Melasma: A comprehensive update

Part I

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1. Reading of the CME Information (delineated below)
2. Reading of the Source Article
3. Achievement of a 70% or higher on the online Case-based Post Test
4. Completion of the Journal CME Evaluation

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Editors
The editors involved with this CME activity and all content validation/peer reviewers of this journal-based CME activity have reported no relevant financial relationships with commercial interest(s).

Authors
Dr. Pandya has been an investigator and consultant for Galderma Laboratories within the last 5 years and has received grants and honoraria for these services. Dr. Sheth reported no relevant financial relationships with commercial interest(s).

Planners
Matthew Zirwas, MD, served as a peer reviewer for this CME activity and is a speaker and consultant for Coria Laboratories and has received honoraria for these services. He is also a consultant for Onset Therapeutics and has received honorarium for this service. The other planners involved with this journal-based CME activity have reported no relevant financial relationships. The editorial and education staff involved with this journal-based CME activity have reported no relevant financial relationships with commercial interest(s).

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Learning Objectives
After completing this learning activity, participants should be able to describe the epidemiology of melasma; delineate the pathogenesis of melasma; and describe the appropriate diagnostic workup of a patient with suspected melasma.

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Melasma is a common disorder of hyperpigmentation affecting millions of people worldwide. While it is thought to be triggered or exacerbated by sun exposure and hormones, much remains to be understood about its pathogenesis. A thorough understanding of the etiology of melasma and the research tools available to study this condition are crucial to enhancing management and developing novel targeted therapies of this often frustrating condition. (J Am Acad Dermatol 2011;65:689-97.)

Key Words: chemical peels; chloasma; hydroquinone; laser therapy; melasma; pigmentation.

Melasma is a common disorder of hyperpigmentation that affects more than 5 million people in the United States alone.[1] Found most commonly in women with Fitzpatrick skin phototypes III through V living in areas of intense ultraviolet (UV) light exposure, melasma is often difficult to treat and has a significant negative impact on patients' quality of life.[2-6] The avoidance of exacerbating factors such as UV light and hormonal contraceptives and testing for underlying thyroid disorders can lead to improvement in certain subsets of patients. Recent studies, however, have shown that the underlying basis for melasma may be more complex than originally thought. These findings also provide new avenues for research into better understanding and treating this challenging condition.

CAPSULE SUMMARY

- Melasma is a common disorder of hyperpigmentation found in all parts of the world that significantly affects quality of life; it is exacerbated by sun exposure and hormonal factors, making photoprotection and avoidance of trigger factors a critical part of management.
- Recently identified pathogenic factors include stem cell factor and c-kit along with neural and vascular growth factors.
- An increased understanding of the etiology of melasma will aid in the development of novel therapies.

Melasma is an acquired disorder of symmetrical hyperpigmentation appearing as light brown to dark, muddy brown macules and patches on the face, especially the forehead, malar areas, and chin. It is also sometimes referred to as chloasma or the mask of pregnancy, a term used in the dermatology literature for several decades.[7] The term chloasma comes from the Greek *chloazein*, meaning to be green,[8] whereas the term melasma comes from the Greek *melas,* meaning black.

EPIDEMIOLOGY

Key points

- **The reported prevalence of melasma ranges from 8.8% among Latino females in the Southern United States to as high as 40% in Southeast Asian populations**
- **Melasma predominantly affects Fitzpatrick skin phototypes III and IV and often lasts for many years after pregnancy**

Several studies from around the world have attempted to discern the prevalence of melasma in the general population; however, few have randomly sampled the general population (Table I). In a randomized study involving self-reporting of melasma in a Hispanic female population in Texas, Werlinger et al[9] noted the prevalence to be 8.8%, with an additional 4% reporting melasma in the past. In Southeast Asia, the prevalence has been reported to be as high as 40% in females and 20% in males[10]; however, these were patients presenting to a dermatology clinic, indicating some ascertainment bias. A survey of Arab Americans living in the United States found that melasma was the fifth most commonly reported skin condition, mentioned by 14.5% of people surveyed.[11] A recent multicenter survey of females from nine countries found that Fitzpatrick skin phototypes III and IV were most commonly affected, and that African Americans were more likely to have a positive family history of melasma.[12] It was also noted that 41% of women surveyed had onset of disease after pregnancy but before menopause. Importantly, only 8% noted spontaneous remission. Only 25% of patients taking oral contraceptives had an onset of melasma after starting their contraceptive. While melasma was thought to be a pregnancy- and contraceptive-related disorder in the past, recent studies show that in many patients it is a chronic disorder that may last for decades. Although common, there is much to learn about the epidemiology of melasma worldwide.

CLINICAL AND PATHOLOGIC FEATURES

Key points

- **The centrofacial pattern of melasma is the most common**
- **While a Wood lamp examination was previously thought to accurately predict epidermal versus dermal pigment deposition, recent studies have shown that dermal melanin deposition is common and may be underrecognized**

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