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Correlation of DLQI and PDI with PASI in psoriasis quality of life

Correlación entre DLQI, PDI y PASI en la calidad de vida en la psoriasis

Correlação entre DLQI, PDI e PASI na qualidade de vida em psoríase

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Abstract

The aim was to evaluate the impact of psoriasis on patients' quality of life (QoL) using the DLQI and PDI, and to assess the correlation between their global scores and individual domains and the PASI. The DLQI and PDI questionnaires were administered to 58 patients aged over 18. Higher scores indicated a greater impact on QoL. The PASI, an assessment of disease severity and extent, was correlated with the DLQI and PDI (and their individual domains) using Spearman's correlation analysis (p-value of 5%). The study followed the Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) guidelines for observational studies. Mean scores were DLQI 7.6±7.4; PDI 11.3±8.6; PASI 12±12.5. Equivalence was found between the DLQI and PDI (rs=0.78; p=0.0001), and significant associations were observed between the DLQI and PASI (rs=0.26; p=0.0003) and between the PDI and PASI (rs=0.29; p=0.005). Regarding the DLQI, the PASI correlated most significantly with signs/symptoms, daily activities, and personal relationships (rs=0.35; rs=0.24; rs=0.16, respectively). For the PDI, the strongest correlations were with work, personal relationships, and daily activities (rs=0.38; rs=0.20; rs=0.19, respectively). Instruments specific to dermatological diseases (DLQI) and psoriasis (PDI) were used; they proved to be correlated and equivalent, clearly demonstrating the significant negative impact of psoriasis on QoL, with a linear relationship between PASI, DLQI, and PDI scores.

Descriptors: Psoriasis; Quality of Life; Activities of Daily Living; Patient Acuity; Surveys and Questionnaires.

Resumén

El objetivo fue evaluar el impacto de la psoriasis en la calidad de vida (CdV) de los pacientes utilizando el DLQI y el PDI, y su correlación entre las puntuaciones globales y sus dominios individuales y el PASI. Los cuestionarios DLQI y PDI se aplicaron a 58 pacientes mayores de 18 años. Cuanto mayor era la puntuación, más afectada estaba la CdV. El PASI, una evaluación de la gravedad y extensión de la enfermedad, se correlacionó con el DLQI y el PDI y con los dominios individuales de cada cuestionario utilizando el análisis de correlación de Spearman (valor p del 5%). El estudio siguió las directrices de Fortalecimiento de la Notificación de Estudios Observacionales en Epidemiología para estudios observacionales. Las medias fueron: DLQI 7,6±7,4; PDI 11,3±8,6; PASI 12±12,5. Se encontró equivalencia entre el DLQI y el PDI, rs=0,78; p=0,0001; Asociación significativa entre DLQI y PASI, rs=0,26; p=0,0003; entre PDI y PASI, rs=0,29; p=0,005. En DLQI, PASI se correlacionó más significativamente con signos/síntomas, actividades diarias y relaciones personales, rs=0,35; rs=0,24; rs=0,16. En PDI, la relación fue más fuerte con trabajo, relaciones personales y actividades diarias, rs=0,38; rs=0,20; rs=0,19. Se utilizaron instrumentos específicos para enfermedades dermatológicas (DLQI) y psoriasis (PDI), que demostraron estar correlacionados y ser equivalentes y mostraron claramente el gran impacto negativo de la psoriasis en la calidad de vida, con una relación lineal entre PASI, DLQI y PDI.

Descriptores: Psoriasis; Calidad de Vida; Actividades de la Vida Diaria; Gravedad de la Enfermedad; Encuestas y Cuestionarios.

Resumo

Objetivou-se avaliar o impacto da psoríase na qualidade de vida - *Quality of Life* (QoL) - dos pacientes através do DLQI e do PDI, e sua correlação entre os escores globais e seus domínios individuais e o PASI. Aplicaram-se questionários DLQI e PDI a 58 pacientes acima de 18 anos de idade. Quanto maior o escore, mais afetada a QoL. O PASI, avaliação da gravidade e extensão da doença, correlacionou-se ao DLQI e ao PDI e aos domínios individuais de cada questionário utilizando-se da análise de correlação de Spearman (p-valor de 5%). O estudo seguiu as diretrizes Strengthening the Reporting of Observational Studies in Epidemiology para estudos observacionais. As médias foram, DLQI 7,6±7,4; PDI 11,3±8,6; PASI12±12,5. Constatou-se equivalência entre DLQI e PDI, rs=0,78; p=0,0001; associação significativa entre DLQI e PASI, rs=0,26; p=0,0003; entre PDI e PASI, rs=0,29; p=0,005. No DLQI, o PASI se correlacionou de forma mais significativa com sinais/sintomas, atividades diárias e relações pessoais, rs=0,35; rs=0,24; rs=0,16. No PDI, a relação foi maior com trabalho, relações pessoais e atividades diárias, rs=0,38; rs=0,20; rs=0,19. Foram utilizados os instrumentos específicos para doenças dermatológicas (DLQI) e para psoríase (PDI), que se mostraram correlatos e equivalentes e mostraram claramente o grande impacto negativo da psoríase na QoL, com relação linear entre PASI, DLQI e PDI.

Descritores: Psoríase; Qualidade de Vida; Atividades Cotidianas; Gravidade da Doença; Inquéritos e Questionários.

Introduction

Psoriasis is a chronic disease affecting approximately 3% of the global population; it is characterized by skin and joint involvement and presents in a variety of clinical forms. It can be a disabling condition, not only due to skin involvement but also because of joint disease and comorbidities[1,2]. It is heterogeneous from the point of view of genetic influence, age of onset, clinical evolution, presence of joint and systemic involvement, and therapeutic response. Although psoriasis was once considered an asymptomatic disease[3], pruritus has been reported in more than 70% of individuals[4]. It is a significant negative factor affecting quality of life, and its presence and intensity help classify psoriasis as mild, moderate, or severe[5-7]. The social and psychological impact of psoriasis is still underestimated in medical practice[8-10].

Techniques for assessing the impact of the disease on the patient's daily life have been the subject of ongoing study, and quality-of-life questionnaires have been developed to quantify and standardize this subjective assessment, thereby aligning the perspectives of the physician and the patient[11,12]. A physician's therapeutic decision is often made intuitively, based on subjective assessments that may not reflect reality[13,14]. Therefore, more accurate measures assessing the patient's perception of their health status, disability, and quality of life can assist in this decision-making process[15].

The measurement of the extent and severity of psoriasis is based on the assessment of the affected body area and the signs and symptoms present; however, this measure does not necessarily correlate with a better or worse quality of life[16-19]. A particular treatment may reduce the score for the disease's signs and symptoms by half or more, but if the residual disease is in a visible area, the quality-of-life index remains unchanged[20].

In this context, the impact of psoriasis on quality of life was evaluated using the Dermatology Life Quality Index (DLQI) and Psoriasis Disability Index (PDI) instruments, analyzing the correlation between global scores and their individual domains, as well as their association with clinical disease severity measured by the Psoriasis Area and Severity Index (PASI).

Methodology

This cross-sectional observational study, of a clinical-epidemiological nature, was conducted in accordance with the recommendations of STROBE (Strengthening the Reporting of Observational Studies in Epidemiology), an international guideline for reporting observational studies.

The study was conducted at the cutaneous-articular disease outpatient clinic of the Clementino Fraga Filho University Hospital at the Federal University of Rio de Janeiro (HUCFF-UFRJ).

Patients of both sexes, aged over 18, with a dermatologist-confirmed diagnosis of psoriasis and receiving outpatient care, were included via convenience sampling. Patients lacking the cognitive capacity to answer the questionnaires or who refused to sign the Informed Consent Form were excluded.

The Dermatology Life Quality Index (DLQI) and Psoriasis Disability Index (PDI) questionnaires were administered to all participants. The PDI is a psoriasis-specific quality-of-life questionnaire consisting of 15 questions, with a maximum score of 45 points. The DLQI is an instrument used for dermatoses in general; it contains 10 questions, with scores ranging from 0 to 30 points, interpreted as follows: no impairment of quality of life (score of 0–1) or mild (score of 2–5), moderate (score of 6–10), severe (score of 11–20), or very severe (score of 21–30) impairment. For both instruments, higher scores indicate greater impairment of quality of life. Disease severity and extent were determined using the Psoriasis Area and Severity Index (PASI), which assesses signs and symptoms, such as erythema, thickness, and scaling, in specific body areas (head, trunk, and upper and lower limbs), with scores ranging from 0 to 72.

Initially, a descriptive analysis of the variables of interest was performed. The association between the global DLQI, PDI, and PASI scores, as well as between the PASI and the individual domains of the questionnaires, was evaluated using Spearman's correlation coefficient, with a significance level of 5% ($p<0.05$). This test was chosen due to the ordinal nature of the scores analyzed and the potential for a non-normal distribution of the variables.

The study was approved by the Research Ethics Committee (CEP) of the Clementino Fraga Filho University Hospital (HUCFF), Federal University of Rio de Janeiro, under opinion number 5,751,788 on November 10, 2022, and all enrolled participants signed the Informed Consent Form (ICF).

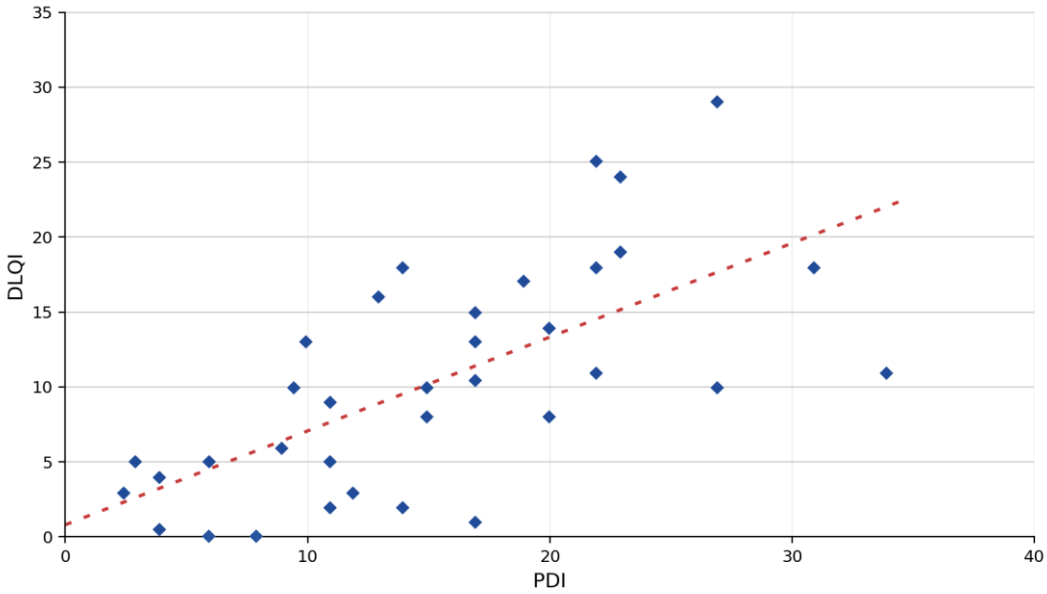
Results

The mean scores were DLQI 7.6 ± 7.4; PDI 11.3 ± 8.6; and PASI 12 ± 12.5. Spearman's correlation coefficient (rs) analysis was used; this measures the correlation between two numerical variables. This coefficient ranges from -1 to +1, and the closer it is to 1, the stronger the correlation between the variables. Equivalence was observed between DLQI and PDI (rs=0.78; p=0.0001; Graph 1), as well as a significant association between DLQI and PASI (rs=0.26; p=0.0003; Graph 2) and between PDI and PASI (rs=0.29; p=0.005; Graph 3). Regarding individual DLQI domains, PASI correlated most significantly with signs/symptoms, daily activities (Graph 4), and personal relationships (Graph 5), in descending order of importance: rs=0.35, rs=0.24, and rs=0.16. As for PDI domains, the relationship was strongest with work, personal relationships, and daily activities, in descending order: rs=0.38, rs=0.20, and rs=0.19.

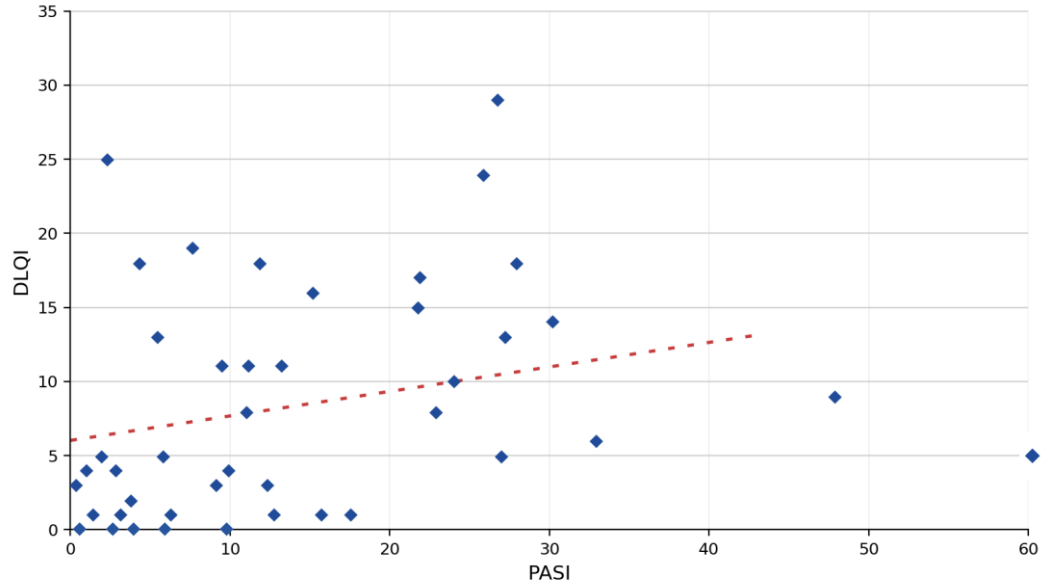
Discussion

In recent decades, the number of instruments for assessing quality of life has increased considerably[11]. They can be divided into generic or specific ones[20]. The ones used in this study are specific to dermatological diseases (DLQI) and psoriasis (PDI)[21-23].

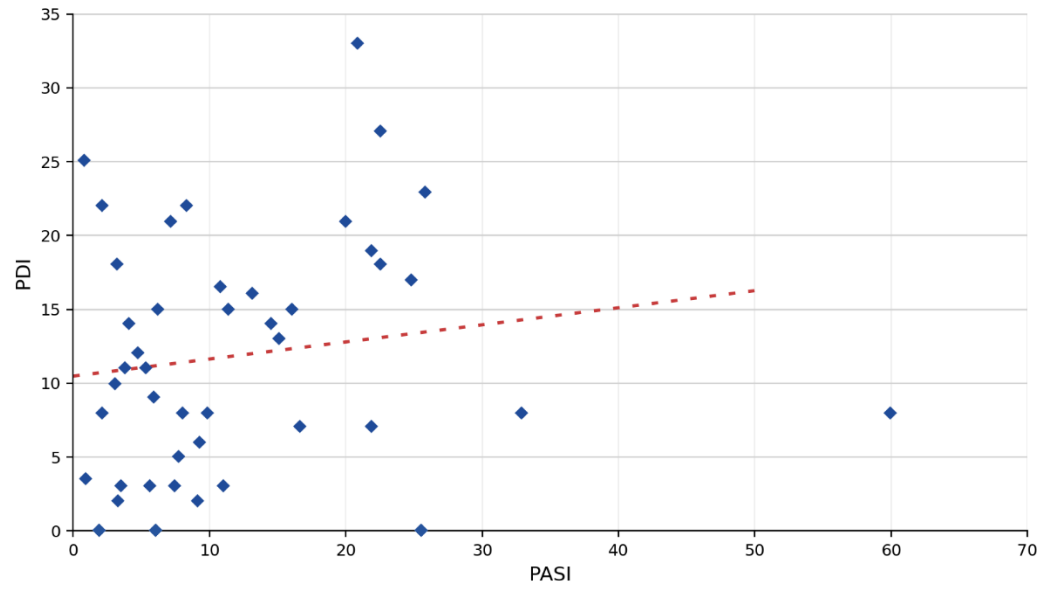
Graph 1. Correlation between quality-of-life indices: PDI vs. DLQI. Rio de Janeiro, RJ, Brazil, 2023



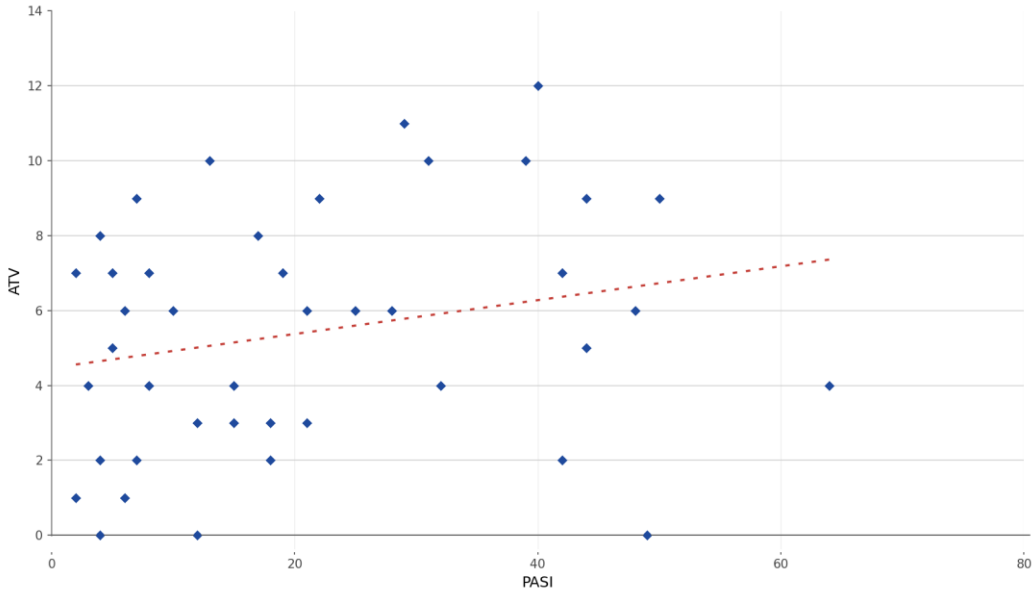
Graph 2. Correlation between disease severity index and quality of life index: PASI vs. DLQI. Rio de Janeiro, RJ, Brazil, 2023



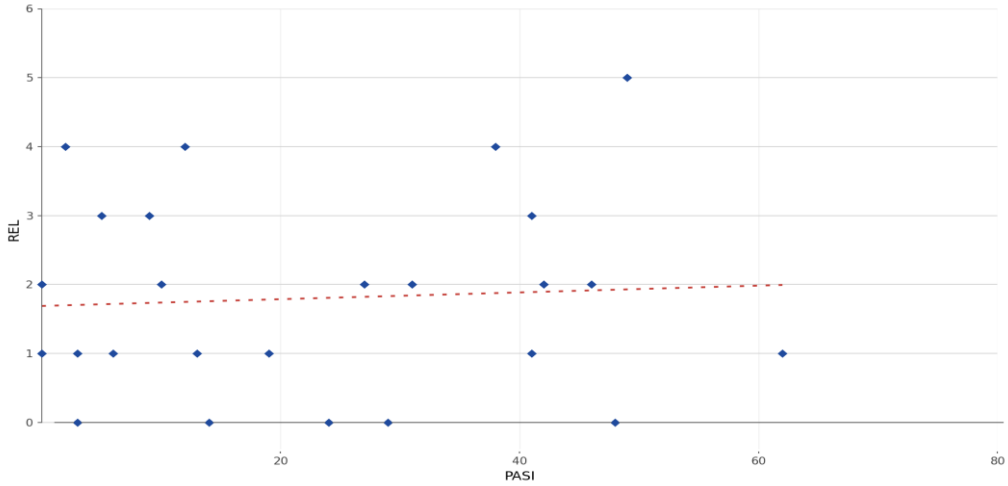
Graph 3. Correlation between disease severity index and quality of life index: PASI vs. PDI. Rio de Janeiro, RJ, Brazil, 2023



Graph 4. Correlation between disease severity index and individual quality of life domain: PASI vs. daily activities. Rio de Janeiro, RJ, Brazil, 2023



Graph 5. Correlation between disease severity index and individual quality of life domain: PASI vs. Personal relationships. Rio de Janeiro, RJ, Brazil, 2023



The equivalence between the two instruments, evidenced by the strong correlation found (rs=0.78; p=0.0001), is a significant finding, as it indicates that the PDI, despite being more specific to psoriasis, does not offer a substantial discriminative advantage over the DLQI in this sample. This suggests that, in routine clinical settings, the DLQI may be sufficient for assessing quality of life in patients with psoriasis, given that it is more widely validated and allows for comparisons across different dermatoses.

The moderate correlation observed between the PASI and QoL instruments (rs=0.26 with the DLQI and rs=0.29 with the PDI) is particularly noteworthy. Although statistically significant, the magnitude of this association is limited, reinforcing that clinical assessment based solely on objective parameters of extent and affected area is insufficient to capture the patient's actual suffering. Lesion location, plaque visibility, associated pruritus, and individual psychosocial factors decisively modulate the perception of the disease's impact, regardless of its severity as measured by PASI[16-19]. A treatment that cuts the disease's signs and symptoms score in half but leaves residual lesions in a visible area may not translate into a perceptible improvement in the patient's quality of life[20].

The QoL domains most affected were personal relationships and daily activities, according to both the DLQI and the PDI. This finding is clinically significant: psoriasis compromises not only an individual's physical functioning but also their social integration and interpersonal interactions. The stigma associated with visible skin lesions, often perceived by others as contagious, contributes to isolation, low self-esteem, and the development of anxiety and depression, significantly impairing the individual's interaction with their environment and ultimately leading to social exclusion[24].

The degree of disability caused by psoriasis is comparable to that of other chronic diseases, such as arterial hypertension and diabetes mellitus, and tends to vary widely among those affected[24]. The average values obtained in the DLQI vary according to the sample studied; in a Brazilian study[25], it was 10.31 in patients with psoriasis, 7.87 in those with atopic dermatitis, and 7.40 in those with acne, correlating with the original study[26]. The mean DLQI score found in this study (7.6), corresponding to moderate

impairment, is close to that described in the national literature, lending external consistency to the findings. Some patients, even those with severe forms of the disease, prefer living with the condition to experiencing the adverse effects of certain medications[27]. Others seek aggressive treatments and view mild forms of the disease as intolerable. What may be highly disabling for some can be insignificant for others, depending on personal attitude and lifestyle[28,29]. Thus, a simple clinical analysis of the improvement in the cutaneous and articular signs of psoriasis does not reflect the patient's well-being[30-32]. In the assessment of patients with psoriasis, alongside other disease-specific severity parameters, the use of the DLQI is part of the "Rule of 10s": when the score obtained exceeds 10 points, the condition is classified as severe[33].

This study has limitations that should be considered when interpreting the findings. First, the sample size was relatively small (n=58), which may limit the statistical power of the analyses and the detection of weaker associations between clinical severity and quality of life. Furthermore, the study utilized a convenience sample recruited from a single tertiary referral center; this may introduce selection bias and compromise the generalizability of the results to the broader population of patients with psoriasis, particularly those receiving care in primary or secondary settings. Another important aspect is the cross-sectional design, which precludes the establishment of causal relationships between the variables analyzed and does not allow for the assessment of changes in quality of life over time or following therapeutic interventions. Potential information biases must also be considered, given that the instruments used rely on self-reporting and may be influenced by subjective, emotional, and sociocultural factors at the time of response. Finally, the absence of potentially relevant clinical variables, such as disease duration, presence of psoriatic arthritis, comorbidities, lesion location, and use of systemic or biologic therapies, limits a more comprehensive analysis of confounding factors that may affect quality of life. Thus, the results should be interpreted with caution, and multicenter studies with larger samples and longitudinal designs are needed to confirm and expand upon these findings.

Conclusion

The two questionnaires are correlated and equivalent in their assessment, despite the DLQI having been developed for dermatoses in general while the PDI is specific to psoriasis. The significant negative impact of psoriasis on patients' quality of life (QoL) is evident, as the mean scores on the questionnaires reflect a moderate level of disease-related impairment. A linear relationship regarding severity is also apparent among the PASI, DLQI, and PDI, demonstrating a greater negative impact on quality of life in more severe cases of the disease, as defined by the PASI. The domains of quality of life most affected by psoriasis were personal relationships and daily activities, as assessed by both questionnaires, significantly impairing the individual's interaction with their environment and ultimately leading to social exclusion. However, these findings must be interpreted considering the study's limitations, particularly its cross-sectional design, small sample size, and single-center setting.

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