

MANAGEMENT OF HYPERPIGMENTATION IN WOMEN

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Hyperpigmentation is the darkening of an area of skin, caused by increased melanin – the pigment found in skin, eyes and hair. Disorders of hyperpigmentation usually result from an increase in melanin production and, on occasion, from an increase in the density of active melanocytes – cells which produce melanin.

The most common presentations of hyperpigmentation in women seen in dermatology clinics in Singapore and other Asian countries are post-inflammatory hyperpigmentation, melasma and lentigines. These can have a significant cosmetic impact, which may negatively affect patients' psychosocial wellbeing.



Figure 1. Post-inflammatory hyperpigmentation secondary to excoriations due to eczema



Figure 2. Melasma occurring over the cheekbone region



Figure 3. Lentigines occurring over the cheek region

POST-INFLAMMATORY HYPERPIGMENTATION

Post-inflammatory hyperpigmentation (PIH) is caused by an excess of melanin pigment following cutaneous inflammation or injury (Figure 1). The condition is extremely common in Singapore, with an incidence of 1.9 percent, and is especially prevalent in individuals with dark pigmented skin.

Disorders that commonly lead to PIH include acne, insect bites, bacterial skin infection, atopic dermatitis, psoriasis and lichen planus, the latter of which is notorious for causing persistent PIH which may last for years. Existing PIH can also be exacerbated by continued inflammation, trauma or exposure to ultraviolet irradiation.

The pattern and distribution of the PIH may provide clues to its underlying aetiology; for example a distribution of clusters of PIH on the lower legs may be suggestive of insect bites. Thus, detailed history-taking is crucial in diagnosing the root cause of PIH. Occasionally, patients may document the presentation of PIH through photos, which can assist in the diagnosis.

MELASMA

Melasma, also known as chloasma, is a common acquired disorder characterised by symmetric, hyperpigmented patches with ill-defined outlines (Figure 2). Melasma occur most commonly in the centrofacial area sparing the philtrum, the cheekbone region and the mandibular area along the jawline.

Less common sites include the extensors of forearms and mid-upper chest. At least 90 percent of patients with melasma are women. Prevalence data is scant but melasma is thought to be very common among Asian women with dark pigmented skin.

The condition is caused by an increase in the number and activity of melanocytes in the epidermis and/or dermis. Exacerbating factors include sun exposure, the use of oral contraceptives and pregnancy – melasma are commonly termed 'mask of pregnancy'. Melasma appear light brown when they occur on the epidermis and bluish-grey when they occur on the dermis.

LENTIGINES

Lentigines are brown, circumscribed macules with well-defined edges, which commonly occur on chronically sun-exposed skin over the face (Figure 3), forearms and hands. Lentigines may evolve slowly over years or appear suddenly.

As they can easily be mistaken for a birthmark or mole, a detailed history of the pigmentation and close examination are necessary for accurate diagnosis. The sudden appearance of multiple lentigines may also be a symptom of an underlying syndrome, e.g. Peutz-Jeghers syndrome – an autosomal dominant inherited disorder characterised by intestinal hamartomatous polyps.

MANAGEMENT OF HYPERPIGMENTATION

TREATMENT

Several treatment options exist for the management of hyperpigmentation. In the case of PIH, hyperpigmentation may be temporary if the melanin deposit occurs in the epidermal layer of the skin. Treatment is usually unnecessary as long as the underlying skin conditions are treated or controlled. However, if treatment is required, the management will be similar to that of melasma and lentigines depending on the location and concentration of the melanocytes.

Topical treatment

Melasma and lentigines present a treatment challenge. Topical treatment with a triple combination cream containing hydroquinone, retinoid and a mild steroid has been proven to be effective as compared with other agents, such as hydroquinone alone, kojic acid cream, dual combination creams and peels such as glycolic acid, salicylic acid and Jessner. The use of hydroquinone should be closely supervised by a dermatologist as chronic use of this agent may lead to permanent ochronosis, which is bluish-black discolouration of the skin, cartilage and ocular tissues.

Lasers

The use of lasers is an increasing trend in the treatment of pigmentation. Patients should be counselled on the potential side effects of laser treatment, which include hyperpigmentation – which is particularly common in Asian skin, hypopigmentation, scars, recurrence and possible downtime from work. Sunscreen application before and after laser treatment is strongly recommended.

The most widely used pigment-specific lasers are Quality (Q)-switched lasers, which have nanosecond pulse duration and can selectively target melanosomes – pigment granules that provide tissues with colour. Several types of Q-switched lasers, with varying wavelengths, are currently in use. Patients with darker skin types require treatment with lasers that have longer wavelengths, as there is less absorption by

epidermal melanin at a longer wavelength, resulting in a lower risk of epidermal injury and pigment alterations. However, in superficial pigmentation such as lentigines, a short wavelength is often sufficient.

Intense pulsed light

An alternative treatment to laser is intense pulsed light (IPL), which uses a broad spectrum of wavelengths that can be changed for each patient to target specific structures in the skin. The light energy absorbed by the melanin in the keratinocytes and melanocytes causes them to coagulate and form microcrusts, which subsequently shed, resulting in the clinical improvement of pigmentation.

Laser treatment intervals usually range from four to six months, to allow any PIH that may develop as a temporary side effect of treatment to subside before assessing the necessity of further treatment. The combined use of a topical triple combination cream and laser treatment, in conjunction with sun protection, appears to be more effective than a mono-therapy approach.

It is important to provide information on the available treatment options and engage the patient on their expectations before embarking on a treatment protocol. This enables the patient to make an informed decision and set a realistic goal for their treatment outcome. Primary care providers should consider referring the patient to a dermatologist when a diagnosis is uncertain, as well as for subsequent management beyond sun protection advice.

PREVENTION

Sun protection is crucial to prevent the development of hyperpigmentation and further deterioration of existing hyperpigmented skin.

Diligent application of sunscreen with a sun protection factor (SPF) of at least 30 – which filters out 97 percent of UV-B radiation – together with a high UV-A rating of PA+++ is advisable.

In addition to sunscreen, physical sun protection should also be used; this includes a wide-brimmed hat, clothing, sunglasses and avoidance of the midday sun between 11am and 3pm.



Dr Liew Hui Min graduated from University of Dundee in Scotland and completed her medical training in the United Kingdom, obtaining her Membership of the Royal College of Physicians in 2007. She further pursued training in dermatology at King's College Hospital in London. Dr Liew's current subspecialty interests include paediatric and women's dermatology.