

Melasma Treatment With Oral Tranexamic Acid and a Novel Adjuvant Topical Therapy

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To the Editor:

I read with interest the informative article by Sheu¹ published online in *Cutis* in February 2018, which succinctly described the pharmacologic characteristics of tranexamic acid, a synthetic lysine derivative, and its mechanism of action in the management of melasma by mitigating UV radiation–induced melanogenesis and neovascularization by inhibiting plasminogen activation. Additionally, the author summarized a study in which oral tranexamic acid was used to successfully treat melasma patients. After 4 months of treatment, 90% of 561 patients treated at a single center in Singapore demonstrated improvement in melasma severity.² Sheu¹ also discussed daily oral doses of tranexamic acid (500–1500 mg) that demonstrated improvement in melasma patients and reviewed potential adverse events (eg, abdominal pain and bloating, deep venous thrombosis, pulmonary embolism) for which patients should be screened and counseled prior to initiating treatment.

Recently, another study showed oral tranexamic acid to be an effective treatment in women with moderate to severe melasma. An important observation by the investigators was that once the initial phase of their study—250 mg of oral tranexamic acid twice daily and sunscreen applied to the face each morning and every 2 hours during daylight hours for 3 months—concluded and a second phase during which all participants only applied sunscreen for an additional 3 months, those with severe melasma lost most of their improvement.³ An adjuvant topical treatment, such as tranexamic acid or an inhibitor of tyrosinase (hydroquinone), might improve the results; however, initiating therapy with a topical agent whose mode of action is directed toward other melasma etiologic factors, such as the increased expression of estrogen receptors and vascular endothelial growth factor in affected skin, might be more beneficial.^{4,5}

I recently proposed a novel approach for melasma management that would be appropriate as an adjuvant

topical therapy for patients concurrently being treated with oral tranexamic acid.⁶ The therapeutic intervention utilizes active agents that specifically affect etiologic factors in the pathogenesis of melasma—estrogen and angiogenesis—that previously have not been targeted topically. Indeed, the topical agent contains an antiestrogen—either a selective estrogen receptor modulator (eg, tamoxifen, raloxifene), aromatase inhibitor (eg, anastrozole, letrozole, exemestane), or a selective estrogen receptor degrader (eg, fulvestrant)—and a vascular endothelial growth factor inhibitor (eg, bevacizumab).⁶

In conclusion, the therapeutic armamentarium for managing patients with melasma includes topical agents, oral therapies, and physical modalities. Optimizing the approach to treating melasma patients should incorporate therapies that are specifically directed toward various etiologic factors of the condition. The concurrent use of a topical agent that contains an antiestrogen and an inhibitor of vascular endothelial growth factor in women with melasma who are being treated with oral tranexamic acid warrants further investigation to assess not only for enhanced but also sustained reduction in facial skin pigmentation.

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The author reports no conflict of interest.

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