Original Article

Determinants of quality of life in psoriasis

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Abstract

Background: The impact of psoriasis on quality of life of the individual may be determined by various factors such as gender, age of onset and type of the disease. No study of various factors of psoriasis determining the quality of life had been carried out in Mauritius. **Objective:** Aim was to study the impact of clinical and epidemiological features of psoriasis on the quality of life of the psoriatic. **Methodology:** The study was carried out in the Outpatient department of a regional general government hospital in Mauritius. It was a cross sectional study of consecutive 55 patients of psoriasis. The clinical features of psoriasis were correlated to a quantitatively assessed impact of psoriasis on the quality of life. The data was analyzed using SPSS 22 (Statistical Package for the Social Sciences) software. **Results:** Out of a total of 55 patients of psoriasis 36 (65.5%) patients were men and 19 (34.5%) women; Association between gender and the Psoriasis Disability Index (PDI) score was statistically significant (p value=0.024). Larger percentage of female patients was seen with greater PDI score. PDI was significantly dependent on stress (p value = 0.003). The patients with stress had a PDI score > 20. Involvement of the Total Body Surface Area (TBSA) less than 10% was observed in 37 (67.3%) and >10% TBSA in 18 (32.7%); 16 (83.3%) patients with involvement of TBSA >10% had PDI score >20. Psoriatic arthritis was observed in 14/55 (24.5%) patients and 13/14 (92.8%) of these patients had PDI score > 20. **Conclusion:** There was a significant association between the gender, stress, severity of the disease, psoriatic arthritis and the total PDI score. The disability due to psoriasis was more in females, when a larger Total Body Surface Area was affected and when joints were involved.

Key words: Quality of Life, Psoriasis Disability Index (PDI) score, Total Body Surface Area (TBSA), Psoriatic arthritis.

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INTRODUCTION

Psoriasis is a recurrent and chronic systemic inflammatory disease with a wide spectrum of clinical patterns of skin, nail and joint involvement.[1, 2] It is the most prevalent autoimmune disease in the United States, affecting approximately 7.5 million, or 2.2%, of the US population.[3] The most common type of psoriasis is psoriasis vulgaris or plaque psoriasis. Symptoms of psoriasis vulgaris include erythematous plaques with silvery, micaceous scales. In most cases, the symptoms are mild and the lesions cover less than 3% of the body. However, for a small subset of individuals (8% of psoriasis patients), psoriasis can cover over 10% of the skin and is classified as severe.[4] Severe psoriasis can have a major impact on quality of life (QOL) of the patient. The impact of psoriasis on QOL of the individual may vary considerably depending on gender, the age, the clinical type, the severity of the disease and the involvement of the joints. Psoriasis is reported to have a greater impact on the quality of life of patients in the age 18 years to 45 years, with men subjected to a greater work-related stress as compared to women.[5] QOL was observed to be significantly more impaired in the older age group, particularly women, in an another study.[6] Symptoms, particularly itching, and severity of the disease as indicated by the Total Body Surface Area

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(TBSA) are reported to have a negative impact on the QOL.[7] Psoriatic arthritis has a marked negative impact on the QOL and is an indication for treatment with immunosuppressant and or the Biologicals.[8] Various co-morbidities such as obesity, hypertension and cardiovascular disease may also influence the QOL of the psoriatic.

The chronic nature and course of the disease contribute to a lifelong burden.[9] Aim was to study various factors of the disease determining Quality of Life in psoriasis.

MATERIALS AND METHODS

It was an exploratory cross sectional study of consecutive 55 patients of psoriasis in the Skin Outpatient department of a regional government hospital in Mauritius. The study was carried out using the case study method. A permission of the Regional Health Director of the Hospital and an informed written consent of patient were obtained for the study. Only classical cases of psoriasis were included in the study. A clinical diagnosis of 'psoriasis vulgaris' was made when typical, well circumscribed, erythematous, scaly, chronic plaques were observed on the scalp and the extensors, and that of 'guttate psoriasis' was made when abrupt eruption of typical psoriatic lesions of papular type were observed. The diagnosis of 'pustular psoriasis' was made if tiny sterile pustules were found on the surface of a psoriatic plaque and with extensive erythema and superficial scaling of more than 90% of the body surface in a known case of psoriasis the diagnosis of 'psoriatic erythroderma' was made.[1,2] Patient of psoriasis who were in remission of skin lesions of psoriasis or those found to be serologically positive for VDRL or TPHA test were excluded from the study. The clinical data such as gender, age, duration of the disease, clinical type of psoriasis, the body sites and the Total Body Surface Area (TBSA) affected, the involvement of joints and the presence of co-morbidities like obesity, hypertension, diabetes mellitus and cardiovascular diseases were recorded in a comprehensive Case Record Form (CRF). Severity of psoriasis was assessed by percentage of the TBSA affected due to the disease. As per Finlay's concept of 'Rule of Tens', area covering more than 10 hand prints, indicating TBSA more than 10%, was considered as severe psoriasis.[10] A quantitative assessment of impact of psoriasis on QOL was done by the Psoriasis Disability Index (PDI) Questionnaire of A Y Finlay.[11] Since its introduction the PDI has been used widely as a tool for assessment of quality of life in psoriasis. It has been translated into at least 16 languages and has been used in published research in 20 countries.[12] A written permission for the use of PDI Questionnaire was obtained from Prof. A Y Finlay.

The PDI Questionnaire contained a total of fifteen questions, covering difficulties encountered under five different sections such as 'daily activities', 'at work', 'personal relationships', 'leisure activities' and 'treatment'. The patient assessed the impact of psoriasis on his QOL by selecting one answer from the choice of four answers: the answer 'very much' (scored 3), 'a lot' (scored 2), 'a little' (scored 1), 'not at all' or no answer (scored 0). The maximum score for the whole questionnaire could be 45 and minimum 0. The total PDI scores were put in two categories: patients with total PDI score of less than (<) 20 and patients with total PDI score of greater than or equal to (≥) 20.

The data was statistically analyzed using SPSS 22 software. The continuous data was described as mean and standard deviation. The categorical data was expressed as frequencies and percentages. Analysis of contingency tables was done by Fisher's Exact test. The categorical data was analyzed by Chi-squared test. A p value of < 0.05 was considered as statistically significant.

RESULT

A total of 55 patients of psoriasis were studied. Age of patients ranged from 20 to 76 years with a mean age 48.85 years, ± SD 13.49; 36 (65.5%) patients were men and 19 (34.5%) women; 25 (45.5%) were employed and 18 (32.7%) unemployed.

Pruritus was noted in 32 (58.2%) patients. No statistically significant association between pruritus, episodes of exacerbation, TBSA and total Psoriasis Disability Index scores could be established.

Episodes of exacerbation of lesions within a year were observed in all 55 patients; 23 (41.8%) patients reported 1 to 2 exacerbation, 12 (21.8%) patients had more than 2 episodes of exacerbations of the disease.

Co-morbidities were present in 12 (40%) patients. They were Overweight (38.2%), Diabetes Mellitus Type II (32.7%), Hypertension (25.4%), Obesity (16.4%) and Cardiovascular disorders (12.7%).

Table 1: PDI (Psoriasis Disability Index) score as per gender, age of onset and stress

Variable	Number of Patients	PDI score groups		p value
		< = 20	> 20	
Gender				
Male	36	21 (58.30%)	15 (41.70%)	0.024
Female	19	5 (26.30%)	14 (73.70%)	
Age of onset				
< 40 years	27	9 (36.0%)	18 (60.0%)	NS
> 40 years	28	16 (64.0%)	12 (40.0%)	
Stress				
"No"	15	12 (80.00%)	3 (20.00%)	0.003
"Yes"	40	14 (35.00%)	26 (65.00%)	

NS: Not Significant Statistically

The gender and the PDI score were associated significantly (p value=0.024). A larger percentage of female patients were seen with greater PDI score. PDI was significantly dependent on stress (p value = 0.003). The patients with stress had a larger (>20) PDI score. Morphologically 53 (96.4%) patients were of Psoriasis vulgaris and1(1.8%) patient had Guttate psoriasis.

Table 2: PDI score as per Body site involved

Body site involved	Total Psoriasis Disability Index scores			p value
	≤20	>20	Total	
Limbs	25 (47.2%)	28 (52.8%)	53	NS
Trunk	16 (37.2%)	27 (62.8%)	43	0.02
Scalp	10 (40.0%)	15 (60.0%)	25	NS
Face	2 (28.6%)	5 (71.4%)	7	NS
Flexures	4 (26.7%)	11 (73.3%)	15	NS
Palms and soles	2 (50.0%)	2 (50.0%)	4	NS

NS: Not Significant statistically

A larger number of patients with psoriasis on the trunk had total PDI scores >20 which was statistically significant. Areas like the flexures, face and the scalp had more patients with high total PDI scores (>20) but were statistically not significant.

Table 3: PDI score as per Total Body Surface Area (TBSA) and psoriatic arthritis

	Total number of patients	PDI groups		p value
		< = 20	> 20	
TBSA				
< 10%	37	24 (64.90%)	13 (35.10%)	0.001
> 10%	18	2 (16.70%)	16 (83.30%)	
Psoriatic arthritis	14	1 (4.0%)	13 (92.8%)	0.001

16 (53.3%) patients with TBSA > 10% had a total PDI score > 20 while 2 (8.0%) patients had total PDI score < 20, ($p<0.05$). A significant correlation was established between disease severity (TBSA) and the total PDI scores. A significant proportion of variance of the PDI was found to be dependent on TBSA (23.1%) on performing a regression analysis.

Most of the patients 13 (43.3%) with joint involvement had higher total PDI score except for one patients who had a total PDI score of less than 20. On performing the Fisher's Exact test, a statistical significant association was found between the total PDI scores and Joint involvement ($p < 0.05$).

DISCUSSION

The study examined the relation of age, gender, pruritus, body site affected, clinical type and the severity of psoriasis as measured by TBSA to the total Psoriasis disability index (PDI) score. The PDI score is a quantitative measure of the impact on QOL.

Gupta MA *et al* has reported that Psoriasis has a greater impact upon the quality of life of patients in the range of age 18 years to 45 years, with men facing a greater work-related stress.[5] Samogna F *et al* reported that elderly people specially women were affected more adversely and the female gender was associated with a larger PDI score.[6] In this study a larger percentage of female patients were seen with greater PDI score but age did not seem to have a significant negative impact on the QOL.

Patient-reported symptoms particularly itching, pain and scaling are reported to negatively affect work productivity.[7] No significant association between pruritus and total Psoriasis Disability Index scores could be established in this study. Stress had a significant negative impact on QOL.

Patients in this study were predominantly of psoriasis vulgaris. Most of the patients had lesions on limbs and the trunk. A larger number of patients with psoriasis on the trunk had a high total PDI score. Areas like the flexures, the face and the scalp had more patients with a high PDI score but were statistically not significant.

TBSA involvement larger than 10% was considered to be a severe disease. This study noted an association between TBSA and the total PDI score. TBSA greater than 10% was observed in 18 (32.7%) patients; 16/18 patients had a PDI total score greater than 20. Horn *et al* also found a negative impact on QOL in moderate-to-severe psoriasis.[13] In contrast, a study from Kwa Zulu Natal, South Africa, reported a weak correlation of Psoriasis area severity index (PASI) with PDI score.[14] The authors found that body sites like face, groin or genitalia when involved, resulted in a higher PDI score and these areas consisted of a smaller percentage of BSA.[14]

Almost all patients with joint involvement had higher total PDI score. Literature reports that patients with PsA have more bodily pain, decreased mental health, social functioning and a poorer quality of life compared to those with psoriasis alone.[15,16]

CONCLUSION

There was a significant association between gender, stress, severity of the disease, psoriatic arthritis and the total PDI score. The disability due to psoriasis was more in females, at the time of stress and exacerbations, when a larger total body surface area was affected and in cases of associated psoriatic arhritis. Areas like the flexures, the face and the scalp had more patients with a high total PDI score but were statistically not significant.

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