

Psoriasis Affects Patient's Quality of Life More Seriously in Female than in Male in Japan

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Objective: The aim of this study was to assess the quality of life (QOL) of patients with psoriasis in Japan using Dermatology Life Quality Index (DLQI). Furthermore, we had evaluated the correlation between DLQI and clinical severity of psoriasis.

Methods: The Japanese version of DLQI was used to assess the QOL of patients. Psoriasis area and severity index (PASI) and Itch visual analogue scale (VAS) were used to assess clinical severity of psoriasis.

Results: The subjects were 102 Japanese patients with mild to severe psoriasis (77 males, 25 females, mean age 55.2 ± 14.2). There were no statistically significant differences in age, PASI, and itch VAS between male and female. The mean DLQI scores in total were 3.6 ± 3.2 in male and 7.2 ± 1.2 in female. The mean total DLQI scores in female were higher than that in male ($p = 0.0016$). Significant correlation was observed between DLQI scores and PASI score ($p < 0.001$) or itch VAS score ($p < 0.001$).

Conclusions: The mean total DLQI scores in female were significantly higher than that in male. Also, we confirmed the correlation between DLQI and clinical severity of psoriasis. These findings suggest that QOL assessment plays a greater role in females than in the males, when assessing the severity of psoriasis.

Key words: Psoriasis, Quality of life, DLQI, Dermatology

INTRODUCTION

Psoriasis is a chronic skin disease which appears as erythematous patches with silvery scale. More than half of patients with psoriasis complain of itching. It worsens when psoriasis flares up, and sometimes interferes with sleep. Along with itching and sleeplessness, the quality of life (QOL) of patients with psoriasis is also markedly impaired by chronic skin lesions and their negative body image due to the presence of the skin lesions.

The severity of psoriasis had been measured by clinical assessments alone for a long time. The psoriasis area and severity index (PASI) [1] is the most widely used clinical assessment tool. Briefly, the body is divided into four sections (i.e. head, arms, trunk, and legs). For each section, the percent "area" of psoriatic lesions is estimated. Within each area, the "severity" is estimated by three clinical signs, such as erythema, induration, and desquamation. On the other hand, the importance of patient-generated evaluations in assessing the impact of healthcare has been recognized in recent years [2]. Several QOL assessment instruments in dermatology have been established and evaluated [2]. Now, QOL is thought to be one of the important factors in assessing the severity of psoriasis [3].

The Dermatology Life Quality Index (DLQI) [4] is one of the useful QOL assessment instruments in psoriasis [2]. It is a reliable, validated 10-item questionnaire covering six dimensions (symptoms and feelings,

daily activities, leisure, work and school, personal relationships, and treatment) which assess the overall impact of skin disorders and current treatments on the patient's functioning and well being. Each question has four possible responses, with lower scores representing a better QOL.

The aim of this study was to assess the QOL of patients with psoriasis in Japan using DLQI. Furthermore, we had evaluated the correlation between DLQI and clinical severity of psoriasis.

SUBJECTS AND METHODS

Subjects

One hundred and two Japanese patients with psoriasis receiving treatment as outpatients at the Department of Dermatology at Tokai University hospital on June, 2006 were included in this study. The medical ethical committee of Tokai university school of medicine approved this study (No. 12R078).

Methods

The original version of DLQI [4] is shown in Table 1 but the Japanese version of DLQI [5] was used in this study. PASI was used to quantify and record the severity of skin lesion [1]. Briefly, the body is divided into four sections (i.e. head, arms, trunk, and legs). For each section, the percent area of psoriatic lesions is estimated, and grade from 0 to 6. Within each area, the severity is estimated by three clinical signs, such as erythema, induration, and desquamation. Severity pa-

Table 1 The Dermatology Life Quality Index

The aim of this questionnaire is to measure how much your skin problem has affected your life OVER THE LAST WEEK. Please tick one box for each question.

1. Over the last week, how itchy, sore, painful or stinging has your skin been?
2. Over the last week, how embarrassed or self conscious have you been because of your skin?
3. Over the last week, how much has your skin interfered with you going shopping or looking after your home or garden?
4. Over the last week, how much has your skin influenced the clothes you wear?
5. Over the last week, how much has your skin affected any social or leisure activities?
6. Over the last week, how much has your skin made it difficult for you to do any sport?
7. Over the last week, has your skin prevented you from working or studying?
If "no" over the last week, how much has your skin been a problem at work or studying?
8. Over the last week, how much has your skin created problems with your partner or any of your close friends or relatives?
9. Over the last week, how much has your skin caused any sexual difficulties?
10. Over the last week, how much of a problem has the treatment for your skin been, for example by making your home messy, or by taking up time?

Each question is answered either "Very much" (score 3), "A lot" (score 2), "A little" (score 1), "Not at all" (score 0). The first part of question 7 has the choices "Yes" (score 3), "No" or "Not relevant" (score 0).

The maximum score (indicating highest possible impairment of quality of life) is 30 and the minimum 0.

Table 2 Characteristics of patients

	Male (N = 77)	Female (N = 25)	p value
Age (years \pm SD)	55.9 \pm 14.3	53.1 \pm 14.2	0.39
PASI (score \pm SD)	6.4 \pm 5.9	5.1 \pm 4.2	0.30
Itch VAS (score \pm SD)	22.6 \pm 23.5	23.8 \pm 22.2	0.80

Parameters are measured on a scale of 0 to 4, from none to maximum. The sum of all three severity parameters is then calculated for each section of skin. PASI scores range from 0 to 72, from no psoriasis to maximal disease, respectively; higher PASI scores indicate more severe psoriasis. Also, visual analogue scale (VAS) was used to assess the degree of itching.

Statistics

All quantitative data was shown as the mean \pm SEM unless otherwise indicated. The statistical differences were determined by two-sided Mann-Whitney's U test. Difference with $p < 0.05$ was considered significant. The Spearman's correlation was calculated to assess the correlation between DLQI and clinical severity of psoriasis. The Statcel2 software (The Publisher OMS Ltd., Saitama, Japan) was used for the statistical analysis.

RESULTS

General description of the study subjects

The characteristics of patients are shown in the Table 2. The subjects were 102 Japanese patients with mild to severe psoriasis (77 males, 25 females, mean age 55.2 ± 14.2). There were no statistically significant differences in age, PASI, and itch VAS between male group and female group.

DLQI scores

Fig. 1 shows mean DLQI scores in total and in each of six dimensions. The mean DLQI scores in total were 3.6 ± 3.2 in male and 7.2 ± 1.2 in female. The mean total DLQI scores in female were higher than that

in male ($p = 0.0016$). Each of six dimensions, such as symptoms and feelings, daily activities, leisure, work and school, personal relationships, and treatment are answered by questionnaires 1 + 2, 3 + 4, 5 + 6, 7, 8 + 9, and 10, respectively. The mean DLQI scores in symptoms and feelings domain were 1.8 ± 0.1 in male and 2.8 ± 0.3 in female. The mean DLQI scores in daily activities domain were 0.6 ± 0.1 in male and 1.6 ± 0.4 in female. The mean DLQI scores in leisure domain were 0.6 ± 0.1 in male and 1.6 ± 0.3 in female. The mean DLQI scores in work and school domain were 0.2 ± 0.0 in male and 0.5 ± 0.2 in female. The mean DLQI scores in personal relationships domain were 0.1 ± 0.0 in male and 0.5 ± 0.2 in female. The mean DLQI scores in treatment domain were 0.5 ± 0.1 in male and 0.5 ± 0.1 in female. In all dimensions, with the exception of the treatment domain, the mean DLQI scores for female scored higher than that in male ($p < 0.05$). Furthermore, 7 (2 males and 5 females) of 102 patients (6.9%) scored DLQI greater than 10.

Fig. 2 shows the distribution of DLQI scores in each dimension. More than half of the patients were not affected at all in all dimensions except for the symptoms and feelings domain. In symptoms and feelings domain, 85.3% of all patients were affected.

Correlation between DLQI score and clinical severity scores

Fig. 3 shows the correlation between DLQI score and clinical severity scores. The mean DLQI score in all patients was 4.5 ± 0.4 , with range from 0 to 21. The mean PASI score in all patients was 6.1 ± 0.6 , with range from 0.5 to 22.0. The mean itch VAS score in

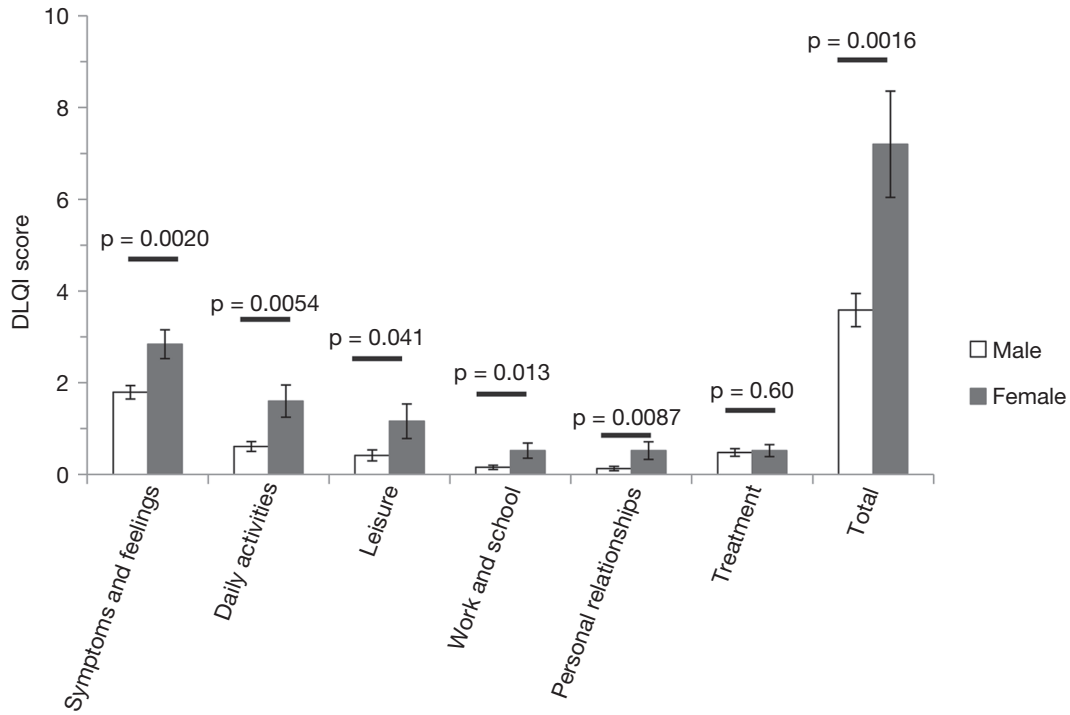


Fig. 1 Mean DLQI scores in total and in each of six dimensions. The mean DLQI scores \pm SEM in male and female are shown in white and black, respectively.

all patients was 22.9 ± 2.3 , with range from 0 to 100. Significant correlation was observed between DLQI scores and PASI score ($p < 0.001$) as well as between DLQI scores and itch VAS score ($p < 0.001$).

DISCUSSION

The QOL of patients with psoriasis is reported to be lower than that of patients with such diseases such as cancer, hypertension, and diabetes [6], and the QOL scores for social psychological factors are also lower in patients with psoriasis [7, 8]. In recent years, the importance of clinical symptoms as well as QOL has been recognized for the assessment of therapeutic effects in psoriasis [2]. Studies have shown that doctors and patients differ in their assessments of severity [9, 10]. While doctors quantify the severity of psoriasis based on symptom severity and area of skin lesions, patients focus on impaired activities of daily living, or their QOL [9, 10]. Therefore, when assessing severity, it is important to assess not only the severity of skin lesion but also QOL. Various instruments are available for the assessment of QOL. The short-form 36 (SF-36) and the sickness impact profile (SIP) assess health-related QOL. The DLQI and Skindex-29 assess the QOL of patients with skin diseases [2]. The psoriasis disability index (PDI), psoriasis life stress inventory (PLSI), and psoriasis quality of life questionnaire (PQOLQ) were each designed specifically for psoriasis. Of these available instruments, only the SF-36, the DLQI, and Skindex-29 have been translated into Japanese. The DLQI was designed by Finlay and Khan in 1994 to assess the QOL of patients with different skin diseases, and is a compact questionnaire consisting of 10-item questionnaire dealing with the following six dimensions (symptoms and feelings, daily activities, leisure, work and school, personal relationships, and

treatment) [4]. DLQI scores range from 0 to 30, with higher scores indicating poorer QOL. Although the validity and reliability of Japanese version of DLQI were evaluated in patients with acne but not psoriasis [5], Japanese version of DLQI has been widely used to assess the severity of psoriasis [11, 12].

In this study, it's notable that the mean total DLQI scores in female patients with psoriasis were significant higher than that in male patients with psoriasis. In the patients with different skin diseases and acne, however, there were no significant differences between male and female both in the original [4] and the Japanese [5] versions of DLQI studies. Although most QOL studies in psoriasis had not referred to the difference in gender, McKenna and Stern showed that female patients with psoriasis had greater intermediate to high impact scores than male patients using unique questionnaire [13]. The present study also showed high score for the symptoms and feelings domain especially in female. These findings could be explained by the association of the general female stereotype that shows greater interest in appearances and a greater dependency on social relationship than male. Therefore, these findings suggest that QOL assessment plays a greater role in females than in the males, when assessing the severity of psoriasis.

In treatment of psoriasis, assessing patients' QOL becomes more important as clinical symptoms worsen. In this study, we confirmed the correlation between DLQI score and clinical severity scores. Finlay proposed the "rule of tens" as a method for assessing the severity of psoriasis; severe psoriasis is defined as $> 10\%$ of total body surface area involved, a PASI score > 10 , or a DLQI score > 10 [3]. This rule takes into consideration skin lesion and QOL in the assessment of the severity of psoriasis. The "rule of tens" has been

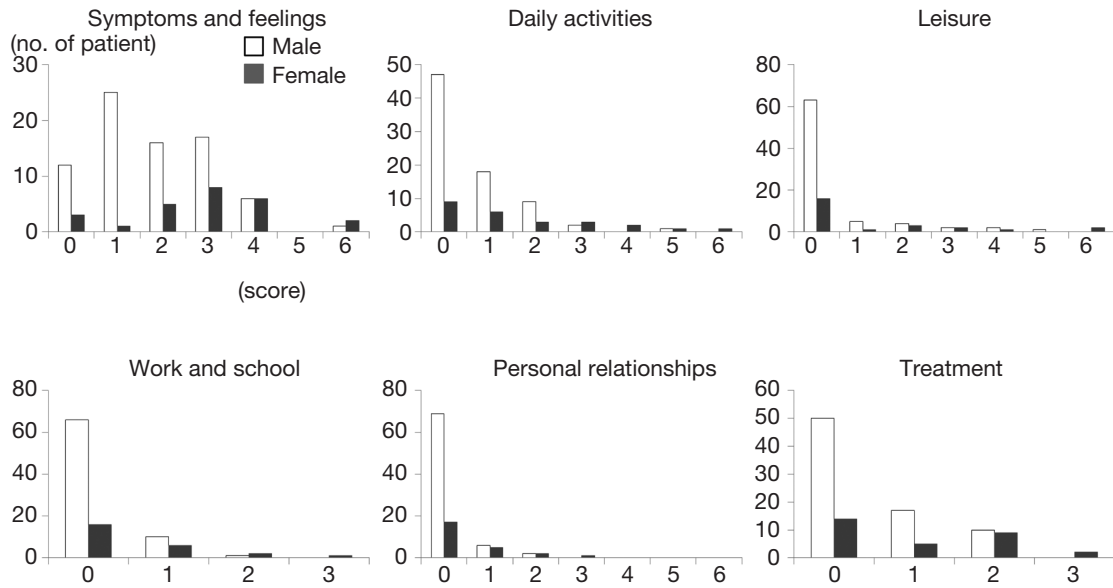


Fig. 2 Distribution of DLQI scores in each dimension. The numbers of the patients in male and female are shown in white and black, respectively.

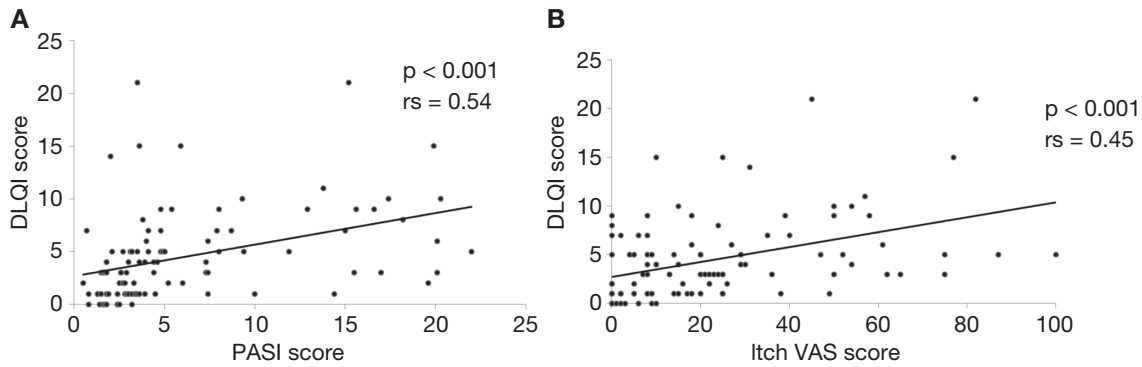


Fig. 3 Correlation between DLQI score and clinical severity scores. Scatter plot of the correlation between DLQI score and PASI score (A) or itch VAS score (B) are shown.

widely accepted in some therapeutic guidelines and clinical trials for psoriasis [11]. In this study, 6.9% of patients scored DLQI greater than 10. Katugampola *et al.* stated that patients with impaired QOL should not receive continuous treatment using the same methods or the same medicine for a long period of time [14]. Such patients are aware that the treatment is not effective for their skin lesions, therefore, the treatment methods or the medicine should be changed if their skin condition is not so severe.

In conclusion, we assessed the QOL of 102 patients with psoriasis in Japan using DLQI. The mean total DLQI scores in female were significantly higher than that in male. Also, we confirmed the correlation between DLQI and clinical severity of psoriasis. These findings suggest that QOL assessment is more important factor for female than for male in the assessment of the severity of psoriasis.

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