European Journal of Molecular & Clinical Medicine

ISSN 2515-8260 Volume 09, Issue 03, 2022

ORIGINAL RESEARCH

Prevalence of Depression and Anxiety in Patients with Idiopathic Pulmonary Fibrosis

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ABSTRACT

Background:Idiopathic pulmonary fibrosis (IPF) is a chronic, progressive, diffuse interstitial lung disease of unknown cause that occurs primarily in older adults. Several causes for IPF have been proposed, including diabetes mellitus, smoking, metal particles, and sawdust. IPF is the commonest and most severe form of idiopathic interstitial pneumonia. No curative medical treatment is available for IPF, and lung transplantation remains the only effective treatment. Psychiatric comorbidities are common in patients of IPF. Among them, depression and anxiety are more common.
Aim and objective: To study the prevalence of depression and anxiety in patients with Idiopathic Pulmonary Fibrosis.
Materials and Methods: A total of 50 patients of Idiopathic Pulmonary Fibrosis who visited Chest and TB OPD were recruited in the study. They were assessed in detail for the presence of depression and anxiety with the help of the Hamilton Depression and Anxiety rating scale.
Results: A total of 30(60%) patients out of 50 have comorbid depression and anxiety.
Conclusion: Depression and Anxiety were found to be a common problem in patients with Idiopathic Pulmonary Fibrosis. A proper address of this issue is important for management, better outcome, and policymaking in patients with Idiopathic Pulmonary Fibrosis.
Keywords: Idiopathic pulmonary fibrosis, Anxiety, Depression.

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INTRODUCTION

Idiopathic pulmonary fibrosis (IPF) is a chronic, progressive, diffuse interstitial lung disease characterized by a catastrophic distortion of the pulmonary structure by abnormal proliferation of fibroblasts.[1,2] IPF is the most common and severe form of the idiopathic interstitial pneumonia. According to some studies, few common causes are mentioned, including smoking, diabetes mellitus, metal particles, sawdust.[2,3] Gastric acid reflux in gastro-oesophageal reflux disease (GERD) has also been found associated with IPF.[4,5]
The incidence of IPF appears to be increasing and is due in part to the aging population, increased awareness of IPF among patients and clinicians, and the improved ability to diagnose IPF due to advances in CT imaging.[6]Nevertheless, and despite more than three decades of clinical research, effective pharmacotherapies remain to be identified,7with no approved drugs available in the United States.[8]Lung transplantation is an option for those eligible but with a still dismal median post-transplant survival of 4.5 years.[9]
There are many studies on IPF which shows that there are multiple co-morbidities associated with IPF like emphysema and pulmonary hypertension. It is also shown in many studies that

psychiatric comorbidities are also common in patients of IPF. Among them, depression and anxiety are more common. In patients with chronic illnesses, depression is 1.5 to 7 times more common than in the population overall.[10,11,12] Mechanisms of the relationship between depression and IPF is not yet known.

A study conducted by Ye Jin Lee et al,[13] have indicated that the prevalence of depression was 25.9%, while that of anxiety was 21.4%, in patients with IPF.

Other studies have found the prevalence of depression to be between 21 to 49% and the prevalence of anxiety in IPF patients is between 27 to 31%.[14,15,16]

Anxiety and depression are more commonly identified in serious and progressive forms of IPF.[17]Psychological problems, which are the secondary consequences of chronic lung diseases, are often ignored. Dyspnea, dry resistant cough, loss of independence, feelings of social isolation and insufficient sleep are among the leading causes of psychological distress.[15] There is a mutual interaction of dyspnea and depression. While dyspnea can cause depressive symptoms, on the contrary, depression can exacerbate the perception of respiratory symptoms.[14] Assessment of depression and anxiety and other psychiatric comorbidities in idiopathic pulmonary fibrosis is of paramount importance and the treatment of the same will lead to the improvement in the quality of life of the patients. Therefore, the requirement of the study was felt.

MATERIALS & METHODS

Patients were recruited for the present cross-sectional study from the department of pulmonary medicine of Tertiary Care Hospital between September 2018 to October 2019. 50 diagnosed patients of Idiopathic Pulmonary Fibrosis were included in the study.

Inclusion Criteria

- All diagnosed patients of Idiopathic Pulmonary Fibrosis.
- Patients giving informed consent

Exclusion Criteria

- History of psychiatric illness.
- Any other morbidity which challenges the patient to complete a psychiatric assessment.
- Patients not giving informed consent

Study Tools

Hamilton Depression and Anxiety Rating scale[18]

Methodology: Study was conducted in Tertiary Care Hospital on IPF patients referred from the Pulmonary medicine department. Consent was obtained from the study subjects, ensuring anonymity and confidentiality. Details of the patients were recorded in a self-prepared Semi-Structured proforma and then the diagnosis of depression and anxiety was made according to the score of Hamilton Depression and Anxiety rating scale.

Ethical Consideration- The proposed study was approved by institutional ethical committee.

RESULTS

Table 1:Sociodemographic details

Variables		Patients (*n*)	Percentage (%)
Age(years)	30-40	2	04
	40-50	30	60
	50-60	18	36
Sex	Male	30	60
	Female	20	40

Religion	Hindu	30	60
	Muslim	18	36
	Sikh	02	04
	Christian	00	00
Education status	Illiterate	30	60
	1^{st} to 10^{th}	20	40
	Pre-university	00	00
	Graduate	00	00
	Post-graduate	00	00
Residence	Rural	25	50
	Semi-urban	20	40
	Urban	5	10

The majority of the patients belong to the age group of 40-50 years (60%), 36% belong to the age group of 50-60 years. 60% of patients were male and 40% were females. 60% of patients were Hindu, 36% were Muslim and 4% were Sikh. The majority of patients were illiterate 60%, 40% of patients were educated up to 10th class. 50% of patients belong to rural backgrounds, 40% were from the semi-urban background, and 10 from an urban background. [Table1]

Table 2:Clinical details of patients with IPF

variables		**No. Of patients**	**Percentage (%)**
Duration of illness	<3 months	20	40
	>3 months	30	60
Smoking status	Current smoker	10	20
	Former smoker	25	50
	Non-smoker	15	30
Duration of hospital stay	< 15 days	22	44
	>15 days	28	56
Psychiatric co-morbidities	Present	30	60
	Absent	20	40

40% of patients had a duration of illness <3 months and 60% of patients had a duration of illness of >3 months. 50% of patients were former smokers, 20% were smoking currently and 30% of patients were a non-smoker. Duration of hospital stay was < 15 days in 44% patients and > 15 days in 56% patients. Psychiatric comorbidities were present in 30% of patients and were absent in 40% of patients. [Table 2]

Table 3:Psychiatric comorbidities in IPF patients

PsychiatricComorbidity	**No of patients**	**Percentage (%)**
Depressive disorder	20	40
Anxiety disorder	10	20

Depression disorder was present in 40% of patients and anxiety disorder was present in 20% of patients. 14% of patients had a generalized anxiety disorder and 6% had panic disorder. [Table 3]

Table 4:HAM-D SCALE SCORE (0-52)

Score	No of patients	Percentage (%)
0-7 (No depression)	30	60
8-13 (Mild depression)	7	14
14-17 (Moderate depression)	8	16
18 + (Severe depression)	5	10
Total	50	100

60 % of participants didn't show any depression. 16% (n=8) patients had moderate depression, 14% (n= 7) had mild depression and 10 % (n=5) patients had severe depression. [Table 4]

Table 5: HAM-A SCALE SCORING (0-56)

Score	No of patients	Percentage %
Normal	40	80
Mild (<17)	2	4
Mild to Moderate (18-24)	5	10
Moderate to Severe (23-30)	3	6
Total	**50**	**100**

10% of patients had mild to moderate anxiety disorder, 6% had moderate to severe anxiety disorder and 4% of patients had a mild anxiety disorder.

DISCUSSION

EpidemographicProfile

In the current study majority of patients were between the age group 40-60 years (96.0%). The majority of patients were Male 60% and 40% were females. The majority of our study population 60% were Hindus, 36% were Muslims and 4% were Sikh. In this study, a large number of patients were illiterate (60%) and only 40% of patients were educated upto 10th class.The majority of patients belong to rural areas (50%), (40%) were from semi-urban areas and only 10% of patients were from an urban area.In this study, 40% of patients had a duration of illness of fewer than 3months and 60% had a duration of illness for more than 3 years.Out of total patients, 50% of patients were former smokers 20% of patients were smoking currently and 30% of patients were a non-smoker.

Out of total patients, 60% had psychiatric morbidity. This study showsthe prevalence of depressive disorder was 40% and of anxiety disorder was 20%.

In this study, the prevalence of depression in patients with IPF was 40% and of anxiety was 20%. A study conducted in Korea by Ye Jin Lee et al (2017)[13]to rule out the clinical impact of depression and anxiety in patients with IPF also found a prevalence of depression and anxiety respectively 25.9% and 21.4%. Another study conducted by Akhtar AA et al (2013)[15] also found that prevalence of depressive disorder was found 49.2%. Both the studies shows resemblance with the prevalence of our study.Our study showed a cross-sectional study that shows that there is a high prevalence of depression and anxiety in patients of Idiopathic Pulmonary Fibrosis, hence the high burden of depression and anxiety in IPF should not be ignored. Depression and anxiety should be actively screened in patients with pulmonary fibrosis and appropriate supportive treatment, including antidepressant and

anxiolytic medication and psychological counselling along with be therefore given at earliest to improve the quality of life.

CONCLUSION

Our study shows that depression and anxiety are common in Indian patients with IPF. Although neither depression nor anxiety was associated with mortality or hospital admission rate. The presence of depression or anxiety significantly influenced the patient's quality of life, highlighting the need for early detection and treatment of such conditions in this patient population. The quality of life of patients known to have IPF can be worked on by a proper psychiatric evaluation with satisfactory individual consideration, including antidepressent drug and psychological therapy. Early detection of depression and anxiety and the beginning of proper treatment will improve the quality of the life and better outcome.

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