

## Editorial

# Tranexamic acid: a promising remedy for melasma?

Melasma is a common pigmentary problem that is characterised by brownish macules and patches occurring primarily on sun-exposed areas on the face. Women are more commonly affected. People in many places like Hong Kong prefer a lighter skin complexion and resent having pigmented patches on their skin, not to mention the face. Melasma affects the psychology and self-esteem of patients as demonstrated by studies that showed melasma has a great impact on patient's quality of life.<sup>1</sup>

Every dermatologist sees a lot of patients with melasma. Yet it is not an uncommon experience to find a number of such patients who do not respond well to treatment, leaving behind a dissatisfied patient and an unhappy doctor. At present, the mainstays of melasma treatment include sunscreens and topical bleaching agents. Other modalities include skin peeling, laser, light-based treatment, etc. Laser therapy may help certain patients but recurrence is not uncommon. Some patients might experience worsening of hyperpigmentation and mottled hypopigmentation.

The standard topical treatment is hydroquinone. It is moderately effective and is often used in combination with other agents e.g. retinoid and topical steroid as used in Kligman's formula. It is associated with side effects like fixed erythema, hypertrichosis and exogenous ochronosis. Apart from its potential side effects, one shortcoming is that it is not readily available in many places including Hong Kong. Other topical lightening agents such as arbutin, azelaic acid, niacinamide also play a role in the treatment of

melasma but are not as effective as hydroquinone.<sup>2</sup>

An old drug, tranexamic acid, an antifibrinolytic agent, has found a new indication and emerged as a promising addition to the armamentarium in the treatment of melasma. Systemic route was found to be efficacious and safe, as shown by a large scale study, among others, performed in a skin centre in Singapore.<sup>3</sup> For those who are concerned with the possible systemic complications of oral tranexamic acid such as thromboembolism, they would find peace in mind to learn that topical application of tranexamic acid in various formulations are found to be effective.<sup>4</sup>

In this issue, Anwar et al compounded a mixture comprising tranexamic acid, galactomyces ferment filtrate, niacinamide and alpha arbutin for the treatment of melasma. They found that there was a significant decrease of melasma severity score in 66 patients with melasma who were asked to apply a serum followed by a cream. In the study, layering technique was used in the application of the mixture. The patients tolerated the treatment well.

In addition to the oral and topical routes of administration of tranexamic acid, intradermal application is yet another option. In a study conducted by Pazyar et al, intradermal injection of tranexamic acid was found to be as effective as topical hydroquinone.<sup>5</sup> The effect of topical tranexamic acid could be enhanced by the

adjunctive use of microneedling followed by topical application of tranexamic acid.<sup>6</sup> Laser assisted drug delivery of hydroquinone has been shown to be safe and effective in the treatment of melasma.<sup>7</sup> Whether this technique could enhance the therapeutic effect of tranexamic acid warrants further evaluation. While more and more studies corroborate the usefulness and efficacy of tranexamic acid in the treatment of melasma, further randomised controlled trials and studies are needed to shed light on and delineate the best possible combination and formulations of tranexamic acid and other skin lightening agents and the most effective route of delivery.

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