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Assessment of hospital anxiety and depression in adult patients with chronic obstructive pulmonary disease: an observational study

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Abstract

Introduction: Chronic obstructive pulmonary disease (COPD) is associated with intermittent exacerbation with deterioration in their symptoms of dyspnoea and cough with expectoration. These patients often require repeated hospitalisation for the control of these exacerbations. Repeated hospitalisation can have persistent psychological effects on these patients. **Methodology:** This was a prospective, observational study. Twenty nine patients admitted to the medical intensive care unit (ICU) with a diagnosis of COPD were enrolled. They were assessed for anxiety and depression using hospital anxiety and depression scale (HADS). Hospital anxiety and depression questionnaire were addressed to patient twice: once just before discharge from ICU and again just before discharge from ward and the results were compared. **Result:** Out of twenty nine patients, 8 (27.5%) showed anxiety, 6 (20.6%) patients were having borderline anxiety and 15 (51.7%) patients had no anxiety. Ten (35%) patients showed depression, 13 (45%) patients had borderline depression and 6 (20%) patients had no depression during intensive care management. In the ward, the same patients were assessed again for anxiety. Five (17.2%) patients showed anxiety, 10 (34.8%) patients had borderline anxiety and 14 (48.2%) patients had no anxiety during ward stay. Similarly, four (13.7%) patients showed depression, 13 (44.8%) patients had borderline depression and 12 (41.3%) patients had no depression. **Conclusion:** Anxiety and depression is common in COPD patients and it is more during ICU stay compared to ward stay.

Keywords: Anxiety, Chronic obstructive pulmonary disease, Depression.

Introduction

Chronic obstructive pulmonary disease (COPD) is associated with intermittent exacerbation with deterioration in their symptoms of dyspnoea and cough with expectoration. These patients often require repeated hospitalisation for the control of these exacerbations.[1] COPD is a largely preventable and treatable disease and is currently the fifth leading cause of death in the India. It will soon be the fourth leading cause of death. COPD is diagnosed based on the symptoms and the finding of a post bronchodilator $FEV_1/FVC < 70\%$. Chronic inflammation of the small airways leads to progressive destruction of the lungs leading to physical disability. This often leads to psychiatric comorbidities such as depression and anxiety disorders such as panic attacks in COPD patients.[2,3] If left untreated, adherence to medical advice and treatment, physical functioning and social interaction can be affected.[4-6] The aim of this study was to assess symptoms such as anxiety and depression symptoms, and compare their level in intensive care unit and wards among adult COPD patients.

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Methodology

This was a prospective, observational study conducted in medical intensive care unit (ICU). This study was approved by the institutional review board of Kasturba Hospital. All study subjects gave written informed consent before study enrolment. Twenty nine patients admitted to the medical Intensive care Unit of a tertiary care Medical College Hospital between January 2015 and June 2015 were enrolled. The criteria for inclusion were a diagnosis of COPD, a period of mechanical ventilation, successfully weaned off the ventilator and on room air or oxygen therapy, conscious and oriented sufficiently to understand able to answer the questionnaire. Patients with neurological problems and postoperative patients were excluded from the study.

The patients were assessed for anxiety and depression using hospital anxiety and depression scale (HADS). The HADS scale consists of 14 parameters, half of which measure anxiety and the other half measure depression. Each parameter is scored on a 4 point Likert scale (0–3) with a higher score indicating more anxiety or depressive symptom. The minimum score for both scales is 0 and the highest score is 21. The HADS is a reliable and valid scale for patients with medical conditions. It has been used as a valid screening tool for anxiety and depression in a variety of populations, including primary care patients, psychiatric patients and the general population.

Hospital anxiety and depression questionnaire was given to the patients just before discharge from ICU by a senior ICU nurse in order to minimise the bias. The patients were asked to choose one response from the four options given for each question. They were told to mark the answer immediately without pondering over it too long to avoid confusion. They were expected to note what came to their mind at that moment about each parameter. The score for each answer was noted down. Total anxiety and depression scores were calculated by adding the individual scores. The sum total was categorized as follows: 0-7 = Normal, 8-10 = Borderline abnormal, 11-21 = Abnormal. All these patients were followed up till discharge from the hospital.

The questionnaire was given to each patient again just before discharge from the hospital, by a senior ward nurse. The total score was calculated as described above. The calculated hospital and anxiety scores were compared between ICU and ward stay. The software (SPSS 17.0, SPSS, Chicago, Illinois) was used for statistical analysis. Descriptive statistics were used where appropriate. Comparison between variable means was done using the Student's *t* test.

Results

A total number of 29 subjects were included in the study (n=29). The mean ± SD age was 66 ±8 years and age range was 40 – 75 years. The majority (75%) reported comorbid medical illnesses. The most common comorbidities identified in the study include diabetes (18, 62%). *Table 1* shows the number of patients in each category of the anxiety and

Table 1: Percentage of patients with anxiety and depression during ICU and ward stay

Anxiety and Depression scale	Anxiety		Depression	
	In the ICU n (%)	In the ward n (%)	In the ICU n (%)	In the ward n (%)
0-7 (No anxiety, depression)	15 (51.7)	14 (48.2)	6 (20)	12 (41.3)
8-10 (Borderline anxiety, depression)	6 (20.6)	10 (34.8)	13 (45)	13 (44.8)
11-21 (anxiety, depression)	8 (27.5)	5 (17.2)	10 (35)	4 (13.7)

Table 2: Mean anxiety and depression scores during ICU and ward stay

Variable	Location	Mean ± SD	P value
Anxiety	ICU	7.93 ± 3.60	0.219
	Ward	7.19 ± 3.49	
Depression	ICU	9.17 ± 2.56	0.198
	Ward	8.21 ± 2.99	

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depression scale. *Table 2* shows comparison of the mean scores in the ICU and in the ward.

Discussion

Hospital anxiety and depression are common in adult patients with COPD during ICU and ward stay. Approximately 50% of the COPD patients have some depression and 75% are anxious, both of which reduce in the ward although no statically significant difference could be demonstrated between ICU and ward stay. COPD affects not only the respiratory function of a patient but also the cognitive and affective functions. Anxiety and depression can occur at any time in the life of a patient suffering from COPD. Health professionals should be able to recognize these symptoms. Management of these patients muct include treatment for these symptoms as necessary so as to deliver overall and wholesome care.

Wagena *et al* showed psychiatric disorders, were very common in COPD patients.[7] The most common psychiatric disorders were depression followed by anxiety. Havermans *et al* found that depression (measured by the HADS scale) was associated with impaired quality of life.[8]

The present study evaluated the presence of anxiety and depression in patients with COPD in the ICU when they have just recovered from the acute illness but are still in the ICU surroundings and compared it with that in the ward when they are about to be discharged from the hospital. The mean scores in the present study were only 8-9, indicating that they were anxious and depressed but not severely. This may be related to the general attitude, trust, faith, family support and educational level of the patients.

The limitations of the study were that it was an observation study conducted at a single centre. Several factors can cause anxiety and depression in patients admitted to the ICU and ward and it would be difficult to attribute them to COPD alone. A multicentric study involving larger number of patients with different social and cultural backgrounds may elicit differences in their incidence.

Conclusions

Anxiety and depression are common in COPD patients but are comparable during ICU and ward stay.

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