

ORIGINAL RESEARCH

Assessment of spectrum of clinical profile in COPD patients

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Abstract

Background: The present study was conducted for assessing spectrum of clinical profile in COPD patients.

Materials & methods: A total of 150 consecutive patients more than 20 years of age and visiting with the clinical presentation indicative of COPD were enrolled. After enrollment, spirometry was done and 120 patients were diagnosed with COPD as per GOLD guidelines. According to this, and FEV1/FVC ratio of less than 0.70 was taken as COPD's diagnostic criterion. Complete demographic and clinical details of all the patients was obtained. A Performa was made and Spirometric findings were recorded separately. A detailed history was taken about symptoms such as a cough, expectoration, breathlessness, fever, and chest pain. Clinical examination and relevant investigations were done including chest radiography. All the results were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software.

Results: Fever, Cough, Breathlessness and Pallor was seen in 50.83 percent, 93.33 percent, 98.33 percent and 38.33 percent of the patients respectively. Icterus, clubbing, cyanosis and pedal edema was seen in 2.5 percent, 15.83 percent, 2.5 percent and 25.83 percent of the patients respectively. 'Diabetes mellitus, Hypertension, Thyroid dysfunction and Ischemic heart disease was seen in 27.5 percent, 30.83 percent, 23.33 percent and 15.83 percent of the patients respectively. Serum creatinine and blood urea levels were found to be 0.9 mg/dL and 41.3 mg/dL respectively.

Conclusion: The current study's results shed a great deal of light on the patients' presentations to the outpatient department, the most typical COPD presentation, and the co-morbidities that are prevalent in COPD cases. An insight for the ongoing management of COPD cases is provided by this image.

Key words: Chronic obstructive pulmonary disease, Clinical Profile, Spectrum

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Introduction

Chronic obstructive pulmonary disease (COPD) is a name coined for the diseases that were previously known as chronic bronchitis and emphysema. The British Medical Research Council (BMRC) defined chronic bronchitis as "daily productive cough for at least three consecutive months for more than two successive years."¹ COPD is primarily present in smokers and those greater than age 40. Prevalence increases with age and it is currently the third most common cause of morbidity and mortality worldwide. In 2015, the prevalence of COPD was 174 million and there were approximately 3.2 million deaths due to COPD worldwide. However, the prevalence is likely to be underestimated due to the underdiagnosis of COPD.³

⁴COPD is a slowly progressing disease with a long asymptomatic phase, during which lung function continues to decline. Persistent cough, particularly with mucus production, is a common symptom. Dyspnea, especially with exercise, wheezing, and chest tightness may also be present. Patients often present with the first acute exacerbation of COPD at an advanced stage. Symptoms do not usually occur until forced expiratory volume in 1 second (FEV1) is approximately 50% of the predicted normal value. As the disease progresses, exacerbations may become more frequent and life-threatening complications may develop.^{5, 6} Physical examination findings, such as tachypnea, wheezing, or prolongation of the expiratory phase of respiration, are unusual until the disease is quite advanced. The role of

early diagnosis allows for more intensive risk factor modification and evidence is increasing that the loss of pulmonary function may be greatest when the disease is in a mild or moderate stage. Asthma, obliterative bronchiolitis, and bronchiectasis can present in a similar manner to COPD.^{7- 9}Hence; the present study was conducted for assessing spectrum of clinical profile in COPD patients.

Materials & methods

The present study was conducted for assessing spectrum of clinical profile in COPD patients. A total of 150 consecutive patients more than 20 years of age and visiting with the clinical presentation indicative of COPD were enrolled. After enrollment, spirometry was done and 120 patients were diagnosed with COPD as per GOLD guidelines. According to this, and FEV1/FVC ratio of less than 0.70 was taken as COPD's diagnostic criterion. Complete demographic and clinical details of all the patients was obtained. A Performa was made and Spirometric findings were recorded separately. A detailed history was taken about

symptoms such as a cough, expectoration, breathlessness, fever, and chest pain. Clinical examination and relevant investigations were done including chest radiography. All the results were recorded in Microsoft excel sheet followed by statistical analysis using SPSS software. Univariate regression curve was used for evaluation of level of significance.

Results

A total of 120 COPD patients were analyzed. Mean age of the patients was 48.3 years. Majority proportion of patients were males. Fever, Cough, Breathlessness and Pallor was seen in 50.83 percent, 93.33 percent, 98.33 percent and 38.33 percent of the patients respectively. Icterus, clubbing, cyanosis and pedal edema was seen in 2.5 percent, 15.83 percent, 2.5 percent and 25.83 percent of the patients respectively. Diabetes mellitus, Hypertension, Thyroid dysfunction and Ischemic heart disease was seen in 27.5 percent, 30.83 percent, 23.33 percent and 15.83 percent of the patients respectively. Serum creatinine and blood urea levels were found to be 0.9 mg/d L and 41.3 mg/d L respectively.

Table 1: Clinical profile

Clinical profile	Number	Percentage
Fever	61	50.83
Cough	112	93.33
Breathlessness	118	98.33
Pallor	46	38.33
Icterus	3	2.50
Clubbing	19	15.83
Cyanosis	3	2.50
Pedal edema	31	25.83

Table 2: Co-Morbidities

Co-morbidities	Number	Percentage
Diabetes mellitus	33	27.50
Hypertension	37	30.83
Thyroid dysfunction	28	23.33
Ischemic heart disease	19	15.83
Others	17	14.17
No co-morbidity	73	60.83

Table 3: Variables

Variables	Mean	SD
Serum creatinine (mg/dL)	0.9	0.21
Proteins (mg/dL)	5.9	0.7
Blood urea (mg/dL)	41.3	8.7
FEV1	61%	22

Discussion

Chronic obstructive pulmonary disease (COPD) is a preventable and treatable disease with airway obstruction and is characterized by persistent respiratory symptoms.¹ COPD is estimated to affect

about 16 million adults in the United States. Incidence of COPD is highest in patients who smoke or have a history of tobacco use, those older than 40 years, and men. Despite recommendations that maintenance pharmacotherapy be used for patients with moderate-to-

severe COPD, 1 up to 71% of patients from a Medicare population did not receive maintenance therapy, highlighting opportunities for improvements in patient management and care.¹⁰⁻¹² Clinical characterization of patients with COPD and research on therapies have progressed enormously in the past 10 years. Although no pathognomonic sign or diagnostic blood test yet exists for COPD, less expensive and easier to use spirometers have facilitated its diagnosis, and sophisticated imaging techniques offer new possibilities for patient stratification and early recognition of disease. The heterogeneity of COPD has been clarified both by molecular characterization of pathobiological diversity and evidence that a multidimensional index (BODE [body mass index, airflow obstruction, dyspnea, and exercise capacity]) is better able to predict survival than FEV1 alone.^{13, 14} A total of 120 COPD patients were analyzed. Mean age of the patients was 48.3 years. Majority proportion of patients were males. Fever, Cough, Breathlessness and Pallor was seen in 50.83 percent, 93.33 percent, 98.33 percent and 38.33 percent of the patients respectively. Icterus, clubbing, cyanosis and pedal edema was seen in 2.5 percent, 15.83 percent, 2.5 percent and 25.83 percent of the patients respectively. Our results were in concordance with the results obtained by previous authors who also reported similar findings. In a study conducted by Bajpai J et al, authors analyzed the incidence, demographic and clinical profile of nonsmoker COPD subjects. Out of 360 COPD cases, about 2/3rd (60%) were smokers and the rest nonsmokers. Overall, males were predominant (57.2%) but there were higher number of female patients in nonsmoker group. Among the 144 nonsmoker COPD patients, the most important and statistically significant risk factor was exposure to biomass smoke.¹⁵ Diabetes mellitus, Hypertension, Thyroid dysfunction and Ischemic heart disease was seen in 27.5 percent, 30.83 percent, 23.33 percent and 15.83 percent of the patients respectively. Serum creatinine and blood urea levels were found to be 0.9 mg/d L and 41.3 mg/d L respectively. In a similar study conducted by Gupta PP et al, authors assessed the clinical and pulmonary functions profile of patients with chronic obstructive pulmonary disease (COPD). The study included 80 COPD patients; 40 patients had ≥ 2 acute exacerbations during preceding 1 year (frequent exacerbation [FECOPD] group) and 40 patients had < 2 acute exacerbations during preceding 1 year (infrequent exacerbation [I-FECOPD] group). FECOPD group had significantly more expectoration score and Modified Medical Research Council dyspnea scores. Cough score and wheeze score did not differ significantly between two groups.¹⁶ The clinical profile of patients with chronic pulmonary obstructive disease at a tertiary care centre was studied in another previous study conducted by Gudagunti AK et al. As the age

increased the prevalence of the COPD increased and highest was found out to be in the age group of above 60 years of age. Males were more affected with COPD as compared with females. The male to female ratio was found out to be 2.4:1. The smokers were more compared to the non smokers. The prevalence of smoking among COPD was noted to be 66% compared to 34% as non smokers. Least proportion of patients of the COPD had fever i.e. in 22% of the cases. Cough was found in 83% of the cases. Breathlessness was found out to be in 98% of the cases. 15% of the cases of the COPD had diabetes only as the co-morbidity along with COPD and no other co-morbidity.¹⁷

Conclusion

The current study's results shed a great deal of light on the patients' presentations to the outpatient department, the most typical COPD presentation, and the co-morbidities that are prevalent in COPD cases. An insight for the ongoing management of COPD cases is provided by this image.

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