International Journal of Research in Dermatology
Kumar A et al. Int J Res Dermatol. 2018 Nov;4(4):539-542
http://www.ijord.com

DOI: http://dx.doi.org/10.18203/issn.2455-4529.IntJResDermatol20184457

Original Research Article

A clinico-epidemiological study of melasma

Akshy Kumar*, Mukul Sharma

Department of Dermatology, Government Medical College, Kota, Rajasthan, India

Received: 18 April 2018
Revised: 27 May 2018
Accepted: 29 May 2018

***Correspondence:**
Dr. Akshy Kumar,
E-mail: akshayrj@gmail.com

ABSTRACT

Background: Melasma is an acquired increased pigmentation of the skin, characterized by gray-brown symmetrical patches, mostly in the sun-exposed areas of the skin.
Methods: The proposed study is an epidemiological cross sectional study which was carried out in the department of dermatology in a teaching institute from October 2007 to September 2008 at Pramukh Swami Medical College, Karamsad, Gujarat. A total of 60 patients were enrolled for the study over a period of one year.
Results: The main age group affected was 30-39 years i.e. 48.33% patients. 50 patients were females.18 patients had a positive family history of melasma. 12 patients had a positive history of using OC Pills. Malar region was the commonest affected area found in 52 patients followed by Centro-facial in 31 and least involvement was seen in forehead region in 24 patients. 20 patients reported association of occurrence of the lesions with pregnancy, 09 patients reported sunlight to be the offending agent.
Conclusions: 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.

Keywords: Epidemiological, Melasma, Pregnancy

INTRODUCTION

Melasma (chloasma faciei) is an acquired, mostly symmetrical hyper-melanosis characterized by "moth eaten" tan or brownish patches with well defined margins that occur on the sun exposed areas of the skin. When melasma is associated with pregnancy it is called chloasma or "mask of pregnancy". The variant which generally occurs with pregnancy is a milder variant and it generally is self limiting in nature which subsides within a year after pregnancy is over.

It is a chronic and recurrent disorder which has been under-diagnosed for decades and is under-treated due to lack of effective definitive therapies and the perception that it is merely a cosmetic nuisance and nothing much except hyper pigmentation. The main area of involvement is face and hence it is of major cosmetic concern to the patient. Lack of definitive therapies makes it a challenge for both, the physician and the patient, to treat and cure melasma.

The exact prevalence of melasma is unknown in most of the countries due to lack of the large epidemiological studies. Melasma is among the most common cutaneous disorders, accounting for 0.25 to 4% of the patients seen in Dermatology Clinics in South East Asia, and is the most common pigment disorder among Indians.[1]

Melasma is primarily a disease of women of child-bearing age although 10% of cases occur in men. Many physicians outside the dermatological community have

not been aware of available treatments and therefore, have typically not addressed the problem unless asked for or have reassured their patients that the hyper-pigmentation would fade after delivery. However, mere assurance is not enough in most of the cases.

The exact etiology of melasma is unknown, rather mysterious. However, multiple factors are implicated in its etiopathogenesis, mainly sunlight, genetic predisposition and role of female hormonal activity hence, more common in the female gender. Exacerbation of melasma is almost inevitably seen after uncontrolled sun exposure and conversely melasma gradually fades during a period of sun avoidance in few cases. Genetic factors are also involved, as suggested by familial occurrence and the higher prevalence of the disease among Hispanics and Asians.[2]

This study is aimed at studying the epidemiology, clinical presentation, and precipitating and / or provocation factors associated with melasma.

METHODS

The present study was carried out in a teaching institute for one year ranging from October 2007 to September 2008. A total of 60 patients were enrolled for the study and the study was conducted in the Pramukh Swami Medical College, Karamsad, Gujarat. It is a cross sectional epidemiological study. No tests were applied to the data to draw the results as it is a descriptive study. College ethical committee clearance was essentially obtained before enrolling the patients for the study.

Patient selection criteria

Patients of all 3 types of melasma attending the outpatient department of dermatology were selected irrespective of age, sex, duration and previous therapy. Only those patients who were willing to take part in the study were enrolled for the study between 2007- 2008.

Patient exclusion criteria

Certain parameters were binding while selecting the patients for the study which were strictly taken care of, during the enrollment procedure: active acne lesions over face; history of taking oral phenytoin in last 1 year; old facial dyschromia; ashy melanosis; uncontrolled systemic disease; any condition necessitating UV -light therapy; any concomitant disease that might interfere with the diagnosis of facial hyper-pigmentation.

Study comprised of total 60 patients who satisfactorily fulfilled the inclusion and exclusion criteria.

RESULTS

The present study comprises of 60 patients of melasma. Out of these 20 patients were treated with GA peel, 20 with SA peel and the remaining 20 were treated with micro-dermabrasion. Patients were evaluated and analyzed after 6 sittings (3 months) each of which was carried out 2 weeks apart.

The main age group affected was 30-39 years i.e. 48.33% patients. The second most affected was 20-29 years i.e. 30% patients, 20% belonged to 40-49 years age group while 1.66% patients belonged to 50-59 years age group. Not even a single patient of melasma was noted in the groups below 20 years of age. Total 10 out of 60 patients were males and rest 50 patients were females. total 18 patients had a positive family history of melasma in either parents or any of the siblings.

Table 1: Distribution of patients according to risk factor.

Condition	No. of patients	Percentage (%)
Use of OC pills	12	20
Thyroxin Sod.	03	05
Hormone replacement therapy	01	1.6

As shown in Table 1, total 12 patients had a positive history of using OC Pills as a mode of contraception while 03 were under medication for hypothyroidism and only 01 patient gave history of taking hormone replacement therapy for inability to conceive.

Table 2: Distribution of patients according to duration of melasma.

Duration (in years)	No. of Patients	Percentage (%)
<1	14	23.33
>1-3	23	38.33
>3-5	07	11.66
>5	16	26.66

Out of total of 60 patients 14 (23.33%) patients had melasma for less than 1 year; While 16 (26.66%) patients had the lesions for more than 5 years. Most common presentation was between 1-3 years of disease duration (38.33%).

Table 3: Distribution of lesions.

Pattern of distribution	No. of patients	Percentage (%)
Malar	52	86.66
Centro-facial	31	51.66
Forehead	24	40.00

As shown in Table 3, malar region was the commonest affected area found in 52 patients followed by Centro-facial in 31 and least involvement was seen in forehead region in 24 patients.

Table 4: Type of pigmentation.

Type of pigmentation*	No. of patients	Percentage (%)
Epidermal	36	60.00
Mixed	13	21.66
Dermal	11	18.33

*on the basis of the interpretation made by examination of the affected region by Wood's lamp.

Table 4 indicates that on Wood's lamp examination 36 patients had epidermal type of pigmentation, 13 patients had mixed type of pigmentation and only 11 patients had dermal pigmentation.

Table 5: Precipitating factor.

Suspected agent	No. of patients	Percentage (%)
Pregnancy (P)	20	33.33
Sunlight (S)	09	15.00
Working on computer (C)	05	08.33
Iatrogenic (I)	02	03.33

As Table 5 indicates; 20 patients reported association of occurrence of the lesions with pregnancy, 09 patients reported sunlight to be the offending agent, 05 patients were habitual of working on computers and in 02 cases there was history of application of some cream / lotion over the face which were OTC drugs or prescribed by some GP.

DISCUSSION

Melasma is an acquired increased pigmentation of the skin. It is a commonly seen entity in clinical practice. Few studies show that melasma accounts for 4–10% of the new cases in the dermatology hospital, as a referral.[3,4] Similarly it is found to be the third most common pigmentary disorder of the skin, confirmed in a survey of 2000 black people, at a private clinic in Washington DC.[5]

The main age group affected was 30-39 years i.e. 48.33% patients in our study compared to 42.3 years, reported in a study from Singapore.[6]

Melasma is more common in women. We found about 16.67% involvement of men in our study compared to 10% in a different study.[7]

A positive family history was observed, 33.33%, in the present study, which was in correlation with an earlier reported study, in which it varied from 20 to 70%.[7,8]

Multiple causative factors have been implicated in the etiology of melasma, including, ultraviolet light (sunlight), hormones (oral contraceptives), and pregnancy. There appears to be an increase in the number and activity of melanocytes in the epidermis of patients with melasma. The melanocytes appear to be functionally altered.[9] We have noticed that about 15% of our patients had sun exposure, which they felt was an aggravating factor. It is in great contrast to Pathak's report, which suggests that sunlight exacerbates melasma in all patients[10].

In this study only 33.33% of the female patients noted pregnancy as a precipitating and aggravating factor, respectively. Only 20.00% 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.[10]Few other studies have also reported a minimum relation with either pregnancy or oral contraceptives.[9]

According to the distribution of the lesions we recognized three clinical patterns and among these, malar was the most common, like other studies from India and abroad.[11,12] However, studies from Singapore and South India observed that malar distribution was the most common.[12,13] 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 similar to an earlier study, which suggested that the epidermal variety was the most common.[14]

CONCLUSION

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.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: The study was approved by the institutional ethics committee

REFERENCES

1. Bandyopadhyay D. Topical treatment of melasma. Indian J Dermatol. 2009;54:303–92.
2. Pasricha JS, Khaitan BK, Dash S. Pigmentary disorders in India. Dermatol Clin. 2007;25:343–522.
3. Estrada-Castanon R, Torres-Bibiano B, Alarcon-Hernandez H. Epidemiologia cutanea en dos sectores de atencion medica en Guerrero, Mexico. Dermatologia Rev Mex. 1992;36:29–34.
4. Failmezger C. Incidence of skin disease in Cazco, Peru. Int J Dermatol. 1992;36:29–34.
5. Goh CL, Dlova CN. A retrospective Study on the clinical presentation and treatment outcome of melasma in a tertiary dermatological referral centre in Singapore. Singapore Med J. 1999;40:455–8.

6. Katsambas AD, Stratigos AJ, Lotti TM. Melasma. In: Katsambas AD, Lotti TM, editors. European handbook of dermatological treatments. 2nd ed. Springer, Berlin; 2003: 336–341.
7. Resnik S. Melasma induced by oral contraceptive drug. JAMA. 1967;199:601–5.
8. Vazquez M, Maldonado H, Benmaman C. Melasma in men, a clinical and histological study. Int J Dermatol. 1988;27:25–7.
9. Sanchez NP, Pathak MA, Sato S, Fitzpatrick TB, Sanchez JL, Mihm MC., Jr Melasma: A clinical, light microscopic, ultrastructural and immunoflorescence study. J Am Acad Dermatol. 1981;4:698–710.
10. Pathak MA. Clinical and therapeutic aspects of Melasma: An overview. In: Fitz Patrick TB, Wick MM, Toda K, editors. Brown melanoderma. University of Tokyo Press, Tokyo; 1986: 161–172.
11. Katasambas A, Antoniou C. Melasma: Classification and treatment. J Eur Acad Dermatol Venereol. 1995;4:217–23.
12. Thappa DM. Melasma (chloasma): A review with current treatment options. Indian J Dermatol. 2004;49:165–76.
13. Goh CL, Dlova CN. A retrospective Study on the clinical presentation and treatment outcome of melasma in a tertiary dermatological referral centre in Singapore. Singapore Med J. 1999;40:455–8.
14. Nicolaidou E, Antoniou C, Katsambas AD. Origin, clinical presentation, and diagnoses of facial hypermelanoses. Dermatol Clin. 2007;25:321–6.

Cite this article as: Kumar A, Sharma M. A clinico-epidemiological study of melasma. Int J Res Dermatol 2018;4:539-42.