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A CASE CONTROL STUDY OF DEPRESSION AMONG STABLE COPD PATIENTS

Pulmonary Medicine

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ABSTRACT

SUMMARY: COPD is a multisystem disease and has several co morbidities like heart disorders, Musculoskeletal, Metabolic, Respiratory infections and Psychiatric disorders. Not much work has been carried out regarding depression in COPD patients in India which lead to this study. We evaluated 160 patients, 39 (24.37%) patients were excluded from the study. Finally, 121 patients completed the study and 130 subjects were evaluated in the control group. The study was a hospital based prospective observational case control study. The study shows that out of 121 cases, 38 (31.4%) had depression while in the control group of 130 subjects only 18(13.85%) had depression (p=0.0013). The study shows an alarming increase in depression among stable patients of COPD. Early psychiatric evaluation and counseling will go on a long way in decreasing depression among these patients and improve their Quality of life.

KEYWORDS

COPD, Co Morbidities, Depression.

INTRODUCTION

Chronic Obstructive Pulmonary Disease (COPD) is the fourth leading cause of death and will become the third leading cause of death by 2020. As per GOLD guidelines: working definition of COPD is "Chronic obstructive pulmonary disease is a common, preventable and treatable disease that is characterized by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually characterized by significant exposure to noxious particles or gases. ".

It is estimated that the number of COPD cases was 384 million in 2010, with a global prevalence of 11.7% (1) .Globally, there are around three million deaths annually(2) The prevalence of COPD is expected to rise over the next 30 years and by 2030 there may be over 4.5 million deaths from COPD and related conditions(3,4) . Co morbidities are common at any severity of COPD (5). COPD often exists with other diseases co morbidities that may have a significant impact on prognosis (6-13). Some of these arise independently of COPD whereas others may be casually related, either with shared risk factors or by one disease increasing the risk or compounding the severity of other. It is a possible that features of COPD are shared with other diseases and as such this mechanism represents a link between COPD and some of its co morbidities (14). The risk of co morbid disease can be increased by the sequelae of COPD. Whether or not COPD and co morbid conditions are related, management of the COPD patient must include identification of its co morbidities.

Common co-morbidities associated with COPD are heart disorders, metabolic disorders, musculoskeletal disorders, malignancies, respiratory infections, psychiatric disorders (15, 16), sexual disorders, sleep disorders and ophthalmic disorders. The present study focuses on identifying depression among stable patients of COPD which is very often ignored and underestimated. Anxiety and depression are important co morbidities in COPD. (17-20) and both are associated with a poor prognosis. (19, 21). There is no evidence that anxiety and depression should be treated differently in the presence of COPD.

MATERIAL & METHODS

We evaluated, all the patients of COPD, either previously diagnosed or newly diagnosed, whoever attends TB & Chest department, S.N. Medical College, Agra, during study period. All patients were subjected to spirometry to confirm the diagnosis. All the diagnosed patients of chronic obstructive pulmonary disease according to the criteria laid down by WHO-GOLD 2011 as having FEV1/FVC <70%, of any stage by spirometry whoever were stable and written consent to participate in our study filling into inclusion criteria, irrespective of present "smoking status" and having none of exclusion criteria, were enrolled into the study. Age and sex matched healthy attendants of patients attending S. N. Medical College, Agra those were interested to participating in our study were enrolled as control group.

Out of 160 patients of COPD evaluated, 39(24.37%) patients were excluded from study because 15 patients(9.37%) were not stable, due to history of hospitalization during previous one month, 14 patients (8.75%) denied to participate in our study and 10 patients (6.25%) were lost during the study period and finally 121 patients completed the study. For control group, 158 patients were evaluated, 28(17.72%) patients were excluded from the study because 17(10.76%) patients did not give consent to participate in our study and 11 patients (6.96%) were lost during study period and 130 subjects were finally evaluated in control group.

Setting
The study was conducted in TB & Chest department, S. N. Medical College, Agra.

Study Design
The study is hospital based prospective observational case control study carried out in stable patients of COPD, age and sex matched apparently healthy attendants attending TB & Chest department, S. N. Medical College, Agra.

Study Period
The study was carried out from May, 2012 to October, 2013.

Study Sample
Known cases and newly diagnosed cases of COPD, confirmed by spirometry according to the criteria laid down by GOLD 2011 (FEV1/FCV <70% in combination with change in pre and post bronchodilator FEV1 <200 ml and <12%) and reaching any GOLD stage, irrespective of sex, religion, caste, socio-economic status, educational qualification and present smoking status attended Department of TB & chest, S. N. Medical College, Agra. Age and sex matched apparently healthy attendants of patients attending TB & chest Department, S. N. Medical College, Agra, as control group for this study.

Inclusion Criteria
1. Known cases or diagnosed cases of chronic obstructive pulmonary disease on the basis of clinical history, physical examination, and chest radiographs and confirmed by spirometry as per criteria adopted and standardized by WHO-GOLD.2.

2. Stable patients not had experienced an exacerbation or been hospitalized in previous month for any respiratory illness.

Exclusion criteria:
Anyone of the following criteria:
1. Acute exacerbation in the previous month.
2. Those who were not interested to participate in our study.

Observation
Table 1: Depression in cases and controls, male and female wise.

	Cases			Controls			
Male N=101	Mild. 18	Mod. 4	Severe 1		Mild	Mod.	Severe
				Male N=100	10	5	00
%	17.82	3.96	0.99	%	10	5	00
Female N=20	10	5	00	Female N=30	3	00	00
%	50	25	00	%	10	00	00

Table 2: Depression in cases and controls (as a whole group).

	Depressive	Non- depressive	Total
Case	38	83	121
Control	18	112	130
Total	56	195	251

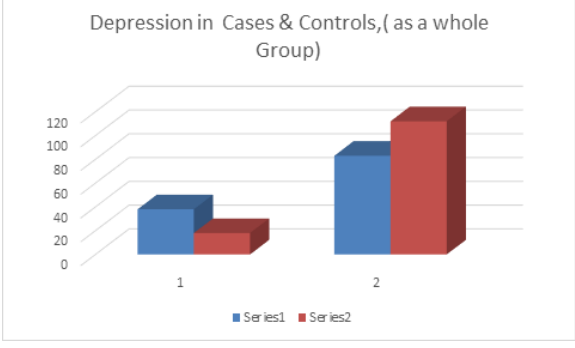

Figure.1 On applying 2*2 contingency table (fisher extract, 2 tailed) p value came to be 0.0013, which is statistically significant

DISCUSSION
Several studies evaluating the cause of death in patients with COPD suggest that patients are more likely to die of co morbid conditions than from COPD, as co-morbidities are more in COPD patients but remain undiagnosed. Not much work has been carried out regarding depression in stable COPD patients in India. In this study, we evaluated the prevalence of depression in stable patient of COPD attending S. N. Medical College, Agra and compare the prevalence of same morbidities in apparently healthy attendants of age 35 and above attending S. N. Medical College, Agra. A total of 121 patients in study group and 130 age and sex matched healthy attendant were finally evaluated for this study. After detailed history and clinical examination, Spirometry was done and all stable COPD patients were referred to a psychiatrist for depression.

Ospedale villa pineta Hospital, Modena, Italy 2008 reported that 51% of the patients have at least once chronic co morbidity in patients of COPD. Barnes PJ (2009)(6) in study found there are increasing evidence indicates that COPD is a complex disease involving more than airflow obstruction. Caterina anecchino et al (22) (2007) reported a cohort of 126,283 COPD patients and found that 10,292 patients (8%) were treated for depression. Thys van der Molena stated that, in state COPD, clinical depression is seen at prevalence of 10-42%, with higher rate seen in more severe disease and in patient recovering from an acute exacerbation (23). Kerry Schnell et al (2012) in a study found that subjects 45+ with physician-diagnosed COPD were more likely than subjects without physician-diagnosed COPD to have coexisting depression (20.6%-12.5%) (24).In present study out of 121 patients in study group, 38 patients (31.4%) had depression while in control group of 130 subject, only 18 subjects (13.85%) had depression. In our study depression found to be most common and statistically significant (p=0.0013) co-morbidity. Reason of this high figure might be that, for depression, patients were evaluated by psychiatrist.

HAMILTON DEPRESSION RATING SCALE-
- All cases and controls were evaluated by Hamilton rating scale -24 items for depression by psychiatrist in the dept. of psychiatry, S. N. Medical College, Agra.

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Conflict of interest: None declared
Limitation of the study. – Owing to the small sample size and the study being conducted in a single tertiary centre, the results of the study cannot be generalized for the entire population. Further large scale studies are required.

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