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Melasma Epidemiology and Its Relation to Disease Severity and Life Quality among Libyan Patients

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ABSTRACT

Background: Melasma is a very common skin disorder. It is most common in young women with brownish skin tan, but it can affect anyone. Melasma is often associated with the female hormones estrogen and progesterone.

Objective: The aim of this study to describe the clinico-epidemiological pattern and the precipitating or provocation factors of melasma, to assess the Melasma Areas and Severity Index (MASI) and the alteration of quality of life.

Subjects and methods: One hundred patients with melisma were exposed to detailed disease history and complete dermatological examination. MASI score was calculated and Dermatology Life Quality Index (DLQI) questionnaire was applied.

Results: Out of 100 patients, 89% were female and 11% were male. Age ranged from 18 to 64years. 66% of the patients the site affected was centrofacial followed by malar that seen in 32%. Sun exposure plays an important aggravating factor in our patients recorded in 55% of all patients followed by oral contraceptive 33% and pregnancy 30% among female patients. MASI score was mild in 26% of patients, moderate in 73% of cases and very severe in only 1% of the patients. Quality of life was impaired in 67.4% of female patients; while quality of life was not affected in 72.7% of male.

Conclusion: Melasma in men is definitely less common than in women, but shares the same clinical characteristics as in women. Although the exact cause of melasma remains unknown, sun exposure plays an important aggravating factor in our patients followed by oral contraceptive and pregnancy among females. Majority of our patients had moderate MASI score.

Keywords: Melasma, Hyperpigmentation, MASI score

INTRODUCTION

Melasma is a common, acquired hypermelanosis that occurs in sun-exposed areas, mostly on the face, occasionally on the neck and rarely on the forearms [1]. There are three major patterns of distribution of the lesions: centrofacial (forehead, nose, chin and upper lip), malar (nose and cheeks) and mandibular (ramus mandibulae) [2]. Melasma is caused by an increase in dermal and epidermal melanin production and retention. Skin biopsies from patients with melasma show an increase in the number of melanocytes and melanin-laden macrophages (melanophages). In addition, later-stage melanocytes containing greater numbers of melanosomes may be present; these are the cellular organelles responsible for melanin synthesis [3]. From its appearance under Woods lamp melasma is classically classified into epidermal, dermal and mixed types [2]. People with darker skin (type IV, V or VI) are more frequently affected [2].

Objective

The aim of this study to describe the clinico-epidemiological pattern and the precipitating or provocation factors of melasma, to assess the Melasma Areas and Severity Index (MASI) [4] and the alteration of quality of life [5]; among Libyan patients.

Subjects and Methods

In cross-sectional study 100 patients with melasma attending Out-Patient Clinic, Dermatology Department, Aljamhoria Hospital, Benghazi, Libya; were exposed to detailed disease history and complete dermatological examination. Woods light examination was done to every patient and MASI score was calculated and Dermatology Life Quality Index (DLQI) questionnaire was applied.

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RESULTS

The study included 100 patients, 89% were female and 11% were male. There was female preponderance with a female to male ratio of approximately 8.1:1, age ranged from 18 to 64 years, with mean age 30.7 ± 7 years, there was no significant difference between the mean age of male and female **(Figure 1)**. Duration of disease was ranged between one month and 6 years. Family history of melasma was recorded in 9% of the patient.

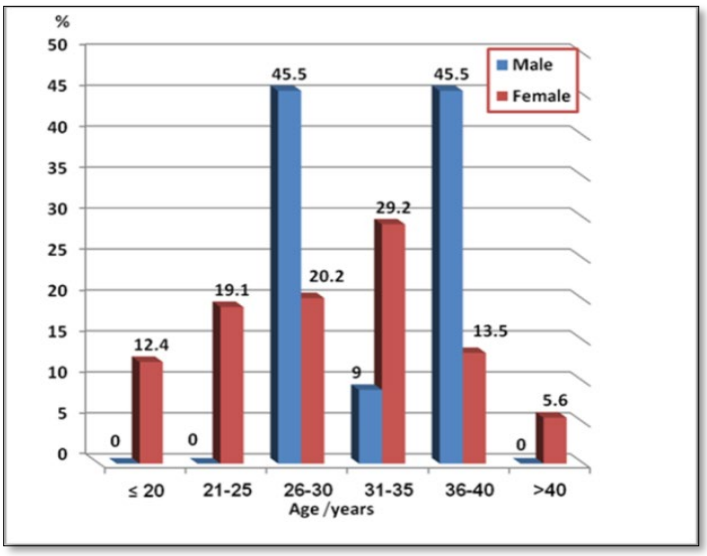

Figure 1. Melasma age group.

Sun exposure plays an important aggravating factor in our patients recorded in 55% of all patients followed by oral contraceptive 33% and pregnancy 30% among female patients.

Regarding the site involved, 66% of the patients the site affected was centrofacial followed by malar that seen in 32% **(Figure 2)**. The majority of the patients (58%) the type of lesion was presented as confluent macules followed by punctate macule in (20%) of patients, 13% was mixed and 9% was longitudinal macules, also the highest in both sex was in confluent macules 81.8% in male and 55% in female **(Figure 3)**.

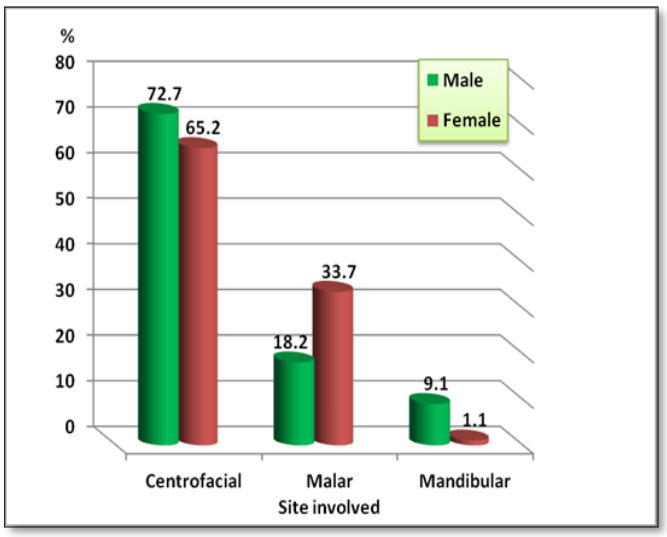

Figure 2. Site involved by melasma.

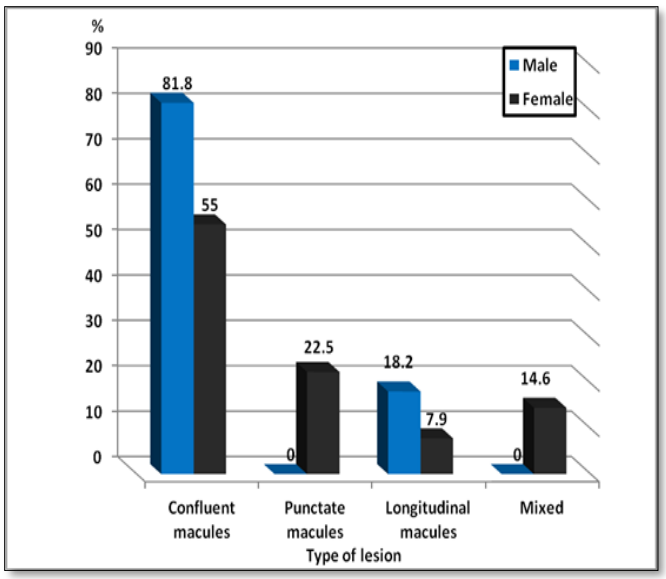

Figure 3. Clinical presentations of melasma.

Concerning the color of the lesions, dark brown/black color was presented in 58% and light brown in 42% of cases. Regarding the skin phototype and tanning intensity, the data showed 66.3% were type VI and 27% type III. Woods light examination showed that melasma was epidermal type in 86% and dermal type in 11% of our cases.

According to MASI score, it was mild in 26% of patients, moderate in 73% of cases and very severe in only 1% of the patients **(Figure 4)**. Quality of life was impaired in 67.4% of females patients and the DLQI score was ranging from mild to moderate while quality of life was not affected in 72.7% of male **(Figure 5)**.

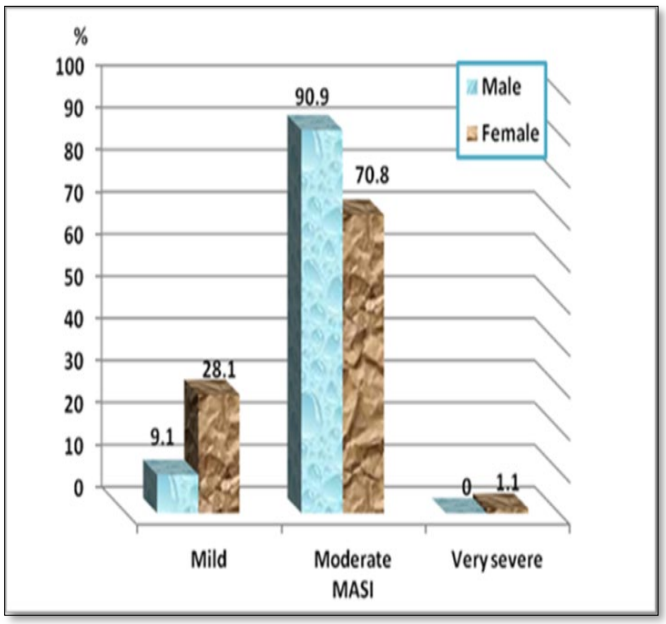

Figure 4. Melasma area severity index (MASI) scores.

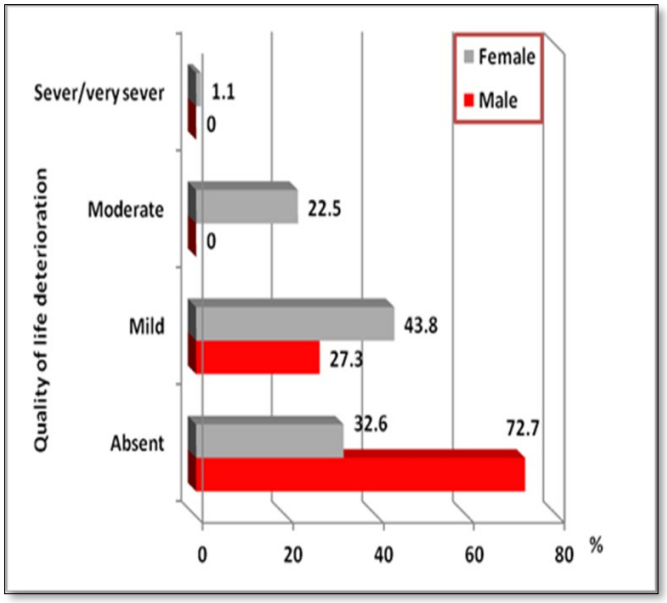

Figure 5. Melasma life quality index.

DISCUSSION

Among the total patients enrolled in our study, 89% were females and 11% were males. There was female preponderance with a female to male ratio of approximately 8.1:1, which was similar to other study where female to male ratio was 4:1 [6]. Latinos associate melasma with ill health and poor nutrition and melasma is considered disfiguring [7]. The higher incidence of melasma in females may be attributable to a hormonal influence as in pregnancy, use of oral contraceptive pills and the use of cosmetics [8]. In our study the age ranged from 18 to 64 years (mean age 30.7 ± 7 years); there was no significant difference between the mean age of male and female, which was similar to other study where the mean age of onset was 29.99 years, with the youngest and oldest being 11 and 49 years, respectively [6]; compared with the mean age of onset was 42.3 years reported in a study from Singapore [9]. In our study female in age group ≤ 20 years was 12.4% and in age group 21-25 yeas was 19.1%, but no male in these age groups, which seem to be that the females affected in age group younger than men. 45.5% of male was in age group 26-30 years , which was similar to age group 36-40 years, 29.2% of female was in age group 31-35 years and the lowest in age group >40 years, in other study about 60% developed melasma before thirty [10].

The commonest site involved in melasma was centrofacial (66%), followed by malar 32% and only 2% mandibular. centrofacial was the highest in both sex, it was 72.7% in male and 65.2% in female followed by malar 33.7% in female and 9.1% in male, this result was similar to the result of other study were centrofacial was the most common pattern (55.44%) observed [6].

However, studies from Singapore observed that malar distribution was the most common [9]. Also in other study 105 patients (65%) had malar distribution, 55 (35%) had centrofacial type and none had mandibular type [11].

In similar study showed that the difference in clinical pattern of melasma between men and women was statistically significant [8]. This discrepancy of results might be due to environmental or regional differences.

In our study skin phototype IV constitute 67%, type III 27% and 6% type V, no significant difference between both sex p-value=0.736.

In other study done in Tunisia 14% presented phototype III, 45% phototype IV and 41% phototype V; 76% presented a centrofacial melasma phenotype [10]; also in similar study they found that skin phototype II (12.8%), III (36.3%) and IV (39.7%) [12].

Woods light examination results, epidermal type was constitute to 86%, dermal type 11% and mixed type 3%, in male the results was 72.7% epidermal type, 27.3% dermal type and no one had mixed type, while in female 87.6% epidermal type, 9% dermal type and 3.4% mixed type, while in other study the Wood light examination showed the dermal type being the most common in 54.48% and epidermal type and mixed type were seen in 21.47% and 24.03% of the cases, respectively [7].

According to MASI, 26% was mild, 73% moderate and 1% very severe, in male 90.9% moderate, 9.1% mild and no one had very severe, while in female 70.8% was moderate, 28.1% mild and only 1% very severe.

MASI score for Forehead darkness showed that 46% had normal skin and 39% had barely visible hyperpigmentation with no difference between genders. Forehead homogeneity equal percentage of normal skin and 41% of specks of involvement. In forehead area of MASI score, 45% had none and 42 patients (42%) had less 10%.

MASI for the Right malar area darkness showed moderate hyperpigmentation in 60%, homogeneity with patches <1.5 cm in 45.5% and the area was 10-29% in 56 patients (56%).

MASI score for left malar region darkness showed the same percentage of moderate hyperpigmentation while for homogeneity more specks of involvement that seen in 45% and in 50% of cases. The area was 10-29%.

MASI score for the chin region darkness presented that 64% of patients had normal skin and 26% of them had barely visible hyperpigmentation with no difference between males and females while homogeneity and with the same percentage of normal skin and almost equal percentage of none involved area and non-significant difference in both sexes.

The DLQI questions were designed to be specific to skin disease, with all 10 questions mentioning skin. There is a very high specificity of the DLQI when compared with the normal population, confirmed in seven studies. The mean DLQI scores (maximum 30) in normal populations ranged from 0 to 0.5.

In our study majority of our female patient were affected by the disease; there was impairment of their life ranging from mild to moderate which expressed on their work and social engagement where is in male 32.6% had Quality life impairment which indicate that Libyan female are much more concerning with their cosmetic appearance than male.

CONCLUSION

Melasma in men is definitely less common than in women, but shares the same clinical characteristics as in women. Although the exact cause of melasma remains unknown; sun exposure plays an important aggravating factor in our patients followed by oral contraceptive and pregnancy among females. Majority of our patients had moderate MASI score.

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