

**Original Article****Clinico-epidemiological Study of Men with Melasma at High Altitude**

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Himachal Pradesh, India**Abstract**

**Background:** *Melasma (Greek 'melas' - black) is a common, acquired hypermelanosis that occurs in sun-exposed areas mostly involving the face. Though multiple factors have been implicated in its etiopathogenesis the exact causes of melasma remains poorly understood. Despite several similarities between melasma in men and women, there are certain differences in clinical, etiological, and treatment aspects of melasma in men.*

**Aim and Objectives:** *To study certain differences in clinical and etiological aspects of melasma in men.*

**Material and Methods:** *30 consecutive men with a clinical diagnosis of melasma presenting to the out-patient department were enrolled in the study. Detailed history regarding age, sex, occupation, onset, duration and progression of melasma, family history and aggravating factors was taken and various clinical patterns namely centro-facial, malar, mandibular were documented.*

**Results:** *30 patients aged between 21 and 46 years (mean 30.1 years) were included in the study, the duration of melasma at presentation ranged from 2 months to 8 years. A positive family history was obtained in 11(36.7%) patients. Exacerbation on sun exposure was reported by 16(53.3%) patients. The malar pattern was the most common pattern seen in 21(70%) men followed by centro-facial in 8(26.7%) and mandibular in one (3.3%) patient.*

**Conclusion:** *Melasma was previously considered a pigmentation disorder of the females, but the occurrence in men is not uncommon and appears to affect dark-skinned men of Asian and African- American origin more frequently. This could also be attributed to the fact that men are becoming more aware of their appearance and media hype of various treatment modalities available.*

## Introduction

The color of the skin plays a major role in the appearance of an individual, as beauty is nothing but skin deep.<sup>1</sup> Melasma originated from Greek word melas which means black is a common, acquired pigmentary disorder. It presents as slowly enlarging, symmetrical tan to brown macules or patches with well-defined geographic borders on sun-exposed areas mostly the face, predominantly on the malar areas of cheek, it may also appear on forehead, chin, nose, upper lips, temple and rarely on arms. Although melasma can affect all races and both sexes, it is more commonly seen in women of child-bearing age and in dark-skinned individuals with Fitzpatrick skin types IV-VI<sup>1,2,3</sup> and in those living in areas with intense ultraviolet (UV) radiation. Melanin pigmentation is of two types, constitutive skin color (which is the amount of melanin pigmentation that is genetically determined in the absence of sun exposure and other influences), and facultative (inducible) skin color, or “tan,” which results from sun exposure.<sup>4</sup> Multiple factors have been implicated in the etiopathogenesis of melasma which includes exposure to ultraviolet (UV) radiation, pregnancy, contraceptive pills, hormone replacement therapy, cosmetics, phototoxic and antiseizure medications.<sup>5</sup> Hormonal imbalances between estrogen and testosterone might play a role in the development of melasma in men. Estrogen is known to lower blood testosterone and suppress the secretion of leuteinizing hormone (LH) and follicle stimulating hormone (FSH), which further increases estrogen levels. The effects of estrogen on melanocytes and induction of pigmentation in melasma are well-documented.<sup>6</sup> Tadokoro et al<sup>7</sup> suggested that testosterone by reducing the level of intracellular cyclic adenosine monophosphate and tyrosinase activity, affects human melanocytes thereby decreasing melanogenesis. Sialy and colleagues described statistically significant higher levels of luteinizing hormone and lower levels of testosterone in 15 men with melasma. The authors applied the term subtle testicular resistance as a

potential reason of melasma in men.<sup>8</sup> Melasma is caused by a complex interplay of environmental factors in a genetically predisposed individual<sup>9</sup>. On histopathology, number of melanocytes is not raised, but they are larger, with greater melanosomes and more dendritic, thus more active. Three distinguished clinical patterns of melasma are centro-facial type (involves forehead, cheeks, nose, upper lip and chin), mandibular type (on mandibular ramus) and symmetrical malar type (localised to cheeks and nose). Thanks to media and the boom in cosmeceutical industry, the controversy regarding the cosmetic differences between skin of men and women is occupying center stage. Men and women are not born with different skin colors. Adult human females are consistently lighter in skin pigmentation than males in the same population<sup>10</sup> which has been attributed to requirement in human females for high amounts of calcium and vitamin D during pregnancy and lactation. Thus, natural selection has led to lighter skin color in females than males in all indigenous populations.<sup>11</sup>

In depth studies have been done when it comes to melasma in women but despite several similarities, there are certain differences in clinical, etiological, and treatment aspects of melasma in men. Thus because of paucity of data on melasma in men this study was done.

## Aim and Objective

To study certain difference in clinical and etiological aspects of melasma in men.

## Material and Methods

- Study was carried out in the Department of Dermatology at our hospital from August 2018 to April 2019. A total of 30 consecutive men with a clinical diagnosis of melasma presenting to the out-patient department were enrolled in the study.
- Detailed history regarding age, sex, occupation, onset, duration and progression of Melasma, family history, aggravating factors such as sun exposure,

use of mustard oil, intake of any medications or history of application of topical corticosteroids were recorded.

- Various Clinical patterns of Melasma were noted (Table- 1).

**Table-1:** Clinical patterns of Melasma

Clinical patterns of Melasma	
1.	Centrofacial
2.	Malar
3.	Mandibular

**Results**

**Demographic profile**

30 consecutive men with a clinical diagnosis of melasma aged between 21 and 46 years (mean 30.1 years) were included in the study (Table-2). The duration of melasma at the time of presentation ranged from 2 months to 8 years. A positive family history was obtained in 11(36.7%) patients. Exacerbation on sun exposure was reported by 16(53.3%) patients. History of use of mustard oil for head and body massage was present in 10(33.3%) patients. Among the drug history, history of intake of phenytoin was present in one (3.3%) patient. None of the patients gave history of any chronic illness.

**Table-2:** Demographic profile and etiological factors of study population

Characteristics	( n =30)
▪ No. of patients	30
▪ Age	21 – 46 years
▪ Duration of Melasma	0.2 – 8 years
▪ Positive family history	11(36.7%)
▪ Exacerbation with sun exposure	16(53.3%)
▪ Use of mustard oil	10(33.3%)
▪ History of drug intake (phenytoin)	1(3.3%)

**Clinical patterns**

According to the patterns of melasma, the malar pattern was the most common pattern seen in 21(70%) men followed by centro-facial in 8(26.7%) and mandibular in one (3.3%) patient (Table-3) (Figure- 1, 2).

**Table-3:** Clinical patterns of Melasma

Clinical patterns of Melasma	n =30(%)
1. Centrofacial	8(26.7)
2. Malar	21(70)
3. Mandibular	1(3.3)



**Figure 1:** Malar Pattern (Most common pattern seen in men)



**Figure 2:** Centrofacial Pattern of Melasma

**Discussion**

Melasma predominantly affects women, men comprising only 10% of all cases.<sup>12</sup> A higher prevalence of melasma in Indian men has been documented in two different studies that is (25.8% [n=120] and 20.5% [n=200])<sup>13,14</sup> when compared to Caucasian men, which could be attributed to their darker complexion and the tropical Indian climate. Average age of affected men is 33.5 years with duration of 3.5 years in a study by Sarkar et al.<sup>2</sup> which is similar to results of our study. Vazquez et al.<sup>12</sup>, reported 70% of men in their study had a family history of melasma in their first- or second-degree relative, however, in our study 11(36.7%) patients gave a positive family history of melasma which is similar to results by Sarkar et al<sup>13</sup> who document 39 % men with a family history of melasma. In our study, sun exposure was reported by 16(53.3%) patients as

the major exacerbating factor as majority was working outdoors. In a study by Sarkar et al<sup>13</sup>, 48.8% of the male patients reported sun exposure, similar findings were reported in two other studies where 45.16% and 81.4% patients had chronic sun exposure.<sup>12,14</sup> Recently in a study, infrared radiation and visible light have been found to cause melasma, although not as severely as UV radiation.<sup>15</sup> History of use of mustard oil was reported by 10(33.3%) patients in our study whereas Sarkar et al<sup>13</sup> found it to be in 43.9% patients. In India practice of mustard oil massage after bath definitely contribute to potential photosensitivity as allyl isothiocyanate, a chief antigen in mustard oil is a common photosensitizer and thus there is uprise in the incidence of melasma in Indian men.<sup>13,16</sup> Phenytoin has been implicated as a causative agent in melasma in 6.45% and 7.3% of men in two separate studies by Sarkar et al<sup>13,14</sup> and we report it in 3.3% patients.

Among women, the centrofacial pattern is most common however, in men; malar pattern is more common than the centrofacial and mandibular patterns, representing 44.1 to 61 percent of male patients. The second most common pattern among men is the centrofacial variant<sup>12,13,14</sup> which is similar to results of our study that is malar pattern in 21(70%) followed by centro-facial in 8(26.7%) and mandibular in one (3.3%) patient. A few cases of extra facial (neck and forearm) melasma have also been reported in men.<sup>17,18</sup>

Limitations of our study were small number of patients and inability to delineate the epidermal/dermal type of melasma.

### Conclusion

The color of the skin plays a major role in the appearance of an individual, as beauty is nothing but skin deep. Melasma was previously considered a pigmentation disorder of the females, but the occurrence in men is not uncommon and appears to affect dark-skinned men of Asian and African- American origin with malar pattern being the most common pattern in men when compared

to females where centrofacial pattern is more common. However, larger studies are further needed.

**Conflict of Interest:** None declared.

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