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Depression in COPD Patients

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Depressive disorder, chronic obstructive pulmonary disease, patient compliance, Smoking cessation

A B S T R A C T

This current study is explores the comorbidities of COPD like depression. This article explores the various literature surrounding comorbid depression and COPD. The literature reveals a high prevalence of depression in patients with COPD and some evidence that the depression is a result of the disease. Depression affects negatively on rehabilitation and quitting of smoking, so ant depressive therapy in the form of medication , counseling and by other means should be included for COPD patients There are difficulties for the assessment of depression in COPD but as this can affects the quality of life and rehabilitation it is necessary to find out depression in COPD Patients.

Introduction

Chronic Obstructive Pulmonary Disease (COPD) has been seen as a multi-systemic rather than a respiratory system disease [(1)]. It is acknowledged that the inflammation which occurs and installs in COPD leads to remodeling of the airway, with consequent impaired pulmonary mechanism and obstructed air flow [(2)].

Chronic obstructive pulmonary disease (COPD) has been variously labeled in the past as chronic bronchitis (CB) and emphysema, chronic nonspecific respiratory disease, chronic airway obstruction (CAO), chronic airflow limitation (CAL) and chronic obstruction lung disease (COLD) depending upon the understanding of the pathophysiology and clinical features of the syndrome of chronic cough and/or airways obstruction. It is only in the last century that the disease has been better understood. Yet, the confusion in the terminology has persisted till now. COPD is presently accepted as an overall umbrella term for a variety of clinical disorders with chronic bronchitis at the one and emphysema at the other end of the spectrum [(3)].

Chronic obstructive pulmonary disease (COPD), also known as chronic obstructive lung disease (COLD), and chronic obstructive airway disease (COAD), among others, is a type of obstructive lung disease characterized by chronically poor

airflow. It typically worsens over time. The main symptoms include shortness of breath, cough, and sputum production [4]. Most people with chronic bronchitis have COPD [5].

The term chronic obstructive pulmonary disease, abbreviated COPD, or sometimes COLD (chronic obstructive lung disease), refers to a disease state characterized by the presence of airflow obstruction resulting from chronic bronchitis or emphysema. As defined in the recent American Thoracic Society guidelines statement regarding COPD "COLD (chronic obstructive lung disease) is a treatable disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily caused by cigarette smoking. Although COPD affects the lungs, it also produces significant systemic consequence" [6].

Similarly, the recent Global Initiative for Chronic Obstructive Lung Disease (GOLD) defines as "A disease state characterized by airflow limitation that is not fully reversible, is abnormal inflammatory response of the lungs to noxious particles or gases" [7].

Globally, COPD has emerged as the major cause of morbidity and mortality expected to become the 3rd most leading cause of death and the 5th leading cause of loss of 'Disability Adjusted Life Years' (DALYs) as per projection of the Global Burden of Disease Study (GBDS). The region-wise projections for the developing countries including India were even worse [3].

Worldwide, COPD affects 329 million people or nearly 5% of the population. In 2011, it ranked as the fourth leading cause of death, killing over 3 million people [8]. The number of deaths is projected to increase due to higher smoking rates and an aging population in many countries [9], which has resulted in an estimated economic cost of $2.1 trillion in 2010 [10].

Extra pulmonary manifestations in COPD, in addition to pulmonary component, are common. It has been observed in the ECLIPSE study that co morbidities were significantly higher in patients with COPD than in smokers and never smokers [11]. The important co morbidities associated with COPD are cardiovascular disorders (coronary artery disease and chronic heart failure, hypertension), metabolic diseases (diabetes mellitus, metabolic syndrome and obesity), bone disease (osteoporosis and osteopenia), stroke, lung cancer, cachexia, skeletal muscle weakness, anemia, depression and cognitive decline [12, 13].

After considering this burden of COPD and associated disorder which also includes depression which also affects sleep, rehabilitation process, quitting of smoking and clinical outcome at certain extent. So it is important to do screening of depression symptoms and initiation of its treatment.

There is a well documented association between COPD and anxiety or depression (Dowson et al 2001; Mikkelsen et al 2004; Kunik et al 2005).

In our study we have used PHQ-9 (Patient Health Questionnaire) to find out the depression in COPD patients. This scale was in English version so it was translated in Guajarati version and then it was used for the COPD patients. Gujarati version of PHQ-9 is validated.

The Patient Health Questionnaire (PHQ) is a multiple-choice self-report inventory

copyrighted by Pfizer Inc, that is used as a screening and diagnostic tool for mental health disorders of depression, anxiety and somatoform[14].

It is the self-report version of the Primary Care Evaluation of Mental Disorders (PRIME-MD), a diagnostic tool developed in the mid-1990s by Pfizer Inc.[15] Designed for use in the primary care setting, it lacks coverage for disorders seen in psychiatric settings[16]. Certain of these tools have been shown to have good diagnostic sensitivity, but poor specificity like the PHQ-2. Though PHQ-9, is both sensitive and specific in its diagnoses, which has led to its prominence in the primary care setting. These tests were originally designed for patients to take themselves, though they can be administered by trained health care practitioners like physiotherapist and others as well [17].

Material and Method

Study design

This cross sectional, non randomized study was done in department of TB & Chest diseases, MP Shah Government Medical College, Jamnagar. All COPD patients who met the inclusion criteria and willing to participate in this study were selected. Diagnosis of COPD was done by chest physician and no further assessment was done by physiotherapist regarding the diagnosis of COPD.

Inclusion criteria:

- Stable COPD patients
- Willing to participate in the study
- No change in medication since last 2 weeks
- No exacerbation in COPD since 2 weeks

Exclusion criteria:

- Acute exacerbation of COPD
- Change in medication in last 2 weeks
- Asthma

Measurement of depression

Depression was evaluated with the validated Gujarati version [18] of nine items PHQ-9 (a subset of Patient Health Questionnaire). PHQ-9 is a self-report version of Primary care Evaluation of Mental Disorders (PRIME-MD) [19]. PHQ-9 consists of nine criteria on which the diagnosis of DSM-IV depressive disorders is based [20]. The PHQ-9 is a dual-purpose instrument that, with the same nine items, can establish provisional depressive disorder diagnosis as well as grade depressive symptom severity. Each of the nine items of PHQ-9 was scored from 0 (not at all) to 3 (nearly every day). Total score ranged from 0 to 27 and depending upon the total score, severity of depression was classified as follows: none (0-4), mild (5-9), moderate (10-14), moderately severe (15-19) and severe (20-27).

Statistical analysis

Prevalence of depression was determined by simply calculating the percentage of patients with severity symptoms on PHQ-9.

Results

A total of 40 patients with COPD were included in the study with the mean age of 64.075 ± 4.71. Study population included 19 men and 21 women.

Presence of depression in COPD

In the study population 23 (57.5 %) patients showed mild depressive symptoms, 11 (27.5 %) showed moderate depressive symptoms and only 6 (15%) showed moderately severe symptoms. Majority of the patients i.e. more

than 50% comes under mild depressive symptoms.

Discussion

In current study more than half of the patients were suffering from depression symptoms. This depression symptom could be because of the chronic air flow limitation which affects their functional and day to day routine activity. This depression symptom might be because of other factors too.

There are many studies which suggest prevalence of depression ranging from 10 to 55 % [(21)] that might be because of different scale and the different methodology used for the assessment of depression symptoms in COPD patients.

In COPD patients' dyspnoea is common symptoms and this chronic dyspnoea and depression has very strong relation with each other. Dyspnoea leads to reduced physical activity and muscle weakness, ultimately less participation in social activity or gathering and other routine activity. So dyspnoea is the strong factor for the comorbidities like depression in COPD patient [(22)].

Limitation of study

There were certain limitations in the present study. We were not able to consider sample size for our study population as so many COPD patients were not willing to participate and this study was done on primary level. We have not classified the depressive symptoms and the severity of COPD as sample size is small. We have not consider any other factors which can affects the level of depression like level of education, gender, any other musculo-skeletal deficit or any other associated illness. So study should on large scale with considering all the above mentioned factors in future.

Conclusion

In the current study, substantial numbers of patients i.e. more than half of the patients are suffering from mild depressive symptoms. This depression symptom may be associated with so many other factors also which was not included in this study. So assessment of depression should be routine in clinical practice in COPD patients as this can affects rehabilitation and other treatment strategy.

References

1. BR Celli, CG Cote,Martyn JM. The body mass index,airflow obstruction,dyspnoea and exercise capacity index in chronic obstructive pulmonary disease. NEJM. 2004;: p. 350(10):1005-12.
2. RA Pauwels, AS Buist, PMA Caverely, CR J, SS H. Global strategy for the diagnosis,management and prevention of chronic obstructive pulmonary disease(GOLD). Am J Respir Crit Care Med. 2001; 163: p. 1256-1276.
3. Jindal S. COPD: The Unrecognized Epidemic in India. SUPPLEMENT TO JAPI. 2012 February; 60.
4. Vestbo , Jorgen. Global strategy for the diagnosis,management and prevention of chronic obstructive pulmonary disease.: Global initiative for COPD; 2013.
5. Reilly , J J, Silverman , K E, Shaprio , D S. Harrison's principles of internal medicine. 18th ed.: McGraw Hill.
6. http://www.thoracic.org/COPD. [Online].; 2007 [cited 2007 May 22.
7. Robert LW, K.Stoller J, M.Kacmarek R. Egan's Fundamentals Of Respiratory

Care. NINTH ed. Sharp B, editor.: MOSBY ELSEVIER; 2009.
8. The 10 leading cause of death in the world: World health organization; 2011
9. CD Mathers, D Loncar. Projection of global mortality and burden of disease from 2002 to 2030. PLOS Med. 2006; 3(11).
10. Lomborg , Bjorn. Global problems,local solutions:cost and benifits.: Cambridge university press.
11. A Augusti, PM Caverely, B Celli et al. Characterisation of COPD heterogeneity in the ECLIPSE cohort. Respir Res. 2010; 11: p. 122-136.
12. M.E.Franseen F, Rochester CL. Comorbities in patients with COPD and pulmonary rehabilitation:do they matter? Eur Respir Rev. 2014; 23: p. 131-141.
13. P Boschetto, B Beghe, LM Fabbri et al . Link between chronic obstructive pulmonary disease and coronary artery disease: implication for clinical practice. Respirology. 2012; 17: p. 422-31.
14. PH Kochhar[1], SS Rajadhyaksha[2], VR Suvarna[2] Translation and validation of brief patient health questionnaire against DSM IV as a tool to diagnose major depressive disorder in Indian patients Year : 2007 | Volume : 53 | Issue : 2 | Page : 102-107
15. Spitzer RL, Kroenke K, Williams JB (1999). Validation and utility of a self-report version of PRIME-MD: the PHQ primary care study. JAMA. Nov 10; 282(18):1737–44.
16. Blacker D. Psychiatric Rating Scales. In Sadock BJ, Sadock VA, Ruiz P (eds) *Kaplan & Sadock's Comprehensive Textbook of Psychiatry*, 9th ed. 2009. p. 1042.
17. Arroll B, Goodyear-Smith F, Crengle S, Gunn J, Kerse N, Fishman T, Falloon K, Hatcher S. Validation of PHQ-2 and PHQ-9 to screen for major depression in the primary care population. Ann Fam Med. 2010 Jul-Aug;8(4):348-53.
18. Kochhar PH, Rajadhyaksha SS, Suvarna VR. Translation and 14. validation of brief patient health questionnaire against DSM IV as a tool to diagnose major depressive disorder in Indian patients. *J Postgrad Med* 2007; *53* : 102-7.
19. Spitzer RL, Kroenke K, Williams JBW. Validation and utility 15. of a self-report version of PRIME-MD: the PHQ primary care study. Primary Care Evaluation of Mental Disorders. Patient Health Questionnaire. *JAMA* 1999; *282* : 1737-44.
20. Kroenke K, Spitzer RL, Williams JB. The PHQ-9: validity of 16. a brief depression severity measure. *J Gen Intern Med* 2001; *16* : 606-13.
21. Cinciripini PM, Wetter DW, Fouladi RT, Blalock JA, Carter 11. BL, Cinciripini LG, *et al.* The effects of depressed mood on smoking cessation: mediation by post-cessation self-efficacy. *J Consult Clin Psychol* 2003; *71* : 292-301.
22. Al-shair K, Dockry R, Mallia-Milanes B, Kolsum U, Singh D, 31. Vestbo J. Depression and its relationship with poor exercise capacity, BODE index and muscle wasting in COPD. *Respir Med* 2009; *103* : 1572-9.