

Original Research

To study the prevalence of psychiatric co morbidities in bronchial asthma and COPD patients

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ABSTRACT:

Aim: To study the prevalence of psychiatric co morbidities in bronchial asthma and COPD patients. **Material and methods:** A total of 300 patients were involved in this study. This research covered all participants who had been diagnosed with COPD or bronchial asthma. As a control, an age and gender matched caregiver of the patient who did not have COPD or bronchial asthma was used. We utilised MINI version 6.0.0. Patients with mental co morbidities were then given three questions concerning the likely socioeconomic reasons for the morbidity, with the most prevalent reasons being lengthy duration of sickness, long term drugs, and fear of aggravation. **Results:** The clinical profile of 34 COPD patients out of 100 included mental co morbidities (34%), whereas 22 bronchial asthma patients out of 100 had the same (22%). Only three patients in the control group had mental co morbidities, accounting for 3%. Generalized anxiety disorder was the most prevalent condition in COPD patients, present in 19 (19%), followed by panic disorder in 7(7%), drug abuse disorder in 5(5%), and major depressive episode in 3(3%). In bronchial asthma patients, the most prevalent mental associated morbidity was generalised anxiety disorder (10%), followed by panic disorder (6%), substance abuse disorder (3%), and major depressive episode (3%). Two patients in the control arm had generalised anxiety disorder, and one had a drug addiction condition. **Conclusion:** The results of this study reveal that those with COPD are more likely to have psychological co morbidities than those with bronchial asthma or healthy controls. Early diagnosis and treatment of co morbidities are crucial to improve the symptomatology of respiratory illnesses and quality of life.

Keywords: Anxiety disorder, Bronchial asthma, COPD, Spirometry

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INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a progressive, partially reversible, preventable, and curable lung ailment characterised by long-term breathing problems that worsen over time. The most noticeable symptoms are shortness of breath and coughing up phlegm. A lot of variables influence each patient's overall severity, including acute exacerbations and frequent comorbidities, which make even routine activities like walking or getting dressed difficult.¹⁻³ COPD affects 5% of Indian men and 3.2% of Indian women. People over the age of 35 are more likely to be impacted.^{4,5} Smoking has a greater impact on the development of COPD than air pollution and genetics. Long-term exposure to irritants causes an inflammatory response in the lungs, narrowing the airways and causing lung tissue to break down.⁶ Unlike asthma, which improves

considerably with bronchodilator administration, COPD is diagnosed based on decreased airflow as measured by pulmonary function tests. The existence of symptoms, the findings of pulmonary function tests, and the presence of a post-bronchodilator FEV1/FVC ratio less than 70% are used to make the diagnosis of chronic obstructive pulmonary disease (COPD).^{7,8} Chronic inflammation of the small bronchoalveolar tree causes lung damage and eventual incapacity to function. These people often develop psychiatric comorbidities such as despair and anxiety, as well as a worse quality of life. Hypoxia and chronic inflammation all impair noradrenergic and dopaminergic synthesis, release, and replenishment^{9,10}, which may contribute to depression symptoms.¹¹ Anxiety and sadness are common even in persons with mild COPD, as indicated by FEV1 and respiratory symptoms. The connection between

chronic obstructive pulmonary disease and depression seems to be complex and mutually reinforcing.¹²

MATERIAL AND METHODS

The research was carried out. A total of 300 patients were involved in this study. This research covered all participants who had been diagnosed with COPD or bronchial asthma. As a control, an age and gender matched caregiver of the patient who did not have COPD or bronchial asthma was used. It was a cross-sectional, observational, case-control research conducted in a hospital. The research included all individuals who were diagnosed with COPD or bronchial asthma using spirometry. Bronchial asthma patients beyond the age of 20 were excluded. COPD and bronchial asthma severity were measured using GOLD and GINA criteria, respectively. Patients with COPD and bronchial asthma who did not provide permission for the trial or who had an episode in the previous 6 weeks were excluded. Patients with comorbid medical problems (diabetes, congestive heart failure, cerebrovascular accident) and main mental or neurological diseases, or who were receiving therapy for the same, were excluded.

METHODOLOGY

Patients with a history of bronchial asthma or COPD were subjected to a thorough physical examination. Spirometry was performed in the emergency department with post-bronchodilator reversibility to identify and stage the disorders. A proforma was created to describe the demographic data of patients and controls. They were briefed about the research and provided signed informed permission. All patients and controls were then submitted to the Department of Psychiatry's OPD for analysis, with strict secrecy maintained. The Mini International Neuropsychiatric Interview (MINI) questionnaire was used to examine psychiatric co morbidities. The MINI is a short structured diagnostic interview developed jointly by psychiatrists and clinicians in the United States and Europe for psychiatric disorders listed in the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition, Text Revision, and the International Classification of Diseases, Tenth Revision. It was created to fill the requirement for a brief yet accurate structured psychiatric interview in multicenter clinical trials and epidemiological studies, as well as to serve as a first step in outcome

monitoring in non-research clinical settings. In this investigation, we utilised MINI version 6.0.0. Patients with mental co morbidities were then given three questions concerning the likely socioeconomic reasons for the morbidity, with the most prevalent reasons being lengthy duration of sickness, long term drugs, and fear of aggravation.

RESULTS

This research included a total of 300 people. 100 were normal healthy volunteers, 100 had bronchial asthma, and the remaining 100 had COPD identified both clinically and by spirometry. The research comprised 100 patients in each of the COPD, bronchial asthma, and control groups, with equal gender distribution (60 men and 40 females) in each group to improve uniformity and eliminate gender bias. COPD patients had a mean age of 55.78 ± 5.25 years, bronchial asthma patients had a mean age of 51.58 ± 5.98 years, and control patients had a mean age of 53.97 ± 4.58 years. The proportion of men in cases and controls was 60%. Table 1 summarises the demographic information of chosen patients.

The clinical profile of 34 COPD patients out of 100 included mental co morbidities (34%), whereas 22 bronchial asthma patients out of 100 had the same (22%). Only three patients in the control group had mental co morbidities, accounting for 3% (Table 2). Generalized anxiety disorder was the most prevalent condition in COPD patients, present in 19 (19%), followed by panic disorder in 7(7%), drug abuse disorder in 5(5%), and major depressive episode in 3(3%). In bronchial asthma patients, the most prevalent mental associated morbidity was generalised anxiety disorder (10%), followed by panic disorder (6%), substance abuse disorder (3%), and major depressive episode (3%). Two patients in the control arm had generalised anxiety disorder, and one had a drug addiction condition (Table 3). Out of 34 COPD patients with mental co morbidities, 18 (52.94%) had stage IV disease, 7 (18.92%) had stage III, and 9 (26.47%) had stage I/II (GOLD criteria). 16 (72.73%) of 22 bronchial asthma patients with mental co morbidities had at least three exacerbations in the previous year. Long-term illness duration was the most prevalent worry of 25 (73.53%), followed by fear of exacerbation in 6 (17.65%) and long-term drugs in 3 (8.82%) of 34 COPD patients with mental co morbidities.

Table 1: Demographic profile of selected patients and controls

Parameter	Bronchial asthma patients	COPD patients	Controls
Age in years	51.58±5.98(Mean)	55.78±5.25(Mean)	53.97±4.58(Mean)
Gender			
Males	60	60	60
Females	40	40	40
Area			
Urban	25	35	30
Rural	75	65	70
co morbidities			

Psychiatric co morbidities	22	34	3
Anxiety disorder	10	19	2
Panic disorder	5	8	NIL
Substance abuse disorder	3	5	2
Major depressive episode	3	3	0
Stages of COPD Disease			
Stage IV	0	55	0
Stage III	0	19	0
Stage I/II	0	26	0
others			
Fear of exacerbation	49	20	0
Long duration of disease	21	70	0
Long term medications	30	10	0

* As per Global Initiative against Obstructive Lung Disease (GOLD) and Global Initiative against Asthma (GINA) guidelines

Table 2: Psychiatric comorbidities in respiratory diseases

Comorbidity	COPD A) RMn	Bronchial Asthma ARMn	Control ARM
Psychiatric comorbidity	34	22	3
No psychiatric comorbidity	66	78	97

Table 3: Frequency of different psychiatric comorbidities

Psychiatric comorbidities	COPD arm	Bronchial asthma arm	Control arm
Generalized anxiety disorder	19	10	2
Major depressive episode	3	3	0
Panic disorder	7	6	0
Substance abuse disorder	5	3	1

*AS PER Mini International Neuropsychiatric Interview (MINI)

DISCUSSION

COPD patients had greater psychiatric co morbidities than bronchial asthma patients or healthy age-matched controls. In this research, 34% of COPD patients had mental co morbidities compared to 3% of the control group, which was statistically significant (p 0.001). In a comparable research from North India, the incidence of mental co morbidities in COPD patients was 28.4% compared to 2.7% in controls.¹³ We discovered that 34% of COPD patients had mental co morbidities, compared to just 22% of bronchial asthma patients, and that this difference was statistically significant (p 0.001). Another research from south India found that 96% of COPD patients, 56% of bronchial asthma patients, and around 47% of healthy controls had psychopathology on the CPRS (Comprehensive Psychopathological Rating Scale).¹⁴ According to a recent study that looked at the prevalence of anxiety and depression in a large group of patients with chronic breathing disorders, including COPD, 65% of COPD patients reported a significant level of anxiety and depression on telephone screening, but only 31% were being treated for it.¹⁵ In a study conducted by Sharma et al, they discovered that the prevalence of psychiatric co morbidities in stable chronic respiratory disorders was 44.8% compared to 24.3% in controls. They used the Global Mental Health Assessment Tool, Primary Care Version (GMHAT/PC) for the study and emphasised the importance of training

physicians and practitioners in the diagnosis of the same.¹⁶

Among this investigation, the most prevalent mental co morbidity in individuals with both COPD and bronchial asthma was generalised anxiety disorder. It was more common in the COPD arm (19%) than in the bronchial asthma arm (10%). Our findings were similar to those of Kunik et al, who investigated generalised anxiety disorder as the most common psychiatric co morbidity in chronic respiratory diseases including COPD, but they used telephonic screening as a tool for patient enrollment rather than our physical examination and MINI. Two further investigations, done in various regions of the globe and using different criteria for psychiatric co morbidity diagnosis, revealed that generalised anxiety was the most prevalent. The research by Sharma et al discovered that generalised anxiety disorder was present in 20.6% of COPD patients, whereas the study by Kahraman et al discovered that anxiety was prevalent in 30.7% of COPD patients compared to 16.4% of controls.^{16,17} So, regardless of the scale employed, the most prevalent is generalised anxiety disorder in the majority of research undertaken in various regions of the globe. Anxiety levels in COPD patients ranged from 10% to 40%, according to a study of the literature.¹⁸ When we looked for similar studies, we discovered that Gania et al. studied similar parameters and discovered that anxiety is present in 65% of COPD and bronchial asthma patients

combined, but our study used a different scale for screening and included nearly double the sample size, making our study more statistically significant.¹⁹ Another research on mild to moderate COPD hospitalised patients utilising standardised clinic interviews found that 55% of patients got a mental illness diagnosis compared to 30% in control groups. They validated the significant incidence of anxiety in COPD patients and hypothesise that anxiety in COPD patients is mediated by cognitive processes.²⁰

The second most prevalent associated morbidity in this trial was panic disorder (7% in the COPD arm and 6% in the bronchial asthma arm), followed by severe depressive episode (3% in both arms). In a comparable research that used Diagnostic Criteria for Research (DCR-10) to compare the prevalence of mental co morbidities in both COPD and bronchial asthma patients, they discovered depression disorder in 10% of COPD patients and panic disorder in just 3%. The research discovered that bronchial asthma patients had higher psychopathology than healthy controls, but there was no significant difference between the COPD and bronchial asthma groups. However, in our investigation, generalised anxiety disorder was shown to be the most prevalent and statistically significant difference between the COPD and bronchial asthma arms, with higher incidences of mental co morbidity in COPD patients. The frequency of mental co morbidities rose with increasing severity of COPD according to GOLD recommendations and with larger number of exacerbations in bronchial asthma patients in the previous year in this research, although the findings were not statistically significant. In terms of gender discrepancy, we recruited an equal number of men and females in all three arms, therefore the proportion of psychiatric co morbidities was not statistically different between males and females.

CONCLUSION

The results of this study reveal that those with COPD are more likely to have psychological co morbidities than those with bronchial asthma or healthy controls. Early diagnosis and treatment of co morbidities are crucial to improve the symptomatology of respiratory illnesses and quality of life.

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