

ORIGINAL RESEARCH

A case-control study to assess association of psoriasis with anxiety and depression

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ABSTRACT

Background: Psoriasis is a chronic inflammatory skin disease affecting 1-3% of the general population with psoriatic arthritis occurring in 5-40% of psoriatic cases. Several studies have shown that anxiety and Depression is also part of chronic inflammation. The present study aimed to assess the relationship of psoriasis with anxiety symptoms and Depression in Indian patients. **Material & Method:** This case-control study was carried out in Indian patients with psoriasis vulgaris and healthy control attending to dermatology department of tertiary care hospital during the period of June 2022 to December 2022. The patients with diagnosis of psoriasis consenting to be part of study were included in the present study. The psoriasis was assessed using PASI scoring, anxiety by Generalized Anxiety Disorder 7-Item (GAD- 7) scale, and depression by Patient Health Questionnaire (PHQ-9) scale. All the data were collected and analysed to assess the relation of anxiety and depression symptoms in patients with psoriasis. **Result:** Total of 100 participants included with 50 each in case and control group. The patients were comparable with no significant difference in demographic details between the groups. There is higher odds of developing depression and anxiety among the patients with psoriasis compared to the healthy participants. ($p < 0.05$) In patients with late onset psoriasis vulgaris there was significant association with a higher risk of depression symptoms and anxiety as compared to the controls. ($p < 0.05$). **Conclusion:** Psoriasis vulgaris patients were more likely to develop depression and anxiety compared to healthy participants. Late-onset patients with psoriasis were positively associated with anxiety and depression.

Keywords: Psoriasis, Anxiety, Depression, Scale, PASI, Generalised Anxiety disorder, Patients Health Questionnaire.

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INTRODUCTION

There is no clear definition or criteria proposed for the diagnosis of psoriasis as the diagnosis is essentially clinical. Based on the current understanding of its pathogenesis, psoriasis can be defined as a papulosquamous disorder characterized by disordered keratinization arising due to T cell-mediated immune dysregulation.¹ Psoriasis is a chronic inflammatory skin disease affecting 1-3% of the general population with psoriatic arthritis occurring in 5-40% of psoriatic cases.² Being a life-long condition, a prolonged and safe control of the disease is needed. Certain systemic drugs currently available for its treatment could be associated, in the long term, with organ toxicity and adverse events, thus, clinical monitoring throughout treatment is required. Moreover, tolerability issues, parenteral administration, and barriers to patient access, such as high cost and specialist management lead to treatment failure.³

Psoriatic lesions often appear in visible areas skin areas involving the scalp, limbs and extensible

surfaces such as elbows and knees.⁴ The skin is believed to have an impact on patients' psychosocial health, such as low self-esteem, shame, sexual dysfunction and even suicidal ideation.⁵ Previous reports revealed early-onset psoriasis (EOP), first presented psoriatic lesions at and prior to the age of 40 years, comprises approximately 70% of all psoriasis. And late-onset psoriasis (LOP), which appears after age 40 old.^{6,7} Patients with EOP are more likely to have family history, lesions are more extensive on the body surface and strongly associated with HLA-C06, while patients with LOP tended to be Sporadic, accompanied by multiple complications such as diabetes, dyslipidaemia, high blood pressure, and obesity.⁸

Previous studies have shown that patients with psoriasis have anxiety and/or depression and have moderate to severe symptoms. People with psoriasis are more likely to have physical or mental impairments.⁹ In turn, emotional condition also can exacerbate psoriasis and even impair treatment

outcome.¹⁰⁻¹² Recently, several studies have shown that anxiety and Depression is also part of chronic inflammation.^{13,14} Therefore, early recognition of emotional disorders is important in improving health-related quality of life and clinical results. However, to our knowledge, the data related to association of psoriasis with anxiety and depression is limited among southern parts of India. Furthermore, there is little evidence to prove that whether there is a relationship between psoriasis and depression/anxiety may differ between LOP patients and EOP patients. The present study aimed to assess the relationship of psoriasis with anxiety symptoms and Depression in Indian patients

MATERIAL & METHOD

This case-control study was carried out in Indian patients with psoriasis vulgaris and healthy control for comparison attending to dermatology department of tertiary care hospital during the period of June 2022 to December 2022. The patients with diagnosis of psoriasis consenting to be part of study were included in the present study. The patients were divided into two group according to disease severity based on psoriasis are and severity index (PASI). A score of <10 is mild psoriasis, score of equal to or more than 10 is defined as moderate to severe psoriasis. The healthy controls were age and gender matched. Healthy control with history of psoriasis were excluded from study.

Study followed the guidelines established in the Declaration of Helsinki and was approved by the institutional Ethics Committee. All participants have signed the informed consent prior to enrolment. collected the demographic information (such as age, sex, education level, cigarette smoking, and alcohol drinking) from all participants by face-to-face interview. The psoriasis area severity index (PASI) score was applied to examine the dermatological

status of included patients: mild (PASI < 10), moderate-to severe (PASI ≥10). To assess the symptoms of generalized anxiety, we used the Generalized Anxiety Disorder 7-Item (GAD- 7) scale, GAD-7 was the most widely used self-assessment tool for evaluating anxiety,^{15,16} the scale of GAD-7 has acceptable diagnostic accuracy when the cut-off scores was ≥8 points (sensitivity = 0.97, specificity = 0.75).¹⁷ And the 9- item Patient Health Questionnaire (PHQ-9) scale was used to evaluating the depressive symptoms, PHQ-9 was proved to be a reliable self-report questionnaire for evaluating depression,¹⁸ the sensitivity and specificity of PHQ-9 (cut-off scores was ≥8 points) was 85.7 and 80.2% respectively.¹⁹ The cutoff point for both scales was ≥8 points.

STATISTICAL ANALYSIS

All the data were collected and entered in excel sheet. The data were analysed using SPSS v23 operating on windows 10. The data were summarised as mean, standard deviation, frequency and percentage. The data were represented using tables, figures, bar diagram and pie chart. The data were compared by t-test for continuous data, chi-square test for categorical data. The association of psoriasis vulgaris with outcome were assessed by multivariable logistic regression with adjustments for potential cofounders. Odds ratio and 95% confidence interval were used to represent the effect size of association. For all statistical purpose, a p-value of <0.05 was considered statistically significant.

RESULT

Total of 100 patients fulfilling inclusion criteria were included in present study. Among them 50 were with psoriasis and 50 were healthy participants. There was comparable demographic details of the patients between the groups with age and gender matched.

Table 1: Demographic details of study participants

		Psoriasis vulgaris	Healthy control	p-value
Age		45.32±11.5	44.9±12.4	0.98
Gender	Male	30 (60%)	32 (62%)	0.99
	Female	20 (40%)	28 (38%)	
Smoking	Current	17 (34%)	8 (16%)	0.01
	Former	33 (66%)	42 (84%)	
Alcohol consumption	No	38 (76%)	40 (80%)	0.65
	Yes	12 (24%)	10 (20%)	

Table 2: Comparison of the anxiety and depression between the groups

	ControlN (%)	Psoriasis			
		N (%)	OR (95%CI)	AOR (95%CI)	p-value
Anxiety (GAD-7 ≥8)	10 (20%)	16 (32%)	1.33 (0.96-1.69)	1.28 (0.94-1.76)	0.01*
Depression (PHQ-9 ≥8)	15 (30%)	19 (38%)	1.43 (1.09-1.79)	1.34 (1.02-1.82)	0.04*

In the study there is significant higher odds of developing depression and anxiety among the patients with psoriasis compared to the healthy participants. (p<0.05)

Table 3: Subgroup analysis for the association between anxiety and depression between the groups

		Case N(%)	Control N (%)	OR (95% CI)	AOR (95% CI)	p-value
Earlyonset psoriasis (EOP)	Anxiety (GAD-7 \geq 8)	15 (30%)	15 (30%)	1.02 (0.76- 1.42)	1.05 (0.73- 1.53)	0.734
	Depression (PHQ-9 \geq 8)	18 (36%)	17 (35%)	1.04 (0.81- 1.46)	1.07 (0.76- 1.51)	0.66
Late onset psoriasis (LOP)	Anxiety (GAD-7 \geq 8)	13 (26%)	8 (16%)	1.88 (1.12- 3.05)	1.51 (1.06- 2.35)	0.03*
	Depression (PHQ-9 \geq 8)	18 (36%)	10 (20%)	2.08 (1.31- 3.28)	1.88 (1.16- 3.05)	0.01*

There was no significant difference in the association of the early onset psoriasis with healthy controls. However, in patients with late onset psoriasis vulgaris there was significant association with a higher risk of depression symptoms and anxiety as compared to the controls. ($p < 0.05$)

DISCUSSION

On the basis of a reliable structured questionnaire, we made a comparison Risk of anxiety and depression in psoriasis in Indian patients. The results of this study indicate that patients with psoriasis vulgaris have a higher risk of depression than healthy control, while the difference was not statistically significant. Regarding the age of onset and severity of the disease, study found that symptoms of anxiety and depression were common among patients with late-onset psoriasis, but not in early-onset psoriasis. Study also observed an unclear impact of anxiety and depression on severity of psoriasis.

A prospective cohort study in the United States documented that patients with psoriasis are more prone to develop depression than people without psoriasis.²⁰ Other A population-based cohort study indicates that patients with psoriasis have a higher risk of depression general population.²¹ Our analysis assists patients with Psoriasis have a statistically significant risk factor for developing it depression. However, we found no statistically Significant risk of anxiety in psoriasis patients when compared with healthy control groups, which was different from other studies.^{22,23}

Previous studies show that EOP patients are more likely to suffer from anxiety and depression.^{24,25} However, we found that LOP was significantly associated with anxiety and depression, but no significant correlation with EOP. The explanation for our results may be that LOP patients frequently exhibit symptoms of itching, skin sensitivity, burning, and anxiety about illness, which may lead to psychological burden.²⁶ In addition, LOP patients frequently suffer from comorbid chronic inflammatory diseases, such as type 2 diabetes, obesity, autoimmune thyroiditis, which can impact quality of life and increase treatment costs.^{27,28} Additionally, depression is thought to play a role in the onset or exacerbation of psoriasis. Anxiety-depression is now considered a chronic inflammatory disease, and LOP is more associated with persistent inflammation.

Psoriasis is also associated with the inflammatory disorders described above, indicating that chronic

inflammation may play a role in the relationship between psoriasis and anxiety- depression.²⁹ When compared to individuals with moderate depression, psoriasis patients with severe depressive symptoms had greater peripheral blood levels of inflammatory cytokines such as TNF-, IL-6, and IL-17.³⁰

The correlation between psoriasis severity and anxiety and depression remains controversial. Kurd et al. showed that the relative risk of depressive symptoms was higher in patients with severe psoriasis than in patients with mild psoriasis.³¹ While a hospital-based case-control study conducted by Golpour et al., revealed that no association was found between clinical severity and symptoms of psoriasis and anxiety and/or depression.³² And Fortune DG et al., reported that the degree of association between clinical severity of psoriasis and depression tends to be mild.³³ study by Russo PA et al., did not confirm any significant correlation between psoriasis severity and anxiety and depression.³⁴

The findings of present study can be strengthened by conducting among larger population size and at multiple health centres.

CONCLUSION

Psoriasis vulgaris patients were more likely to develop depression and anxiety compared to healthy participants. Late-onset patients with psoriasis were positively associated with anxiety and depression. Thus, clinicians should pay attention to the emotion in psoriasis patients, and routine examinations should include the screening of psychological disorders in the daily management.

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