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Research Article

Assessment of Depression and Suicidal Risk in Patients with Psoriasis Vulgaris: A Hospital-Based Observational Study

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ABSTRACT
Background- Psoriasis which is a chronic inflammatory skin disease with multiple psychiatric comorbidities. However there has been limited evaluation on the aspect of psychiatric illness in chronic dermatological conditions. In this tertiary hospital based study we aim to evaluate the prevalence of depression and suicidality in 50 selected patients suffering from psoriasis vulgaris.
Results- We have found through our study that the prevalence of depression was 30% and suicidality was 92% mild, 4% both moderate and severe suicidal risk with rate of depression and suicidality increasing with the increase in PASI score.
Conclusion – Through this study we have gather the evidence the commonality of psychiatric comorbidities and the association that it shares with the PASI score among the psoriasis vulgaris patients.

INTRODUCTION

Psoriasis vulgaris affecting about 2-3% of people worldwide. It is a chronic, immune-mediated, inflammatory skin disease characterized by sharply demarcated, erythematous plaques with silvery scales, most commonly affecting the scalp, elbows, knees, and lower back, but can involve any part of the skin, nails, and joints. The condition results from an interplay of genetic predisposition and environmental factors, leading to hyperproliferation and abnormal differentiation of keratinocytes[1].

Psoriasis is becoming more well acknowledged as a systemic condition that goes beyond its dermatological manifestations and is linked to serious psychiatric comorbidities, especially depression and suicidality [2]. According to new research, the inflammatory pathways that cause psoriasis which are mainly mediated by cytokines like interleukin-17 (IL-17), tumour necrosis factor-alpha (TNF-α), and interleukin-23 (IL-23) may also be responsible for neuropsychiatric disorders by interfering with serotonin metabolism and fostering neuroinflammation[3].

According to research, up to 60% of psoriasis patients suffer from depressed symptoms, and 10–20% have suicidal thoughts—rates that are much higher than those of the general population [4,5]. Patients with moderate-to-severe psoriasis (defined as having a Psoriasis Area and Severity Index [PASI] ≥10) are twice as likely to engage in suicidal behaviour as individuals with milder forms of the condition [6]. Emotional distress is made worse by a number of contributing factors, such as chronic pain, social withdrawal, stigmatisation, and a lower quality of life [7]. Psychosocial stressors play a significant role in this population, as seen by the disproportionate impact on younger patients and those with visible lesions (e.g., hands, face) [8].

Despite these risks, psoriatic patients continue to have underdiagnosed depression and suicidality. With a focus on the interaction between inflammatory biomarkers, psychosocial factors, and disease severity (Psoriasis Area and Severity Index scores), this study attempts to assess the incidence and determinants of depression and suicidal risk in individuals with psoriasis vulgaris.

METHODS

Study design and sampling technique
The study was a cross-sectional study and consecutive purposive sampling technique was undertaken.

Study Type Observational

Setting

1. Informed consent was taken from the patient
2. Clearance by the ethical committee of SMCH was taken.

METHOD OF COLLECTION OF DATA

In the hospital, 50 patients fulfilling the inclusion criteria of being psoriatic patients between 18 – 60 years with PASI Score of 5 or more with onset of more than 1 month and less than 1 year duration. A written consent was obtained from the patients or from the legal guardian. A detailed history and Mental status examination was done in all patients as per a pre-determined proforma. Patient with concomitant pustular psoriasis, erythroderma psoriasis and arthritic psoriasis and with past history of any psychiatric history was excluded. The study was conducted in the department of Dermatology and Psychiatry, Silchar Medical College and Hospital, Assam.

Description of Tools.

1. Specially designed proforma containing sociodemographic and clinical data.
2. Depression was diagnosed and assessed by using ICD 10 criteria.[9]
3. The 21-item HAM-D was used to determine how severe depression was. Items receive a score ranging from 0 to 4.A score of less than 7 indicates no depression, whereas 8–13 indicates mild depression, moderate depression of those scoring 14 to 18, severe depression in those score 19 to 22, and very severe depression in those score >23.[10]
4. The Beck Suicidal Intent Scale served as the model for the suicidal risk assessment form. Each item on this 15-item scale has a score between 0 and 2. The risk rating is low (0–10), high (21–30), and medium (11–20).[11]
5. The severity of psoriasis and the affected skin area were evaluated using the PASI scale. The head, trunk, upper limb, and lower limb are the areas that are covered. 10%, 20%, 30%, and 40% of the body's total area, in that order. The three target symptoms of erythema, inflammation, and desquamation are evaluated for severity using a 0–4 scale (0 being no lesion and 4 being the most severe potential lesion). The sum of the severity ratings for the three target symptoms, multiplied by the numerical value of the affected areas and by different percentages of the four body areas, yields the overall PASI score, which ranges from 0 to 72.[12]

RESULTS

Table 1- Distributin of depression

Depression	Frequency	Percent
Present	30	60.0%
Absent	20	40.0%

Table 2. Distribution of type of depression

Type of depression	Frequency	Percent
No depression	20	40.0%
Mild depression	15	30.0%
Moderate depression	5	10.0%
Severe depression	7	14.0%
Very severe depression	3	6.0%

Among the 50 subjects included in the study we have found that 30 (60.0%) subjects were suffering from depression and only 20 (40.0%) did not report of depression. In the 60.0% who reports of depression it was noted that 30.0% had mild depression, 10% had moderate depression, 14.0% had severe depressions and 6.0% had reported of very severe depression.

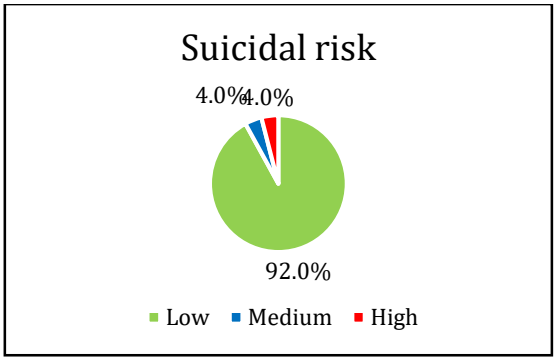

Figure1- Distribution of Suicidal risk.

In the figure 1, we have the suicidal risk distribution among the 50 subjects. We have seen that 92.0% of the subjects had low suicidal risk, 4.0% subjects had report of both medium and high suicidal risk in our study.

Table 3. Association of depression with different sociodemographic variables

Variable		Depressed (n=30)	Nondepressed (n=20)
Age	≤20 years	0 (0%)	2 (10%)
	21-30 years	8 (26.7%)	1 (5%)
	31-40 years	15 (50%)	4 (20%)
	41-50 years	5 (16.7%)	5 (25%)
	51-60 years	2 (6.7%)	8 (40%)
Sex	Male	19 (63.3%)	14 (70%)
	Female	11 (36.7%)	6 (30%)
Religion	Hindu	18 (60%)	12 (60%)
	Islam	12 (40%)	6 (30%)
	Christian	0 (0%)	2 (10%)
Marital status	Married	24 (80%)	10 (50%)
	Unmarried	6 (20%)	8 (40%)
	Separated	0 (0%)	2 (10%)
Socioeconomic status	Low	11 (36.7%)	5 (25%)
	Lower middle	14 (46.7%)	10 (50%)
	Upper Middle	5 (16.7%)	5 (25%)
Education	Up to high school	24 (80%)	17 (85%)
	Higher secondary	6 (20%)	3 (15%)
Employment	Employed	10 (33.3%)	12 (60%)
	Unemployed	20 (66.7%)	8 (40%)
Locality	Rural	17 (56.7%)	11 (55%)
	Semi urban	9 (30%)	6 (30%)
	Urban	4 (13.3%)	3 (15%)

In the table 3 we have the sociodemographic distribution association with the depression. Among the age group distribution, we have seen that majority of the subjects (15 /30) in the sample who had reported of depression belonged to the age group of 31 – 40 years of age. Male patients in the study had reported of depression more than female. 18 out of 30 depressed patients belonged to Hindu religion and 24 of the 30 subjects were married. 14 subjects reported belonged to the lower middle socioeconomic status and 24 out of the 30 had their education done upto high school. 20 of the

30 subjects were unemployed and 17 subjects were from rural locality.

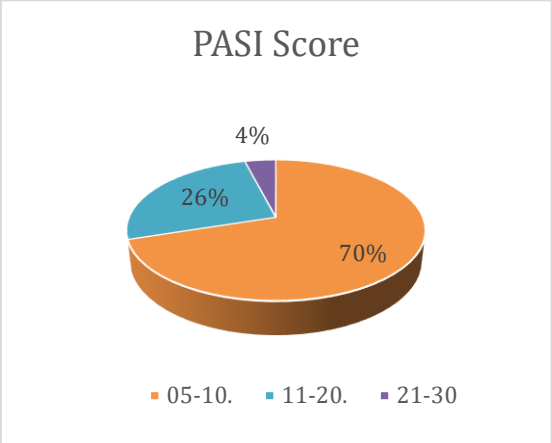

Figure 2- Distribution of PASI score

In the figure no.2 we have the distribution of the PASI score. 70% (35) of the subjects had a PASI score of 5- 10 score, 26 % (13) had PASI score of 11- 20 and 4% (2) had PASI score of 21 – 30.

PASI score	Depression					Significance (P)
	No	Mild	Moderate	Severe	Very severe	
5-10	18	9	4	4	0	<0.001
11-20	2	6	1	3	1	
21-30	0	0	0	0	2	

Table 4 shows association of severity of depression with different PASI scores. PASI score of 5-10 has 18 individuals with no depression, 9 had mild depression and 4 individual each on moderate and severe depression. PASI score of 11-20 showed 2 individuals with no depression, 6 individuals with mild depression, 1individual with moderate depression and 3 individuals with severe depression. PASI score of 21-30 showed only 2 individuals with very severe depression.

Correlations	Pearson's Correlation coefficient (r)	P value	Interpretation
HAM-D and Beck SIS	0.607	<0.001	Positive correlation
HAM-D and PASI	0.679	<0.001	Positive correlation
Beck SIS and PASI	0.748	<0.001	Positive correlation

Table 7. Correlations between various scales showing HAM-D, Beck SIS and PASI are positively correlated with each other which is statistically significant.

DISCUSSION

The study examined the relationship between psoriasis severity, sociodemographic factors, and depression in a sample of fifty individuals. Our study have documented 60% depression with similar findings reported by Kurd et al. (2010)[13] who reported 39% increase of depression in psoriasis patients and Zięciak T et al(2017)[14] reporting 45%. Suicidality in our study has seen that 4.0% of the individuals had reported of both medium and high suicidal risk. In 2001 an Indian study when comparing the suicidal rate between psoriasis and vitiligo they found that the rate of suicidal ideation rate was more in patients with psoriasis with a rate of 26.6%[15]. Similarly, the study in UK cohort study with mild and sever psoriasis patients they found higher risk of suicidality[16]. According to

our study, depression was significantly correlated with age and married status (p=0.003 and p=0.043, respectively) which was found to be in line with research indicating that younger people suffer more psychosocial distress as a result of visible skin lesions and social stigma. Also, younger patients (ages 21 to 40) reported higher rates of depression (76.7%) than older age groups.[17] Notably, despite previous research suggesting that marital support is protective, married people had a higher prevalence of depression (80%) than persons who were single or separated[18]. This disparity can be a result from psoriasis patients having a greater carer load or family stress[19]. Further our study has seen that umeployed individuals reporting a higher depression which can be a direct result of the financial strains and reduce access to health care which further exacerbates the mental health outcome of the psoriatic patients[20]. Thought in our study no significance was seen in regards to sex, religion, socioeconomic status and locality, however H Devrimci-Ozguven et al. (2000) in their studies have shown increase rate of depression rise among female gender and among the lower socioeconomic status[21].Similarly two other studies have also pointed the prevalence of depression more among the women with low QoL scores than men.[22] When in comparing with the Psoriasis Area and Severity Index (PASI) score it has shown a strong association with severity of depression, it was seen that subjects with PASI scores with 11-30 had higher rates of moderate to very sever depression, which support the bidirectional relationship between inflammation and mood disorders[23]. It can be understood that the proinflammatory cytokines (e.g., tumor necrotic factor-alpha, Interleukin-6) in psoriasis may directly affect the neurobiological pathways, exacerbating depression[24]. Kimball et al. (2008) study showed that PASI >20 has 45% reported suicidal thoughts vs. 15% with PASI <5.[25]Similarly, the meta-analysis by Singh et al. (2017) systematically evaluated the association between psoriasis severity (measured by Psoriasis Area and Severity Index, PASI) and suicidality found that PASI ≥10 were associated with 2.1× higher odds of suicide attempts[26]. Our study further has shown high positive correlation between the PASI, Beck SIS, and Hamilton Depression Rating Scale (HAM-D) which supports the concept that psychological distress and psoriasis severity are connected. These results were consistent with Tyring et al. (2006)[27], who found that treating psoriasis reduced skin lesions and depression scores. Further they reported that treating psoriasis had shown 43% individuals had >/ 50% improvement in HAMD scores further supporting TNF-alpha inhibitions direct modulate neuroinflammatory pathways implicated in depression.

In conclusion, Psoriasis vulgaris which is a systemic inflammatory disease that has significant psychosocial consequences in addition to being a skin ailment. Suicidality, depression, and the severity of psoriasis were strongly correlated, according to the data. Higher PASI scores were seen to have associated with higher chances of suicidal thoughts and depressive symptoms, which are fuelled by psychosocial stigmatisation, visible lesions, and chronic inflammation (e.g., elevated TNF-α, IL-17). In order to lessen stigma and isolation, future studies should examine the long-term impact of biologics on suicidality and create specialised psychosocial therapies. Healthcare systems can enhance outcomes and lower the hidden mortality associated with untreated depression and suicidality in this population by acknowledging psoriasis as a neuro-immuno-cutaneous illness.

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