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Evaluation of quality of life in female patients with melasma

Asude Kara Polat[1], Sumeyre Seda Ertekin[2], Muge Gore Karaali[1], Ayse Esra Koku Aksu[1], Mehmet Salih Gurel[3]

University of Health Sciences, Istanbul Training and Research Hospital, Department of Dermatology, Istanbul, Turkey
Aksaray University, Faculty of Medicine, Department of Dermatology, Aksaray, Turkey
Medeniyet University, Göztepe Training and Research Hospital, Department of Dermatology, Istanbul, Turkey

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Abstract

Melasma is an acquired pigmentation disease occurs on the face and neck, sun-exposed areas. It significantly affects the quality of life of the patients. The objective of this study was to evaluate the quality of life in patients with melasma. A prospective cross-sectional study was conducted on 49 female patients diagnosed with melasma between November 2016 and March 2017 in a tertiary referral hospital dermatology outpatient clinic. The patients were evaluated according to age, marital status, education level, Fitzpatrick skin type, puberty age, the duration of disease, family history, medical comorbidities. Disease severity were measured with the melasma area and severity index (MASI). The patients were evaluated according to quality of life scales: Turkish version of the melasma quality-of-life questionnaire (MelasQoL-TR), Dermatology Life Quality Index (DLQI), Turkish version of Skindex 16. The correlation between the severity of the disease and the qualities of life of the patients were evaluated. Fourty-nine female patients with the mean age of 36.8 ± 7.8 enrolled in the study. Fitzpatrick skin type III (49.6%) and IV (49.0%) were the most common skin phototypes. The mean disease duration was 56.7 ± 49.0 months. The mean MASI score was 16.3 ± 8.7. The mean MeLaSQoL-TR score, DLQI score and Skindex 16 score were 34.4 ± 13.0, 15.1 ± 7.6, 34,7 ± 16,9 respectively. Significant positive correlation was found between MASI score and MelasQoL-TR, DLQI and Skindex 16 scores ($p < 0.05$). When the scores of emotion and function of Skindex 16 were evaluated separately, there was a significant positive correlation between MASI score and these scores ($p < 0.05$). However no significant correlation was observed between MASI score and Skindex 16 symptom score ($p > 0.05$). There was a significant correlation between these three different life quality scales. Age and education level were not significantly related with quality of life scales in our study. In this study, all scale scores were high in patients with melasma, and were correlated with severity of the disease. Melasma has a significant emotional and functional impact on quality of life in female patients.

Keywords: Melasma, MASI score, scale, life quality

Introduction

Melasma is an acquired hyperpigmentation disease with increased melanogenesis in melanocytes. It is characterized by irregular brown macules and patches, especially in sun-exposed areas such as face and neck [1,2]. The disease is more common in women with Fitzpatrick skin type IV-V [1]. Although its etiopathogenesis is not fully understood, ultraviolet exposure, genetic factors, hormone therapy, phototoxic drug use, anticonvulsant drug use are known as risk factors [2].

Melasma is a disease that significantly affects the quality of life. In 2003, the disease-specific health-related quality of life scale MELASQoL was developed by Balkrishnan et al [3].

***Corresponding Author:** Asude Kara Polat, University of Health Sciences, Istanbul Training and Research Hospital, Department of Dermatology, Istanbul, Turkey, E-mail: asudekara@yahoo.com.tr

Doğramacı et al. had also developed the Turkish validity and reliability (MelasQoL-TR) scale of the melasma quality of life scale [4].

The aim of this study was to evaluate the effect of the disease on quality of life in the patients with melasma.

Materials and Methods

A prospective cross-sectional study was conducted between November 2016 and March 2017. The study included 49 women aged over 18 years who were admitted to tertiary referral hospital dermatology outpatient clinic and diagnosed as melasma.

Being under the age of 18 years, using photosensitive drug or estrogen / progesterone in the last 6 months, using the drug that can cause pigmentation (such as amiodarone, antimalaryal, chlorpromazine, minocycline), using topical corticosteroid for the last 1 month, using a depigmentation agent in the last 1 month, pregnancy, other local dermatological diseases (such as Ota nevus, postinflammatory hyperpigmentation), microdermabrasion,

chemical peeling and laser treatment, systemic lupus erythematosus (SLE), Addison, and pigmentation causing systemic disease were determined as exclusion criteria.

Ethics committee approval was received from University of Health Sciences, Istanbul Training and Research Hospital Scientific Research and Publication Ethics Board (approval number: 07/10/2016-844).

After taking oral and written informed consents, patients' ages, marital status, education levels, Fitzpatrick skin types, age of puberty, the duration of melasma, presence of melasma in the family and presence of concomitant disease were questioned.

The occurrence of melasma before or after menopause, before or after the use of hormonal contraceptives, without the use of hormonal contraceptives, before or after pregnancy or before or during pregnancy were evaluated.

To assess the severity of melasma, the melasma area and severity index (MASI) applied to patients, was developed Kimbruog-Green et al. [5]. Accordingly, the ratio of the area to be kept (F), right malar region (MR), left malar region (ML) and area held in jaw (C) (A, 0-6), darkness of melasma (D, 0-4), homogeneity (H, 0-4) evaluated. MASI = 0.3 (DF + HF) AF + 0.3 (DMR + HMR) AMR + 0.3 (DML + HML) calculated according to the AML + 0.1 (DC + HC) AC formula. The MASI scores ranged from 0 to 48, with scores of 0-16.9, 17-32.9, 33-48 defined as mild, moderate, severe symptoms respectively [5].

While evaluating the quality of life of the patients, the validity and reliability of melasma quality of life quality validated by Doğramacı et al. (MelasQoL-TR), the dermatological quality of life scale developed by Gürel et al. and the Turkish "Skindex 16" scale, by which was validated by Aksu and her colleagues. [4,6,7].

Statistical Analysis

Mean, standard deviation, median lowest, highest, frequency and ratio values were used in descriptive statistics of the data. The distribution of variables was measured by the kolmogorov simirnov test. Kruskal-wallis was used for the analysis of quantitative independent data. Spearman correlation analysis was used for correlation analysis. SPSS 22.0 program was used in the analyzes.

Results

Forty nine female patients diagnosed as melasma were included in the study. The mean age of patients was 36.8 years. 77.6% were married and 22.4% were single. The sociodemographic characteristics of the patients were shown in Table 1. Melasma was diagnosed in postmenopausal period in 4.1% and premenapausal period in 95.9% of patients. In twenty (40.8%) patients disease started during pregnancy and in 4 (8.2%) after oral contraceptive use. In 10 patients (20.4%), melasma was with hypothyroidism.

The mean score of MASI was 16.3 ± 8.7. 27 patients (55.1%) were mild, 20 (40.8%) had moderate and 2 (4.1%) patients had severe disease. Correlation between MASI scores and three different life quality scales' scores were evaluated.

Table 1. Sociodemographic characteristics of women diagnosed with melasma

N: 49	**N(%)**
Age (year)	36.8 ± 7.8
Marital status	
Maried	38 (77.6)
Single	11 (22.4)
Education status	
Not literate	2 (4.1)
Primary education	23 (46.9)
High school	14 (28.6)
University	10 (20.4)
Fitzpatrick skin type	
I-II	2 (4.1)
III	23 (46.9)
IV	24 (49.0)
Puberty age (year)	13.2 ± 1.3
Duration of disease (months)	56.7 ± 49.0
Family history of melasma	
Present	21 (42.9)
Absent	28 (57.1)
Medical Comorbidity	
Hypothyroidism	10 (20.4)
Other	0 (0)

The mean MeLaSQoL-TR score was 34.4 ± 13.0, and there was a significant positive correlation between the MelasQoL-TR and MASI score ($p < 0.05$). According to this scale "Are you bothered by the appearance of your skin?", "Did you feel sad and sad because of your skin condition?", "Did you feel less attractive because of the color change on your skin?" questions were scored five, six or seven points, 67%, 53% and 53% respectively, showing a negative influence. The responses given to the MeLaSQoL-TR scale were shown in Table 2.

The average score of quality of life (QOL) instrument developed by Gürel et al. was found to be 15.1 ± 7.6 in our study. There was a significant positive correlation with MASI ($p < 0.05$). According to this scale, 'Do you feel uncomfortable, irritable and stressed because of skin disease?', 'Do you feel uncomfortable because your skin disease is reminded by asking questions by people around you?', 'Do you think that your physical appearance is impaired due to skin disease, you are looking at the mirror over or over looking?' questions were scored three or four points, 65.3%, 61.2% and 55.1% respectively by patients. The responses of the patients to this scale were given in Table 3.

Table 2. Responses to the Melasma quality-of-life scale (MelasQoL*)
1 (not bothered at all) - 7 (bothered all the time)

	1	2	3	4	5	6	7
The appearance of your skin condition	0	3	6	7	7	12	14
Frustration about your skin condition	5	4	9	6	6	9	10
Embarrassment about your skin condition	10	10	6	4	4	9	5
Feeling depressed about your skin condition	5	7	7	4	13	8	5
The effects of your skin condition on your interaction with other people (e.g., interaction with family, friends, close relationship)	18	7	8	5	9	2	0
The effects of your skin condition on your desire to be with people	17	14	3	3	8	2	2
Your skin condition making it hard to show affection	17	16	3	3	7	2	1
Skin discoloration making your feel unattractive to others	2	4	11	6	11	11	4
Skin discoloration making you feel less vital or productive	13	19	8	1	5	2	1
Skin discoloration affecting your sense of freedom	19	15	7	1	3	1	3

* Turkish validity and reliability determined version of the MelasQoL scale was applied to the patients

Table 3. Responses to the dermatological quality of life scale instrument*
0 (never-never), 1 (rarely), 2 (occasionally-sometimes), 3 (often, mostly), 4 (always-always)

	0	1	2	3	4
Do you feel uncomfortable, irritable and stressed because of your skin disease?	4	7	6	22	10
Do you think your physical appearance is impaired due to your skin disease, are you over-looking or avoiding looking in the mirror?	1	8	13	18	9
Does your skin disease prevent you from doing your housework, does it negatively affect your school-work life?	27	11	9	2	0
Do you feel uncomfortable when people around you remind your skin disease by asking questions?	4	4	11	19	11
Is it possible that you stay away from your friends and cannot enter social environments because of your skin disease?	16	10	17	3	3
Do your complaints (such as bleeding, wound, pain, itching, blemish) caused by your skin disease restrict your life?	29	9	7	2	2
Do you think that people stay away from you, do not get in close contact like shaking hands, kissing because of your skin disease? Because of this are you getting away from the people around you?	32	8	6	3	0
Is your sexual life affected because of your skin disease?	38	7	3	1	0
Do you feel desperate thinking that your skin disease will not improve or recur?	5	5	14	19	6
Do you think you have wasted time and money while dealing with the treatment of your skin disease?	24	9	10	6	0
Does your skin disease prevent you from eating what you want, dressing, putting on makeup and cleaning your body?	33	8	6	2	0

*The Turkish version, which is the original version of this scale, was applied to the patients. It was translated into English with the recommendation of the referee.

The total score of the Skindex 16 scale was found to be 34.7 ± 16.9, which was significantly correlated with MASI. The symptom score, emotional score and the functional score were 3.2 ± 10.0, 59,7 ± 23,0 and 24.0 ± 23.8 respectively in this scale. When symptom, emotional and functional scores were evaluated separately; there was a statistically significant correlation between MASI score and emotional and function scores ($p<0.05$), but no significant correlation was observed between symptom score ($p>0.05$). According to this scale, it was determined that 87.7% of the patients were bored with skin problems, 79.6% were annoyed because of persistence/recurrence of their skin condition, 75,5% were annoyed because of the appearance of their skin. The answers of the patients with melasma according to this scale were shown in Table 4.

Table 4. The validity and reliability of the Turkish version of the Skindex 16 scale responses*
1 (never bothered) - 7 (always bother)

	1	2	3	4	5	6	7
Your skin condition itching	46	0	0	1	1	0	1
Your skin condition burning or stinging	46	1	1	0	1	0	0
Your skin condition hurting	48	0	0	0	0	0	1
Your skin condition being irritated	45	1	0	0	0	1	2
The persistence/reoccurrence of your skin condition	0	2	4	5	4	18	16
Worry about your skin condition (For example: that itwill spread, get worse, scar, be unpredictable, etc.)	0	5	3	10	6	10	15
The appearance of your skin condition	0	2	4	4	5	16	18
Frustration about your skin condition	5	5	12	7	6	4	10
Embarrassment about your skin condition	8	8	7	2	17	5	2
Being annoyed about your skin condition	3	4	2	7	9	16	18
Feeling depressed about your skin condition	10	8	15	3	9	3	1
The effects of your skin condition on your interactions with others (For example: interactions with family, friends, close relationships, etc.)	16	8	8	7	7	0	3
The effects of your skin condition on your desire to be with people	14	10	9	5	5	1	3
Your skin condition making it hard to show affection	18	12	5	7	6	0	1
The effects of your skin condition on your daily activities	27	10	7	1	2	2	0
Your skin condition making it hard to work or do what you enjoy	32	6	4	2	3	1	1

*Turkish validity and reliability determined version of the Skindex 16 scale was applied to the patients

Discussion

Melasma is an acquired pigmentation disease characterized by irregular hyperpigmented macules that often present with facial localization. It is often aggrevated with some factors such as sunlight, pregnancy and taking hormonal oral contraceptives [8].

Melasma reduces the quality of life with emotional stress. It also causes medical interventions that may not meet the expectations of the patients and may cause high expenditures [9].

The most common type of Fitzpatrick skin type IV in our study was observed in 49.0% of the patients. This was followed by type III (46.9%) and type II (4.1%), respectively. In the study of Seçkin et al., 8% of patients were identified as type II, 62% were type III, 28% were type IV [10]. The mean duration of disease was 4.9 months in the same study and 56.7 months in our study [10].

21 (42.9%) of our patients had family history of melasma. Hexsel et al. reported this rate as 64%, while Ortonne et al. 48% reported a similar rate as in our study [11,12]. In our study, 40.8% of our patients had melasma onset after pregnancy and were in similar rate with the study by Ortonne et al [12].

20.4% of our patients had hypothyroidism. In the study of Rostami Mogaddam et al., 17.1% had hypothyroidism and 1.4% hyperthyroidism [13]. The symptoms of hypothyroidism could be questioned in patients with melasma.

According to the MASI scale developed by Kimbruog-Green et al., the scores between 0-16.9, 17-32.9, 33-48 were defined as mild, moderate and severe symptoms respectively [5]. The mean score was 16.3 ± 8.7 in our study. 27 patients (55.1%) were mild, 20 (40.8%) had moderate and 2 (4.1%) patients had severe disease. Ali and et. reported 75% of patients with mild, 22% with moderate and 3% with severe disease diagnosed as melasma [14].

In our study, the MeLaSQoL-TR score was 34.4 ± 13.0. There was no statistically significant difference between MeLaSQoL score, age and education level ($p > 0.05$). The mean MelasQoL-Tr score was 29.9 ± 14.6 (10 (66) in the study of Doğramacı et al., and no significant relationship was found between the education level and MelasQoL-Tr score ($p> 0.05$) as in between age and MelasQoL-Tr score ($p> 0.05$) [4]. In our study, there was no statistically significant difference between QoL instrument and Skindex-16 scores, between age and education level ($p > 0.05$). In women with melasma, quality of life is affected regardless of age and education level. In our study, there was a statistically significant correlation between MelasQoL-TR score and MASI, similar to that of Doğramacı et al ($p< 0.05$) [4]. In the study of Freitag et al., MELASQoL-BP was found to be 37.5 ± 15.2 [15]. According to

the MelasQoL-TR scale, the patients who scored 5,6,7 points to the questions, 67% of the patients were uncomfortable because of the skin appearance, 53% felt sad because of the skin condition, they felt less attractive. As a result of their study with 51 patients with melasma, it was found that 94.1% of the patients were uncomfortable because of skin appearance, 64.7% felt sad and sad because of skin conditions and 78.43% felt less attractive because of their illness [16].

In the present study, the mean score of QoL instrument developed by Gürel et al. was found to be 15.1 ± 7.6 and there was a statistically significant correlation with MASI ($p < 0.05$) [6]. Gürel et al. reported that quality of life was affected by in conditions of hyperpigmentation in similar proportions (15.1 ± 9.8). Also, this ratio is similar in patients with contact dermatitis (14.5 ± 10.1), tinea (13.5 ± 9.4) and acne vulgaris (17.7 ± 9.9) [6]. According to this scale, 77.5% of the patients were not affected by sexual life. The patients feel uncomfortable, irritable and stressed because of skin diseases, skin diseases are reminded by asking questions by people around them and they feel uncomfortable with their appearance due to skin diseases and therefore were avoided looking at the mirror excessively.

According to Skindex 16, the validity and reliability of the Turkish version of Aksu et al. mean score was 34.7 ± 16.9 and significant correlation was observed with MASI ($p < 0.05$) [7]. When the symptom, emotion and function scores of this scale were evaluated separately, there was a statistically significant correlation between MASI score and emotion and function scores ($p < 0.05$), but there was no significant correlation between the symptom score ($p>0.05$). According to this scale, patients were most disturbed with the appearance of skin disorders; persistent and repetitive skin problems. In our study, the emotion score was 59.7 ± 23.0 in patients with melasma. This rate was lower than that of acne (75 ± 23) and psoriasis (68 ± 25), but similar with eczema (52 ± 30) [17]. Function score was 24.0 ± 23.8 in our study; according to the same study, while this rate was similar with eczema (24 ± 29) and verruca (24 ± 31), it was found to be lower than psoriasis (39 ± 33) and acne vulgaris (38 ± 30) [17].

When all of these findings were evaluated in our study, it was observed that the quality of life of women with melasma was adversely affected.

Conclusion

In our study, there was a correlation between all three quality of life scales' scores and melasma severity in female patients with melasma. It was observed that melasma adversely affected the quality of life of the patients, especially in the emotional and functional areas. In our country, there are no studies evaluating all three scales in melasma patients. In terms of contributing to epidemiological data in our country and increasing the awareness of the disease; there is a need for comparative multicentre studies, including broader series and regional differences.

Conflict of interest

The authors declare that they have no competing interest.

Financial Disclosure

All authors declare no financial support.

Ethical approval

Before the study, permissions were obtained from the local ethical committee..

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