

## Original Research Article

# Clinico-epidemiological study of melasma in tertiary care centre

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### ABSTRACT

**Background:** Melasma is common pigmentary disorder and affect patient quality of life due to its presentation over the face. It mostly affects sun exposed area and present as grey-brown pigmentation over the face.

**Methods:** In this observational or descriptive study, total 110 patients were enrolled which was carried out in the Department of Dermatology from February 2019 to January 2020 at Sri Siddhartha Medical College and Sciences, Tumkur, Karnataka.

**Results:** Mean age group affected was 31-40 years of age (41.8%). Out of 110 patients 18 patients were male and 92 patients were females. Total 15 patients had positive family history (13.6%). 30 patients had history of taking oral contraceptive pills (27.3%). 22 patients had sun exposure history (20%). 59 patients had epidermal pigmentation (53.6%) and 62 patients had malar region distribution (56.4%).

**Conclusions:** During third decade of life, females were more commonly affected. Pathogenesis of melasma is multifactorial. In our study, we found that oral contraceptive pills and sun exposure may predispose or trigger the melasma. Most common area affected was malar. Epidermal pigmentation was more common.

**Keywords:** Melasma, Clinical patterns, Oral contraceptives

### INTRODUCTION

Melasma is an acquired hyperpigmentation of sun-exposed areas. Melasma presents as symmetrically distributed hyperpigmented macules, which can be confluent, reticulated or punctate. Areas that receive excessive sun exposure, including cheeks, upper lip, chin, and forehead, are most common locations but can occasionally occur in other sun-exposed locations. Commonly seen in reproductive age group women with Fitzpatrick skin type IV-VI, though the condition can occur in male also.<sup>1</sup>

Chloasma is a synonymous term sometimes used to describe the occurrence of melasma during pregnancy which is mild and self-limiting. Melasma is common

pigmentary disorder, its prevalence in the Southeast Asia varies from 0.25-4% and among Indians.<sup>2</sup>

Melasma affect individual quality of life due to its location on the face and it affects individual physical, emotional, psychological, and social functioning.<sup>3</sup>

The exact pathogenesis of melasma is unknown. Common risk factors are hormonal factors such as female sex hormones, genetic predisposition, oral contraceptive pills, ultraviolet (UV) radiation exposure, pregnancy and drugs like phenytoin.<sup>4,5</sup>

This study is aimed at clinico epidemiological and etiological factors associated with melasma. Based on distribution, melasma lesions categorized into three types

i.e. centrofacial pattern, malar pattern and mandibular pattern. Based on Wood's light examination, melasma is classified into four types depending on the depth of pigment deposition i.e. epidermal type, dermal type, mixed type and intermediate type.<sup>6,7</sup>

### Objectives

The objectives of the study were to determine the clinico-epidemiological pattern and precipitating factors in melasma.

### METHODS

This observational/descriptive study was carried out in the tertiary care hospital, Department of Dermatology for one year ranging from February 2019 to January 2020 and patients who is having complain of melasma. Total 110 patients were enrolled in the study and the study was conducted at Sri Siddhartha medical sciences, Tumkur. No additional test was required for data to draw the results as it is a descriptive study. Before enrolling the patients for the study college ethical committee clearance was obtained.

Demographic data regarding age at present, age at the onset of melasma, sex, duration of disease, clinical pattern was noted. Data of the disposing factors, history of sun exposure, drug history and family history were noted.

Clinical examination was done based on the distribution pattern melasma was classified into centrofacial, malar and mandibular pattern. Wood's lamp examination was done to determine the depth of pigmentation.

### Inclusion criteria

Patients with all types of melasma attending the outpatient department of Dermatology were selected irrespective of sex, age, duration and previous history of treatment and those patients who were willing to take part in the study were included in this the study between 2019- 2020.

### Exclusion criteria

Patient aged <18 years and >60 years, pregnant women and those not willing to participate in study were excluded.

Total 110 patients were included in the study who satisfactorily fulfilled the inclusion and exclusion criteria.

### Statistical analysis

Data was analysed using Microsoft excel and presented in number and percentages.

### RESULTS

This study includes 110 patients with melasma out of that 18 patients were males and 92 patients were females. Age group which affected more was between 31-40 years of age (41.8%). Second age group was between 20-30 years of age (29%). Third group affected was between 41-50 years of age (22.7%). Only 7 patients were between 51-60 years of age (6.3%). Not even single case reported below 20 years of age. Out of that 15 patients had positive family history (13.6%).

**Table 1: Distribution of patients according to medication used.**

Variables	No. of patients	%
No history of any medication	61	55.5
Patients on oral contraceptive pills	30	27.3
Topical steroid cream application	12	10.9
Fairness cream	6	5.5
Native medication	1	0.9

As shown in Table 1, total 30 patients had history of oral contraceptive pills (27.3%). 61 patients had no history of any medication (55.5%). 12 patients had history of topical steroid cream application for melasma (10.9%). 6 patients had a history of application of fairness cream (5.5%). Only 1 patient had a history of native medication application (0.9%).

**Table 2: Distributions of the patient according to clinical pattern of melasma.**

Distribution pattern	No. of patients	%
Centrofacial	47	42.7
Malar	62	56.4
Mandibular	1	0.9

As shown in Table 2, total 47 patients had centrofacial distribution (42.7%). 62 patients had malar distribution (56.4%). Only 1 patient had mandibular distribution (0.9%).

**Table 3: Type of pigmentation.**

Pigmentation type*	No. of patients	%
Epidermal	59	53.6
Dermal	51	46.4
Mixed	0	0

\*on Wood's lamps examination, depth of the pigmentation was interpreted.

As shown in Table 3, total 59 patients had epidermal pigmentation (53.6%). 51 patients had dermal pigmentation (46.4%). No patient reported in our study with mixed pigmentation.

As data given in Table 4, total 22 patients had history of repeated sun exposure (20%) and 88 patients had no history of chronic sun exposure (80%).

**Table 4: Distribution of patients according to sun exposure.**

Repeated sun exposure	No. of patients	%
Yes	22	20
No	88	80

**Table 5: Duration of melasma.**

Duration of melasma (in years)	No. of patients	%
<1	36	32.7
1-2	45	40.9
3-4	20	18.2
>5	9	8.2

As per data shown in Table 5, total 36 patients had history of <1-year duration of melasma (32.7%). 45 patients had 1-2 years of duration (40.9%). 20 patients had 3-4 years of duration (18%) and 9 patients had >5 years of duration (8.2%).

## DISCUSSION

Melasma is common acquired pigmentary disease of the skin and routinely seen by dermatologist in clinics. In Washington DC study Goh et al found that melasma was the third most common pigmentary disorder which was confirmed in a private clinic survey of 2000 black people.<sup>8</sup>

In our study main age group affected was between 31-40 years i.e. 41.8% patients as compared to 42.3 years which was reported in Singapore study.<sup>9</sup>

Melasma is more prevalent among women. In our study we found about 16.4% men involvement compared to other study done by Vazquez et al which was 10%.<sup>11</sup>

Positive family history was found 13.6% in our study, compared with the previous research, in which it ranged from 20-70%.<sup>10,11</sup>

Various predisposing factors like hormones, ultraviolet radiation, sun exposure, pregnancy, medications like phenytoin have been implicated in melasma etiology. Melasma pathogenesis leads to increase melanocyte activity and synthesis with altered melanocyte function. In our study 20% patients had history of repeated sun exposure.<sup>12</sup>

In our study 30 patient had history of oral contraceptive medication (27.3%). Few other studies have reported a limited association with either oral contraceptive pills or pregnancy.<sup>12</sup>

Along with other studies from India and abroad, we identified three clinical patterns according to the distribution of the lesions and among that malar pattern was most common. In our study it was (56.4%).<sup>13,14</sup>

Similar to earlier study we found epidermal type was common, based on wood's light examination which indicate epidermal variety was most common and, in our study, it was (53.6%).<sup>6</sup>

## CONCLUSION

Melasma is more common in females and in reproductive age group which attributes to hormonal influence. Although pathogenesis of melasma is multifactorial, we observe in our study sun exposure, oral contraceptive pills may cause melasma or trigger it.

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