

SHORT COMMUNICATION

Challenges in the Treatment of Melasma in Latin America

Desafíos del Tratamiento del Melasma en América Latina

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ABSTRACT

Melasma was a chronic skin condition characterised by hyperpigmented spots, mainly on the face, and most frequently affecting women with intermediate to high phototypes in tropical and subtropical regions. Intense sun exposure contributed to its appearance and chronicity, making photoprotection an essential component in its treatment. Although depigmenting agents, peels and technologies such as laser were used, protection against ultraviolet radiation and visible light was key to preventing relapses and improving clinical results. Blue-violet light, oxidative damage and chronic inflammation were identified as aggravating factors. In Latin America, cultural and economic factors and the limited availability of suitable products made it difficult to adhere to effective photoprotection. For this reason, strategies such as the use of broad-spectrum sunscreens, oral photoprotection, patient education and improved access to products were promoted, all within an interdisciplinary approach adapted to the region.

Keywords: Melasma; Photoprotection; Hyperpigmentation; Visible light; Latin America.

RESUMEN

El melasma fue una afección cutánea crónica que se caracterizó por manchas hiperpigmentadas, principalmente en el rostro, y afectó con mayor frecuencia a mujeres de fototipos intermedios a altos en regiones tropicales y subtropicales. La exposición solar intensa contribuyó a su aparición y cronificación, haciendo de la fotoprotección un componente esencial en su tratamiento. Aunque se utilizaron agentes despigmentantes, peelings y tecnologías como el láser, la protección frente a la radiación ultravioleta y luz visible fue clave para prevenir recaídas y mejorar los resultados clínicos. La luz azul-violeta, el daño oxidativo y la inflamación crónica se identificaron como factores agravantes del cuadro. En América Latina, factores culturales, económicos y la limitada disponibilidad de productos adecuados dificultaron la adherencia a una fotoprotección eficaz. Por ello, se promovieron estrategias como el uso de filtros solares de amplio espectro, la fotoprotección oral, la educación del paciente y la mejora en el acceso a productos, todo dentro de un enfoque interdisciplinario adaptado a la región.

Palabras clave: Melasma; Fotoprotección; Hiperpigmentación; Luz visible; América Latina.

BACKGROUND

Melasma is a chronic skin condition characterized by the appearance of hyperpigmented spots, mainly on the face.^(1,2,3) It is more frequent in women of phototype III to V, especially in tropical and subtropical regions such as Latin America,^(4,5) where intense sun exposure determines its appearance and chronification.^(6,7,8,9)

Although the treatment of melasma usually includes depigmenting agents, peeling, and technologies such as lasers, photoprotection is an essential pillar to improve therapeutic efficacy and prevent recurrences and the progression of the disease.^(10,11,12)

Ultraviolet (UV) radiation, especially UVA and UVB rays, induces melanin production by activating melanocytes and generating reactive oxygen species (ROS), which stimulates skin pigmentation.⁽¹³⁾ In addition, recent studies have identified visible light (VL), particularly the blue-violet fraction, as a key factor in the exacerbation of melasma due to its ability to induce hyperpigmentation through opsin-3-mediated melanocyte activation.^(14,15,16)

Cumulative photodamage contributes to chronic inflammation, damage to the basement membrane, and alterations in the dermis's vascularization, all of which are factors in melasma's pathogenesis.^(17,18,19,20) Therefore, photoprotection prevents new lesions' appearance, avoids previous lesions' reactivation, and contributes to a better therapeutic response.⁽²¹⁾

In Latin America, high rates of solar irradiation, coupled with socioeconomic and cultural factors, hinder the effective implementation of photoprotection strategies.^(22,23) Many patients underestimate the need to use sunscreen daily, especially on cloudy days or during daily activities that do not involve direct sun exposure. In addition, the availability of products with adequate UV, visible light, and infrared filters is often limited or expensive.^(25,26)

Daily use of broad-spectrum sunscreens: Sunscreens that offer protection against UVA, UVB, and visible light are recommended. Products containing iron oxides are particularly effective against visible light and have been shown to reduce pigmentation in patients with melasma.^(27,28)

- Frequent reapplication: To maintain adequate protection, it is crucial to reapply sunscreen every 2-3 hours, especially in humid climates or during physical activity.
- Oral photoprotection: Supplementing topical protection with oral antioxidants such as polypodium leucotomos, vitamin C, vitamin E, and niacinamide can decrease radiation-induced oxidative damage and reduce skin inflammation.
- Patient education: Patients must be educated about the importance of constant photoprotection, even indoors or on cloudy days. Educational campaigns and medical accompaniment favor treatment adherence.
- Accessibility to suitable products: Public policies and alliances with the cosmetic industry should be promoted to improve the availability and affordability of photo protectors adapted to the needs of the Latin American population.

Melasma has a relapsing course and can worsen with inadequate sun exposure.⁽²⁹⁾ Continuous photoprotection is essential to avoid the reactivation of hyperactive melanocytes. In addition, it should be integrated into a therapeutic approach that includes personalized depigmenting treatments (hydroquinone, tranexamic acid, kojic acid), complementary methods such as micro-needling, chemical peeling, or low-energy laser, and control of hormonal and lifestyle factors (contraceptives, gestation, stress, diet).⁽³⁰⁾

Photoprotection is an irreplaceable strategy in treating melasma, especially in Latin America, where high sun exposure favors its appearance and chronicity. Incorporating broad-spectrum photoprotectors, educating the patient, facilitating access to appropriate products, and supplementing with oral antioxidants not only improve clinical outcomes but also prevent recurrence and progression of the disease.^(31,32) Only through an interdisciplinary and culturally adapted approach will it be possible to effectively control this pathology that affects the quality of life of millions of people in the region.

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FINANCING

None.

CONFLICT OF INTEREST

None.

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