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Research Article

MELASMA: A CLINICO-EPIDEMIOLOGICAL STUDY

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ABSTRACT
Melasma is an acquired increased pigmentation of the skin, characterized by gray-brown symmetrical patches, mostly in the sun-exposed areas of the skin. The pathogenesis is unknown, but genetic or hormonal influences with UV radiation are important. Our present research aims to study the clinico-epidemiological pattern and the precipitating or provocation factors in melasma. A total of 36 patients were enrolled for the study over a period of three months. The mean age of patients with melasma was 33.77 years, ranging from 21 to 44 years. Females comprised the majority of cases seen in 29 out of 36 cases and the common age group affected was in late third decade. The patients sought medical treatment on an average of 3.41 years after appearance of melasma. About 28% of our patients reported that their disease exacerbated during sun exposure. Among 36 female patients, 10 reported pregnancy and 13 reported oral contraceptive as the precipitating factors. A positive family history of melasma was observed in 13 (36%) patients. Centrofacial was the most common pattern (47.22%) observed in the present study. Wood light examination showed the epidermal type being the most common in 55.55% and dermal and mixed were seen in 22.22% and 16.66% of the cases, respectively. We tried to find an association with endocrinal diseases and observed that 5 of them had hypothyroidism. The exact cause of melasma is unknown. However, many factors have been implicated in the etiopathogenesis of this disorder. Here we try to identify the causative factors and provocation to develop melasma.

Keywords: *Clinical, Epidemiological, Melasma*

INTRODUCTION
Melasma is a common acquired hypermelanosis that occurs exclusively in sunexposed areas, mostly in the face and occasionally in the neck and rarely forearms. It develops slowly and is usually symmetric. Melasma is derived from the Greek word ‘‘melasitaties’’ meaning black. Chloasma is derived from greek “cloazeinitaties” meaning “to be green”. Since melasma is hypermelanotic, it is better to be designated as melasma, rather than chloasma.

The prevalence of melasma has been reported as between 5-70%. Melasma is more common in women. Men have been reported to represent 10% of cases and demonstrate the same clinical and histologic characteristics as women.

The precise cause of melasma is unknown. However, a number of factors are implicated in the aetiopathogenesis of melasma. These include genetic influences, exposure to UV radiation, pregnancy, oral contraception, oestrogen-progesterone therapies, thyroid dysfunction, cosmetics and phototoxic and antiseizure drugs.

Other aetiologic factors implicated in melasma are oral contraceptives and pregnancy. Melasma starts with pregnancy and disappears completely after parturition but may not regress in women on oral contraceptive until the medication is discontinued.

There is also a report that thyroid disorders are associated with melasma in women whose pigmentation develops during pregnancy or after ingestion of oral contraceptive drugs.

Some studies suggest melasma as a type of photo contact dermatitis. The allergens were found to be ingredients in cosmetics.

To conclude aetiopathogenic studies, it is stated that melasma may be a consequence of hyperactive/ hyperfunctional melanocytes that cause excessive melanin deposition in the epidermis and dermis.

Melasma may represent a unique phenotypic expression of an aberrant susceptibility of epidermal melanocytes to ultraviolet light and sex steroid hormone induced stimuli for melanogenesis.
The number of hyperpigmented patches may range from a single lesion to multiple patches located usually symmetrically on the face and occasionally the V-neck area. The lesions have serrated, irregular, and geographic borders. According to the distribution of lesions, three clinical patterns of melasma are recognized. Centrofacial pattern is the most common (63%) pattern and involves the forehead, cheeks, upper lip, nose and chin. Malar pattern constituting 21% involves the cheeks and nose. Mandibular pattern the least common (16%), involves the ramus of the mandible.
Using Wood's light examination, melasma can be classified into four histologic types. In epidermal type the pigmentation is intensified under Wood's light examination. It is the most common type of melasma seen in 70% of cases. In dermal type the pigmentation is not increased under Wood's light examination. In the mixed type the pigmentation becomes more apparent in some areas while in others there is no change. In the indeterminate type wood's light examination is of no benefit in individuals with skin type VI.
This study is aimed at studying the epidemiology, clinical presentation, and precipitating and / or provocation factors associated with melasma.

MATERIALS AND METHODS

The present study was carried out on the clinico-epidemiology of melasma patients between January 2012 and March 2012. Thirty six patients with a clinical diagnosis of melasma were enrolled for the study.
The demographic data regarding age at present, age of onset of melasma, sex, duration of the disease, and family history were noted. The data of different predisposing factors like sun-exposure, pregnancy, cosmetics, and other endocrinal diseases were included, and relevant investigations were carried out to rule out the same.
Clinical evaluation was done and depending upon the distributions of lesions, they were divided into centrofacial, malar, or mandibular. Wood's light examination was done to determine the histological pattern.

RESULTS AND DISCUSSION

Results

The study comprised of 36 patients of melasma; the demographic features of which are given in Table 1.
There were 29 females and 7 males with an age range of 21 to 44 years. It had its onset and presentation in 3rd and 4th decade of life in majority of cases. We did not have any case beyond 5th decade of life. It was common in females as observed in 80.6% of the cases in comparison to 19.6% of males.
Thirty six (36%) of the cases with melasma had similar complaints in family. Among 29 female cases with melasma, 44.83% of the cases developed facial pigmentation during pregnancy. Other predisposing factors are UV radiation, drugs like ART and OCP's, cosmetics like fairness creams and associated systemic diseases like hypothyroidism.
10 out of 36 patients of melasma had history of drug intake. Out of which 4 patients were on OCP's for a mean duration of 2 years and 3 patients were on ART. 3 of the patients were on other drugs like anti-diabetic and anti-hypertensive.
The most common type of melasma was centrofacial seen in 17 out of 36 cases, followed by malar (Vazquez *et al.,* 1988) and mandibular (Lutfi *et al.,* 1985).
The most common pattern under wood's lamp examination observed in our study was epidermal in 55%, followed by dermal (22%), mixed (17%) and was indeterminate in 2 cases.

Discussion

Melasma is an acquired hypermelanoses, characterized by gray-brown symmetrical patches, mostly in the sun-exposed areas of the skin. The pathogenesis is unknown, but genetic, hormonal and UV radiation is important predisposing factors. 36% of cases in our study comprised melasma. The average age of patients in our study was 33.77 years ranging from 24 to 48 years which was in accordance with the study

conducted by Achar and Rathi (2011) where the mean age was 33.45 years. In another study by Goh CL in Singapore the average age was 42.3 years.

The common age group affected in melasma was 31-40 seen in 50%, followed by 21-30 in 36% of cases. Females comprised the majority of cases seen in 29 out of 36 cases and the common age group affected was 31-40.

Melasma is more common in women observed in 80.6%. We found about 19.4% involvement of men in our study compared to 19.87% in a study conducted by Achar and Rathi (2011) in India and 10% by Vazquez *et al.*, (1988).

This study showed that most patients consulted the doctor after 3.41 years of their disease in accordance to the study conducted by Achar and Rathi (2011) who noticed an earlier presentation to doctor that is 3.59 years.

19.4% of the melasma cases in our study had itching. 27.7% of the cases had photosensitivity.

A positive family history was observed in 36.11% in the present study, which was in concordance with an earlier reported study, in which it varied from 20 to 70%.

We have noticed that about 28% of our patients had significant sun exposure, which they felt was an aggravating factor. Achar and Rathi (2011) reported that 55.12% had sun exposure which was slightly higher compared to our study.

In this study, 36% of the female patients noted pregnancy as a precipitating factor which was in accordance with Achar and Rathi (2011) study (22.4%).

Only 11.11% of them were taking oral contraceptives during their disease process, which was not related to the precipitating or aggravating symptoms / signs. These figures are lower than those reported earlier (29%).

Eight patients (22%) used different types of cosmetics on a regular basis (at least five days in a week). Some studies suggest melasma as a type of photo contact dermatitis. The allergens were found to be ingredients in cosmetics.

There was no other autoimmune disease noted, except hypothyroidism in 5 patients out of 36 cases of melasma.

According to the distribution of the lesions we recognized three clinical patterns which were centrofacial, malar and mandibular. Among these, centrofacial was the most common, like other studies from India and abroad. However, study from Singapore observed that malar distribution was the most common. This variation of results might be due to environmental or regional differences.

Under the Wood's light examination, we found that the epidermal type was the most common, in accordance to an earlier study.

Table 1: Demographic distribution of study population (n=36)

Mean Age		33.77 years
Sex(F:M)		4:1(29/7)
Mean Duration of Disease		3.5 years
Mean Age of onset		25.59 years
Family history	Positive	36%
	Negative	64%
Relation with sun exposure	Positive	28%
	Negative	72%

Females were affected more commonly during their late third decade of life. Although we did not find the exact cause of melasma, we noticed that sun-exposure, pregnancy, and taking of oral contraceptive pills could precipitate or exacerbate the melasma. We found that some of our patient's relatives also had

melasma and some of our patient's disease was associated with autoimmune disease, mainly thyroid dysfunction. These findings suggest some genetic implication in the development of melasma.

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