

Melasma, A Guide of Management

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ABSTRACT

Melasma management is frequently difficult, with many examples of inadequate remission and repeated relapses. Depending on the patient's features and clinical presentation, a multimodal treatment involving photoprotection, skin lighteners, exfoliants, antioxidants, and rejuvenation operations is necessary in most situations.

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INTRODUCTION

Melasma management is frequently difficult, with many examples of inadequate remission and repeated relapses. A combination of therapy addressing numerous pathologic factors, including as photodamage, inflammation, abnormal vascularity, and abnormal pigmentation, produces the best clinical results. A range of treatments that restrict melanin biosynthesis and promote epidermal turnover are available, as are chemical peels and lasers that accelerate melanin removal without affecting melanin synthesis or melanosome transfer from melanocytes to keratinocytes.¹

TREATMENT

Melasma has no conventional treatment. Although several treatment guidelines and algorithms have been established, the majority of them are based on expert consensus rather than data from large, strong randomized trials. Depending on the patient's features and clinical presentation, a multimodal treatment involving photoprotection, skin lighteners, exfoliants, antioxidants, and rejuvenation operations is usually necessary.²

Strict photoprotection, which includes avoiding the sun, wearing protective clothes, and using broad-spectrum sunscreens, is an important part of all melasma treatment and preventive regimes. It is recommended that you wear a broad-spectrum sunscreen with a sun protection factor (SPF) of 50 or greater on a daily basis. Sunscreen should be applied liberally in the morning and reapplied every two to three hours outside.³

Several studies have found that visible light can cause pigmentation in those with darker skin. Chemical and mineral broad-spectrum sunscreens (based on zinc oxide and titanium

dioxide) do not provide enough UV protection. Iron oxide concentrations exceeding 3% are seen in the most effective visible light sunscreens. Iron oxide is the primary pigment used in colored solar goods, as well as colored topical treatments and cosmetics.⁴

First-Line Therapies

Mild melasma: For patients with mild melasma, 4% hydroquinone cream is recommended as a first-line treatment. Hydroquinone can be used once or twice a day to afflicted regions for two to four months and up to six months, followed by maintenance therapy for six months or longer.⁵

Hydroquinone-free skin lighteners, such as azelaic acid, kojic acid, or niacinamide, can be utilized as first-line alternative therapy, particularly in individuals who do not tolerate or are allergic to hydroquinone. It is worth noting that azelaic acid is one of the few agents that may be used in pregnant women if necessary.⁶

Fluocinolone, hydroquinone, and tretinoin triple combination cream (CBT) is preferred to 4% hydroquinone cream as the initial therapy for individuals with moderate to severe melasma. For two to four months, the cream is administered every night. The only Melasma treatment approved by the US Food and Drug Administration is CBT.⁷

Second-Line Therapies

Glycolic acid, various alpha-hydroxy acids, salicylic acid, Jessner peel, and trichloroacetic acid are examples of superficial chemical peels used to cure melasma. In addition to the regular use of lightening agents with or without hydroquinone, many sessions (about five to six) delivered at two-to-four-week intervals may be employed. Because

Melasma, A Guide of Management

chemical peels remove epidermal melanin without influencing anogenesis or melanocytes, patients should be aware that any improvement will most likely be transient.⁸

Skin preparation is vital for getting the best outcomes from chemical peels. Priming, also known as skin preparation, is the administration of topical skin lightening chemicals such as hydroquinone and tretinoin prior to the exfoliation treatment in order to improve the efficacy of chemical peeling and reduce the risk of hyperpigmentation in inflammatory diseases. Priming should be done for a minimum of two to four weeks. Lightening agents can be used until the exfoliation, however tretinoin should be stopped at least 7 to 10 days before the treatment. Tretinoin enhances the depth of skin penetration of exfoliating agents, which might lead to problems.⁹

At an average dose of 250 mg twice day, oral tranexamic acid, a hemostatic drug with antiplasmin action, has proven success in the treatment of melasma. However, relapses inevitably occur when oral medication is discontinued. 650 mg tablets are available in the United States. Patients are advised to take one tablet daily or half a tablet twice day.¹⁰

Although the dose used in clinical research for the treatment of melasma is far lower than that used to treat hemorrhagic disorders (3500 mg daily), general worries about the safety profile remain due to tranexamic acid's proclivity to generate thromboembolic events. As a result, before beginning oral tranexamic acid, patients should undergo comprehensive testing for thrombotic risk factors.¹¹

Third-Line Therapies

Lasers and light therapy are third-line treatments for melasma, ideal for individuals who have failed to improve with topical treatments and, in certain cases, chemical peels. Importantly, because of the possibility of post-inflammatory hyperpigmentation, lasers and light sources should be used with extreme caution in patients with darkly pigmented skin.¹²

Melasma cannot be cured with lasers or light therapy, thus patients should be informed. In fact, regardless of the device used, around half of patients develop a recurrence within three to six months following the completion of therapy. Furthermore, recurrence may be accompanied with more extreme pigmentation that is resistant to future therapy. As a result, physicians should inform patients on the need of following a maintenance regimen to reduce the likelihood of recurrence following laser or light therapy.¹³

MAINTENANCE

Routine methods to relapse prevention include the use of broad-spectrum, visible-light sunscreens as well as maintenance therapy with hydroquinone-free lighteners such as azelaic acid, kojic acid, niacinamide, and retinoids, which are all routinely utilized in the authors' practice. In addition, to sustain elimination, occasional use of 4% hydroquinone cream or twice-weekly CBT can be introduced into the maintenance routine.¹⁴

Despite this technique and the available agent weaponry, relapses are prevalent. Relapses need the restart of active therapy.¹³

Cosmetic camouflage is a cosmetic method used to conceal skin blemishes and normalize skin look. It has the potential to reduce the emotional burden of melasma while also improving the patient's quality of life. Anhydrous (waterproof) makeup bases including titanium dioxide, zinc oxide, and iron oxide serve as cosmetic concealers as well as sunscreens. Cosmetic camouflage can be used in conjunction with active therapy.¹⁴

CONCLUSION

The patient's severity and duration of melasma, particular triggers and risk factors, level of commitment to therapy, and readiness to adopt stringent photoprotection measures are all assessed prior to treatment. Furthermore, the usage and reaction to past therapies should be assessed. Because hormone therapy frequently impact or provoke melasma, clinicians must tailor hormone usage guidelines to each patient's specific needs.

Patient education is critical in the treatment of melasma. Physicians should educate patients about the risk factors and triggers of melasma, as well as the importance of using a broad-spectrum sunscreen that protects against ultraviolet (UV), visible, and even infrared light on a daily basis, and the importance of using maintenance therapy consistently to reduce the risk of recurrence.

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Melasma, A Guide of Management

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