Quality of Life in Patients with Pityriasis Rosea is Associated with Rash Severity

Aslı Hapa[1], Elif Yıldırım[2], Berna Aksoy[3], Emine Mutlu[4]

[1]Department of Dermatology, University of Health Sciences, Bozyaka Training and Research Hospital, İzmir, Turkey
[2]Department of Dermatology, Sanko University School of Medicine, Gaziantep, Turkey
[3]Clinic of Dermatology, Bahçeşehir University School of Medicine, VM Medical Park, Kocaeli, Turkey
[4]Department of Dermatology, Celal Bayar University School of Medicine, Manisa, Turkey

Cite this article as: *Hapa A, Yıldırım E, Aksoy B, Mutlu E. Quality of Life in Patients with Pityriasis Rosea is Associated with Rash Severity. Cerrahpaşa Medical Journal 2020; 44(1): 21-26.*

Abstract

Objective: Few investigations have assessed the quality of life (QOL) in patients with pityriasis rosea (PR). Our aim was to determine whether PR affects the QOL in patients.

Methods: Overall, 85 patients with PR and 90 healthy controls were enrolled in the study. Each participant completed the Dermatology Life Quality Index (DLQI). The severity of PR and pruritus was assessed using the Pityriasis Rosea Severity Score (PRSS) and visual analog scale (VAS), respectively.

Results: The overall DLQI scores of the 85 patients with PR (median: 6; range 1–28) were signiŞcantly higher than that of the 90 controls (median: 1; range 0–8). Notably, the DLQI scores of patients with PR decreased significantly following treatment (median: 2; range 0–20). The median PRSS score of 47 patients with PR who attended follow-ups was 24 before treatment (range 2–48) and significantly decreased to 9 (range 0–42) after treatment. A strong, positive correlation was observed between the PRSS scores and DLQI scores of patients before (r=0.359; p=0.000) and after (r=0.628; p=0.000) treatment.

Conclusion: The DLQI of patients with PR decreases significantly after treatment, and QOL correlates with rash severity. Therefore, we recommend treating this self-limiting condition, especially in patients presenting with severe disease.

Keywords: Pityriasis rosea, quality of life, severity of disease

Pitriazis Rozea Hastalarında Yaşam Kalitesi Döküntü Şiddeti ile İlişkilidir

Öz

Amaç: Az sayıda araştırma pitriazis rozea (PR) hastalarında yaşam kalitesini değerlendirmiştir. Amacımız PR hastalarında yaşam kalitesinin etkilenip etkilenmediğini belirlemektir.

Yöntemler: Seksen beş PR hastası ve 90 sağlıklı kontrol çalışmaya dahil edildi. Her katılımcı Dermatoloji Yaşam Kalitesi İndeksini (DYKİ) tamamladı. PR ve kaşıntı şiddeti sırasıyla Pitriasis Rozea Şiddet Skoru (PRŞS) ve görsel analog skala (GAS) kullanılarak değerlendirildi.

Bulgular: PR'li 85 hastanın toplam DYKİ skorları (ortanca: 6; aralık 1-28), 90 kontrol grubundan (ortanca: 1; aralık 0-8) anlamlı derecede yüksekti. PR hastalarının DYKİ skorları tedaviden sonra anlamlı şekilde azaldı (ortanca: 2; aralık 0- 20). Takip edilebilen 47 PR hastasinin ortanca PRŞS skoru tedaviden önce 24 (dağılım 2-48) iken tedaviden sonra anlamlı şekilde azalarak 9 (0-42) oldu. Tedavi öncesi PRŞS skorları ile DYKİ skorları arasında pozitif korelasyon bulundu (r=0,359; p=0,000). Hastaların DYKİ ve PRŞS skorları arasında tedavi oncesinde ve tedavi sonrasinda pozitif ve kuvvetli korelasyon vardı (r=0,628; p=0,000).

Sonuç: PR'li hastaların DYKİ'leri tedaviden sonra önemli ölçüde azaldığından ve yaşam kalitesi döküntü şiddeti ile korele olduğundan, kendiliğinden düzelen bu hastalığın, özellikle hastalık şiddeti yüksek olan hastalarda tedavi edilmesini önermekteyiz.

Anahtar Kelimeler: Pitriazis rozea, yaşam kalitesi, hastalık şiddeti

Pityriasis rosea (PR) is a self-limiting papulosquamous skin disorder with a possible viral etiology. It is commonly seen in young, healthy people between the ages of 10 and 35. PR typically begins with a patch called the "herald patch" that precedes the eruption, after which the disease evolves rapidly. The rash may be asymptomatic or may be accompanied by severe pruritus, which can deteriorate patients' life quality. The eruption disappears spontaneously in 6–8 weeks. Although several studies have evaluated the etiopathogenesis and diagnosis of PR, only one study involving a small sample size evaluated its effect on the quality of life (QOL) in adult patients and noted no correlation between the rash severity and QOL [1]. Emollients, oral and topical steroids, antihistaminics, macrolides

Received/Geliş Tarihi: 02.10.2019 **Accepted/Kabul Tarihi:** 27.01.2020
Address for Correspondence/Yazışma Adresi: Elif Yıldırım, Department of Dermatology, Sanko University School of Medicine, Gaziantep, Turkey
E-mail/E-posta: elisko@yahoo.com
DOI: 10.5152/cjm.2020.19012

(azithromycin and erythromycin), antivirals (acyclovir), and UV light therapy are the primary therapeutic options [2, 3]. For almost all treatments tried, there are contradictory results. A recent Cochrane review revealed that oral acyclovir is likely to lead to an increase in good or excellent rash improvement [4]. Because PR is a self-limiting condition, most patients would just need emollients, antihistamines, and guidance on PR etiology and prognosis. Active treatments may be considered for patients whose QOL is moderately or severely affected by PR [2].

The Dermatology Life Quality Index (DLQI) allows clinicians to assess the effects of dermatological conditions on the QOL in an objective manner. A higher DLQI score indicates more significant QOL impairment [5]. Several national and international guidelines for the treatment of various skin diseases other than PR suggest using DLQI scores to measure the effectiveness of treatment [6]. However, to date, no study has determined the DLQI scores before and after treatment in PR patients. In addition, the Pityriasis Rosea Severity Score (PRSS) is a useful tool for clinicians to evaluate the severity of the rash objectively, and has been used recently in studies regarding PR [7]. A visual analog scale (VAS) is commonly used for pruritus severity assessment and provides an easy and rapid estimation of the patient's itch sensation. This scale was developed originally to assess the intensity of pain but has since been adopted to evaluate the severity of pruritus [8].

The objective of this prospective, observational study was to assess whether PR patients report lower QOL than the general population, as well as to evaluate the effects of rash severity on QOL measures.

Material and Methods

Patients

Data from patients with PR (n=85) and healthy controls (n=90) who signed the informed consent were collected after the approval from the local ethics committee. The study was conducted in the following outpatient clinics of three centers between January 2015 and March 2016: the Sanko University Faculty of Medicine, Department of Dermatology, Gaziantep (n=39); the Buca Seyfi Demirsoy State Hospital, Dermatology Clinic, İzmir (n=35); and VM Medical Park Dermatology Clinic, Kocaeli (n=11). The inclusion criteria for participants in this study were as follows: age >18 years, ability to read and write Turkish, and diagnosis of PR. The control group consisted of healthy volunteers without any known clinical dermatological disease. The diagnosis of PR was based on clinical assessment by qualified dermatologists conducting this study. Our criteria for diagnosis included "an acute rash consisting of distinct circular or oval lesions having peripheral collarette scaling, a clear center in some or all lesions, and some or all lesions positioned along the skin cleavage lines." None of our patients underwent histopathological examination for diagnosis. Patients were excluded from this study if they had received topical or systemic therapy for PR (e.g., systemic corticosteroids, erythromycin) before attending the hospital or had a history of intolerance to oral azithromycin or erythromycin.

Pre-treatment assessments

Disease duration, the season of first appearance of lesion, presence of the herald patch, and treatment protocols were documented.

Clinical grading of the disease

In our study, for the evaluation of the distribution and severity of the disease, we used the PRSS, which was developed based on the Psoriasis Area and Severity Index (PASI) [7]. The two areas to determine PRSS were the head and trunk (t) and the upper and lower extremities (e). The disease extent was evaluated using a 3-point scale (0=absence of lesions; 1=1 to 9 lesions; 2=10 to 19 lesions; 3≥20 lesions). Three target symptoms were identified to assess the severity of the lesions, namely erythema (E), infiltration (I), and scale (S), and evaluated on a 3-point scale with 0 being the complete lack of skin involvement and 3 being the strongest implication. Notably, PRSS was calculated separately for the left and right sides of the body. The PRSS was calculated as follows: the sum of the severity score for the three primary signs multiplied by the numeric (N) of the disease's extent. This formula can be written as $PRSS=N_t\ (E_t+I_t+S_t) + Ne(Ee+Ie+Se)$.

Assessment of pruritus

Patients rated their pruritus severity on a 10-point VAS.

Quality of life

The DLQI is used to obtain information regarding the extent to which skin conditions affect the following six life dimensions: symptoms and feelings, daily activities, recreational activities, work and school, personal relationships, and treatment. For each of the DLQI questions, participants were asked how frequently they were affected in these dimensions in the previous week. The answers were scored on a 5-point Likert scale (never=0; hardly ever=1; occasionally=2; fairly frequently=3; very frequently=4). These scores were then summed to get the overall DLQI scores, which could range from 0 (no impact) to 30 (highest impact possible).

Of the 85 patients with PR, 47 (55%) returned for their follow-up visits and completed the DLQI after treatment. Besides the DLQI, PRSS and VAS scores were recorded at the follow-up visits. Overall, 37 patients (44%) were reached through the phone and asked if their symptoms had improved after treatment, and if so, when the improvement began. Moreover, the VAS scores were assessed through the phone. Only one patient could neither attend the follow-up visit nor be reached through the phone.

Ethical approval was obtained from Kocaeli University Non-Invasive Clinical Investigations Ethical Committee (decision no: 2016/13.14, GOKAEK project no: 2016/168). Because this was an observational prospective clinical study, no registration was required.

Statistical analysis

All analyses were performed using the IBM Statistical Package for the Social Sciences Statistics (IBM SPSS Corp.; Armonk, NY, USA) version 23. Descriptive statistics were presented as median and minimum-maximum values. A comparison of patients' and controls' DLQI scores was performed using the Mann-Whitney U test. The DLQI, PRSS, and VAS scores before and after treatment were compared using the Wilcoxon signed-rank test. Spearman correlation coefficient was used for assessing the relationship between DLQI, PRSS, and VAS scores, both before and after treatment. A probability of $p<0.05$ was accepted as statistically significant.

Results

Demographic findings

This prospective research comprised 85 patients with PR (54 females (64%) and 31 males (36%), mean age: 31±9 years) and 90 healthy controls (67 females (74%) and 23 males (26%), mean age: 29±8 years]. The study groups exhibited no significant differences regarding age or sex ($p>0.05$).

Characteristics of the disease

The median duration of the disease was 10 days (min: 2 days; max: 90 days). Of the 85 patients, 55% (n=47) had a herald patch at the time of the dermatological examination. The most common season when the lesions appeared was winter (n=27, 31%), followed by autumn (n=24, 28%), spring (n=19, 22%), and summer (n=15, 17%). Of those who could be reached through phone or attended a follow-up visit, 85% (n=72) of patients with PR stated that their lesions improved in the median time of 10 days (min: 3 days; max: 80 days), 14% (n=12) of patients stated that their lesions did not improve, and one patient reported improvement but also the appearance of new active lesions (Table 1).

Table 1. Characteristics of the disease

Median disease duration (days)	10 (min 3, max 80)
Occurrence of herald patch	55% (n=47)
Season of appearance	Winter 31%, n=27
	Autumn 28%, n=24
	Spring 22%, n=19
	Summer 17%, n=15
Improvement of lesions after treatment	Yes 85%, n=72
	No 14%, n=12
	Yes, but new lesions also 1%, n=1

Treatment modalities

Patients received the following treatment modalities: only topical corticosteroids or oral antihistamines (21%; n=18); oral azithromycin (48%; n=41) (azithromycin 500 mg/day for 3 days a week for at least 2 weeks); systemic corticosteroids (29%; n=25) (triamcinolone acetonide 40 mg/mL flacon intramuscular once or oral prednisolone starting at a dosage of 32 mg and progressively decreasing over 3 weeks). Six patients (7%) received phototherapy (three sessions per week).

PRSS, VAS, and DLQI scores of patients before and after treatment

The median PRSS score of patients with PR was 24 before treatment (range 2–48) and 9 (range 0–42) after treatment (in 47 follow-up patients). This difference between the PRSS scores before and after treatment was statistically significant ($p<0.05$). The median VAS score of patients with PR was 4 before treatment (range 0– 10) and 1 after treatment (range 0–10), again with a statistically significant difference ($p<0.05$). The median DLQI score of patients with PR was 6 before treatment (range 1–28) and 2 after treatment (range 0–20), with the difference being statistically significant ($p<0.05$). Additionally, the median DLQI score of the healthy controls was 1 (range 0–8), and the difference was statistically significant for patients with PR ($p<0.05$). Moreover, no significant difference was observed between the scores of the control group and that of patients with PR after treatment ($p<0.05$), thereby indicating that treatment lowered the scores of patients with PR to normal levels.

A positive ($r=0.359$) and significant correlation ($p=0.000$) was observed between the overall pre-treatment DLQI and the pre-treatment PRSS scores in patients with PR. Furthermore, the post-treatment DLQI scores and PRSS scores correlated strongly ($r=0.628$) and significantly ($p=0.000$).

Discussion

Evaluating the effect of skin disease on a patient's QOL has several significant implications for practice. The DLQI provides a relevant, patient-oriented outcome to assess new therapies, as well as compare the different methods of skin treatment [9]. Using this approach, the current study evaluated whether PR is an asymptomatic dermatological condition (as previously thought) or whether a patient's QOL is adversely affected by the severity of the disease and justifies treatment.

To the best of our knowledge, only one study has evaluated the QOL in adult patients with PR [1]. This case-control study enrolled 66 participants in three groups, 22 patients with PR, 22 with active atopic dermatitis, and 22 controls with acne vulgaris. Although PRSS was used for the evaluation of the severity of the lesions, like in our study, the prevalence of pruritus as a symptom was not investigated. Thus, the scores of the above study are comparable to that of our study. However, we compared patients with PR with healthy controls, which produced a significantly better study design. Moreover, our study evaluated pruritus based on patient-reported VAS scores and assessed whether various treatment modalities affect the QOL, pruritus severity, and extensiveness of the rash. Unlike the study by Chuh et al. [1], our study revealed significant improvements in the PRSS, VAS, and DLQI scores after treatment and positive correlations between the DLQI and PRSS scores in patients with PR (Table 1). The disparity between our study and the study of Chuh et al. [1] could probably be related to the difference in sample sizes because our study included a larger number of patients.

Another study assessed QOL in patients with PR, aged 5–16 years [10]. This study comprised overall 30 children who were divided into the following three groups: 10 patients with PR, 10 with atopic dermatitis, and 10 control subjects with a disease other than that of the skin. In children with PR, the QOL was significantly less influenced than that of children with atopic dermatitis, but children with PR were significantly more influenced than those without skin problems. Notably, PRSS was not assessed in this study. In addition, this study did not determine the correlation between DLQI and rash severity.

Nevertheless, evaluation of DLQI scores in patients with PR, before and after treatment, is crucial in determining appropriate treatment approaches in these patients because several national and international guidelines for other skin diseases recommend DLQI assessment before and after treatment to determine the treatment objectives [6].

Psoriasis may be one of the most well-known dermatological diseases for the use and understanding of DLQI scores and is the subject of most of the comprehensive guidelines. DLQI can act as a reference score, which can be useful in determining the change in QOL before, during, and after treatment owing to the significant psychological and physical risk in psoriasis [11, 12]. Moreover, biologics with the highest PASI decrease before the end of induction therapy have maximum DLQI decrease. The British Association of Dermatologists guidelines for biological therapy for psoriasis 2017, defined the DLQI's minimal clinically significant difference as "clinically relevant improvement in physical, psychological, or social functioning (e.g., ≥4-point improvement in DLQI)." [13].

Notably, the National Institute for Health and Clinical Excellence (NICE) Guidelines on Management of Atopic Eczema in Children suggested a holistic approach in the management of a child's atopic eczema considering the physical extent and its effect on QOL [14].

Furthermore, vitiligo is another skin disease where DLQI scoring is critical for the assessment of treatment. In addition, a guideline for the diagnosis and management of vitiligo [15] recommended that physicians should evaluate the psychological and QOL effects of vitiligo and make the patient's QOL progression the most critical outcome variable in clinical trials.

Notably, the DLQI score descriptor banding system and minimal clinically significant difference have been used in clinical trials on skin diseases other than psoriasis, such as chronic spontaneous urticaria, rosacea, and hidradenitis suppurativa [16-18].

Per the literature, PR treatment is generally considered optional because PR is accepted to be a self-limiting, asymptomatic disease with mild, tolerable pruritus [19]. Even though both systemic and topical PR treatments are currently used, it is still unclear whether these treatments could change the course of the disease, reduce itch, or enhance patients' QOL. Topical treatments for PR primarily include moisturizers and topical corticosteroids. By contrast, the systemic treatment comprises oral antihistamines, phototherapy, systemic corticosteroids, and macrolides [19]. Notably, the mechanism of action of macrolide in PR treatment is unknown; however, it is considered to exert anti-inflammatory and immunomodulatory effects [20].

The median DLQI scores of our patients with PR decreased significantly after various treatment modalities. In addition, the DLQI scores of the healthy controls were significantly lower than patients with PR. Moreover, the difference between the scores of the control group and that of patients with PR after treatment were not statistically significant, thereby indicating that treatment lowered the scores to normal levels in patients with PR.

Nonetheless, the limitation of our study was the lack of randomization by assigning patients to different treatment groups. However, the aim of this research was not to compare the efficacy of various PR therapy protocols but to assess the effect of disease severity on DLQI in patients with PR.

To the best of our knowledge, this is the first study on adult patients with PR to assess the effect of different treatment modalities on the QOL, pruritus severity, and disease severity. Moreover, in our study, patients with PR were compared with healthy controls, were followed up over time, and were asked to complete the DLQI after treatment. Therefore, based on our findings, we believe that PR is not only an asymptomatic eruption but also a disease that may affect a patient's QOL. Furthermore, oral azithromycin and systemic corticosteroids may be considered as alternatives to topical corticosteroids or antihistamines in treating patients with PR, especially those presenting with severe disease.

Ethics Committee Approval: Ethics committee approval was received for this study from the ethics committee of Kocaeli University Non-Invasive Clinical Investigations Ethical Committee (decision no: 2016/13.14, GOKAEK project no: 2016/168).

Informed Consent: Written informed consent was obtained from patients who participated in this study.

Peer-review: Externally peer-reviewed.

Author Contributions: Concept – A.H., E.Y.; Design – A.H., E.Y.; Materials – A.H., E.Y., B.A., E.M.; Data Collection and/or Processing – A.H., E.Y., B.A., E.M.; Analysis and/or Interpretation – A.H., E.Y.; Literature Search – A.H., E.Y., E.M.; Writing Manuscript – A.H., E.Y.; Critical Review – A.H., E.Y., B.A.

Conflict of Interest: The authors have no conflicts of interest to declare.

Financial Disclosure: The authors declared that this study has received no financial support.

Etik Komite Onayı: Bu çalışma için etik komite onayı Kocaeli Üniversitesi Non-invaziv Klinik Araştırmalar Etik Kurulu'ndan (Karar no: 2016 / 13.14, GOKAEK proje no: 2016/168) alınmıştır.

Hasta Onamı: Yazılı hasta onamı bu çalışmaya katılan hastalardan alınmıştır.

Hakem Değerlendirmesi: Dış bağımsız.

Yazar Katkıları: Fikir – A.H., E.Y.; Tasarım – A.H., E.Y.; Malzemeler – A.H., E.Y., B.A., E.M.; Veri Toplanması ve/veya İşlemesi – A.H., E.Y., B.A., E.M.; Analiz ve/veya Yorum – A.H., E.Y.; Literatür Taraması – A.H., E.Y., E.M.; Yazıyı Yazan – A.H., E.Y.; Eleştirel İnceleme – A.H., E.Y., B.A.

Çıkar Çatışması: Yazarlar çıkar çatışması bildirmemişlerdir.

Finansal Destek: Yazarlar bu çalışma için finansal destek almadıklarını beyan etmişlerdir.

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