. We also encourage our patients to use an emollient after washing, then wait 20 to 30 minutes before applying a drug. For patients with very sensitive skin, perhaps the drug is applied every other day for the first five to six weeks, and then daily.

By 6 to 12 weeks, patients typically become retinized, so by that point they can tolerate the drug daily. Patients are also aware that they may become irri-

In-Office Dispensing of Avage

The 5,000 square foot Center for Dermatology and Laser Surgery in Sacramento, Calif., devotes some of its space to skincare products. "We have one or two people who work full time in the products area. They educate our patients on how to use these products," said Emil Tanghetti, M.D. "We have a number of different lines that we mix and match." Topical retinoids are one of the few prescriptive groups that the center dispenses.

"I feel we have an obligation to both dispense and educate," Dr. Tanghetti commented. "It is impor-

tant to have a key employee who understands how these drugs are used in combination, and can integrate them in the patient's normal daily regime. But to simply give a patient a prescription and tell her to put in on without instruction is almost asking for failure."

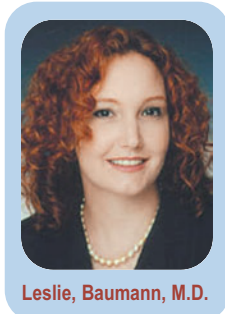
The physician who allows dispensing also needs to understand the product and be convinced that it works. "He or she needs to understand how to use a retinoid in clinical practice as well," Dr. Tanghetti stated. "This is not easy. Tips about washing

and barrier functions, for example, need to be fully understood. You can't expect your employee to understand those things unless you understand them. When we give a patient a prescription, we typically provide written instructions on how to use the product and integrate them into their regime."

You will certainly bring that patient back into your office for other procedures such as Botox, microdermabrasion, laser hair removal and photorejuvenation. Dispensing Avage is a valuable service to keep your patients tied into your practice."

tated now or then, so they may have to back off a day or two. Some results are truly outstanding.

Dr. Baumann – When patients first begin using tazarotene, I like them to apply only a green pea size amount of cream around the whole face, every third night for two weeks. If the patient does not develop excessive redness or peeling, the regimen is changed to every other night for two weeks. This is followed by applying the cream every night. Once Avage is used every night for about six months, I really start to see tightening of the skin and improvement in fine lines.



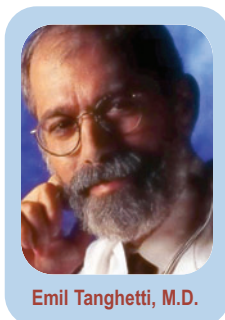
Leslie, Baumann, M.D.

What is the synergy between tazarotene and other anti-aging procedures/products in your practice?

Dr. Goldman – Tazarotene simply adds one more treatment modality to minimizing photodamage. It has certainly enhanced results. In fact, Avage is the only retinoid I dispense.

Dr. Lupo – I think tazarotene works very well in conjunction with procedures performed in the office, such as microdermabrasion and chemical peels, as well as more aggressive resurfacing techniques. Tazarotene is also extremely efficacious for people who are undergoing photoaging treatment like IPL. It makes all of these procedures work better and faster. I often tell other physicians that performing costly facial laser treatment without some type of retinoid and a protection protocol is like liposuction without first consulting the patient on diet, nutrition and exercise. As physicians, we must keep the science in our treatments. I think adding cosmeceuticals is fine, but remember that the real hard science is best for the benefits of the retinoids.

Dr. Tanghetti – We are currently doing a study using tazarotene in combination with lasers. Is there a difference? Sometimes we use the effect of the laser with the tazarotene because the effect of the tazarotene at the end of three to six months is so remarkable. We often think about stimulating epidermal growth and differentiation. We're always running a fine line between under- and overstimulation. My



Emil Tanghetti, M.D.

concern with a lot of cosmeceuticals is that we are understimulating the skin and not having a true effect. Certainly, one of the risks we have with topical retinoids is the occasional irritation. But that's part of the regime – to get patients right on that edge of stimulation, without overstimulating.

Dr. Baumann – Tazarotene speeds up the cell cycle, or how fast your cell divides. So I like to use this drug with anyone who is having a wounding procedure like microdermabrasion or laser. It makes the patient heal faster afterwards. Avage also gets rid of brown spots, so if I'm doing IPL I think I achieve better efficacy. In fact, I'm a firm believer that people should begin using retinoids when they are 18 years old and use them for the rest of their lives, even if they have rosacea. I have not had any problems with my rosacea patients. They seem to tolerate it. The data on aging prevention with retinoids is very strong and Avage is my favorite. ■

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