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Psychiatric morbidity in patients with Chronic Obstructive Pulmonary Disease

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Abstract

Introduction: Chronic Obstructive Pulmonary Disease [COPD] is a disease of increasing public health importance around the world. Anxiety and depressive symptoms are common in patients with chronic obstructive pulmonary disease. This study was done to evaluate the prevalence of psychiatric disorders in patients with chronic obstructive pulmonary disease.

Materials and methods: It was a clinical observational study conducted in Yenepoya Medical College, Derlakatte, Mangalore. All patients admitted under the department of General Medicine and Pulmonary Medicine, constituted the population for the study. Sixty consecutive in-patients with a clinical diagnosis of COPD who satisfied the inclusion and exclusion criteria were chosen for the study. They were assessed for psychiatric morbidity using Mini International Neuropsychiatric Interview (M.I.N.I PLUS). The data was analyzed by using T test, Chi square test and Fishers exact test.

Results: Psychiatric disorders were diagnosed in 26 (43.33%) patients. The most common psychiatric disorders were Major depressive disorder followed by generalized anxiety disorder. None of the patients had received medications for psychiatric illness prior to the study. There was significant association between the duration of COPD and the occurrence of psychiatric morbidity.

Conclusion: The present study concludes that patients with COPD have significant psychiatric morbidity, the most common being major depressive disorder.

Keywords: Psychiatric morbidity, COPD, Depression, Anxiety

Introduction

Chronic Obstructive Pulmonary Disease is a disease state characterized by airflow limitation that is not fully reversible. The World Health Organisation predicts that COPD will become the third leading cause of death worldwide by 2030.Catherine and colleagues study found that psychiatric disorders are at least three times higher in COPD patients compared to general population and nearly two times higher in women than in men. Women also have greater psychological distress, worse perceived control of symptoms and greater functional impairment.[1]Higher predominance of depression and anxiety was observed in patients with COPD compared to patients that suffered from other chronic

respiratory disorders, such as bronchial asthma and tuberculosis.[2]The presence of psychiatric comorbidities, such as anxiety and depression, has been linked to increased mortality, decreased functional status, and decreased quality of life.[3]Both depression and anxiety are significantly associated with decreased functional status and worse health status when compared to those of patients without psychological symptoms, even after controlling for the effects of overall health status.[4,5,6]Left untreated, they can cause an increase in physical disability and a worsening of overall health. Chronic obstructive pulmonary disease (COPD) exacerbations contribute significantly to morbidity and mortality. COPD is also associated with high levels of psychological distress, which has been linked with higher exacerbation rates. The aim of this study was to evaluate the prevalence of psychiatric disorders in patients with chronic obstructive pulmonary disease.

Materials and methods

The clinical study was conducted in Yenepoya Medical College, Derlakatte, Mangalore. All patients admitted under the department of General Medicine and Pulmonary Medicine with a clinical diagnosis of chronic obstructive pulmonary disease constituted the population for the study. The study was conducted from the 1st November 2011 to the 30th of April 2012.The sample for the study consisted of sixty consecutive patients with COPD who satisfied the inclusion and exclusion criteria.

Inclusion criteria:

- Patients with clinical diagnosis of COPD diagnosed by a physician or pulmonologist according to GOLD's criteria.
- Male patients/ female patients.
- Patients above 18 years of age.
- Patients willing to give informed consent.

Exclusion criteria:

- Individuals suffering from any visual or hearing impairment or mental retardation which may serve as a hindrance in performing the tests.
- Individuals who refuse to consent.
- Patients with COPD having other medical disorders like Diabetes mellitus, Hypertension, Thyroid dysfunction and other chronic debilitating medical conditions known to cause psychiatric morbidity.

This study was given ethical clearance by the institutional ethical committee. A written informed consent was obtained from all participants. The socio demographic and clinical variables were recorded in a specific Performa prepared for this clinical study. All the participants underwent a thorough clinical examination to rule out other medical disorders if any. Psychopathology was rated in all the participants using the Mini International Neuropsychiatric Interview (M.I.N.I PLUS). The results obtained were analyzed using the following statistical methods: T test, Chi square test, Fishers exact test.

Results

Majority of the patients (45%) belonged to the age group of 61-70 years. Only nine patients were of female gender. Fifty six were married, four were unmarried. Majority of the patients were Muslims (83.33%).8 (13.33%) were Hindus and 2(3.33%) were Christians. Forty one (68.33%) patients belonged to a rural background. Eighteen (30%) belonged to a semi-urban background and one (1.66%) belonged to an urban background. Majority of patients (35%) were illiterated [Table1]. 12(46.15%) patients with psychiatric illness had COPD for more than 10 years. 8(30.76%) patients with psychiatric illness had COPD for a duration of 5-10 years. 6(23.07%) patients with psychiatric illness

had COPD for a duration of 2-5 years. There was a statistically significant association between the duration of COPD and the occurrence of psychiatric morbidity. The longer the duration of COPD, the higher was the occurrence of psychiatric morbidity. ($p=0.053<0.05$) [Fig 1].Out of the 60 patients studied 26(43.33%) had psychiatric illness. 14(23.32%) patients had Major depressive disorder [11.66% mild, 6.66% moderate and 5% severe without psychotic features]. 4(6.66%) patients had Mixed anxiety depressive disorder. 3(5%) patients had Generalized anxiety disorder. 3(5%) patients had Bipolar I disorder. 1(1.66%) patient had Adjustment disorder with depressed mood. 1(1.66%) patient had Somatization disorder [Fig 2]. 16(26.66%) patients were only on bronchodilators.13 (21.66%) patients were only on steroids. 21(35%) patients were on both. 10 (16.66%) patients were on other medications along with bronchodilators and steroids. There was no statistically significant difference in terms of medication usage among patients with and without psychiatric illness.($p=0.09>0.05$) [Fig 3]. 17(28.33%) patients belonged to stage I severity. 29(48.33%) patients belonged to stage II severity. 13(21.66%) patients belonged to stage III severity. One (1.66%) patient belonged to stage IV severity. Statistical analysis did not reveal any significant difference in severity of COPD among patients with and without psychiatric illness. ($p=0.3947>0.05$) [Fig4].

Table 1: Socio-demographic characteristics.

Sociodemographic characteristics	Patients with Psychiatric illness	Patients without psychiatric illness	P value
Age distribution			
41-50yrs	3(11.53%)	6(17.64%)	
51-60yrs	7(26.92%)	5(14.70%)	
61-70yrs	11(42.31%)	16(47.05%)	
71-80yrs	4(15.38%)	6(17.64%)	p= 0.6626
Gender			
Male	21(80.76%)	30(88.23%)	
Female	5(19.23%)	4(11.76%)	p=0.482
Marital status			
Unmarried	2(7.69%)	2(5.88%)	
Married	24(92.30%)	32(94.11%)	p=1.000
Religion			
Muslims	21(80.76%)	29(85.29%)	
Christians	1(3.84%)	1(2.94%)	
Hindus	1(3.84%)	3(8.82%)	p=0.625
Domicile			
Urban	7 (26.92%)	11 (32.35%)	
Rural	18 (69.23%)	23 (67.64%)	p=0.78
Education			
No formal education	13(50%)	8(23.52%)	
Some formal education	13(16.66%)	26(25.48%)	p= 0.055
Occupation			
Employed	22(84.16%)	33(97.05%)	
Unemployed	4(15.38%)	1(2.94%)	p= 0.15

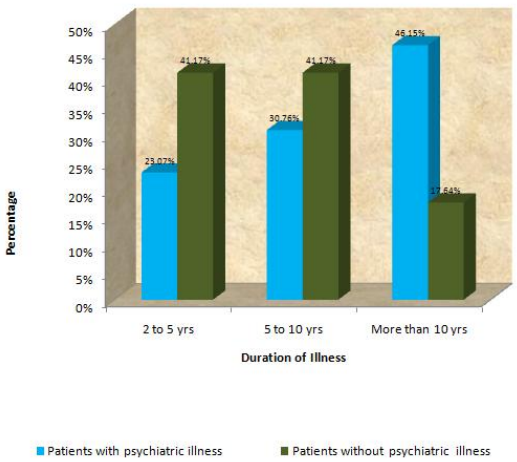

Fig. 1: Duration of COPD and occurrence of psychiatric morbidity.

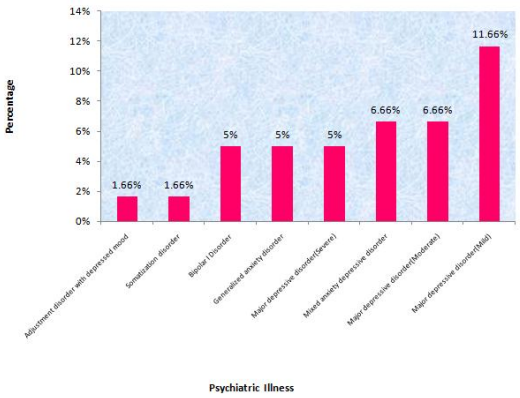

Fig. 2: Psychiatric illness based on MINI Plus diagnostic criteria.

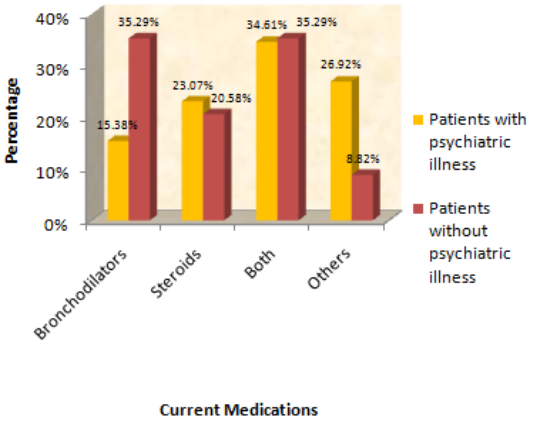

Fig. 3: Data regarding medications taken for COPD.

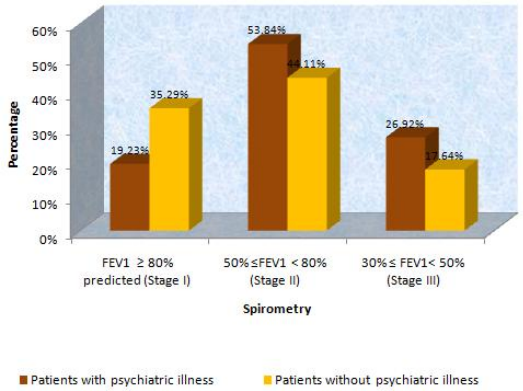

Fig. 4: Staging of severity of COPD.

Discussion

This study was carried out in Yenepoya Medical College Hospital, Derlakatte, Mangalore. This institute is multispecialty, general private sector, teaching hospital, catering to the needs of South Kannada, Udupi and Northern districts of Kerala. The socio-demographic data of those with and without psychiatric illness were compared. There was no statistically significant difference in terms of age, marital status, religion, domicile distribution, occupation, education and income. There was significant association between the duration of COPD and the occurrence of psychiatric morbidity. Longer the duration of COPD, the occurrence of psychiatric morbidity was higher. To the best of our knowledge such findings have not been reported in the literature reviewed. Forty three percent of COPD patients had psychiatric illness. Earlier studies report that patients with COPD have depressive and anxiety symptoms ranging from 6%-90 %.[7,8,9,10] Although COPD is a chronic physical illness, it has profound psychological and social impact on its victims.[11]In the present study we found psychopathology other than depression and anxiety. The psychiatric disorders were diagnosed in twenty six COPD patients. Among the fourteen who had major depressive disorder, seven patients had major depressive disorder - mild, four patients had major depressive disorder- moderate and three had major

depressive disorder – severe without psychotic features. This finding is consistent with those of earlier studies. [8,9,10,12,13]. A significant proportion of patients was on steroids and bronchodilators. An earlier study on psychopathology in COPD patients postulates that the medications could be related to psychopathology.[14]But the nature of medications and the dosage of medications are not mentioned. In this study there was no significant difference in terms of medication use in those with and without psychiatric illness. Spirometry done on COPD patients revealed that forty eight percent belonged to stage II and twenty eight percent belonged to stage I severity. There was no significant difference in the severity of illness in those with and without psychiatric illness. Around forty five percent of patients with psychiatric illness also had a family history of psychiatric illness/medical illness and substance use. Depression and anxiety are often untreated or undertreated in patients with COPD. In two studies less than one third of patients were receiving appropriate treatment. Untreated or incompletely treated depression and anxiety have major implications for compliance with medical treatment, increased frequency of hospital admissions, prolonged length of stay, and increased consultations with primary care physicians.[15]Barriers to the detection and management of psychiatric illness in COPD include patient and physician barriers. Patient barriers include lack of knowledge about the possibility of anxiety or depression as well as their treatment options. Stigma regarding mental illness may include the belief that depression is a personal and family issue not to be discussed with physicians. Other barriers may include preference for depression care within the primary care system, and therapies that may be limited by insurance coverage or accessibility. Physician barriers include short clinical visit times, the lack of close follow-up, the lack of time for educating patients about depression and counseling, limited skills, and knowledge of mood disorders.[16] This study also highlights the unmet mental health needs in COPD, which is associated with increased disability, decreased health care usage and impaired quality of life. Limitations of the study are that the samples are not representative of the general population, the subjects were assessed on one occasion only and larger sample size will be required to enhance the reliability and validity of the results.

Conclusion

In conclusion, patients with COPD have significant psychiatric disorders, the most common ones being major depressive disorder and generalized anxiety disorder.

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Conflict of interest: None

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