Research Report

DEPRESSION AND ANXIETY SYMPTOMS IN PSORIASIS PATIENTS COMPARED TO A CONTROL GROUP WITHOUT PSORIASIS—A DESCRIPTIVE STUDY

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ABSTRACT

Background: Due to psychosocial and neurobiological reasons, psoriasis is frequently associated with depression and anxiety. The aim of this study was to compare the occurrence of depression and anxiety symptoms in patients with psoriasis with a control group without psoriasis. It was also aimed to study the correlates of these psychological symptoms in patients with psoriasis.

Methods: A cross-sectional, comparison study was done on patients with psoriasis (N=35) and a control group (N=23), who were patients from Otorhinolaryngology department or their caregivers, without psoriasis, attending a tertiary care centre. In the study group, the severity of psoriasis, quality of life, depression and anxiety symptoms were assessed using the Psoriasis Area and Severity Index (PASI), Dermatology Life Quality Index (DLQI), Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 scale (GAD-7) respectively.

Results: 57.1% of cases (95% CI= 39.52-73.24) were found to have symptoms of depression versus 8.7% (95% CI= 1.52-29.51) of controls (p <0.01). 45.7% of cases (95% CI= 29.22-63.12) had anxiety symptoms while it was absent in controls (p<0.01). No significant difference between the cases and controls were noted in other variables. Scores of PHQ-9 (ρ=0.825, p<0.01) and GAD-7 (ρ=0.766, p<0.01) were found to have a significant positive correlation with DLQI scores; higher scores suggestive of poorer quality of life. No significant correlation was found between the duration of psoriasis, PASI, PHQ-9 and GAD-7 scores.

Conclusion: There is a high prevalence of depressive and anxiety symptoms in patients with psoriasis compared to a control group without psoriasis. Psychological symptoms have a significant correlation with poorer quality of life of patients with psoriasis.

Keywords: Depressive disorder, anxiety disorders, dermatology, psoriasis, quality of life

INTRODUCTION

Psoriasis is a chronic, immune-mediated inflammatory skin disease. It ranges in severity from a few scattered red, scaly plaques to involvement of almost the entire body surface. The prevalence of psoriasis in India ranges from 0.44 to 2.8%.[1] It may progressively worsen with age or wax and wane in its severity; the degree of severity depends on inheritance and environmental factors.[2] Psoriatic patients often feel impaired by their physical appearance, leading to stigmatisation, avoidance of social interaction and isolation. This disease is frequently comorbid with psychiatric conditions like adjustment disorder, depressive disorder, dysthymia and anxiety disorders, which produces a significant impact on the psychological and social aspects of the patient's life.[3]

Gascón et al., in their study of hospitalised dermatology patients, found that 45.3 % and 52% of psoriatic patients suffered from depression and anxiety symptoms, respectively (N=75).[4] In a study done in Jodhpur, India, Kumar et al. found that 84% of psoriasis patients (N=50) had psychiatric morbidity.[5] In this study 52% of psoriatic patients had mild anxiety, 36% had mild to moderate anxiety, and 12% had moderate to severe anxiety; whereas 68% of them had mild depression, 18% had moderate depression, 4% had severe depression, and 10% had minimal or no depression. Singh et al., using the Mini International Neuropsychiatric Interview (MINI), was able to diagnose depressive disorders in 39.4 % of patients with mild to moderate psoriasis (n=104) attending an outpatient clinic in the Department of Dermatology at a tertiary care centre in Chandigarh.[6] In a cross-sectional study done; 73-79in Puducherry, Lakshmy et al. found 78.9% and 76.7% of a sample of 90 psoriatic patients attending the department of Dermatology to be suffering from depression and anxiety symptoms respectively.[7]

None of these studies had compared the occurrence of depressive and anxiety symptoms in psoriasis patients with a control group. Hence, this study was undertaken to compare the depressive and anxiety symptoms among patients with psoriasis and controls without psoriasis at a tertiary care centre; and, to study the socio-demographic and clinical correlates of depressive and anxiety symptoms in this population.

MATERIALS AND METHODS

A cross-sectional, comparison study was undertaken over four months (June to September 2016) in a tertiary care teaching hospital in Thiruvananthapuram, Kerala. Cases were those aged 18-64 years, diagnosed with psoriasis, by the dermatologist in the Department of Dermatology of the tertiary care centre. Controls were selected from among patients attending the Department of Otorhinolaryngology of the same institution or their caregivers, without psoriasis. The patients from that department were diagnosed to have diseases like allergic rhinitis, rhinosinusitis, deviated nasal septum, chronic suppurative otitis media, polyps, thyroglossal cyst, carcinoma etc. Subjects with other co-morbid skin disorders or with a history of previously diagnosed mental disorder other than alcohol use disorder and tobacco use disorder were excluded from the study. Approval was obtained from the Institutional

Research Committee and Human Ethics Committee of the institution, prior to the study. All consecutive cases and concurrent controls were included in the study. Written informed consent was obtained from all the participants.

Taking α-error as 5%, β-error as 10%, the prevalence of anxiety symptoms among cases (p1) as 76.7%[7] and in the normal population (p2) as 20.7%[8], the sample size was calculated to be 19. With p1 for depressive symptoms as 78.9%[7] and p2 as 15.1%[8], it was 14. Hence, the sample size of 35 cases and 20 controls were considered adequate for the study.

Variables

Depressive symptoms were assessed using the Patient Health Questionnaire–9 (PHQ-9). This is a 9-item self-report tool used for screening, diagnosing, monitoring and measuring the severity of depression. Each item is scored from 0 to 3, and the total score ranges from 0 to 27. The overall score is categorised as follows: 5-9: minimal symptoms; 10-14: major depression, mild; 15-19: major depression, moderately severe; >20: major depression, severe. It is a valid and reliable tool with a Cronbach's alpha of 0.89.[9] The Malayalam version, as provided by the authors, was used.[10]

Anxiety symptoms were assessed using the Generalized Anxiety Disorder–7 (GAD-7) scale. It is a 7-item self-reported questionnaire for screening and measuring the severity of generalised anxiety disorder (GAD). Each item is scored from 0 to 3, and the total score ranges from 0 to 21. Scores of 5, 10, and 15 represent cut-off points for mild, moderate, and severe anxiety, respectively. It is a valid and reliable tool with a Cronbach's alpha of

0.89.[11] The Malayalam version, as provided by the authors, was used.[12]

Socio-demographic variables including age, sex, marital status, education, socioeconomic status and occupation were assessed. Clinical variables like the duration of psoriasis, it's severity, quality of life, other chronic medical conditions, family history of depressive or anxiety disorder and the presence of alcohol or tobacco use disorder diagnosed as per the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) were studied.[13] The severity of psoriasis was assessed using the Psoriasis Area and Severity Index (PASI). It combines the severity of the lesions and area affected into a single score ranging from 0 to 72. It is a valid and reliable measure of the severity of psoriasis (Cronbach's alpha- >0.9).[14] The quality of life of the psoriatic patient was assessed using the Dermatology Life Quality Index (DLQI). The DLQI is a compact self-reported questionnaire consisting of 10 items to measure health-related quality of life over the previous week in patients with skin diseases.[15] The total score ranges from a minimum of 0 to a maximum of 30, with higher scores indicating greater impairment in health-related quality of life. It has also been found to be valid and reliable in patients with psoriasis with a Cronbach's alpha of 0.83.[16] The Malayalam version of the DLQI, as provided by the authors, was used.[17] Permission and the license for use were obtained from the authors of DLQI for the study.

All consecutive cases and concurrent controls were included in the study after obtaining informed consent. Details of the socio-demographic and clinical variables were

obtained from the participants using a structured questionnaire and the tools described above, by the researcher. The assessment of the severity of psoriasis using PASI was done by the dermatologist. Those found to have moderate to severe depression or anxiety symptoms were referred for further care to the department of Psychiatry.

Table 1. Distribution of Sociodemographic variables among cases and controls

		Cases (n = 35)	Controls (n = 23)	χ^2 (P value)
		Frequency (%)		
Age	< 20 years	1 (2.9)	0 (0.0)	0.958*
	21-30 years	2 (5.7)	1 (4.3)	
	31- 40 years	4 (11.4)	2 (8.7)	
	41- 50 years	14 (40.0)	8 (34.8)	
	51- 60 years	8 (22.9)	8 (34.8)	
	>60 years	6 (17.9)	4 (17.4)	
Sex	Male	25 (71.4)	16 (69.6)	0.023
	Female	10 (28.6)	7 (30.4)	(0.879)
Socioeconomic status	Above poverty line	15 (42.9)	6 (26.1)	1.69
	Below poverty line	20 (57.1)	17 (73.9)	(0.194)
Marital Status	Married	31 (88.6)	19 (82.6)	0.513*
	Unmarried	2 (5.7)	1 (4.3)	
	Divorced	0 (0.0)	0 (0.0)	
	Separated	1 (2.9)	0 (0.0)	
	Widow/ Widower	1 (2.9)	3 (13)	
Education	Illiterate	1 (2.9)	0 (0.0)	0.478*
	Primary	7 (20.0)	2 (8.7)	
	Upper primary	7 (20.0)	3 (13.0)	
	High School	11 (31.4)	13 (56.5)	
	Pre-degree	4 (11.4)	3 (13.0)	
	Undergraduate	5 (14.3)	2 (8.7)	
Occupation	Unemployed	12 (34.3)	5 (21.7)	0.104*
	Unskilled	6 (17.1)	11 (47.8)	
	Semi-skilled	13 (37.1)	6 (26.1)	
	Skilled	4 (11.4)	1 (4.3)	
	Professional	0 (0.0)	0 (0.0)	

*Fisher's exact test applied

Table 2. Comparison of anxiety and depressive symptoms among cases and controls

		Cases (N1=35)	Controls (N2=23)	P value*
		Frequency (%)		
Symptoms of depression	No depression	15 (42.9)	21 (91.3)	<0.01
	Mild	11 (31.4)	2 (8.7)	
	Moderate	8 (22.9)	0 (0.0)	
	Severe	1 (2.9)	0 (0.0)	
Symptoms of anxiety	No anxiety	19 (54.3)	23 (100)	<0.01
	Mild	14 (40.0)	0 (0.0)	
	Moderate	2 (5.7)	0 (0.0)	
	Severe	0 (0.0)	0 (0.0)	

*Fisher's exact test applied

Table 3. Correlation between the scores of PHQ-9, GAD-7, PASI and DLQI and duration of psoriasis (DOP)

Variable	PHQ-9	GAD-7	PASI	DLQI	DOP
PHQ - 9	-				
GAD - 7	*0.871 (<0.01)	-			
PASI	0.293 (0.09)	0.178 (0.31)	-		
DLQI	*0.825 (<0.01)	*0.766 (<0.01)	*0.436 (<0.01)	-	
DOP	0.157 (0.37)	0.200 (0.25)	-0.050 (0.78)	0.118 (0.50)	-

Spearman's correlation coefficient (p value) shown in the table. * p value < 0.0

RESULTS

Data were entered in Microsoft Excel Version 7, cleaned and edited. Mean, and Standard Deviation (SD) of continuous variables and proportion for discrete variables are provided. The correlation was assessed using Spearman's correlation coefficient. R Version 2.13.1 was used for statistical analysis.

There were 35 cases and 23 controls in the study. The mean age for cases was 48.09 years [Standard Deviation (SD)-11.3], and that of controls was 50.87 years (SD-10.61). Majority of the cases belonged to the age group of 41-50 years (40%), and controls belonged to both 41- 50 years and 51-60 years

(34.8%). Majority of the cases and controls were males (71.4 % and 69.6 % respectively), belonged to lower socioeconomic status (57.1% and 73.9 % respectively), were married (88.6 % and 82.6 % respectively) and educated up to high school (31.4% and 56.5 % respectively). 37.1% of the cases were semi-skilled workers, whereas 47.8% of the controls were unskilled labourers. (See Table.1).

Alcohol use was reported in 48.6% of cases and 43.4% of controls while tobacco was used by 45.7% of cases and 39.1% of controls. Chronic medical conditions like hypertension, dyslipidemia, diabetes mellitus

etc. were reported in 28.6% of cases and 26.1% of controls. We did not find any significant difference between cases and controls in any of these variables. None of the participants gave a family history of depressive or anxiety disorders. The mean duration of psoriasis was 2.26 years (SD-1.50) with most cases suffering from psoriasis for 1-5 years (34.4 %). Those suffering from psoriasis for 5-10 years constituted 22.9%; 10-15 years, 17.1%; more than 20 years, 14.3%; and less than one year as well as 15-20 years, 5.7% each. The mean scores for PASI and DLQI were 12.75 (SD-9.62) and 10.83 (SD-5.60), respectively.

Depressive symptoms were reported by 57.1% of cases [95% Confidence interval (CI)=39.52-73.24] and 8.7% of controls (95%CI=1.52-29.51) (p<0.01). Only mild depressive symptoms were reported by controls. The mean PHQ-9 score for cases and controls were 5.97 (SD-4.56) and 1.43 (SD-1.59), respectively. The mean GAD-7 score for cases and controls were 3.77 (SD-3.06) and 0.57 (SD-1.08), respectively. Anxiety symptoms were present in 45.7% of cases (95%CI= 29.22%-63.12%) and none of the controls (p<0.01). 40.0% of cases were found to have mild symptoms of anxiety. (See Table 2 for details).

Correlation of socio-demographic and clinical variables with the duration of psoriasis, PASI, PHQ-9, GAD-7 and DLQI were assessed using Spearman's coefficient, but none of these was statistically significant. The correlation was also assessed between duration of psoriasis, PHQ-9, GAD-7, PASI and DLQI scores. DLQI scores were found to have a significant positive correlation with the PHQ-9 (ρ=0.825, p<0.01) and GAD-7 (ρ=0.766, p<0.01) scores, which suggested that more severe depressive and anxiety symptoms correlated with poorer quality of life. Significant positive correlations were found between DLQI and PASI scores (ρ=0.436, p<0.01) and between PHQ-9 and GAD-7 scores (ρ=0.871, p<0.01). No significant correlation was found between other variables. See Table 3 for details.

DISCUSSION

In our study, 57.1% and 45.7% of patients with psoriasis were found to suffer from symptoms of depression and anxiety, respectively. In various cross-sectional studies, the prevalence of depression and anxiety in patients with psoriasis has ranged from 9.9-78.9% and 13.1–76.7% respectively.[8,18] Dowlatshahi et al., in their systematic review and meta-analysis of literature, found a pooled prevalence of 28 % for depressive symptoms; 12 % and 19% were suffering from a depressive disorder, diagnosed as per ICD-10 and DSM- IV respectively.[19] However, Korkoliakou et al. in their case-control study were unable to find a significant difference between depression and anxiety in patients with psoriasis when compared with controls.[20] Assessing for depressive and anxiety symptoms as against depressive and anxiety disorders as well as differences in the scales used could be the reasons for the wide variance in prevalence in these studies. In our study, we had assessed for depressive, and In this study, depressive and anxiety symptoms were found to correlate significantly with poorer quality of life in psoriatic patients. Similar findings were found in various other studies. [8,18,21,22] A significant positive correlation was observed between the severity of psoriasis (PASI) and quality of life scores in our

study. The literature search also concurred with studies that have established this relationship.[8,23,24,25] However, Fortune *et al.* and Yang *et al.* were not able to establish a relationship between the severity of psoriasis and quality of life in patients with psoriasis.[26,27] In a review, Aurangabadkar suggested that the psychosocial comorbidities of psoriasis are not always proportional to measures of disease severity.[28] In our study also, no significant correlation was observed between the severity of psoriasis and depressive & anxiety symptoms.

We were not able to find any correlation between the other socio-demographic and clinical variables with our study variables like quality of life and depressive and anxiety symptoms. Other studies have found that psoriatic patients who were older and belonging to female sex were more prone to depression and anxiety[18,23,29,30] However some studies have found that younger age increases the risk for depression in patients with psoriasis[31,32] Quality of life was also found to be poorer in females with psoriasis.[23] Lack of higher education and occupational inactivity were found to correlate with depressive symptoms in this population.[29] Akay *et al.* (N=120) did not find any correlation between depression and duration of symptoms of psoriasis which concurred with our study.[33] Our study found that psychological problems in psoriatic patients can impair their quality of life.

The limitation of our study is that it is a cross-sectional study, and hence, causal inferences cannot be made. Since this is a hospital-based study, the findings lack generalizability. Assessment based on the type of psoriasis was not done; so also, a heterogeneous group was taken as controls for this study. A homogeneous control group consisting of patients with chronic medical conditions could have provided a better comparison.

Our study highlights that there is a high prevalence of anxiety and depression in patients with psoriasis compared to those without the disease. The severity of depression and anxiety showed a significant positive correlation with poorer quality of life of these patients. Therefore, it is important to assess and manage psychological symptoms in psoriatic patients to improve their quality of life. Longitudinal studies will help in developing a better understanding of the incidence and course of depression and anxiety symptoms in this population. Further studies on the management of psychological symptoms in this population will be of much value in the care of patients with psoriasis.

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