



Original Research

Quality of life in lupus erythematosus female patients with cutaneous lesions in Antananarivo, Madagascar ^{☆,☆☆,★}



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ABSTRACT

Background: Lupus erythematosus (LE) is a chronic autoimmune disease that affects more women than men. The quality of life (QoL) of patients with lupus erythematosus and skin manifestations is impaired, but little is known about Malagasy patients.

Objective: This study aimed to assess the impact of cutaneous lesions on the QoL of patients who present with LE.

Methods: A transversal study, during 3 months, was conducted in patients who presented with LE and cutaneous lesions at the University Hospital Antananarivo. QoL was assessed using the Dermatology Life Quality Index (DLQI) scales.

Results: The impact of cutaneous lesions on the QoL was assessed in 37 patients with LE, of whom 34 were women. The mean age of patients was 37.32 years. The mean DLQI was 5.43 ± 4.67 (range, 0–21). Of the patients, 2.7% had a very important effect (DLQI >21), 18.9% reported a great effect of skin symptoms of LE in their QoL (DLQI: 11–20), 18.9% had a moderate effect (DLQI: 6–10), 40.4% had a small effect (DLQI: 2–5), and 18.9% had no effect of cutaneous lesions on their QoL. Daily activities, symptoms, and feelings were the most altered dimensions. The alteration in patients' QoL was influenced by high monthly income, severe medical history, and localization of the cutaneous lesions on the face and neckline. No correlation was found between sex and QoL.

Conclusion: This study shows that significant impairment of QoL was found in patients with LE and cutaneous manifestations, which affected their sense of well-being.

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What is known about this subject in regard to women and their families?

- Lupus erythematosus (LE) predominantly affects young women, and skin involvement occurs in up to 70% of patients with LE.
- Patients with cutaneous lesions of LE have a poorer quality of life.
- Data concerning quality of life of patients with LE in Africa are still less intensive than in Europe and the United States, especially in Malagasy patients.

What is new from this article as messages for women and their families?

- Cutaneous lesions of LE on the face and scalp altered the quality of life of patients, especially in female patients.
- Low educational status and high monthly income were significantly correlated with a poor quality of life.
- Daily activities, symptoms, and feelings were the most altered dimensions according to Dermatology Life Quality Index questionnaire.

Introduction

Lupus erythematosus (LE) is a chronic autoimmune disease with a broad range of clinical manifestations (Strand and Chu, 2011) and is most common in young women. This female prevalence was 0.15% according to data in 2011 in the unique reference center of dermatology in Madagascar (Ranaivo et al., 2019). Almost all patients with LE have LE-specific and/or nonspecific cutaneous lesions. The quality of life (QoL) of patients with LE and skin manifestations has been reported to be impaired (Ishiguro et al., 2014; Klein et al., 2011). The issues of QoL in patients with LE were recently a relevant topic. However, data concerning the QoL of patients with LE in Africa are still less intensive than in Europe and the United States, especially in Malagasy patients. Therefore, we aimed to evaluate the impact of skin symptoms on the QoL of patients with LE using Dermatology Life Quality Index (DLQI) questionnaire.

Methods

A cross-sectional study, during 3 months, was conducted in the Department of Dermatology at the University Hospital Joseph Raseta Befelatanana in Antananarivo, Madagascar.

Education level was classified in three categories: primary, mid-level (including lower- and upper-secondary), and higher (academic study) education. Participants provided their monthly income information as <300,000 Ariary or >300,000 Ariary (equivalent to \$85).

All patients with skin manifestations of systemic LE (SLE) and cutaneous LE (CLE) were included. SLE was diagnosed based on the American College of Rheumatology criteria (Hochberg, 1997), and CLE was diagnosed by a senior dermatologist according to the clinical features of the cutaneous lesions described by the Düsseldorf Classification of Cutaneous Lupus Erythematosus 2003 (Kuhn and Ruzicka, 2004). We categorized the skin manifestations of LE into three groups: chronic, subacute, and acute forms. The chronic form of LE most often manifests as a localized or generalized classical discoid rash (lupus panniculitis). The subacute form is characterized by erythematous papulosquamous or annular-polycyclic photosensitive plaques, and the acute form most often manifests as malar erythema. There are also a number of skin lesions that

are common but not specific to lupus, including livedo reticularis, vasculitis, and Raynaud's phenomenon.

The DLQI questionnaire was used to assess patients' QoL. The DLQI is a dermatology-specific tool to measure health-related QoL and consists of 10 items, including six dimensions (symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment), with four possible responses to each item: 0 (not at all), 1 (a little), 2 (a lot), and 3 (very much). Responses are calculated for a total DLQI score between 0 and 30 (Finlay and Khan, 1994). The higher the score, the more the QoL is impaired. DLQI scores from 0 to 1 mean no effect of the disease on the patient's QoL, scores of 2 to 5 mean a small effect, scores of 6 to 10 mean a moderate effect, scores of 11 to 20 correspond to a great effect, and scores of 21 to 30 mean a very important effect of disease on the patient's QoL (Hongbo et al., 2005). Patients were asked to answer the questions listed on the DLQI before their initial treatment.

This study was approved by the ethics committee of the University Hospital Joseph Raseta Befelatanana in Antananarivo, Madagascar. Study participants were informed about the study procedures, and informed consent was obtained.

Statistical analysis

Data were collected in Excel software 2010, and the statistical analysis was performed using Epi info, version 3.5.3. Student's *t* test, χ^2 , and Fisher's exact test were used for quantitative and qualitative variables, respectively, and $p \leq .05$ is considered statistically significant.

Results

Among 54 patients with LE, 37 were included in the study (34 women, 3 men; sex ratio: 0.09). The mean age \pm standard deviation of patients with LE was 36.29 ± 10.3 years (range, 7–59 years). The median age was 36 years. Most patients were married (64.8%), and 51.3% had a mid-level education. Among these patients, 19 were employed, 13 were unemployed, and 6 were students. Twenty-eight patients declared their monthly income as <300,000 Ariary (<\$85). The mean disease duration was 4.25 ± 2.7 years (range, 0–19 years). There were 27 patients with SLE and 10 patients with CLE, consisting of five localized discoid lupus erythematosus (DLE), three generalized DLE, and two LE profundus. Among the 27 patients with SLE, 19 patients presented with acute lesions as malar erythema, 2 patients with subacute lesion as annular polycyclic lesions in the trunk, and 6 patients with a generalized discoid rash. Eleven patients presented with Raynaud's phenomenon.

Musculoskeletal symptoms were the extracutaneous manifestations most associated with skin lesions (in 18 patients). Twenty-six patients presented with cutaneous manifestations of LE on the face or scalp. Hair disorders were presented by 26 patients, consisting of 18 SLE cases with nonscarring alopecia and 8 DLE cases with scarring alopecia. The distribution of participants by sociodemographic and clinical characteristics is shown in Table 1.

Evaluation by Dermatology Life Quality Index score

The mean DLQI score was 5.43 ± 4.67 (range, 0–21). Daily activities, symptoms, and feelings were the most altered dimensions. A score >10 indicates that the patient's life is severely affected by their skin disease. In our study, 18.9% of patients reported a great effect of skin symptoms of LE in their QoL (DLQI: 11–20), 2.7% had a very important effect (DLQI >21), 18.9% had a moderate effect (DLQI: 6–10), 40.4% had a small effect (DLQI: 2–5), and 18.9% had no effect of cutaneous lesions on their QoL.

Table 1
Distribution of participants by sociodemographic and clinical characteristics

Characteristics	n	%
Age, years		
≤20	5	13.5
20–30	8	21.6
30–40	9	24.3
40–50	8	21.6
>50	7	18.9
Sex		
Male	3	8.1
Female	34	91.8
Marital status		
Married	14	37.8
Single	23	62.1
Educational status		
Elementary school	14	37.8
Secondary school	9	24.3
University	14	37.8
Monthly income		
<\$85	28	75.6
≥\$85	9	24.3
Clinical presentation		
Acute lesion	19	51.3
Subacute lesion	2	5.4
Chronic lesion	6	16.2
Topography of lesions		
Scalp	26	70.2
Face	26	70.2
Upper and lower limbs	16	43.2
Trunk	5	13.5
Neckline	4	10.8

Discussion

Our data show that there is no correlation between sex, age, and QoL in patients with LE. Low educational status and high monthly income were significantly correlated with poor QoL. These results may raise some discussion.

The mean DLQI score in our study was 5.43. Our study shows that significant impairment of QoL (DLQI >10) was found in 21.6% of patients. Daily activities, symptoms, and feelings were the most altered dimensions. The DLQI questionnaire was used in our study because we aimed to evaluate the impact of skin symptoms on the QoL of patients with LE. Several studies reported altered QoL in patients with LE (Gu et al., 2019). The affected dimensions varied between the studies. In our study, personal relationships were less affected. Some patients with LE reported that their illness had improved their relationship with their family, who supported and visited them more often during the acute phase of their illness.

The mean DLQI score in our study was 5.43. This score was lower than in Malagasy patients who presented with alopecia areata. According to a Malagasy study in 2016, alopecia areata had a moderate impact on patients' QoL, with a mean DLQI score of 9.11 in 35 patients with alopecia areata (Ranaivo et al., 2017).

No correlation was found between sex and QoL, which may be explained by the small sample of male patients, making a validation of differences between men and women difficult. Krasselt et al. (2019) found that male patients with lupus tend to show more severe features when compared with female patients. Jolly et al. (2019) studied 1803 patients with lupus erythematosus and reported that men had greater damage and worse social support than women. However, women fared significantly worse in several domains. Skin lesions on exposed areas especially presented esthetic problems for women because they may affect their attire and makeup and wearing a hat and long-sleeved clothing may disturb the lesions. Scalp involvement, such as alopecia, altered women's QoL because hair plays an essential role in their identities and self-image (Davis et al., 2018). Furthermore, Macêdo et al. (2016) found a high prevalence of depressive and anxiety symptoms, which have a negative effect on QoL, in female patients compared with male patients.

Patients with a low-level education had a QoL that was more impaired than those with a mid-level and high education ($p=.008$). Our result was consistent with that of several studies that reported a positive correlation between high-level education and QoL. Kulczycka et al. (2008) found a positive correlation between all domains of the Short Form-36 and level of education, except in general health and role emotional. Reis et al. (2010) also found a statistically significant positive correlation between level of education and the physical, psychological, level of independence, and environmental domains.

Patients with a high monthly income had a QoL that was more impaired than those with a low monthly income ($p=.004$). Monthly income in Madagascar is very low and does not cover the cost of treatment. Our result may explain that favorable socioeconomic conditions are not always a guarantee of satisfaction. Favorable socioeconomic conditions usually lead to higher expectations, which for many reasons cannot always be achieved, and may decrease QoL. Sociological research specifies that an improvement in living conditions is linked to the guarantee of its high quality (Kulczycka et al., 2008). Abu-Shakra et al. (2006) showed in their study that worse socioeconomic conditions were correlated with a higher satisfaction with life.

In our study, skin involvement of LE on the face and scalp altered the QoL of patients, especially in female patients. Perceptions on how they were seen by society caused feelings of sadness, anger, and discomfort. Most participants had low self-esteem. Hair and facial appearance represent an essential element of femininity, fertility, and female attractiveness in society. This is compati-

Correlation between demographic data and Dermatology Life Quality Index score

Age, sex, and quality of life

Six patients age >40 years (16.2%) had a DLQI score >10, compared with 8 patients age ≤40 years (21.6%) with a DLQI score >10. No correlation was found between age and patient's QoL ($p=.19$). Sex and QoL were found to be unrelated ($p=.26$).

Marital status, educational status, and quality of life

Single patients had a QoL that was more impaired than married patients. However, the correlation was weak ($p=.09$). Patients with a low-level education had a QoL that was more impaired than those with a mid- and high-level education ($p=.008$).

Monthly income and quality of life

Patients with a high monthly income had a QoL that was more impaired than those with a low monthly income ($p=.004$). The distribution of participants by DLQI score according to sociodemographic data is shown in Table 2.

Subtypes of lupus erythematosus

When comparing SLE with CLE, the difference in DLQI was not significant (mean DLQI in SLE: 6.1 vs 3.4 in CLE; $p=.12$; 95% confidence interval, -6.4 to 0.8).

Topography of cutaneous lesions, hair disorders, and quality of life

No correlation was found between the localization of skin manifestations of LE on the scalp ($p=.74$), the upper and lower limbs ($p=.21$), and the trunk ($p=.35$) and patients' QoL. However, skin involvement of LE on the face and neckline altered QoL ($p=.03$ and $.006$, respectively). DLQI score according to topography of cutaneous lesions is shown in Table 3. QoL was impaired in patients with scarring alopecia, as well as in patients who presented with nonscarring alopecia.

Table 2
Distribution of participants by DLQI score according to sociodemographic data

Parameters	Patients with DLQI score <10, n (%)	Patients with DLQI score >10, n (%)	p-value
Age, years			
≤20	3 (8.1)	2 (5.4)	.16
20–30	3 (8.1)	5 (13.5)	
30–40	8 (21.6)	1 (2.7)	
40–50	6 (16.2)	2 (5.4)	
>50	3 (8.1)	4 (10.8)	
Sex			
Male	2 (5.4)	1 (2.7)	.26
Female	27 (72.9)	7 (18.9)	
Marital status			
Married	13 (35.1)	1 (2.7)	.09
Single	16 (43.2)	7 (18.92)	
Educational status			
Elementary school	7 (18.9)	7 (18.92)	.008
Secondary school	9 (24.3)	0 (0)	
University	14 (37.8)	0 (0)	
Monthly income			
<\$85	25 (65.5)	3 (8.1)	.004
≥\$85	4 (10.8)	5 (13.5)	

Table 3
DLQI, Dermatology Life Quality Index
DLQI score according to topography of cutaneous lesions

Topography of cutaneous lesions	Patients with DLQI score <10, n (%)	Patients with DLQI score >10, n (%)	p-value
Scalp			
Present	20 (54)	6 (16.2)	
Absent	9 (24.3)	2 (5.4)	.74
Face			
Present	18 (48.6)	8 (21.6)	.03
Absent	11 (29.7)	0 (0)	
Upper and lower limbs			
Present	11 (29.7)	5 (13.5)	.21
Absent	18 (48.6)	3 (8.1)	
Trunk			
Present	3 (8.11)	2 (5.4)	.35
Absent	26 (70.2)	6 (16.2)	
Neckline			
Present	1 (2.7)	3 (8.1)	.006
Absent	28 (75.6)	5 (13.5)	

DLQI, Dermatology Life Quality Index

ble with the previous literature (Ishiguro et al., 2014; Klein et al., 2011) and suggests that the QoL of patients with alopecia tends to be more impaired.

Conclusion

Our study found that lupus dermatologic lesions had a great or very important effect on QoL in 18.9% and 2.7% of patients, respectively. Daily activities, symptoms, and feelings were the most altered dimensions. Low level of education, high monthly income, and cutaneous lesions on the face and scalp were the determinant factors of QoL of patients with lupus, as seen in patients at the Department of Dermatology in Antananarivo, Madagascar. No correlation was found between sex, marital status, and QoL. Better understanding and communication between patients with lupus and their physicians may help to improve not only the clinical outcomes in LE, but also the patient's QoL.

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