



ORIGINAL RESEARCH PAPER

Pulmonary Medicine

PREVALENCE OF ANXIETY AND DEPRESSION IN CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS AND ITS CORRELATION WITH SEVERITY OF DISEASE.

KEY WORDS: COPD, Anxiety, Depression.

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ABSTRACT

Background: Co-morbidities like anxiety and depression contribute to substantial burden of COPD related morbidity, notably by impairing quality of life and reducing adherence to treatment.

Aim: To estimate the prevalence of anxiety and depression in COPD patients and to assess its severity with increasing severity of COPD.

Material and Methods: An observation study with cross sectional survey and interview to a group of 100 COPD patients was developed to estimate the prevalence of anxiety and depression amongst these patients.

Results: Amongst COPD patients, 53% had mild anxiety, 37% had mild to moderate anxiety, 9% had moderate to severe anxiety, while only 1% had no anxiety according to HAM-A questionnaire. According to HAM-D questionnaire, 19% had mild depression, 25% had moderate depression, 23% had severe depression, 15% had very severe depression, and 18% had no depression. A statistically significant correlation (p value < 0.001) was found between increasing severity of COPD with increasing severity of anxiety and depression.

Conclusion: The present study concludes that prevalence of anxiety and depression is significant in COPD patients, which needs to be treated, to improve quality of life of patient and adherence to treatment of COPD.

INTRODUCTION:

In past two decades, there has been increasing recognition that patients with chronic obstructive pulmonary disease (COPD) with three or more co-morbidities are more likely to be frequently hospitalised and may die prematurely compared with COPD patients without co-morbidities [1]. Of such co-morbidities, anxiety and depression are seen more commonly in COPD patients.

According to WHO estimates, 65 million people have moderate to severe chronic obstructive pulmonary disease (COPD). More than 3 million people died of COPD in 2005, which corresponds to 5% of all deaths globally [2]. Anxiety in COPD patients is reported to have prevalence of 2-96% [3] and the prevalence of depression in patients with COPD ranged 7-42% [4].

Untreated anxiety and depression have series of ill-effects in daily life and hampers social interaction skills, increasing fatigue, leading to frequent utilisation of healthcare facility. Since the clinical symptoms of anxiety and depression overlap with that of COPD, it is often overlooked, which eventually leads to incomplete treatment and poor adherence to treatment.

Thus suspecting anxiety and depression at initial stage in COPD and treating them, will improve quality of life of patient and better disease control.

MATERIAL AND METHODS:

The study commenced after obtaining approval from the institutional ethical committee. An observation study with cross sectional survey and interview to a group of 100 COPD patients was developed to estimate the prevalence of psychological condition and the demographic data for these groups of patients.

Severity of COPD was assessed as per GOLD (Global Initiative for Chronic Obstructive Lung Disease) guidelines, severity of anxiety was assessed by HAM - A (Hamilton

Anxiety Score) questionnaire and scoring system and severity of depression was assessed using HAM - D (Hamilton Depression Score) questionnaire and scoring system. The study was conducted from March 2018 to June 2019 at Meenakshi Medical College Hospital and Research Institute, Kanchipuram.

INCLUSION CRITERIA:

1. Patient who has the diagnosis of COPD that is confirmed by spirometry according to GOLD classification.
2. Patient ready to give written consent.
3. Patients who are able to understand and complete questionnaires either by filling them by themselves or with the assistance from doctors.

EXCLUSION CRITERIA:

1. Significant medical comorbidity or uncontrolled medical condition which may confound results, including symptomatic or untreated dementia, known chronic psychiatric illness which is on treatment already and any condition as judged by research doctor.
2. Patient who are on anxiolytic medication or anti-depression medication before starting the study.

STATISTICAL ANALYSIS:

Statistical analysis to be done using SPSS version 20 software. Chi-square test was used for analysis and P value of < 0.05 is considered statistically significant.

RESULTS:

All the patients included in the study were in their fourth decade and above, suggesting increase in prevalence of COPD in elderly patients. The prevalence of COPD in various age group were as follows: 40-50 years - 8%, 51-60 years - 37%, 61-70 years - 48% and >70 years - 7%.

Of total number of cases, 78% were male patients and 22% were female patients.

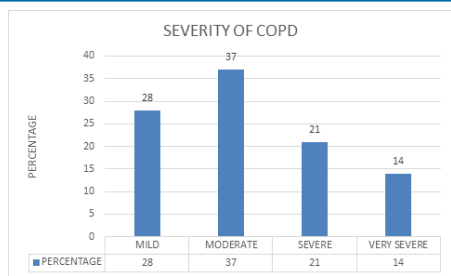


FIG 1. BAR DIAGRAM OF DISTRIBUTION OF SEVERITY OF COPD.

Based on the results obtained from spirometry test, severity of COPD was assessed in each patient. 37 % patients had moderate severity of COPD, followed by 28% patients having mild COPD. Severe and very severe form of COPD was found in 21% and 14% of patients respectively.

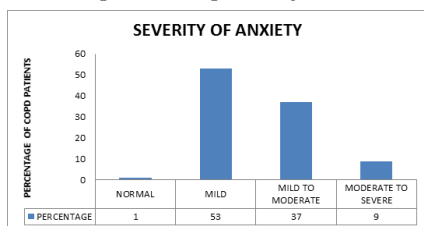


FIG 2. BAR DIAGRAM OF DISTRIBUTION OF SEVERITY OF ANXIETY IN COPD.

TABLE 1. CO-RELATION OF SEVERITY OF COPD WITH SEVERITY OF ANXIETY.

		SEVERITY OF ANXIETY (as per HAM-A scale)				TOTAL	P-VALUE
		NORMAL (score 0)	MILD (score 1-17)	MILD TO MODERATE (score 18-24)	MODERATE TO SEVERE (score 25-30)		
SEVERITY OF COPD (as per GOLD guidelines)	MILD (FEV1 > 80%)	1(3.6%)	25(89.3%)	2(7.1%)	0(0.0%)	28(100.0%)	0.001
	MODERATE (FEV1 50-80%)	0(0.0%)	24(64.9%)	12(32.4%)	1(2.7%)	37(100.0%)	
	SEVERE (FEV1 30-50%)	0(0.0%)	3(14.3%)	15(71.4%)	3(14.3%)	21(100.0%)	
	VERY SEVERE (FEV1 <30%)	0(0.0%)	1(7.1%)	8(57.1%)	5(35.7%)	14(100.0%)	
Total		1(1.0%)	53(53.0%)	37(37.0%)	9(9.0%)	100(100.0%)	

Thus P-value in association of severity of COPD with severity of Anxiety is 0.001, which is statistically significant (<0.05), thus indicating a strong correlation of increase in severity of anxiety, as the severity of COPD increases.

TABLE 2. CO-RELATION OF SEVERITY OF COPD WITH SEVERITY OF DEPRESSION.

		SEVERITY OF DEPRESSION (as per HAM-D scale)					TOTAL	P-VALUE
		NORMAL (score 0-7)	MILD (score 8-13)	MODERATE (score 14-18)	SEVERE (score 19-22)	VERY SEVERE		
SEVERITY OF COPD (as per GOLD guidelines)	MILD (FEV1 > 80%)	14(50.0%)	11(39.3%)	3(10.7%)	0(0.00%)	0(0.00%)	28(100%)	0.001
	MODERATE (FEV1 50-80%)	3(8.1%)	7(18.9%)	17(45.9%)	10(27.0%)	0(0.00%)	37(100%)	
	SEVERE (FEV1 30-50%)	1(4.8%)	1(4.8%)	4(19.0%)	9(42.9%)	6(28.6%)	21(100%)	
	VERY SEVERE (FEV1 <30%)	0(0.00%)	0(0.00%)	1(7.1%)	4(28.6%)	9(64.3%)	14(100%)	
Total		18(18%)	19(19%)	25(25%)	23(23%)	15(15%)	100(100%)	

Thus P-value in association of severity of COPD with severity of Depression is 0.001, which is statistically significant (<0.05), thus indicating a strong correlation of increase in severity of depression, as the severity of COPD increases.

DISCUSSION:

A study on prevalence of anxiety and depression among 220 patients which included severe and very severe COPD patients and 220 non COPD patients as controls in Egyptian population was conducted by Osama M Gado ,Lamia A. Basiony et.al. (2015) [5].

Anxiety and Depression was assessed through Hospital Anxiety and Depression scale (HAD), the prevalence of anxiety-depressive symptoms was 44.5% in severe and very severe COPD patients and 14% among the controls [5].

Severity of anxiety was graded based on HAM-A questionnaire. Maximum patients included in study, were found to be suffering from mild anxiety with incidence of 53%. It was followed by mild to moderate grade of anxiety in 37 % patients and 9 % of patients had moderate to severe anxiety. Only 1% of sample size was found to have no anxiety.

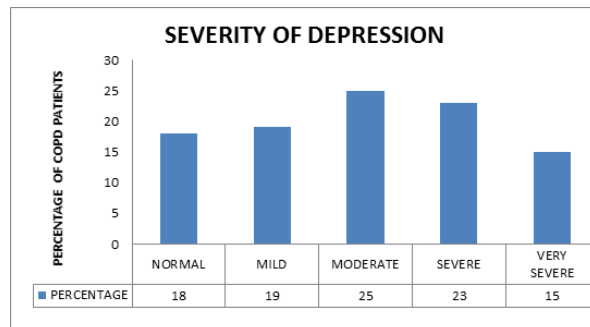


FIG 3. BAR DIAGRAM OF DISTRIBUTION OF SEVERITY OF DEPRESSION IN COPD PATIENTS.

Based on HAM-D questionnaire, the patients were evaluated for severity of depression. Moderate depression comprised of 25% of total sample size, which was the highest reported incidence, closely followed by severe depression, which comprised of 23% of patients. Mild depression was found in 19% of patients and very severe depression was seen in 15% patients. 18% of patients had no depression.

This study did not include mild and moderate patients of COPD.

A cross-sectional study by Einser and colleagues[6] reported that COPD patients are 85% more likely to develop anxiety disorders compared to healthy, matched controls. Willgoss TG et al in their study found the prevalence of clinical anxiety in COPD outpatients ranges between 13% and 46% [7].

The incidence of depression, in a study by Schneider et al. (n = 35,000, COPD) with a follow-up of 10 years[8] was 16.2 cases per 1000 person-years in the COPD group compared to 9.4 cases per 1000 person-years in the non-COPD control group. In addition, those with severe COPD were twice as likely to develop depression [8] [9] compared to patients with mild COPD.

The impact of anxiety and depression on COPD patients and their families is significant. Depressed patients with a chronic medical illness are usually sicker than their counterparts and have lower treatment adherence [10].

CONCLUSION:

The present study concludes that prevalence of anxiety and depression is significant in COPD Patients. COPD patients with Anxiety and Depression have poor quality of life.

The morbidity and mortality are high in COPD patients, more commonly due to associated co-morbidities, and in our study, we have successfully proven significant correlation between severity of COPD with anxiety and depression. Pulmonary rehabilitation and proper psychiatric counselling will reduce the burden of mental illness in COPD patients.

Efforts should be directed towards prevention of risk factors for COPD, primarily smoking cessation, which can bring down the prevalence of COPD and thus reduces the incidence of anxiety and depression in such patients.

Limitation of study:

Non probability convenient sampling technique was used for this study which does not represent the entire population.

The present study was conducted among stable COPD patients only thus limiting the generalization of the findings.

A sample size of 100 patients was taken up for study. Further study may be warranted with a larger sample size.

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