PSORIASIS AREA SEVERITY INDEX (PASI) AND THE DERMATOLOGY LIFE QUALITY INDEX (DLQI): THE CORRELATION BETWEEN DISEASE SEVERITY AND QUALITY OF LIFE IN PATIENTS OF PSORIASIS

Saima Ali Khan, Zafar Iqbal Shaikh

Military Hospital/National University of Medical Sciences (NUMS) Rawalpindi Pakistan

ABSTRACT

Objective: To determine the correlation between Psoriasis Area Severity Index (PASI) and Dermatology Life Quality Index (DLQI) in patients of psoriasis.

Study Design: Cross sectional study.

Place and Duration of Study: Both outdoor and indoor patients of Dermatology Department, Military Hospital (MH) Rawalpindi for duration of 6 months i.e. from 6th Oct 2014 to 5th Apr 2014 were selected.

Material and Methods: A total of 155 patients of chronic plaque psoriasis diagnosed clinically, ranging from 20 to 80 years of age and of either gender were included in the study. A careful history and clinical examination was done and for each case PASI and DLQI were calculated and registered in the designed proforma. Data were entered and analyzed in SPSS version-17.0. Mean and standard deviations were calculated for quantitative variables like age, PASI and DLQI. Frequencies and percentages were calculated for qualitative variables like gender. Pearson's correlation coefficient (r) (+1,-1) was calculated between mean PASI and mean DLQI. A *p*-value <0.05 was considered as significant. Stratification was done for age and gender and post stratification correlation was calculated.

Results: Out of 155 patients studied, 110 (70.97%) were males and 45 (29.03%) were females. Ages of the patients ranged from 20-80 years (mean age 49.5 ± 15.6 years). Mean PASI score was 27.92 ± 5.83 and DLQ1 was 11.46 ± 4.22. The value of Pearson correlation coefficient (r) was 0.1324 which showed weak correlation between PASI and DLQ1 with *p*-value of 0.100. Weak correlation (r=-0.3394) in age 51-80 years while very weak correlation (r=-0.0651) in age 20-50 years was noted. PASI and DLQ1 showed weak correlation in males (r=0.132) and in females (r=0.461).

Conclusion: This study concluded that there is a weak correlation between PASI and DLQI.

Keywords: Association, Psoriasis, Quality of life.

INTRODUCTION

Psoriasis is an immune-mediated, chronic, inflammatory skin disease which affects approximately 2% of the world's population[1]. Although not life-threatening or contagious, psoriasis substantially affects health-related quality of life (HRQoL) and has negative psychological and social implications[2], influencing career, social activities, family relationships and all other aspects of life[3]. It has significant impact on overall emotional status of patients.

Correspondence: Dr Saima Ali Khan, Department of Dermatology, Military Hospital Rawalpindi Pakistan
Email: him_105@yahoo.com
Received: 08 May 2017; revised received: 11 Jul 2017; accepted: 18 Jul 2017

In clinical practice, severity of psoriasis is usually assessed by area of involvement, erythema, thickness & scaliness. The most widely used index measure of severity of psoriasis is Psoriasis Area Severity Index (PASI). Health related quality of life is most commonly evaluated using the Dermatology Life Quality Index (DLQI) which is a reliable, validated 10-item questionnaire covering six dimensions (symptoms and feelings, daily activities, leisure, work and school, personal relationships and treatment) that assess the overall impact of skin disorders and current treatments on the patient's functioning and well being[4].

The exact relation between disease severity as measured by PASI and the psychological

burden on patient is still unclear. Various studies have demonstrated a positive correlation between PASI and DLQI[5] while some studies revealed only a weak correlation between clinical severity and quality of life (r=0.24)[6,7].

Improvement of health related quality of life is nowadays considered as an independent goal of psoriasis therapy. 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 quality of life. Therefore, when assessing severity, it is important to have a more comprehensive approach encompassing both medical and psychological measures. A better understanding of the relationship between PASI and DLQI in psoriasis is important as it can influence physician's treatment decisions and optimize patient care.

MATERIAL AND METHODS

It was a descriptive, cross sectional study conducted in Dermatology Department, Military Hospital (MH) Rawalpindi for a duration of 6 months i.e. from 6th Oct 2014 to 5th Apr 2014. Sample size of 155 cases was calculated with >95% confidence level and r=0.246. Sampling technique was non-probability, consecutive sampling. Both outdoor and indoor patients of both gender between 20-80 years were selected with duration of illness of more than 1 year. Patients with morphological forms other than chronic plaque psoriasis, any chronic medical or surgical illness were excluded. A total of 155 Patients from outpatient department (OPD) of Dermatology and skin ward at MH Rawalpindi, fulfilling the inclusion criteria were selected after written informed consent and permission from Hospital Ethical Review Committee. Detailed history and examination were done and severity of disease was recorded and PASI calculated. The impact of disease on quality of life was assessed on (DLQI) proforma. Data was entered and analyzed in SPSS version 17. Mean and standard deviations were calculated for quantitative variables like age, PASI and DLQI. Frequencies and percentages were calculated for qualitative variables like gender. Pearson Correlation's coefficient (r) (+1,-1) was calculated between mean PASI and mean DLQI. A *p*-value <0.05 was considered as significant.

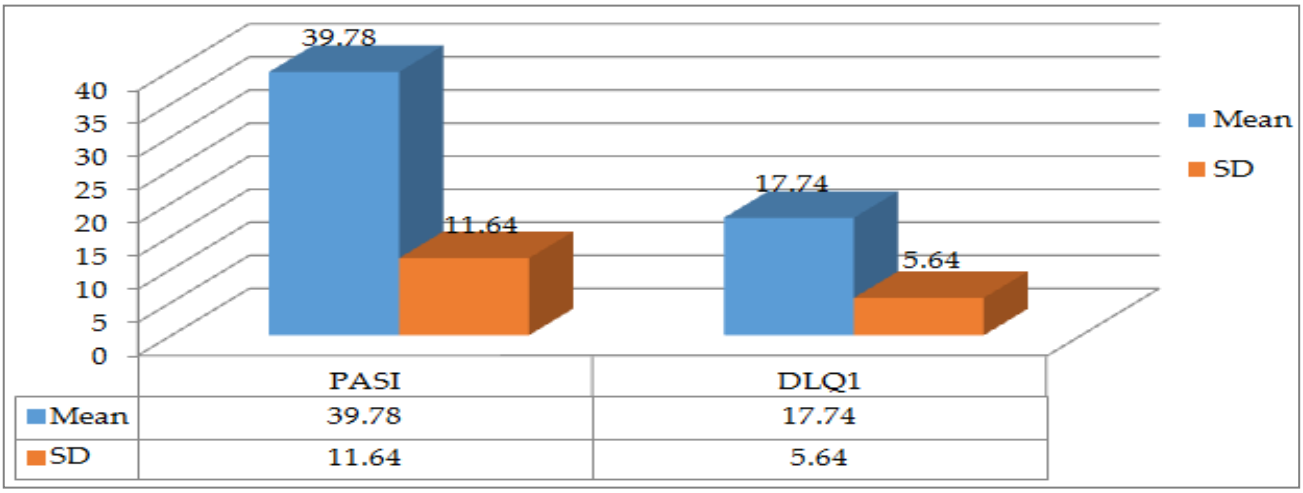

Figure-1: Mean PASI and DLQ1.

RESULTS

Among 155 patients studied, there were 110 (70.97%) males and 45 (29.03%) females with male to female ratio of 2.4:1. Ages of the patients ranged from 20-80 years with mean age of 49.56 ± 15.62 years. Majority of the patients 56 (36.13%) were between 36 to 50 years of age.

Mean PASI score was 27.92 ± 5.83 and DLQ1 was 11.46 ± 4.22 as shown in fig-1. The value of

Pearson's correlation coefficient (r) was 0.1324 which showed weak correlation between PASI and DLQ1 (p=0.10) (fig-2).

Correlation between PASI and DLQ1 (fig-3 & 4) with respect to age groups showed weak correlation (r=-0.3394) in age 51-80 years while very weak correlation (r=-0.0651) in age 20-50 years (p>0.05).

Correlation between PASI and DLQI with respect to gender showed weak correlation in males (r=0.132) and in females (r=0.461) with p>0.05.

DISCUSSION

Psoriasis has a significant effect on patient's quality of life. In addition to visible manifestation of disease and itching, patients suffering from psoriasis feel stigmatization, isolation and feeling of hopelessness. Although not life-threatening or contagious, psoriasis has a substantial impact on health-related quality of life (HRQOL) and has negative psychological and social implications. HRQOL measures represent important and relevant endpoints, from the patient's perspective.

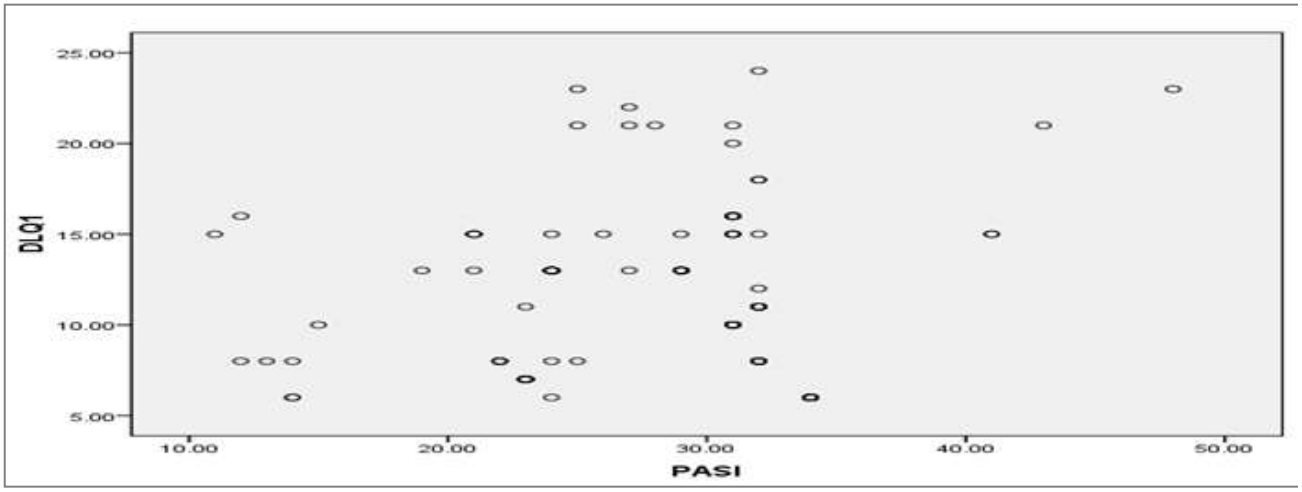

Figure-2: Correlation graph between PASI and DLQ1.
The value of Pearson correlation coefficient (r) is 0.1324 which has shown the weak correlation.
A p-value 0.100 which is statistically insignificant.

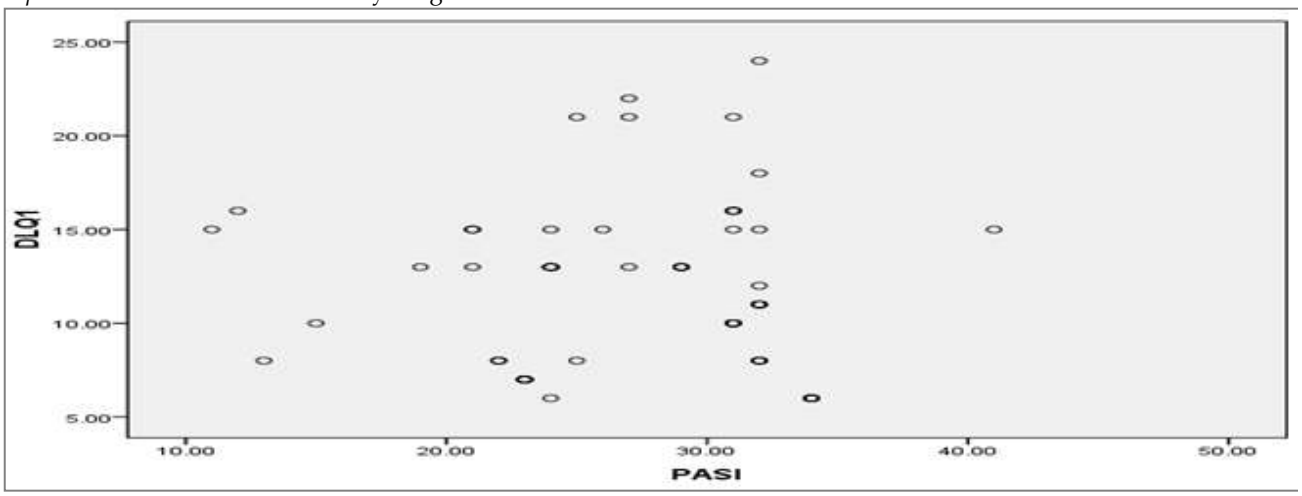

Figure-3: Correlation graph between PASI and DLQ1 with respect to age 20-50 years (n=85).
The value of Pearson correlation coefficient (r) is -0.0651 which has shown very weak correlation.
A p-value 0.55 which is statistically insignificant.

Various studies have demonstrated a positive correlation between PASI and DLQI[5,8,9]. The study conducted by Gelfand et al showed that there was greater reduction in quality of life in patients with extensive skin involvement[10].

Data collected on 93 patients by Schafer et al revealed that higher PASI was associated with impaired quality of life and DLQI, however association was weak[6] (r=0.24). A study evaluating PASI and DLQI based on quality of life questionnaire adapted to Brazilian context for patients with plaque psoriasis showed no concordance[11].

Secondly, psoriasis is a chronic disease with a prolonged course; so patients may have better coping strategies and acceptance of the disease. If the lesions are on the visible parts of the body like face, hands and nails, impact on quality of life is increased. Occupation, education and socioeconomic status are other independent factors effecting health related quality of life.

In our study, out of these 155 patients, 110 (70.97%) were males and 45 (29.03%) were females with a ratio of 2.4:1. Many previous studies showed male predominance as observed in our study. PASI and DLQ1 showed weak

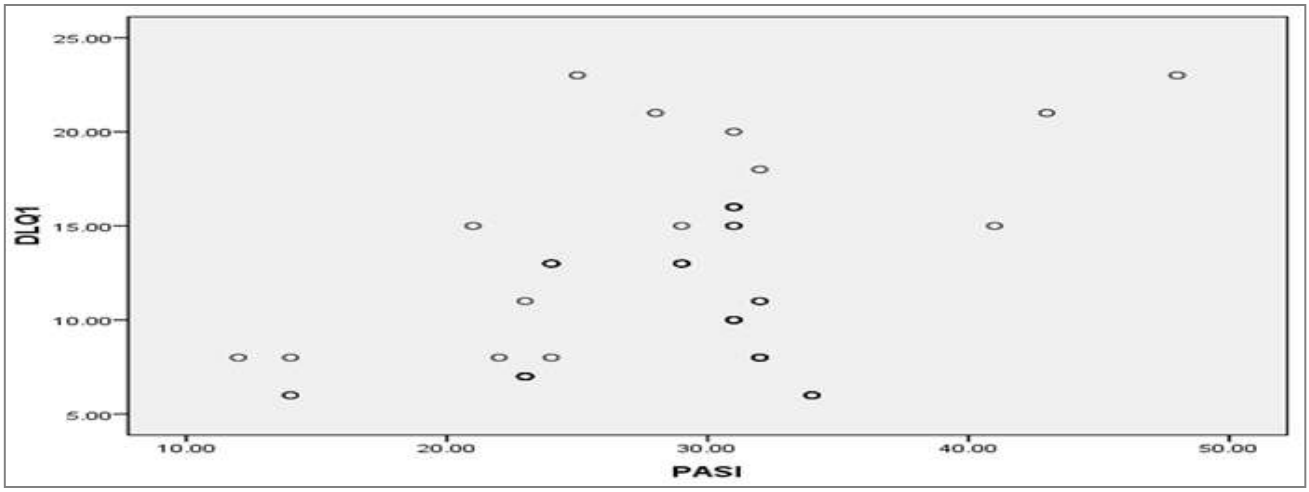

Figure-4: Correlation graph between PASI and DLQ1 with respect to age 51-80 years (n=70).
The value of Pearson correlation coefficient (r) is 0.3394 which has shown the weak correlation.
A *p*-value 0.004 which is statistically insignificant.

Our study showed similar results. In our study, mean PASI score was 27.92 ± 5.83 and DLQ1 was 11.46 ± 4.22. The value of Pearson's correlation coefficient (r) was 0.1324 which showed weak correlation between PASI and DLQ1 with *p*-value of 0.100 which was statistically insignificant. This was comparable to mean DLQI scores of 10.6 to 18.83 reported among psoriatic patients in various past studies done worldwide.

The non-concordance between PASI and DLQI may be multifactorial. The original DLQI has many questions which are not related to lives of people belonging to lower socioeconomic class and the validity of this tool in people with diverse sociocultural profile can be questioned.

correlation (r=0.4701) in male and in female gender (r=0.4605) in our study. Similar findings were also observed in a study done in Taiwan by Lin et al[12]. In addition, previous studies have shown women to be more likely than men to report impairment of psoriasis-related quality of life[13] and it is believed that women generally report greater psychological disease severity, but men have higher PASI scores than women[14]. However, the gender factor was weakly associated with the DLQI scores in our study.

PASI and DLQI are two separate parameters to assess the severity of disease and their weak correlation suggests that both parameters should be included in assessing the patient for decisions regarding treatment, for assessing response of

treatment and for evaluation of psychological impact of the disease.

CONCLUSION

This study concluded that there is a weak correlation between PASI and DLQI. PASI and DLQI are two separate parameters to assess the severity of disease and evaluation of both of them has significant importance in optimizing management in patients with psoriasis.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

REFERENCES

1. Tang MM, Chang CC, Chan LC, Heng A. Quality of life and cost of illness in patients with psoriasis in Malaysia: A multicenter study. Int J Dermatol 2013; 52(3): 314-22.
2. Augustin M, Radtke MA. Quality of life in psoriasis patients. Expert review of pharmaco-economics & outcomes research 2014; 14(4): 559-68.
3. Obradors M, Blanch C, Comellas M, Figueras M, Lizan L. Health-related quality of life in patients with psoriasis: A systematic review of the European literature. Quality of Life Research 2016; 25(11): 2739-54.
4. Chalmers RJ. Assessing psoriasis severity and outcomes for clinical trials and routine clinical practice. Dermatologic clinics 2015; 33(1): 57-71.
5. Revicki DA, Willian MK, Menter A, Saurat JH, Harnam N, Kaul M. Relationship between clinical response to therapy and health-related quality of life outcomes in patients with moderate to severe plaque psoriasis. Dermatology 2008; 216: 260-70.
6. Schäfer I, Hacker J, Rustenbach SJ, Radtke M, Franzke N, Augustin M. Concordance of the psoriasis area and severity index (PASI) and patient-reported outcomes in psoriasis treatment. Eur J Dermatol 2010; 20(1): 62-7.
7. Shankar V, Ghosh S, Ghosh K, Chaudhuri U. PASI and PQOL-12 score in psoriasis: Is there any correlation? Indian J Dermatol 2011; 56(3): 287-9.
8. Mattei PL, Corey KC, Kimball AB. Psoriasis Area Severity Index (PASI) and the Dermatology Life Quality Index (DLQI): The correlation between disease severity and psychological burden in patients treated with biological therapies. J Eur Acad Dermatol Venereol 2014; 28(3): 333-7.
9. Herédi E, Rencz F, Balogh O, Gulácsi L, Herszényi K, Holló P, et al. Exploring the relationship between EQ-5D, DLQI and PASI, and mapping EQ-5D utilities: A cross-sectional study in psoriasis from Hungary. Eur J Health Econ 2014; 15(1): 111-9.
10. Gelfand JM, Feldman SR, Stern RS, Thomas J, Rolstad T, Margolis DJ. Determinants of quality of life in patients with psoriasis: A study from the US population. J Am Acad Dermatol 2004; 51: 704–08.
11. Silva MF, Fortes MR, Miot LD, Marques SA. Psoriasis: Correlation between severity index (PASI) and systemic treatment. Anais brasileiros de dermatologia 2013; 88(5): 760-3.
12. Lin TY, See LC, Shen YM, Liang CY, Chang HN, Lin YK. Quality of life in patients with psoriasis in northern Taiwan. Chang Gung Med J 2011; 34(2): 186-96.
13. Sampogna F, Chren MM, Melchi CF, Pasquini P, Tabolli S, Abeni D. Age, gender, quality of life and psychological distress in patients hospitalized with psoriasis. Br J Dermatol 2006; 154: 325-31.
14. Zachariae R, Zachariae H, Blomqvist K, Davidsson S, Molin L, Mørk C, et al. Quality of life in 6497 Nordic patients with psoriasis. Br J Dermatol 2002; 146: 1006-16.