Comorbidity of unipolar depression in patients of psoriasis attending a tertiary care hospital

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Abstract

Context: Psoriasis is one of the most common dermatological illnesses with an often-devastating course. Patients of psoriasis have impairment of physical, psychological, vocational, social functioning which led to psychiatric morbidities such as anxiety disorders and depressive disorder.
Aims: The objective is to evaluate the presence and severity of depression in patients of psoriasis and to correlate the severity of psoriasis with severity of depression.
Settings and Design: Hospital-based cross-sectional study.
Subjects and Methods: Fifty patients of psoriasis were enrolled for the study after their informed consent with purposive sampling method from the Department of Dermatology, in a tertiary care hospital in northeastern part of India. The severity of psoriasis was assessed using Psoriasis Area and Severity Index scale. Same patients were evaluated using international classification of diseases 10 research criteria and Hamilton rating scale of depression to diagnose and grade the degree of depression.
Statistical Analysis Used: Linear regression method was used to compare the severity of depression with the severity of psoriasis. Data were analyzed in SPSS version 20.0.
Results: Incidence of depression was found to be 44% in psoriasis patients. Among them, 50% had mild depression, and 36.1% had severe to very severe depression. The severity of depression was directly proportionate to the severity of psoriasis.
Conclusions: These findings indicate the need of early recognition of depression among these patients and their early intervention, which will improve the primary disease process.

Keywords: Comorbidity, depression, dermatological illness, psoriasis

INTRODUCTION

The word psychosomatic medicine dates back to the early 19th century, and it means “a physical disease that is thought to be caused or made worse by mental factors.” It deals with scientific investigations of the relation among psychological factors, physiological phenomenon, and different disease pathogenesis. Depression is quite common in different psychosomatic illness.¹,²

Among different psychosomatic illness, dermatological illness is very frequent.¹,² Psoriasis is one of the most common dermatological illness affecting 1%–2% of
the general population. Patients of psoriasis have impairment of physical, psychological, vocational, and social functioning. These result from the disease-related stress, its cosmetic disfigurement, and social stigma. This, in turn, led to psychiatric morbidities such as anxiety disorders and depressive disorder. A comparative study revealed psychiatric comorbidity in vitiligo and psoriasis patients to be 33.63% and 24.7%, respectively.

The influence of psyche on the skin implies that there are chemical mediators, which translate emotion to the cutaneous lesion. These mediators are neurotransmitters and some hormones produced by skin nerve fibers, keratinocytes, and Langerhans’s cells. These are neuropeptides, i.e., substance P, neuropeptide Y, vasoactive intestinal peptide (VIP), calcitonin gene-related peptide, etc., and their receptors are recognized in neutrophil, macrophages, etc.

Substance P is increased in psoriasis skin nerve fiber. The proliferation of keratinocytes in psoriasis is triggered by release of both substance P and VIP. Substance P also induces localized lymphocytic proliferation.

The relationship between the immune system and cutaneous response is now established as a part of Neuroimmune Cutaneous Endocrine Network, and there is bidirectional communication between the central nervous system and immune systemic. There is immunologically based change in behavior and vice versa. Noradrenergic postganglionic sympathetic nerve fibers and peptide nerve fibers innervate lymphoid tissues. Exposure to stress triggers both humoral and cell-mediated immune response probably through adrenocorticotropic hormone, corticotropin-releasing hormone, and endogenous opioids.

Previous workers also evaluated psychiatric symptoms such as depression, anxiety, alcoholism in patients with psoriasis and were directly proportional to the length of a disease flare. Prevalence of depression was 62% of patients in earlier studies. Thus, in our study along with the prevalence of unipolar depression, an attempt was made to find the relation between severity of depression and severity of psoriasis.

**SUBJECTS AND METHODS**

This was a hospital-based cross-sectional study. The sample was drawn with purposive sampling method from the outpatient department and patients admitted in the Dermatology Department of a tertiary care hospital, in the north-eastern part of India for 1 year from July 2012 to June 2013.

**Mode of selection of cases**

**Sampling procedure**

After informed consent, 50 psoriasis patients of age group 15–60 years of both sexes were included. Patients with the present or past history of any major physical or dermatological illness other than psoriasis were excluded. Patients with present psychiatric disorder other than unipolar depression and history of any psychiatric disorder prior to the onset of psoriasis were excluded. Patients with bipolar depression were excluded. Pregnant and lactating women were excluded as depression is commonly seen in pregnancy and the postpartum period patients on systemic steroid and substance dependence were excluded from the study.

**Operational procedure**

Diagnosed cases of psoriasis were selected from dermatology outdoor and indoor with purposive sampling method as per inclusion and exclusion criteria. After obtaining informed consent, Psoriasis Area, and Severity Index (PASI) scale was applied under the guidance of dermatologists and documented. On those patients after mental status examination, international classification of mental and behavioral disorders -10 (ICD–10) research criteria along with 21-item Hamilton Rating Scale of Depression (HAM-D) were applied to diagnose the presence of depression and grading them as mild, moderated, severe, and very severe.

**Description of tools**

1. Specially designed Performa was used to record the sociodemographic data, present, family, medical and drug history, also physical examination as designed by the researchers
2. Depression was diagnosed and assessed by the International Classification of Diseases-10 revision Research criteria
3. Twenty-one items HAM-D was applied to assess the severity of depression. Items are scored between 0 and 4 points. A score of <7 has no depression, mild depression (8–13), moderate depression (14–18), severe depression (19–22) and >23 has very severe depression
4. PASI scale was used to assess the skin area involved by psoriasis and its severity. Area covered is for head, trunk, upper limb, and lower limb corresponding to 10%, 20%, 30%, 40% of total body area, respectively. The severity assessment is done along a 0–4 scale (0 – no lesion to 4 – severest possible lesion) for the three target symptoms of erythema, induration, and desquamation. The total PASI score, ranging from 0 to 72 is obtained by adding the values
of the sum of severity ratings for the three target symptoms multiplied with the numerical value of the areas involved and with various percentages of the four body areas.

Analysis of data
Data were tabulated showing sociodemographic distribution between depressed and nondepressed patients. On parametric test “Chi-square test” or “Fisher’s exact t-test” was administered to compare between the groups. To assess the relationship between severity of psoriasis with the severity of depression linear regression model was used. All analysis was performed using Microsoft Excel software and statistical package for social sciences (SPSS for Windows, Version 20.0. IBM SPSS Statistics for Windows, Armonk, NY; IBM Corporation, USA). P < 0.05 was considered as significant in all aspect.

RESULTS
A total of 50 patients were enrolled. Among them 44% of the patients of psoriasis were depressed [Table 1]. sociodemographic profile of both depressed and non-depressed patients were compared. Only in occupation there was statistically significant difference whereas other items in sociodemographic profile didn’t have statistically significant difference [Table 2]. Here in our study PASI score was directly proportional to severity of depression [Table 3].

DISCUSSION
In our study, 44% of the patients of psoriasis were depressed [Table 1]. The higher rate of depression in psoriasis was similar to previous studies[12] and can be due to impairment in vocational and social functioning.[10,20] Out of the 50 patients with psoriasis, majority of patients (26%) were in the age group of 26–35 years.[8,14] This is because psoriasis is more common in the second to fourth decades of life.[3] Although the prevalence of depression is more in female population we found a higher incidence of depression in males patients (male = 86.4%; female = 13.6%). This may be due to male preponderance in our study. We also found that depression has an inverse relationship with the number of years of education such as illiterate patients (22.7%) and those educated up to high school (45.4%) were found to be more depressed than higher secondary pass (18.2%) and graduate (13.6%) patients. In a similar study, depressive symptomatology was more prevalent in psoriatic patients with only primary or secondary education than in psoriatic patients with higher education [Table 2].[14]

Table 1: Assessment of depression using the international classification of diseases-10 research criteria and Hamilton rating scale of depression scale in the study group

| Study group, n (%) |  |
|--------------------|---|
| Depressed          | 22 (44) |
| Nondepressed       | 28 (56) |

In addition, we found depression in 11 out of 12 patients (91.67%) who belongs to daily wage earners and cultivator group which comprises 50% of depressed population, i.e., a significant correlation between occupation and occurrence of depression in psoriasis patients (P = 0.002). This could be due to the responsibility to earn for the family on one side and the physical disability, fear of rejection by employer due to cosmetic disfigurement on the other side. To the best of our knowledge, there is no study comparing the occupation and occurrence of depression in cases of psoriasis.

As per HAM-D scale, 50% of depressed patients had mild depression and 36.1% of patients had severe to very severe depression. We compared the severity of psoriasis with the severity of depression using PASI and HAM-D and assessed using a linear regression model. Out of all the patients of psoriasis, 44% had depression and majority having mild depression. We divided the PASI score into 4 groups and 38 patients out 50 had PASI score 0–10 of which 28.7% had mild depression and 7.9% had very severe depression. On the other hand, all 5 patients (100%) having higher PASI score (>21) had very severe depression. There was a significant level of association between the severity of depression and severity of psoriasis [Table 3]. Thus, it is evident that more severe is psoriasis more severe is the depression. Three patients had severe depression with PASI score <20. They had involvement of palms and soles, which might have hampered their occupation and social interactions.

The limitations of the study were small sample size, and the patients were evaluated once only. Larger sample size and further evaluation would have been helpful to elicit the presence of depression in the course of illness. In addition, the study did not include measurement of other relevant variables such as psoriasis specific stressor, coping, and quality of life.

CONCLUSIONS
The depression was found to be associated with psoriasis process which leads to a vicious cycle. Thus, the early diagnosis of depression in patients with psoriasis will help us to break this cycle and to treat the patients who will improve the prognosis and quality of life of these patients.
Our findings reveal the need for psychiatry consultation, especially in cases with high disease activity and disability. A multidisciplinary approach with the treatment of depression in pharmacological, psychological, and psychosocial aspect may overall improve the prognosis of a primary disease condition in patients of psoriasis.

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## Conflicts of interest
There are no conflicts of interest.

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