



A CLINICOEPIDEMIOLOGICAL STUDY ON MELASMA IN A TERTIARY CARE CENTRE IN CHENNAI

Dermatology

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ABSTRACT

Our aim was to study the clinicoepidemiological features in patients with Melasma. A retrospective analysis of clinicoepidemiological features of patients with Melasma who had attended the Dermatology OPD, in a tertiary care centre between January 2016 and December 2019 was done. All the required data had been collected from the OPD records and the details were tabulated and analysed. A total of 361 patients had Melasma during the study period, out of which 37 were males and 324 were females. Majority of patients (14.1%) presented in the month of March throughout the period of study. Most common age group affected (47.9%) was 31 to 40 years, with malar presentation being the most commonly affected site. Melasma is noted to be increasingly prevalent through the years and identification of its risk factors is essential for effective treatment and resolution.

KEYWORDS

Melasma, epidemiology, clinical, melanosomes

INTRODUCTION:

Melasma is a common acquired hyperpigmentation disorder presenting as symmetrical, irregular brown macules and papules. It is usually found in sun exposed areas of the body, commonly in the face.^[1] Although the exact pathophysiology has not been ascertained, several factors such as chronic UV radiation exposure, genetic predisposition and hormones are believed to be associated with its incidence.^[2] Initially, melasma was classified based on the localisation of melanosomes, namely epidermal, dermal and mixed. However, with recent advancements and studies, it has been found that all melasma is mixed.^[3] This has helped in choosing the ideal treatment for an individual, depending on the risk factors associated. The most effective treatment has been topical therapies such as hydroquinone, tretinoin and corticosteroids, usually in combinations.^[4] In case of refractory conditions, skin peels and procedures such as dermabrasion and laser therapy can be tried out. Newly developed drugs are aimed at maintaining the skin barrier or hormone levels, while some involve the local dermal vasculature.^[3, 4] It is vital to understand the etiology of melasma better as this could remarkably affect the modality of treatment and its responses. This study has been conducted among patients attending the dermatology OPD of a tertiary care centre situated in an urban area, with the aim of understanding the clinicoepidemiological features of melasma.

MATERIALS AND METHODS:

A retrospective study of patients diagnosed with melasma, who had attended the Dermatology OPD of a tertiary care centre, was conducted through assessment of OPD records between January 2016 and December 2019. The collected information was tabulated and analysed.

RESULTS:

A total of 361 patients diagnosed with melasma were included in the study in a period of 4 years. The ratio of male (n = 37) to female (n=324) is 1:8.7.

Table 1 – Number of patients diagnosed with melasma during the study period

Total number of patients	Male	Female
361	37 (10.2%)	324 (89.8%)

The majority of male patients observed for age of onset were in the age group of 21-30 years (4.9%), while it was 31-40 years in case of females (44%). However, the predominant age group was 31-40 years (47.9%) among the study population.

Table 2 - Age distribution among the total study population

Age	Male	Female	Total
0-10	0	0	0
11-20	0	1 (0.3%)	1 (0.3%)
21-30	18 (4.9%)	39 (10.9%)	57 (15.8%)
31-40	14 (3.9%)	159 (44%)	173 (47.9%)
41-50	2 (0.6%)	90 (24.9%)	92 (25.5%)
51-60	1 (0.3%)	27 (7.5%)	28 (7.8%)
>61	2 (0.6%)	8 (2.2%)	10 (2.8%)

Table 3 - Age distribution among the male study population

Age	Male
0-10	0
11-20	0
21-30	18 (48.7%)
31-40	14 (37.8%)
41-50	2 (5.4%)
51-60	1 (2.7%)
>61	2 (5.4%)

Table 4 - Age distribution among the female study population

Age	Female
0-10	0
11-20	1 (0.3%)

21-30	39 (12%)
31-40	159 (49.1%)
41-50	90 (27.8%)
51-60	27 (8.3%)
>61	8 (2.5%)

Majority of the patients had presented during the month of March (14.1%) consistently through four years, followed by February (10.8%). Our tertiary care centre saw the maximum number of melasma patients in the year of 2018 (26.9%) within our study period.

Table 5 - Monthly distribution in 2016, 2017, 2018, 2019 in the study population

	2016	2017	2018	2019	Total
January	5 (1.4%)	8 (2.2%)	8 (2.2%)	4 (1.1%)	25 (6.9%)
February	15 (4.1%)	8 (2.2%)	6 (1.7%)	10 (2.8%)	39 (10.8%)
March	12 (3.3%)	12 (3.3%)	12 (3.3%)	15 (4.1%)	51 (14.1%)
April	7 (1.9%)	6 (1.7%)	9 (2.5%)	4 (1.1%)	26 (7.2%)
May	6 (1.7%)	8 (2.2%)	10 (2.8%)	4 (1.1%)	28 (7.7%)
June	5 (1.4%)	5 (1.4%)	5 (1.4%)	9 (2.5%)	21 (5.8%)
July	6 (1.7%)	5 (1.4%)	4 (1.1%)	8 (2.2%)	23 (6.4%)
August	12 (3.3%)	11 (3%)	4 (1.1%)	3 (0.8%)	30 (8.3%)
September	2 (0.6%)	5 (1.4%)	10 (2.8%)	7 (1.9%)	27 (7.5%)
October	5 (1.4%)	9 (2.5%)	10 (2.8%)	8 (2.2%)	32 (8.9%)
November	4 (1.1%)	6 (1.7%)	10 (2.8%)	11 (3%)	31 (8.6%)
December	6 (1.7%)	8 (2.2%)	9 (2.5%)	5 (1.4%)	28 (7.7%)
Total	85 (23.5%)	91 (25.2%)	97 (26.9%)	88 (24.4%)	361

Table 6 - Monthly distribution in 2016, 2017, 2018, 2019 within the male and female study population

Months	2016		2017		2018		2019	
	Male	Female	Male	Female	Male	Female	Male	Female
January	1 (0.3%)	4 (1.1%)	1 (0.3%)	7 (1.9%)	0	8 (2.2%)	1 (0.3%)	3 (0.8%)
February	1 (0.3%)	14 (3.9%)	0	8 (2.2%)	1 (0.3%)	5 (1.4%)	0	10 (2.8%)
March	3 (0.8%)	9 (2.5%)	0	12 (3.3%)	3 (0.8%)	9 (2.5%)	1 (0.3%)	14 (3.9%)
April	0	7 (1.9%)	0	6 (1.7%)	0	9 (2.5%)	0	4 (1.1%)
May	0	6 (1.7%)	1 (0.3%)	7 (1.9%)	1 (0.3%)	9 (2.5%)	0	4 (1.1%)
June	1 (0.3%)	4 (1.1%)	1 (0.3%)	4 (1.1%)	0	5 (1.4%)	2 (0.6%)	7 (1.9%)
July	1 (0.3%)	5 (1.4%)	1 (0.3%)	4 (1.1%)	2 (0.6%)	2 (0.6%)	0	8 (2.2%)
August	1 (0.3%)	11 (3%)	2 (0.6%)	9 (2.5%)	0	4 (1.1%)	0	3 (0.8%)
September	0	2 (0.6%)	0	5 (1.4%)	2 (0.6%)	8 (2.2%)	1 (0.3%)	6 (1.7%)
October	0	5 (1.4%)	0	9 (2.5%)	1 (0.3%)	9 (2.5%)	2 (0.6%)	6 (1.7%)
November	0	4 (1.1%)	1 (0.3%)	5 (1.4%)	1 (0.3%)	9 (2.5%)	0	11 (3%)
December	1 (0.3%)	5 (1.4%)	1 (0.3%)	7 (1.9%)	1 (0.3%)	8 (2.2%)	1 (0.3%)	4 (1.1%)
Total	9 (25%)	76 (21%)	8 (22%)	83 (23%)	12 (3.3%)	85 (23.5%)	8 (2.2%)	80 (22.2%)

The most common presentation observed in our study was the malar type (59.2%), followed by centrofacial type (36.3%).

Table 7 - Site of lesions in the study population

Site	Number of patients
Centrofacial (Forehead, cheek, nose, upper lip sparing philtrum)	131 (36.3%)
Malar (Cheeks, nose)	214 (59.2%)
Mandibular (Chin, jaw)	12 (3.3%)
Extra-facial	4 (1.1%)

The patients who presented to our OPD with melasma were given topical therapy of combined hydroquinone, tretinoin and corticosteroids for one month, along with sunscreen application and Vitamin C supplements. It was followed by Kojic acid as topical therapy in some patients and chemical peel in other patients, for two months in recalcitrant cases. Most of the patients who were compliant

with the advice for follow up and treatment showed complete resolution in 3 months period.

DISCUSSION:

Melasma is one of the most commonly occurring pigmentation disorders of India. It is observed predominantly in women, especially within the Fitzpatrick skin types IV to VI.^[2] The prevalence of melasma in major Indian cities was noted to be 15.3%–27% among all disorders of hyperpigmentation in females.^[5]

A study by KrupaShankar et al demonstrated a female:male ratio of 4:1 across various Indian regions.^[6] However, our study showed a much higher proportion of females with a ratio of 8.7:1. Studies conducted outside India have recorded a higher fraction of females with melasma such as Sivayathorn et al showing a ratio of 6:1 in Malaysian population and 24:1 in Indonesian population.^[7]



Figures 1 and 2 – Melasma in malar region; Figure 3 – Melasma in centrofacial region

When observed in entirety, the majority of patients (47.9%) were observed within the age group of 31–40 years. This is correspondingly noted with the female study population as the commonest age group affected (49.1%) was 31–40 years. The same is noted in studies by KrupaShankar et al and, Achar and Rathi.^[6,8] However, the KrupaShankar et al and, Achar and Rathi studies showed male predominance within the 31–40 years too, but in our study, the majority of males affected (48.7%) presented within the 21–30 years group.

The relationship between ultraviolet rays exposure and melasma has been well established.^[2] This could have been one of the contributing factors for our study seeing the greatest number of patients in the month of March (14.1%), followed by February (10.8%), that marks the onset of summer in South India.

The sites of lesions can be classified as centrofacial, malar, mandibular and extra-facial. The prevalence of the type of melasma has been noted to vary between different geographical regions within India and with different ethnicities.^[6] In our study, malar lesions were seen most commonly (59.2%), followed by centrofacial lesions (36.3%). This is consistent with studies by C L Goh et al, and Manjula Jagannathan et al.^[9,10]

CONCLUSION:

The clinicoepidemiological analysis done in our study has reiterated the importance of the rising prevalence of melasma in the last few years. Multiple environmental triggers, along with female hormones have seen to be directly proportional to the incidence of the skin disorder. It is imperative to advice sun protection as a primary preventive measure and also for better resolution in patients clinically diagnosed with melasma. Furthermore, counselling the patients is necessary as well to aid in assuaging the psychosocial impact of melasma.

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