

## Unmasking melasma

Gupta J<sup>1\*</sup>, Gupta KK<sup>2</sup>

<sup>1</sup>Director Aestheticos, <sup>2</sup>HOD, <sup>1</sup>Dept. of Oral and Maxillofacial Pathologist, <sup>2</sup>Dept. of Periodontist and Implantologist, <sup>2</sup>Vyas Dental College and Hospital, Jodhpur, Rajasthan, India

**\*Corresponding Author: Gupta J**  
Email: jagritig26@gmail.com

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### Abstract

Melasma is a very common skin problem affecting a wide population. It appears as brown to gray patches most commonly on the face. It can affect both males and females. It has various etiologies like sun damage, hormonal imbalance, genetic predisposition etc. It poses a serious esthetic concern leading to loss of confidence and self-esteem. It is curable in most of the cases by addressing the underlying cause and giving various in office treatment and following home care methods.

**Keywords:** Melasma, Chloasma, Chemical peel, LASER.

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### Introduction

Melasma or brown patches can be very easily noticed in a wide population. It causes brown to gray-brown patches, usually on the face. Most people get it on their cheeks, bridge of their nose, forehead, chin, and above their upper lip. It also can appear on other parts of the body that are exposed to sun, such as the forearms and neck. Melasma is an acquired hypermelanosis of sun – exposed areas. Melasma presents as symmetrically distributed hyperpigmented macules, which can be confluent or punctate.<sup>1</sup>

The word melasma originates from the Greek root "melas", which means black, and refers to its brownish clinical presentation. The designations: "mask of pregnancy", liver spots, uterine chloasma, *chloasma gravidarum*, and *chloasma virginum* do not fully characterize the disease, nor are semantically appropriate, although the term "chloasma" (derived from the Latin *chlóos* and the Greek *cloazein*: greenish) is still used in the medical literature.<sup>2-5</sup> Melasma usually affects women in their reproductive age.

### Etiology

The exact causes of melasma are unknown, although some triggering factors are described, such as sun exposure, pregnancy, use of oral contraceptives and other steroids, consumption of certain food items, ovarian tumors, intestinal parasitoses, hepatopathies, hormone replacement therapy, use of cosmetics and photosensitizing drugs, procedures and inflammatory processes of the skin, and stressful events. This suggests that the development of melasma is influenced by many factors, and depends on the interaction of environmental and hormonal influences, with susceptible genetic substrate.<sup>6</sup>

There are various etiologies associated with melasma like:

1. Sun exposure
2. Hormonal imbalance

3. Genetic predisposition
4. Medications like oral contraceptives
5. Allergies to dyes

### Types of Melasma

Melasma is broadly classified depending on pattern, depth, history. Wood's lamp examination is used to categorize melasma types (epidermal, dermal, mixed and indeterminate types) based on the depth of the skin. Furthermore, depending on the natural history of the lesions, melasma may also be classified into transient and persistent types, and three clinical patterns of distribution of the pigmentation may be recognized: centrofacial, malar and mandibular depending on the pattern.<sup>7</sup>

PIH (post inflammatory hyperpigmentation) is also one of the cause of skin pigmentation. This is due to any inflammatory condition like acne or pimples. These are also treated in much similar manner as melasma.

Studies reveal that a direct relationship between female hormonal activity and melasma exists. This is correlated with the fact that melasma occurs more frequently in females than in males and commonly develops or increases during pregnancy and also with the use of oral contraceptives. Additionally the expression of estrogen receptors appears to be up regulated in melasma lesions. Therefore sometimes melasma is referred to as "mask of pregnancy".

Melasma is just a cosmetic problem and is not related to mortality or morbidity. There is no reported case of malignant transformation.

### Treatment

Before proceeding with the treatment methods, one must analyze the etiology of melasma for that particular patient. If its due to hormonal dysregulation or direct sun exposure or due to any medication, firstly the etiology should be addressd to get the best result.

Melasma is a benign but potentially annoying condition as it affects individuals look and confidence. No single treatment can be advocated for all melasma patients. The

therapy involves a combination of procedures and strict home care regime.

Various procedure that can be employed for treating melasma primarily involve the chemical peels.

Chemical peels are chemical lotions having both chemical and or natural ingredients in varying concentration. There are various types of peels available ranging from superficial peels to medium depth peels and deep peels. These are selected depending on the condition of patient. Often what works wonders for one person may not be effective for another, so deciding the treatment plan depends and varies from patient to patient.

LASER are also commonly used for treating melasma. Several types of LASERS like intense pulsed light (IPL), Q-switch, Picosecond LASER and non ablative fractionated LASERS can be used. It is mandatory to get these procedures done by well trained professionals only.

Skin lightening creams are also included in home care methods which patient has to apply everyday. Skin lightening creams usually contain ingredients like kojic acid, alpha arbutin, vitamin C, glabridin, tetrahydrodiferuloylmethane, licorice extract, glycolic acid, soy isoflavone, allantoin, niacinamide – vitamin B3, tocopherol acetate – vitamin E.

Tetrahydrodiferuloylmethane is a natural depigmenting agent derived from white turmeric and acts as a powerful antioxidant. Licorice extract prevents UVB -induced pigmentation by reducing epidermal melanin. Glycolic acid helps to reduce fine lines and exfoliates the skin resultin in even tone. Arbutin blocks tyrosinase, an enzyme responsible for melanogenesis. Kojic acid actively reduces pigment production and lightens skin tone by inhibiting free tyrosinase. Soy isoflavone and Niacinamide prevents melanosome transfer. Allantoin is known to soothe, protect and repair skin. Tocopherol acetate or vitamin E increases intracellular glutathione and retains moisture resulting in smooth and younger looking skin.

Moisturizers are very essential in daily skin care regime. It usually contains hyaluronic acid and dimethicone, which helps to keep skin hydrated. Glycerin, propylene glycol, proteins and urea also helps to attract water to skin. There are certain ingredients like lanolin, mineral oil and petrolatum the keep the moisture locked. One the skin is hydrated it doesn't loose its elasticity esarly in life and keeps it wrinkle free, thus also prevents ageing.

Sunscreen is a must to deal with pigmentation. UVA and UVB rays are constantly causing damage to our skin, which is inevitable. But the harmful effect of sun rays can be reduced to some extent by using sunscreens. UVA(long wavelength ultra violet) rays accounts for upto 95% of UV radiation reaching Earth's surface. UVA rays penetrate deep into the dermis and are responsible for wrinkles, sun spots and pigmentation.

Although UVB (short wavelength ultra violet) rays account for a very less percent but still pose risk for skin. UVB rays usually burn only the superficial layer of skinSo it is essential to choose a sunscreen which gives protection from bot UVA and UVB rays. Also while selecting

sunscreen we must take into consideration, its SPF (sun protection factor).



Fig. 1



Fig. 2

#### Patient Awareness

Melasma is commonly reported, distressing skin disorder which is therapeutically often challenging.<sup>8</sup>

It is very important to create awareness about harmful effects of sun rays. Sun rays are proven to be responsible for skin cancer, so public awareness regarding methods of preventing oneself from harmful sun rays is must. When

public is aware of harmful effects of sun rays and start adopting measures to prevent exposure to sun rays will automatically lead to reduction in cases and severity of diseases due to sun exposure. Daily home care regimes for skin protection should form a part in syllabus to create awareness among people.

**Conflict of Interest:** None.

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