

Clinical Assessment Of Melasma In Patients Attending The Department Of Dermatology And Venereology At Rizgary Teaching Hospital In Erbil City

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ABSTRACT

Background and Objectives: Melasma is an acquired and symmetric hyperpigmentation of the face. The aim of this study was to assess clinical varieties, aggravating factors of melasma, distribution among different age and sex groups and observed diseases.

Methods: This descriptive study was conducted on 210 patients with melasma attending the department of Dermatology and Venereology at Rizgary Teaching Hospital in Erbil city. Data were collected from November 2007 to the end of June 2008. All patients and both sexes were included in the study except for patients who received treatment during last two months of presentation. A questionnaire was prepared and full history and a thorough examination was done for each patient.

Results: The study showed that 83.33% of the patients were females with a mean age of 23.71 years. Main factors found to induce or exacerbate melasma were sunlight (71.9%) and emotional stress (65.7%). The most common morphological type was centofacial (70.95%). Wood's light examination showed epidermal type predominance.

Conclusions: Melasma is a disease of reproductive period. Sunlight and emotional stress are the most common aggravating factor. The most common morphological type of melasma seen was centofacial. Epidermal type of pigment predominates in most patients with melasma.

Key words: Melasma, Fitzpatrick skin phototype, Premenstrual exacerbation, Pregnancy, Acne.

INTRODUCTION:

Melasma is an acquired hypermelanosis, occurring symmetrically on sun-exposed areas in the face. Lesions are irregular light to dark brown macules and patches, usually involving the cheeks, forehead, upper lip, and chin¹. Melasma is common particularly in women of child bearing age. It develops in about 70% of pregnant women especially those of dark complexion during the 2nd half of pregnancy². It appears at the end of the 3rd and beginning of the 4th decade and may appear later in black patients³⁻⁵. Many etiologic factors are associated with melasma; of these factors sunlight exposure appears to be the most

significant. Other factors include genetic influences, pregnancy, oral contraceptives, certain cosmetics, endocrine factors, thyroid dysfunction, and medications⁶⁻⁸. Melasma is classified both clinically and histologically. Clinically, melasma occurs in three distributions: centofacial, malar and mandibular pattern, although in Iraqi study is classified as butterfly, mask, localized, horseshoe. Histologically¹⁵, melasma is divided into four patterns of pigmentation: epidermal, dermal, mixed and inapparent type found in patients of dark skin⁶. Although the pathogenesis of melasma is not yet completely understood, several treatments are available including hypopigmenting agents, chemical peels, and

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lasers. Therapy is aimed at protection from UV radiation, inhibition of both melanocyte proliferation and the synthesis of melanin, and the removal of melanin⁸. Melasma has a severe impact on the quality of life by undermining patient's psychological, social and emotional well-being. Melasma is commonly encountered problem in dermatological departments, this is the first clinical study done on melasma in Erbil city and no data available regarding clinical aspect of melasma. The aim of this study is to assess clinical varieties, aggravating factors of melasma, distribution among different age and sex groups and observed diseases that accompany melasma.

SUBJECTS AND METHODS:

This descriptive study (review of cases) was conducted on patients attending the clinical outpatient Department of Dermatology and Venereology at Rizgary Teaching Hospital in Erbil City from November 2007 to the end of June 2008. Two hundred ten patients with melasma were included in the study. The diagnosis in each case was based on the history and clinical examination. All patients and both sexes were included in the study; except for patients who received treatment for melasma two months before presentation were excluded from the study. A questionnaire was prepared, a number was given to each patient and a detailed history was taken from each patient including, age, gender, occupation, marital status, age of onset, duration of melasma and family history among close relatives. The history also included aggravating factors like sunlight exposure, emotional stress, drugs and cosmetics, history of hair epilation in males was not included in the study as an aggravating factor. Female patients were asked about the history of pregnancy, premenstrual exacerbations, oral contraceptive pills intake and menstrual irregularities, no hormonal assay or ultrasonography examination were done to female patients. A detailed examination was done to assess Fitzpatrick skin types,

sites, color, homogeneity and morphology of melasma. The examination also included diseases observed with melasma like acne, hirsutism, and diffuse hair loss. All patients were examined by Wood's light examination to evaluate the depth of pigmentation in melasma. Data were entered into the computer using the Statistical Package for Social Science (SPSS, Version 16.0) for analyzing the data. Microsoft Excel was used to plot graphs.

RESULT:

A total of 210 patients with different types of melasma were studied, their age range was 16-42 years with a mean (\pm SD) was 23.71 ± 5.17 years, while the age of onset ranged from 14-40 years with a mean (\pm SD) was 20.62 ± 4.74 years. Female patients constituted 83.33% of patients while males constituted 16.66% of patients with a female to male ratio of 5:1. Melasma was seen in different age groups but most commonly was seen during the reproductive period, it was seen mainly at the age 20-40 years with a marked decline after the age of 40 years. The duration of melasma ranged from 1 month to 10 years with a mean (\pm SD) was 33.71 ± 29.80 months. Melasma was most commonly seen during the periods of increased sun exposures from March toward the end of June. Melasma was seen in 43.33% of patients working as outdoor job (teachers, students, employee, farmers, military personnel) while 56.66% of patients with indoor jobs or no jobs (housewives). Family history of melasma among close relative was positive in 80 (38.09%) cases. There were many aggravating factors singly or in combination found to induce or exacerbate melasma. The most important were the following: sunlight (71.9%), emotional stress (65.71%), premenstrual exacerbations (52.57%), cosmetics (42.85%), pregnancy (32%) and contraceptive pills (13.71%); aggravating factors were absent in 1.42% of patients. Aggravating factors were variable in different sexes like sunlight (94.28% in males, 67.42%

females) was more important in males than females while emotional stress, premenstrual exacerbations, cosmetics, pregnancy, contraceptive pills were more important factors among females (Table 1). Fitzpatrick skin phototypes commonly seen in this study were type IV in 56.2% of patients and type III in 38.1% of patients and type II in 5.7% of patients while type I, V, VI were not seen. Many predilection areas were commonly involved by melasma that could be affected singly or in combinations. These areas were cheeks (95.2%), nose (88.1%), upper lip (57.1%), forehead (39%), chin (27.6%), and no lesions were found on the ramus of mandible and other parts of the body like trunk and forearms. Morphological types of melasma commonly seen were centrofacial (pigmentation on cheeks, forehead, upper lip, nose, and chin), malar (pigmentation on nose and

malar area) and no mandibular type found. Centrofacial type was more common in females while malar type was more common in males (Table 2). Light brown color predominates the dark brown, and the mottled pigmentation predominates the uniform one. Wood's light examination showed epidermal type of melasma in 66.66% of patients and 16.19% of patients showed dermal type of melasma while 17.14% of patients showed mixed type and no unapparent type were seen. (Table 3). Patients with melasma might have irregular period, it was found that 18.28% of females had menstrual irregularities in the form of menorrhagia, oligomenorrhea or amenorrhea. Disorders observed with melasma singly or in combinations were acne vulgaris (48.57%), diffuse hair loss (25.23%), hirsutism (16.57%).

Table 1: Aggravating factors in females

Aggravating factors	Female (n=175)	Male (n=35)
Sunlight	67.42%	94.28%
Emotional stress	69.14%	48.57%
Premenstrual exacerbation	52.57%	-
cosmetics	51.42%	-
Pregnancy	32%	-
Contraceptive pills	13.71%	-
No aggravating factor	1.71%	-

Table 2: Morphological types of melasma among male and female

Wood's light examination	Color		Homogeneity		Total
	Light brown	Dark brown	Uniform	Mottled	
Epidermal	90%	10%	23.57%	76.42%	100%
Dermal	26.47%	73.52%	61.76%	38.23%	100%
Mixed	58.33%	41.66%	38.88%	61.11%	100%
Total	74.28%	25.71%	32.38%	67.61%	100%

Table 3: Color, homogeneity and Wood's light examination

Morphological types	Male	Female	Total
Centrofacial	54.28%	74.28%	70.95%
Malar	45.71%	25.71%	29.04%
Total	100%	100%	100%

DISCUSSION:

This is the first study on melasma that was conducted in the clinical outpatient department of Dermatology and Venereology at Rizgary Teaching Hospital in Erbil City.

During eight months period of this study, out of 12655 patients that were referred to Rizgary outpatient department, 210 cases with melasma were recorded which account for 1.65% although this prevalence is incomparable to that of Baghdad city in regard to the population density. Because this department is not the only department of dermatology in Erbil city, the compiled data give only a rough idea about true occurrence of the disease. The mean age of the affected patients was found to be 23.71 years, in contrast to two other studies one in Iraq⁹ reported higher mean age (31.92 years), the other study in India which showed a mean age of 31.54 years¹⁰. In the present study melasma was seen commonly during third decade of life in 60.47% and 18.09% during the fourth decade of life with a marked decline after the age of 40, this confirms the occurrence of melasma during the reproductive period of life in females and may explain the role of the hormonal changes in the pathogenesis of melasma. In the present study females constituted 83.33% of cases while males constituted 16.66%, concurring with other studies done in Iraq which showed that 85.71% of the melasma patients were females⁹, while in India, Garg et al reported that females constituted 86.66% of patients¹⁰. This is because females are more interested about cosmetic appearance than males in addition to the effect of hormonal changes, oral contraceptive pills (OCP) use is predominant in females. Many aggravat-

ing factors were reported in this study, Sunlight was found as high as seen in Indian study (74.1%)¹⁰ (although the majority of the patients occupations reported indoor activity but the majority of these patients reported frequent exposure to sunlight regardless of their occupation), while it was found lower than other studies as in Iraq that reported sunlight as an aggravating factor in 93% of patients¹¹, and in Brazil reported in 88.1% of patients¹², this high value may be due to the nature of the temperate climate in Iraq in which the summer is longer and hotter than other seasons. Emotional stress was comparable to an Iraqi study (58%)¹¹, this high value may be due to the role of MSH on the skin. Premenstrual exacerbation was much higher than an Iraqi study (22%)¹¹, and from a Brazilian study (8.8%)¹², this may clarify the effect of hormonal changes on melasma during menstrual cycle. Cosmetics in the current study was higher than a study done in Brazil that showed only 11% of patients thought that cosmetics play a role in exacerbation of melasma¹³. Pregnancy in Iraq was reported to be an exacerbating factor in 50% of cases¹¹, and in Brazil (54.7%)¹², which are higher than the present study while close results (35.7%) were reported in Indian study¹⁰, this is because most of the patients with previous pregnancy regard melasma as one of the normal sequel after pregnancy and most of them do not seek medical advice. Moin et al found OCP was the cause in 11.3% of cases¹⁴ which is comparable to the current study, while it seemed to be higher than another study done in India with only 1.4% of patients reported OCP intake¹⁰. Aggravating factors were absent in 3.3% in an Iraqi study¹⁵ in contrast to

68.8% of patients in Iranian study¹⁴ which is very high value than in the present study, this means that patients included in this study were more aware about exacerbating factors than other regions. Regarding morphological features the figures of the present study were comparable to an Indian study centrofacial (70%), malar (30%)¹⁰, in contrast to other studies done in India which reported centrofacial (48.39%) and malar (51.61%)¹⁶ and in Singapore which reported centrofacial (8%) and malar (89%) while mandibular pattern reported in only 3%¹⁷. The absence of mandibular pattern may be due to that the majority of patients aged below 40 years old, the Centrofacial involvement together with sites of involvement mentioned above may be due to the limited use of sun protective measures like head covers and probably sunscreens hence prone the whole face to sunlight exposure. Wood's light examination results were comparable to that in a study done in Singapore in which the epidermal type constituted 68% of patients while dermal type was 29% and 3% for the mixed type¹⁷. This high value of epidermal type consistent with good response rate to treatment observed on the patients participated in this study. Many disorders were observed with melasma these include acne (48.57%), diffuse hair loss (25.23%), hirsutism (16.57%) and no disorder was observed in 31.42% of patients which means that 68.58% of patients observed with combined disorder. Because these disorders (acne, diffuse hair loss and hirsutism) are commonly observed at Rizgary dermatology department regardless of melasma, these observations might be an accidental finding in patient with melasma. Menstrual irregularities found in 18.28% of females in form of menorrhagia, oligomenorrhoea and amenorrhoea which is comparable to what was reported by Mohammad's study (20.2%)¹⁵. this may be due to the role of hormonal changes in the pathogenesis of melasma.

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