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Quality of Life in Patients with Melasma: A Hospital-Based Study

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Abstract

Introduction: Melasma is the most common cause of facial melanosis and one of the most common diseases presenting to the Dermatology department.It can lead to psychological and emotional distress for the patients and can hamper their quality of life. So, this study was done to assess the quality of life among patients with melasma so that the need for couseling of these patients could be assessed along with medical treatment.

Materials and Methods: This was a hospital based cross sectional studywith 205 clinically diagnosed cases of melasma during the study period of one year. Melasma area severity index (MASI) score was recorded for each patient. Melasma quality of life was evaluated usingthe Melasma related Quality of Life(MELASQOL) score. MASI score and MELASQOL score were correlated using the Chi square test and socio-demographic details were also recorded.

Results: The mean MASI score in our study was 14.39 and the mean MELASQOL score was 34.98. The correlation of the MASI score with the MELASQOL score was found to be statistically significant (p value= 0.000).

Conclusion: MELASQOL score can be used to assess the quality of life in patients with melasma and the impairment in quality of life depends upon the MASI score.

Keywords: Melasma; Melasma area severity index; Melasma related quality of life

Introduction

Melasma is the most common cause of facial melanosis and is manifested by hyperpigmented macules on the face, which become more noticeable by exposure to sunlight.[1] Due to its high prevalence, involvement of facial skin, occurrence at a competitive age, and resistance to treatment, melasma has a major impact on quality of life.[2, 3] Melasma quality of life is a tool designed to evaluate how melasma affects a patient's emotional state, as well as how it impacts their ability to interact with others and carry out everyday tasks. In 2003, Balakrishan et al., developed and validated a disease specific health related quality-of-life instrument: the Melasma Quality of Life (MELASQOL) score.[4] Kimbrough-Green et al., proposed the Melasma area severity score (MASI) in 1994 to quantify the severity of melasma occurring on the face.[5]

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Materials and Methods:

This study was a hospital based cross sectional descriptive study. It was conducted over a period of one year from January 2019 to December 2019 in dermatology department of Nepal Medical College and Teaching Hospital after taking approval from the Institutional review committee and consent from patients. The demographic profile of patients, clinical examination and wood's lamp findings were noted in a preset proforma.

Quality of life was measured using the Melasma related Quality of Life (MELASQOL) score. It comprises of 10 questions, which ask patients to rate how they

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feel about each question on a scale of 1 (not bothered at all) to 7 (bothered all the time). The highest score is 70, and the lowest score is 10. The english language MELASQOL questionnaire was converted into Nepali and patients were asked questions in Nepali. A pilot study was carried out in order to validate and improve the proforma and MELASQOL questionnaire.

Inclusion criteria included all patients above 18 years of age, clinically diagnosed with melasma, and willing to participate in the study. Other mimickers of facial hyperpigmentation both clinically and on Woods lamp examination were excluded from the study. Patients who were not able to understand/read Nepali were also excluded from the study. A total of 205 patients were included in the study. MASI score was recorded for each patient. MASI score ranges from 0 to 48.

Statistical analysis

SPSS v.16 was used to enter and analyze the collected data. Descriptive statistics such as mean, standard deviation and percentage were calculated for quantitative data and a Chi square test was used to correlate MASI score and MELASQOL score. A Student's t- test was used to compare the association of MASI and MELASQOL with occupation. Point of statistical significance was considered when the p-value was less than 0.05 ($p<0.05$).

Results

Among 205 patients recruited in the study, 36 (17.6%) were males and 169 (82.4%) were females. The mean age was 32.20 6.55 years and the maximum number of patients belonged to the age group of 31-40 years. Most of the patients were homemakers, 95 (46.3%), and the majority of the patients were Hindus, 130 (63.4%). In the majority of patients the duration of melasma was between 3 months and 3 years (57.1%), and sun exposure was the major precipitating factor. Most patients had Fitzpatrick skin type IV, 83 (40.5%) followed by skin type III, 72 (35%). Forty five patients had skin type V and five patients had skin type II. The majority of the patients, 133 (64.9%), had the epidermal type of melasma (Figure 1 (a and b)), followed by the mixed type, 37 (18%) patients (Figure 2 (a and b)). The mean MASI score in our study was 14.39 and the mean MELASQOL score was 34.98. Chi square test was used to correlate the MASI score with the MELASQOL score and the correlation was statistically significant (p value = 0.000) (Table 1). In our study, the MASI score was highest in homemakers as compared to other occupations, which was statistically significant (p value = 0.001) (Table 2). However, MELASQOL score did not depend on the occupation of the patients (p value = 0.274). Assessment of the MASI score in relation to the Fitzpatrick skin types was also done and it showed that MASI depends upon the Fitzpatrick skin types (p = 0.000) (Table 3). Melasma was most severe in the patients with skin type III.

Discussion

Melasma is an acquired, hyperpigmented condition that is often symmetrical. Patients may develop psychological morbidity as a result of it. Most often, middle-aged adults experience it. This study was carried out to assess the effect of the severity of melasma on the quality of life of the patient. Most patients belonged to the age group of 31 to 40 years. This finding is in concordance with the study done by Yalamanchili et al., and Krupa Shankar et al., where the commonest age groups affected were 31-40 years and 30-62 years respectively.[6,7] In our study, females (82.4%) outnumbered males (17.6%). This could be explained by the fact that there are more triggers of melasma in females compared to males, like pregnancy and contraceptive usage. Another reason could be esthetic care seeking behavior in females. Homemakers (46.3%) and business owners (19.5%) constituted the majority of our study population. Most patients had duration of melasma of between 3 months and 3 years. This is consistent with the study conducted by Kalla et al.[8]

In the present study, Fitzpatrick skin types IV (40.5%), skin type III (35.1%) and skin type V (22%) were the most commonly affected skin types as these are the common skin types in Nepal. According to the study done by Handel et al., the patients with skin type I cannot produce additional pigmentation and people with skin type VI have already produced their maximum pigmentation, and they are not commonly affected by melasma.[9]

Most of our patients had mixed type of melasma (53.6%), involving the malar region and forehead. The other types seen were malar (25.4%) and centrofacial (18.5%). Two percent of patients had other distributions that included the forehead or chin. Yalamanchili et al., also reported the malar pattern (67.9%) followed by the centrofacial pattern (25%) as the most commonly involved patterns.[6]

In our study, 133 (64.9%) patients had epidermal type of melasma, 33 (16.1%) patients had dermal type of melasma, 37 (18%) patients had mixed type of melasma and 2 (1%) patients had indeterminate type of melasma. This finding is supported by the study conducted by Bhattarai et al., which showed epidermal preponderance (65.2%).[10]

We assessed the severity of melasma in each patient using the MASI score. Most of the patients had MASI score between 5-15 (60.5%) followed by MASI score between 15-25 (21%). Mean MASI score was 14.39. In the study conducted by Sarkar et al., mean MASI score was 20.[10] We found a significant relationship between the MASI score and occupation (p value = 0.000) with homemakers having the most severe melasma. An assessment of MASI score in relation to the Fitzpatrick skin types was done, which showed that MASI score depends upon the Fitzpatrick skin types (p = 0.000). Melasma was most severe in the patients with skin type III. A reason for the greater severity of melasma in skin

type III in our study could be that brown discoloration of melasma is more visible in fair skin.

The mean MELASQOL score in our study was 34.98 and the highest MELASQOL score was reported in the age group 31-40 years (26.8%). In the study by Balakrishnan et al., mean MELASQOL score was 36.[4] In study by Sarkar et al., the mean MELASQOL score was 20.9 which is lower than our score i.e., 34.98.[11] This difference in MELASQOL may be due to different factors such as culture, occupation, sun exposure, skin type and self-awareness.

We further assessed the correlation between the MASI score and the MELASQOL score. In our study, the relationship between MASI score and MELASQOL score was statistically significant (p = 0.000). A statistically significant correlation between MASI score and MELASQOL score was also seen in the studies conducted by Sarkar et al. and Dominguez et al.[11, 12] The correlation between MELASQOL score and MASI score in our study shows that there is an increase in the impairment of quality of life with increase in severity of the melasma.

World Health Organization has defined "health" not only as the 'absence of disease' but has also emphasized on 'physical, mental and social wellbeing'.[13] So, the principle of this study is to identify the clinical as well as psychological state of all the patients with melasma by means of an appropriate questionnaire so that we can opt for holistic management of patients with melasma.

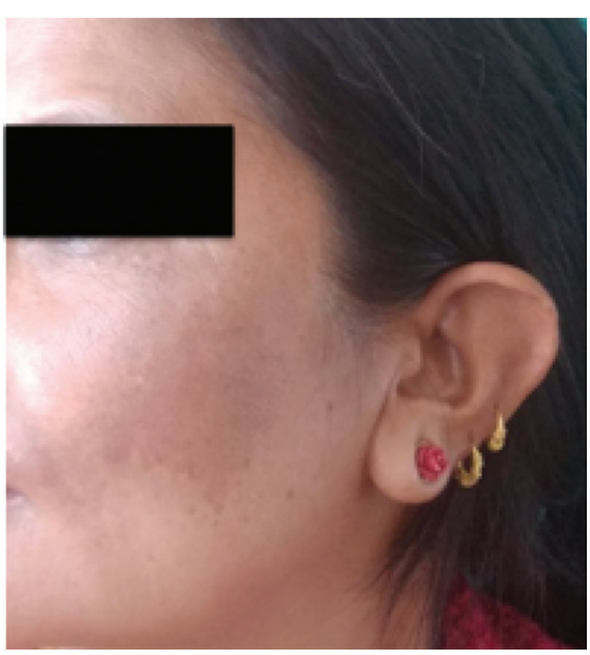
Conclusion

Melasma is a disease with a psychosocial impact. Still, there is a paucity of data regarding the actual impact of melasma on a patient's quality of life in the context of Nepal. Our study showed impaired quality of life in majority of the patients.

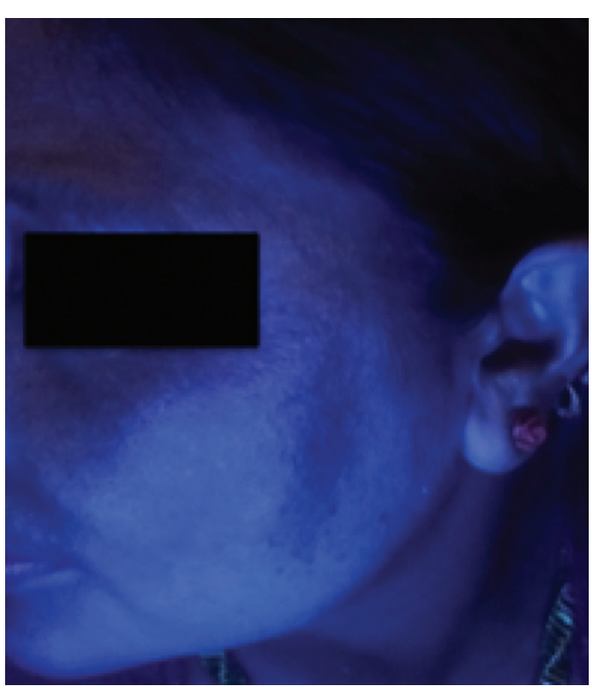
Many patients with melasma have an impaired disease related quality of life, but very few clinicians address the psychological impact of melasma. Also, we tend to choose our treatment plan based on the severity of melasma rather than the impact on quality of life. We therefore recommend assessment of melasma-induced impairment of quality of life in all patients with melasma. We also strongly advise that a treatment plan be developed based on the MELASQOL score.

At the same time, patients having a higher MELASQOL score should also be offered psychological counselling. Also, patients should be involved actively in the decisions concerning their treatment. Discussing the patient's concerns, expectations and treatment can also empower the patient. This way, we can treat the patient as a whole- physically and psychologically.

Figure 1: Epidermal type of melasma [A-clinical image, B-Wood's lamp image]

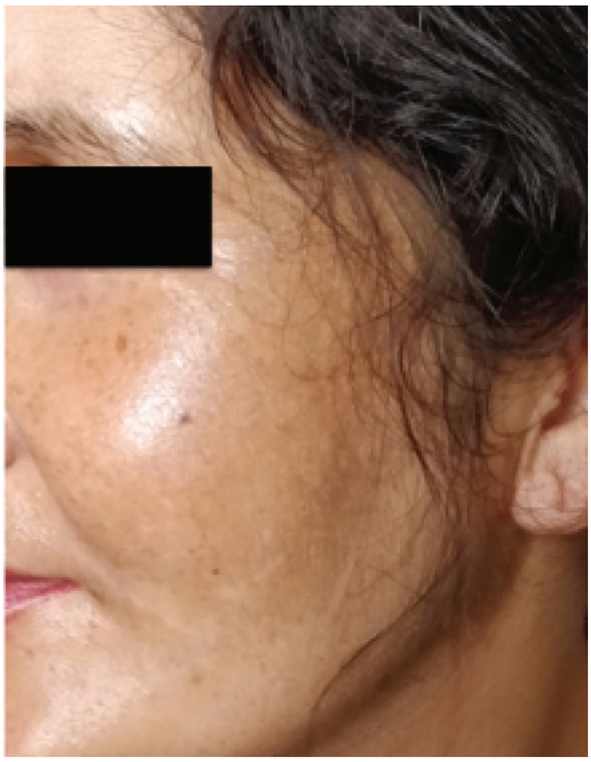


A (Clinical image) Distribution of melasma over left malar region.tif

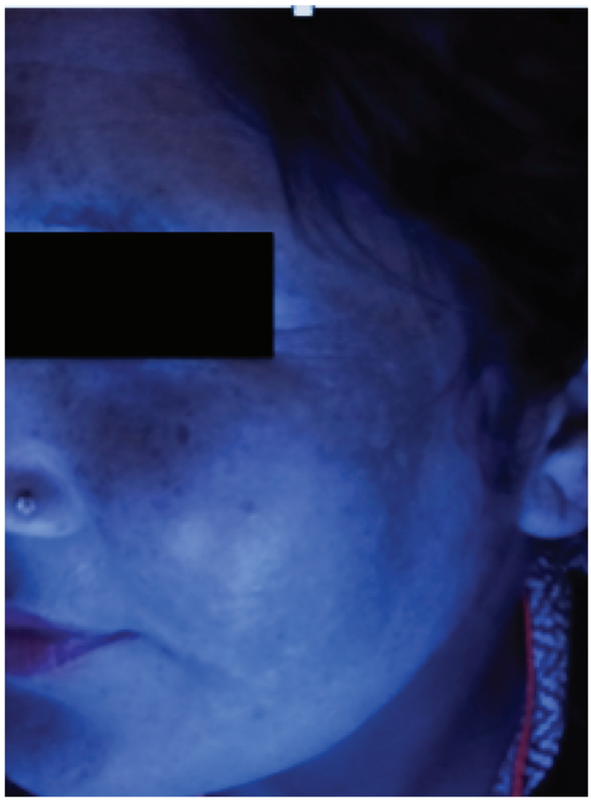


B (Wood's lamp image) Accentuation of pigment over left malar region.tif

Figure 2: Mixed type of melasma [A-clinical image, B-Wood's lamp image]



A (Clinical image) Distribution of melasma over left cheek.tif



B (Wood's lamp image) No accentuation of pigment over central cheek and accentuation of pigment over periphery.tif

Table 1. Association between MASI and MELASQOL score

		MASI score					p value
		<5	5-15	16-25	26-35	36-45	
MELASQOL score	= 10		1	0	0	0	0
	11-20	5	24	4	0	0	
	21-30	8	22	12	5	2	
	31-40	3	36	13	2	1	
	41-50	2	20	14	0	0	
	51-60	0	10	0	9	0	
	61-70	0	11	0	0	0	
	Total	**19**	**124**	**43**	**16**	**3**	

Table 2. Association of MASI score with occupation

		MASI score					p value
		<5	5-15	16-25	26-35	36-45	
OCCUPATION	Homemaker	2	58	26	7	2	0.000
	Laborer	0	9	4	1	0	
	Service holder	13	18	2	1	0	
	Student	1	7	0	0	0	
	Business owners	0	26	9	4	1	
	Driver	0	0	0	1	0	
	Others	4	6	2	0	0	

Table 3. Association between MASI score and Fitzpatrick skin types

		MASI score					p value
		<5	5-15	16-25	26-35	36-45	
FITZPATRICK SKIN TYPE	I	0	0	0	0	0	0.000
	II	0	5	0	0	0	
	III	9	48	10	2	3	
	IV	10	53	20	0	0	
	V	0	18	13	14	0	
	VI	0	0	0	0	0	
	Total	19	124	43	16	3	

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