Original Article

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Effect of Melasma on Quality of Life in Patient with Melasma Using DLQI (Dermatology Life Quality Index): A Cross Sectional Study

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ABSTRACT

Introduction: Melasma is an acquired pigmentary disorder that has a negative impact on various domains of patient's quality of life. Measurement of quality of life can help in enhancing patients care and outcomes. The study was done to assess DLQI (Dermatology Life Quality Index) in Melasma patients and its correlation with clinical severity.

Methods:A cross-sectional hospital based study was conducted and fifty clinically diagnosed cases of Melasma were included after informed consent. Clinical and epidemiological data was obtained as per structured proforma. Severity of Melasma was measured as per MASI (Melasma Area and Severity Index) score. Dermatology Life Quality Index was used to assess the quality of life. Statistical analyses were performed as per standard statistical protocols.

Results: The mean age of the patients included in our study was 31.14 (±7.12) years. A female preponderance (n=43; 86%) was observed in our study. A family history of Melasma was obtained from sixteen patients (29.63%). Centrofacial type of Melasma was the most frequently encountered pattern in our study subjects. The average MASI and DLQI score of our patients was 4.44 (± 1.91) and 5.24 (±4.97), respectively. No significant correlation was observed in between MASI and DLQI scores (p=.228).

Conclusion: The present study showed that Melasma causes a moderate reduction in quality of life.

Keywords: Melasma ;Quality of Life ;DLQI (Dermatology Life Quality Index)

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INTRODUCTION

Melasma is an acquired pigmentary disorder. It is characterized clinically by symmetric reticulated hypermelanosis in three common facial patterns: centrofacial, malar and mandibular. Forehead, cheeks, nose, chin, upper lip and neck are the common sites of predilection. Ultraviolet exposure, genetic factors, pregnancy, hormonal therapies and certain drugs are considered contributory factors to the development of disease.[1,2]

The chronic and relapsing nature of the disease has a negative impact on various domains of patient's quality of life. Furthermore, anxiety, depression, low self-esteem and poor body image are frequently associated with the disease.[3] Hence, measurement of quality of life can help in enhancing patients care and outcomes. The Dermatology Life Quality Index (DLQI) is a validated questionnaire technique which m7easures the detrimental effect of skin disease on quality of life of patients.[4] Whereas, Melasma Area and Severity Index (MASI) score has been developed as a reliable and valid means of measuring Melasma severity.[5]

Owing to paucity of local data assessing the impact of Melasma on quality of life of patients, the current hospital based cross-sectional study was carried out. We conducted a study to assess the Dermatology Life Quality Index (DLQI) in the affected patients and its correlation with clinical severity of Melasma.

METHODS

After obtaining approval from Institutional Review Committee (Reference No. 078/079/62, March, 2022), a hospital based cross sectional study was conducted for a period of three months, from March 2022 to June 2022. Fifty cases of Melasma, visiting the department of Dermatology (KIST Medical College and Teaching Hospital, Lalitpur) were included in our study. Patients under the age of 18 years, pregnant women, patients having systemic causes of pigmentation, patients on anti-convulsant or phototoxic drugs, and patients suffering from other facial dermatosis were excluded. Informed consent was obtained from all patients.

The diagnosis of Melasma was made clinically. All relevant epidemiological and clinical data was obtained using a structured proforma. The severity of Melasma was assessed using Melasma Area and Severity Index (MASI) score. The index ranges from 0 to 48, with higher scores indicating greater severity of the disease. Subjective assessment of area of involvement, darkness and homogeneity is made for forehead, right malar region, left malar region and chin.[5]

The patients were then asked to fill the printed validated DLQI in Nepali. In 1994, DLQI was introduced as the first dermatology-specific quality of life questionnaire. The questionnaire comprises of ten questions, grouped under six headings. Questions regarding patients' perception of the impact of skin diseases on different aspects of their health-related quality of life over the last week are scored. Scores 0-1 indicates no effect at all on patient's life, 2-5 indicates small effect on patient's life, 6-10 indicates moderate effect on patient's life, 11-20 indicates very large effect on patient's life and score of 21-30 indicates extremely large effect on patient's life.[4] The obtained data was analyzed using IBM SPSS

(version 24), as per standard statistical protocol. P value <0.05 was considered significant.

RESULTS

The mean age of the patients included in our study was 31.14 (±7.12) years. Majority (n=27;54%) of our patients were 21-30 years of age. A female preponderance (n=43; 86%) was observed in our study. Men only comprised 14% of the study population. A vast majority (n=35; 70%) of our patients were married. The patients included in our study mainly hailed from urban areas (n=46; 92%). Majority (n=29;58%) of our patients were housewives.

A family history of Melasma in first degree relatives was obtained from sixteen patients (29.63%). Past or current use of oral contraceptive pills was demonstrated in 18 patients (36%). The average exposure of our patients to sunlight was 10.50 (± 9.85) hours/week. The mean duration of disease in our study population was 2.13 (± 1.32) years. Centrofacial type of Melasma was the most frequently encountered pattern in our study subjects .(**Table 1**).

Table 1. Clinical types of Melasma

Pattern	Frequency (n)	Percentage (%)
Centrofacial	31	62
Malar	15	30
Mandibular	04	08
Total	50	100

The MASI score of our patients ranged from 1 to 8. Average MASI score of our patients was 4.44 (± 1.91). The DLQI scores ranged from 1 to 21, with mean scores of 5.24 (±4.97). Further details regarding DLQI scores are provided in **Table 2**.

Table 2. DLQI (Dermatology Life Quality Index) scores

Score Range (Effect on Quality of Life)	Frequency (n)	Percentage (%)
0-1 (No effect)	03	06
2-5 (Small effect)	35	70
6-10 (Moderate effect)	04	08
11-20 (Very Large effect)	07	14
21-30 (Extremely Large effect)	01	02
Total	50	100

However, no significant correlation was observed in between MASI and DLQI scores (p=.228) (**Table 3**).

Table 3. Correlation between MASI [a] and DLQI [b] scores

	Mean	Pearson Correlation	P-value
MASI[a]	4.44 (± 1.91)	.174	.228
DLQI[b]	5.24 (±4.97)		

[a] MASI: Melasma Area and Severity Index

[b] DLQI: Dermatology Life Quality Index

DISCUSSION

Melasma is an acquired condition of symmetric hyperpigmentation, typically occurring in 2nd to 3rd decade of life.[6] Accordingly, the average age of patients included in our study was 31.14 (±7.12) years and majority (54%) of them belonged from 20-30 years of age.

Hormonal influences play a significant role in the pathogenesis of Melasma. This is corroborated by pregnancy, oral contraceptive use and other hormonal therapies acting as important causative factors.[7] An immunohistochemical study on Melasma patients, compared the affected skin with unaffected neighboring skin. A significantly increased expression of the progesterone receptor in the epidermis of affected skin was found. Our study demonstrated a female preponderance (86%) of the disease. Also, 36% of patients reported past or current use of oral contraceptive pills. Other studies, too, have reported similar observations.[8]

Exposure to ultraviolet light, genetic risk factors and hormonal milieu are the three important risk factors to the development of disease. The average exposure of our patients to sunlight was 10.50 (± 9.85) hours/week. Ultraviolet light induces reactive oxygen species (ROS) by activating inducible nitric oxide. The generated ROS, in turn promotes melanogenesis. In recent times, the role of visible light in inducing pigmentation has also been appreciated.[9]

A family history of Melasma was obtained from approximately one-third of our patients (29.63%). Family history is considered to be an important risk factor for developing Melasma. This lends strength to the hypothesis of a genetic predisposition to the condition. Genes responsible are believed to be involved in pigmentary, inflammatory, hormonal, and possibly vascular responses. Interestingly, patients with darker skin types have higher incidence of a positive family history.[7,8] Several clinical studies have identified centrofacial Melasma as the most frequently encountered type. Similarly, centrofacial Melasma, was the predominant form of disease observed in our study subjects (62%).

Melasma is a chronic, recurrent skin disorder that may result in deteriorations in patients' quality of life in different populations.[10] The average MASI and DLQI score of our patients was 4.44 (± 1.91) and 5.24 (±4.97), respectively. The mean DLQI score of 5.24 (±4.97) obtained in our study demonstrates a moderate impact on quality of life of Melasma patients.[4] Our observations are consistent with another local study which observed a mean DLQI of 5.64 ± 5.41.[11]

No significant correlation was observed in between MASI and DLQI scores (p=.228). Studies differ with regards to the association of MASI with DLQI. Some studies have found a significant association (p=0.011).[12] Whereas, a study conducted in Nepal, found no significant correlation (p=0.317).[13] Local socio-demographic and cultural factors may account for varied observations.

CONCLUSION

The present study showed that Melasma causes a moderate reduction in quality of life. Further comprehensive studies are required to better

understand the effect of this frequent skin disorder on quality of life.

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