



## PREVALENCE OF PSYCHIATRIC AILMENTS IN PATIENT WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE AND ITS MANAGEMENT IN INDIAN POPULATION

### Psychiatry

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### ABSTRACT

**Objectives** The aim of the study is to outline common psychiatric ailments in COPD patients and their management, keeping in view the limitations of use of various psychotropic drugs in such patients.

**Methods** It is a cross-sectional descriptive study conducted from 1st of April' 17 to 30th April' 17 at ESIPGIMSR and E.S.I.C Medical College and Hospital, Joka, Kolkata, India. All the referred patients were evaluated by a consultant psychiatrist and diagnosis was made according to the diagnostic guidelines, as per ICD-10 (International Classification of Diseases) – Classification of Mental and Behavioural Disorders. Data relating to socio demographic details, history of smoking and tobacco chewing was taken.

**Results** A total of 60 patients were enrolled in the study. Majority of the patients (60%) were elders, above 65 years of age. It was found that more numbers of COPD patients with psychiatric comorbidities had low education (100%), smoked more than 25 cigarettes per day (40%) and exercised less than three days a week (60%). The prevalence of major depressive disorder and generalized anxiety disorder was found in 25% and 50% of the patients, respectively. Sleep disorder, which is a major trouble for these kinds of patients, was also found in 80% of the patients. Majority of the patients were given antidepressant medication (90%). Amongst them, 70% of the patients received mirtazapine, followed by stablon (10%) and escitalopram (10%).

**Conclusion** A high prevalence of psychiatric disorder was observed in COPD patients. It is associated with significant morbidity, mortality and worsened prognosis. Therefore effective management strategies should be undertaken for this kind of patients.

### KEYWORDS

Respiratory disease, chronic obstructive pulmonary disease, pharmacotherapy, psychiatric disorders

### Introduction

Chronic disease, like chronic obstructive pulmonary disease (COPD) imposes a huge human and economic global burden(1, 2). Chronic obstructive pulmonary disease was estimated to be the fifth leading cause of death in 2001(3) and estimated to be the third chief reason for death by 2020 (4). It is a slow progressive irreversible bronchial obstruction caused by small airway disease and parenchymal destruction. Since the nature of the disease is irreversible, the treatment mainly aims to lessen the symptoms, improve the functioning, and quality of life of the patients.

Research clearly underlines the adverse impact of psychological consequences of chronic illness on patients, their families and society. In patients with COPD, comorbid psychological symptoms are highly prevalent, especially depression and anxiety(5, 6). One of the largest meta-analysis demonstrated the prevalence of anxiety and depression to be 36% and 40%, respectively (7). Although the exact cause is not known, several hypotheses are assumed for the psychological associations of COPD. Some believe that it may be caused spontaneously because of physical (longer hospital duration, and limited functionality), social (social isolation), and the economic burden that an individual suffers throughout the course of the disease (8). Further, it is also assumed that COPD and psychiatric disorders may also be linked by some common pathway like smoking(9) and inflammatory process(10), as evidenced by few studies. Finally, it is also conjectured that dyspnoea over the course of the disease may induce disturbing changes in the brain area processing emotions making it susceptible to anxiety and depression (11, 12).

Despite the recent increasing awareness on the impact of psychological disease like depression and anxiety affecting COPD, they often remain undiagnosed and consequently untreated (2). A study by Hanania et al. recently demonstrated that out of COPD patients with depression only 35% patients were diagnosed and treated with relevant medication. Moreover, only 22% reported the use of antidepressants(13). Looking at the fact, it would not be wrong to state that in this contemporary era, studies evidencing psychiatric ailments in association with COPD and its management are scant and unsatisfying. Thus, the aim of the study is to outline common psychiatric ailments in COPD patients and their management, keeping in view the limitations of use of various psychotropic drugs in such patients.

### Methods

It is a cross-sectional descriptive study conducted from 1st of April'17

to 30<sup>th</sup> April'17<sup>th</sup> ESIPGIMSR and E.S.I.C Medical College and Hospital, Joka, Kolkata, India. It is a Central Government multispecialty hospital, providing specialist level of care to industrial workers and their dependents, having a pulmonary medicine department with the entire necessary infrastructure, where COPD patients with psychiatric ailments are frequently referred to the psychiatric department for evaluation and management. The study was conducted according to the guidelines of Good Clinical Practices and Declaration of Helsinki. All consecutive patients of both the genders, who gave consent, and were diagnosed with COPD according to updated GOLD guidelines. All the referred patients were evaluated by a consultant psychiatrist and diagnosis was made according to the diagnostic guidelines, as per ICD-10 (International Classification of Diseases) – Classification of Mental and Behavioural Disorders. Data relating to socio demographic details, history of smoking and tobacco chewing was taken.

### Statistical analysis

Descriptive analysis was calculated in terms of mean and standard deviation for continuous variables and frequency with percentage for categorical variables. All data were analysed using the Statistical Package for Social Sciences (SPSS; Chicago, IL, USA) program, version 15.

### Results

#### Baseline demographics

Out of total patients, male population (70%) was predominant. No patients were observed in the younger age groups. Majority of the patients (60%) were elders, above 65 years of age. It was found that more numbers of COPD patients with psychiatric comorbidities had low education (100%), smoked more than 25 cigarettes per day (40%) and exercised less than three days a week (60%). The details are outlined in **table 1**.

**Table 1: Baseline demographic characteristics**

Characteristics	Frequency
Male	42 (70%)
<b>Age group</b>	
15-24	Nil
25-34	Nil
35-44	Nil
45-54	03 (5%)
55-64	21 (35%)
> =65	36 (60%)

Occupation	
Daytime worker	36 (60%)
Shift/night work	06 (10%)
Not working	06 (10%)
Retired	12 (20%)
<b>Education</b>	
<=9 years	24 (40%)
10 years	36 (60%)
12-14 years	Nil
>14 years	Nil
<b>Body mass index</b>	
<25 kg/m2	18 (30%)
25-29.9 kg/m2	39 (65%)
>=30 kg/m2	03 (5%)
<b>Daily alcohol intake</b>	
Do not drink	48 (80%)
1 glass/day	12 (20%)
2-5 glasses/day	Nil
≥6 glasses/day	Nil
<b>Smoking status</b>	
Never smoked	03 (5%)
1-24 cig./day	27 (45%)
≥25 cig./day	24 (40%)
Former smoker	06 (10%)
<b>Exercise at least 3 days/week</b>	
Yes	24 (40%)
No	36 (60%)

#### Psychiatric comorbidity

The prevalence of major depressive disorder and generalized anxiety disorder was found in 25% and 50% of the patients, respectively. Sleep disorder, which is a major trouble for these kinds of patients, was also found in 80% of the patients. The detailed depressive and anxiety disorders are outlined in table 2.

**Table 2: Prevalence of psychiatric comorbidity**

Psychiatric ailment	Prevalence, n (%)
<b>Mood disorders</b>	
• Major depressive disorder	15 (25%)
• Bipolar disorder	03 (5%)
<b>Anxiety disorders</b>	
• Generalized anxiety disorder	30 (50%)
• Post-traumatic stress disorder	03 (5%)
• Specific phobia	03 (5%)
• Social phobia	03 (5%)
• Obsessive – compulsive disorder	03 (5%)
• Panic disorder	09 (15%)
• Agoraphobia	03 (5%)
• Anxiety disorder NOS	18 (30%)
<b>Mental disorder and Sleep disturbance</b>	
• No mental disorder/sleep disturbance	12 (20%)
• Mental disturbance alone	06 (10%)
• Sleep disturbance alone	48 (80%)
• Mental disturbance and sleep disorder	30 (50%)

#### Management

Majority of the patients were given antidepressant medication (90%). Amongst them, 70% of the patients received mirtazapine, followed by stablon (10%) and escitalopram (10%). The management of the patients in detail has been described in table 3.

**Table 3: Management of COPD patients for psychiatric disorders**

Antidepressants	Prevalence, n (%)
Tab.Mirtazapine (7.5mg)	40 (60%)
Tab.Mirtazapine (15mg)	6 (10%)
Tab.Stablon (Tianeptine) (12.5mg)	6 (10%)
Tab.Escitalopram (10mg)	6 (10%)
<b>Sleep promoting agent</b>	
Tab.Mirtazapine (7.5mg)	42 (70%)
Tab.Zolpidem (5mg)	12 (20%)
Tab.Melatonin (3mg)	6 (10%)
<b>Delirium management</b>	

Haloperidol Liquid	6 (10%)
Psychosis management	
Low dose haloperidol or risperidone or olanzapine	3 (5%)

#### Discussion

The association of psychiatric disorders with COPD and its management has long been the topic of conflict and controversy. Most of the studies evaluating psychiatric conditions of COPD patients have been conducted in western countries and small patient population, thus restricting wider generalizability. Moreover, Asian patients are usually reluctant to admit the feelings of anxiety due to perceived social stigma associated with mental illness, which may have given rise to a relatively lower risk (15). Thus with this rationale, our study, which aims to assess the prevalence and type of mental disorders in Indian COPD patients, was conducted.

Recently, one such study has been conducted on Asian patients which has clearly demonstrated that cumulative incidence of anxiety disorder in a cohort of newly diagnosed COPD remained higher than in a non-COPD matched comparison group over a mean follow-up period of 5.5 years (16). Out of total 100 patients diagnosed with COPD in our institution, 20 patients had psychiatric comorbidity, accounting for a prevalence rate of 20%. Previous studies have clearly demonstrated that comorbid depression and anxiety is related to worse prognosis of the disease, including increased mortality, more frequent exacerbations, persistent smoking, longer and frequent hospitalization, increased symptom burden and worsened physical and social functioning (4, 17).

#### Management of patients

The discrepancies in the management of mental disorders in COPD patients is no less an issue. Despite of its high incidence, there is scarcity of data concerning its effective management. This is clearly reflected in the inadequate treatment that many patients receive. In a study by Kim et. al., less than 25% of the COPD patients with moderate to severe anxiety or depression received appropriate intervention (18).

Additionally, such kind of patients is usually taking multiple medications and therefore is unwilling to take antidepressant drugs. One of the feasibility trials of antidepressant drugs states that majority of the depressed patients (72%) refuses antidepressant therapy (19). Also, more stress has been laid on the effectiveness of cognitive behavioural therapy (CBT) in such kind of patients owing to the adverse safety profile of antidepressant drugs.

Despite of lack of evidence and high drop-out rates, pharmacotherapy is commonly used in COPD patients with anxiety and depression. Antidepressants are the most common category in the standard clinical practice. In our study also 90% of the patients were administered antidepressant medication. Selective serotonin re-uptake inhibitors (SSRIs) are considered as preferred first line agents with some evidence pointing to better depression scores and quality-of life outcomes (20, 21). As a second-line of treatment, either venlafaxine or mirtazapine are considered useful for patients who are not responsive to SSRI or with patients who previously had a good response to these drugs (22).

#### Conclusion

A high prevalence of psychiatric disorder was observed in COPD patients. It is associated with significant morbidity, mortality and worsened prognosis. Therefore effective management strategies should be undertaken for this kind of patients.

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