Original Research Article

A study of clinical severity and its correlation with physical and psychological disability and stress incurred in the psoriasis patients

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Abstract

Background: According to a recent international consortium, psoriasis affects upto 2% of the world's population, approximately 125 million people. Prevalence of depression in patients with psoriasis ranges between 10% and 58%. The physical and psychosocial aspect of psoriasis interact and influence one another in reciprocal way to create an overall clinical picture. **Aim and Objectives:** To study clinical severity and its correlation with physical and psychological disability and stress incurred in the psoriasis patients. **Material and Methods:** It's a cross sectional, observational study consisting of 50 cases having chronic plaque psoriasis aged between 18-60 years of both sexes and duration of disease of at least 3 months included in the study. Study period is of 2 years from November 2010 to October 2012 and data collected from two hospitals attached to a tertiary health care centre. Psoriasis Disability Index (PDI) and Psoriasis life stress inventory (PLSI) Questionnaires were used as study tools. The extent of clinical severity of the disease was assessed by the psoriasis area severity index (PASI). **Results:** There were 41 male and 9 female patients. Mean age of onset of psoriasis was 33.6 years. Mean duration of disease was 7.3 years. The mean PDI and PLSI were 15.98 (35.51%) and 18.04 (40.08%) respectively. In the present study, PASI, PDI, PLSI were significantly correlated. **Conclusions:** Increasingstress due to psoriasis is the significant factor responsible for higher physical disability. The good support from family members, friends, and people at the working place other than the patient can take off or minimize the psychological stress of the patient which can definitely improve quality of life of the patient.
Key Words: Psychological disability, stress.

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INTRODUCTION

Psoriasis has a major impact on patient's quality of life. These patients often experience anguish, stress and emotional disruption in their daily lives, their relationships with others and their perceptions of themselves.[1] They often report feeling stigmatized and tend to be anxious and depressed and to engage in excessive worrying. It affects activities of daily living, emotional perceptions, sexual relationships, the decision to have children, educational issues and career choices.[2] Psoriasis is a common, chronic, disfiguring, inflammatory and proliferative condition of the skin, in which both genetic and environmental influences have a critical role. The most characteristic lesions consist of red, scaly, sharply demarcated, indurated plaques, present particularly over extensor surfaces and scalp. The disease is enormously variable in duration, periodicity of flares and extent.[3]The first description of psoriatic arthritis was given in the 19th century but it was identified as a distinct entity by the American Rheumatology association only in

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1964.Five different types of clinical patterns of psoriatic arthritis have been described by Moll and Wright.[4]Psoriasis affects 1% to 3% of general population and estimates suggest that 0.4% to 2.3% of adult population have psoriasis but remain undiagnosed.[5] Specific measures such as the Psoriasis Disability Index (PDI) and Psoriasis Life Stress Inventory (PLSI) have been developed for patients with psoriasis.[6]Most studies on quality of life in psoriasis patients have been conducted in western countries, with very few studies among Asian patients. Identifying factors that determine the impact psoriasis has on quality of life may help guide treatment strategies by helping to identify subsets of patients most likely to benefit from systemic psoriasis therapies.

MATERIAL AND METHOD

It's a cross sectional, observational study consisting of 50 cases having chronic plaque psoriasis aged between 18-60 years of both sexes and duration of disease of at least 3 months attending the Department of Dermatology, Venereology and Leprology at Bapuji Hospital and Chigateri General Hospital attached to J.J.M. Medical College, Davangere constituted the source for a period of 2 years from November 2010 to October 2012.After obtaining the informed consent, patients of chronic plaques psoriasis were enrolled in the study.

Inclusion Criteria

- Age between 18-60 years.
- Patients with no significant medical conditions except psoriasis.
- Duration of the disease of at least 3 months.
- Patients willing for enrollment for study and able to come for regular follow up.

Exclusion Criteria

- Age <18 years and above 60 years.
- Psoriasis associated with any other major diseases.
- Patients unwilling for inclusion in the study and those who are not able to come for follow up.
- Pregnant women.

Predesigned and pretested questionnaire which used for data collection from the psoriasis patients after applying the inclusion and exclusion criterias adequately. The statistical analysis was done by using appropriate statistical procedures.

Quality of life assessed by using questionnaires which were asked verbally. The Psoriasis Disability Index[6]was calculated by summing the score of the 15 questions on a scale of 0-3. The higher the score, the more quality of life is impaired. The PDI can also expressed as a percentage of the maximum possible score of 45. We also assessed the stress incurred by the patient using the Psoriasis life stress inventory (PLSI)[6]scores on this scale ranged from 0 to 45 and the extent of clinical severity of the disease was assessed by the Psoriasis area severity index (PASI). In this specific, the four body regions (head, upper limbs, trunk and lower limbs) represent about 10%, 20%, 30% and 40% of the body surface area respectively, they are given corresponding weightage in scoring by multiplying their scores by 0.1, 0.2, 0.3, 0.4 respectively. The score can vary between 0 to 72.Categorical data was analyzed by chi-square test, correlation analysis was done by Pearson's correlation coefficient. 'p'- value of ≤ 0.05 was considered as statistically significant.

RESULTS AND OBSERVATIONS

Table 1: Age and Gender wise distribution of patients

Gender	Mean age in years
Males	43.2 ± 11.4
Females	32.2 ± 12.8

In the present study, out of 50 patients, 41 (82%) were males and 9 (18%) were females.

Table 2: Mean values of Psoriasis Disability Index (PDI)

Sex	Mean±SD
Male	16.3± 7.8
Female	14.6± 6.6

In the present study, the mean PDI was 15.98 (35.51%). Mean PDI in males and females was 16.3 ± 7.8 and 14.6 ± 6.6 respectively.

Table 3: Mean values ofPsoriasis life stress inventory (PLSI)

Sex	Mean±SD
Male	17.8± 6.3
Female	19.0± 8

In the present study, the mean PLSI was 18.04 (40.08%) and the mean PLSI in males and females was 17.8 ± 6.3 and 19.0 ± 8 respectively. Among the psycho-social measures investigated, psoriasis sufferers were found most likely to feel disturbed/ depressed by shedding of skin, heard insensitive remarks/ comments, felt self-conscious among strangers, spent more time on taking care of themselves, felt degraded by people implying the skin condition as AIDS, leprosy or venereal disease. Whereas problem like avoidance of sunbathing was not at all affected.

Table 4: QOL indices in two clinical severity groups based on PASI

QOL indices	PASI <12 (n=24)	PASI >12 (n=26)	Significance	
			t	p-value
Daily activities	4.12±2.19	6.81±2.79	3.76	0.000
Employment related	2.54±1.38	5.27±2.38	4.91	0.000
Personal relationship	1.46±0.88	2.31±1.19	2.84	0.007
Leisure	2.25±1.36	4.38±2.71	3.47	0.001
Treatment related	0.83±0.57	1.62±1.10	3.13	0.003

Total PDI	11.21±3.83	20.38±7.60	5.32	0.000
Total PLSI	**13.46±4.22**	**22.27±5.52**	**6.30**	**0.000**

The patients were divided into 2 groups based on their PASI scores; group I- PASI< 12 and group II- PASI > 12. The mean of the PDI and its subdivisions and the PLSI in each of the clinical severity groups were compared. In the present study, the total PDI and its subdivisions and the PLSI scores were higher in group II (PASI >12). On the basis of PLSI scores, we divided our patients into 2 groups:

Group I: Less stress reactive group with PLSI <16

Group II: More stress reactive group with PLSI >16

Table 5: Difference in means of total PDI and PASI among the two stress groups based on PLSI scores

QOL indices	PLSI <16 (n=24)	PLSI>16 (n=26)	Significance	
			t	p-value
Daily activities	3.54 ± 2.02	7.35 ± 2.19	6.37	0.00
Employment related	2.50 ± 1.41	5.31 ± 2.31	5.13	0.00
Personal relationship	1.25 ± 0.90	2.50 ± 0.99	4.67	0.00
Leisure	1.96 ± 1.23	4.65 ± 2.51	4.75	0.00
Treatment related	0.75 ± 0.61	1.69 ± 1.01	3.95	0.00
Total PDI	10.00 ± 3.23	21.50 ± 6.14	8.19	0.00
Total PASI	**6.83 ± 3.89**	**18.73 ± 6.63**	**7.66**	**0.00**

In the present study, on comparing the 2 groups, we observed that patients classified as more reactive to stress had higher clinical severity score (PASI, p=0.00) and higher physical disability (PDI, p=0.00). We also observed that group II had higher mean scores in all aspects of PDI.

Table 6: Correlation matrix showing the relationship between PASI, PDI and PLSI (r-values)

	PASI	PDI	PLSI
PASI	-	-	-
PDI	0.780*	-	-
PLSI	0.871*	0.841*	-

r = Pearson's correlation coefficients.

In the present study, the total PASI score significantly correlated with the total PDI (r = 0.780; p<0.05) and with total PLSI (r = 0.871; p<0.05). Total PDI significantly correlated with PLSI (r=0.841; p<0.05). Total PDI, PASI and PLSI were positively correlated with each other and this relationship was found to be statistically significant. We observed highly significant correlation between PASI, PDI and PLSI.

DISCUSSION

In the present study, mean age (in years) in malesand females was 43.2 ± 11.4 and 32.2 ± 12.8 respectively. In the study of Rakhesh SV *et al*[7] mean age in males was 40.52 ± 12.02 years where as in females it was 34.02 ± 12.20 years. Whereas in the study of Gupta S *et al*[8] mean age in males was 47±15.3 years and in females it was 49.1±16.5 years. Thus mean age is variable in different studies. From our study, out of 50 patients 41 (82%) were males and 9 (18%) were females. In the studies of Gelfand *et al*[9],Manjula *et al*[10], Pakran *et al*[11,] Hariram *et al*[12], males were more affected. Thus, there is a difference in sex distribution among the patients which could be probably due to variations about the knowledge of the disease in different areas as well as the amount of eagerness in seeking the treatment for the problem. In the present study, the mean PDI was 15.98 (35.5%). Similar observation was made in the study of Rakhesh SV *et al*[7] whereas in the study of Pakran *et al* [11]it was low as compared to our study. In the present study the mean PDI in males and females was 16.3 ± 7.8 and 14.6 ± 6.6 respectively. In the study of Rakhesh SV *et al*[7] mean PDI in male was 15.56 ± 7.00 but in female mean PDI was high (20.25 ± 9.30). PDI in the patients of psoriasis is variable in males and females. In the present study it could be due to the system of outdoor work, manual labour which is more in male. Regarding PLSI, the mean PLSI was 18.04 (40.08%) and mean PLSI in males and females was 17.8 ± 6.3 and 19.0 ± 8 respectively. In the study of Rakhesh SV *et al*[7]the mean PLSI and mean PLSI in males and females were high [26.72 (50%)] as compared to our study. PLSI can vary from person to person. In females it is high because of social stigma, cosmetic reasons. It may affect their marriage issues.

QOL indices in two clinical severity groups based on PASI: In the present study, the total PDI and its subdivisions and the PLSI scores were higher in group II (PASI>12). In the study of Rakhesh SV *et al*[7] the total PDI and all its subdivisions except questions relating to leisure and treatment and the PLSI scores were significantly higher in group II (PASI > 18). Finlay *et al*[13] had found the PASI scores to significantly correlating with all aspects of PDI. This could be due to the fact that clinically severe disease affects patient's daily activities, work, personal relations, leisure, treatment and this disability increases the stress in patients. In the present study, on comparing the 2 groups, we observed that patients classified as more reactive to stress had higher clinical severity score (PASI, P=0.00) and higher physical disability (PDI, P=0.00). We also observed that group II had higher mean scores in all aspects of PDI.Stress is considered as one of the precipitating factors for psoriasis. So, patients with higher stress suffer from more severe disease and physical disability.

Correlation of clinical severity scores with QOL indices: In the present study, the total PASI score significantly correlated with the total PDI (r=0.780; p<0.05) and with total PLSI (r=0.871; p<0.05).Total PDI

significantly correlated with PLSI. Total PDI, PASI and PLSI were positively correlated with each other and this relationship was found to be statistically significant. We observed highly significant correlation between PASI, PDI and PLSI. In the study of Rakhesh SV *et al*[7] inter-relationship between PDI, PASI and PLSI was found to be statistically significant. Findings in our study are concurrence with above study.

SUMMARY AND CONCLUSIONS

At the end of present study, we can conclude that clinically severe Psoriotic disease affects patient's daily activities, work, personal relations, leisure, treatment and this disability increases the stress in patients. PASI, PDI, PLSI were significantly correlated. Stress is considered as one of the precipitating factors for psoriasis. So, patients with higher stress suffer from more severe disease and physical disability. Thus when chronic plaque psoriasis affects the earning member of the family it can be a handicap to the dependents. Effective counseling of the patients, family members, friends, and people at the working place can be very effective for patients to come forward for early treatment which can contribute to a good control of the disease. The good support from the above set of people other than the patient can take off or minimize the psychological stress of the patient which can definitely improve QOL of the patient.

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