



A STUDY OF CLINICAL PROFILE OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE PATIENTS AT TERTIARY CARE CENTRE, KARWAR.

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ABSTRACT

Introduction: Chronic obstructive pulmonary disease (COPD) is a common, preventable and treatable disease that is characterised by persistent respiratory symptoms and airflow limitation that is due to airway and/or alveolar abnormalities usually caused by significant exposure to noxious particles or gases. Tobacco smoking, occupational exposure to organic and inorganic dusts, chemical agents and fumes and biomass cooking are the risk factors for COPD. Chronic dyspnoea, cough, sputum production, wheezing and chest tightness are the common symptoms of COPD. The present study was undertaken to evaluate the clinical, radiological and spirometric parameters in patients with COPD and to demonstrate a correlation between them. **Methods:** A hospital based cross sectional study was carried out among 200 cases of COPD. Their detailed history, thorough clinical examination and parameters like hemoglobin, serum creatinine, protein etc were investigated. The presence of co-morbidities was noted. **Results:** 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 comorbidity. **Conclusions:** Breathlessness was the most common symptom at presentation and diabetes and hypertension were the most common co-morbidities found.

KEYWORDS : Clinical profile, Co-morbidities, Hypertension, Patients, Symptoms

INTRODUCTION

According to global initiative for chronic obstructive lung disease, chronic obstructive pulmonary disease (COPD) is defined as preventable and treatable disease with some significant extra-pulmonary effects,¹ which may contribute to the severity in individual patients. COPD represents a significant and increasing healthcare concern as a leading cause of morbidity and mortality, worldwide. COPD is responsible for approximately 2.75 million deaths worldwide.² Moreover, COPD at present is 12th leading cause of disability worldwide, and is expected to be the fifth leading cause of disability by 2020.^{3,4} Chronic Obstructive Pulmonary Disease (COPD) is manifested by chronic cough, sputum production, wheezing and, in later stages, dyspnea, poor exercise tolerance, and signs/symptoms of right-sided heart failure.

Symptomatic COPD affects more than 5 percent of the adult population, is the fourth leading cause of death, and the twelfth leading cause of morbidity in the United States.^{5,6} Over the last couple of decades, there has been a fair deed of published data on the extra pulmonary manifestations of COPD.^{7,8} The consensus statement of GOLD has also defined COPD as a disease with significant extra pulmonary manifestations. Estimates of the population attributable fraction of tobacco smoking as a cause of COPD vary by age and population setting more recent estimates in those aged 30-69 years, 54% for men and 24% for women, are probably accurate and less than the widely quoted 80-90% in the 1984 US Surgeon General Report.⁹ Attributable fractions are higher in industrialized countries than developing countries other risk factors are also important, including exposure to biomass smoke, occupational exposures to dust and fumes, history of pulmonary tuberculosis, outdoor air pollution, and poor socioeconomic status asthma.¹⁰

However smoking remains the most important cause of COPD in western countries. Around 50% of smokers eventually develop COPD, although the risk falls by about half following smoking cessation.

METHODS

The study was a Hospital based cross sectional study conducted at the Department of General medicine, Karwar

institute of medical sciences, karwar, Karnataka, India during July 2019 to June 2020. Study population during the study period, out of total patients who attended the department of General medicine, 100 patients who were eligible as per the inclusion and exclusion criteria and willing to participate in the present study were included.

Inclusion Criteria

1. confirmed cases of copd
2. Willing to participate.

Exclusion Criteria

1. COPD patients with severe associated morbidities
2. Bed ridden patients and patients who were unable to give details

All patients who were eligible as per the inclusion and the exclusion criteria were asked their willingness to get participated in the present study after explaining the nature of the present study. As per the pre designed, pre tested, semi structured study questionnaire which was developed for the present study after extensive review of the literature detailed history was taken and recorded from all participants of the present study. Details like age, sex, smoking habits and symptoms were asked for all patients. Smoking history was taken in detail as to duration of smoking, frequency and dose. Symptoms also were asked as to duration of the symptoms, frequency and any aggravating and relieving factors. Any associated co-morbidities were also looked for. Details of exacerbations of COPD and hospitalization, Vital parameters and investigations like Hemoglobin, PCV, ESR, Bio-chemical test, Urea, Creatinine, protein, Albumin, BMI, FEV1, 6 min walking distance, Pallor, Icterus, Clubbing, Cyanosis, Lymphadenopathy, Pedal edema

Statistical Analysis

The collected data were entered in Microsoft excel sheet and SPSS version 22 was used for statistical analysis and collected presented with appropriate tables and graphs. Data analyzed using proportions & p value <0.5 considered significant.

RESULTS

Table 1 shows age distribution of patients. There were 23% of

the COPD patients in the age group of 35-49 years. There were 31% of the COPD patients in the age group of 50-59 years. And the majority of the COPD patients were found in the age group of more than 60 years of age i.e. 46% or almost half. This showed that 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.

Table 1: Age distribution of patients.

Age (years)	Number	%
35-49	23	23
50-59	31	31
≥60	46	46
Total	100	100

Table 2: Gender distribution of patients.

Sex	Number	%
Male	71	71
Female	29	29
Total	100	100

Table 2 shows gender distribution of patients. The. There were 71 male patients with COPD. There were 29 female patients with COPD. Thus it has been found out that the males were more affected with COPD as compared with females. The prevalence of COPD in males was 71% i.e. almost two third as compared to only 29% among the females i.e. about one third of the cases of the COPD belonged to females. The male to female ratio was found out to be 2.4:1. That for everyone female COPD patient, there were 2.4 males with the COPD.

Table 3: Smoking status of patients with COPD.

Smoking status	Frequency	%
Smokers	66	66
Non smokers	34	34
Total	100	100

Table 3 shows smoking status of patients with COPD. There were 66 patients of the COPD who were smokers at the time of the study. There were 34 patients of the COPD who were not smokers. Thus, it has been found out that 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. Thus, we would have got may be around 66 less number of cases if they were not smoking and only we would have got 34 cases of COPD which were due to other causes than the smoking.

Table 4: Symptoms of patients at presentation.

Symptoms	Number	%
Fever	22	22
Cough	83	83
Breathlessness	98	98

Table 4 shows symptoms of patients at presentation. Almost all i.e. 98 patients of the COPD had presented with symptom of breathlessness as it is a cardinal symptom of the COPD. 83 patients of the COPD presented to our outpatient department of the pulmonary medicine with cough. 22 patients of the COPD presented with fever. Thus, it has been found that the least proportion of patients of the COPD had fever i.e. in 22% of the cases. Cough was found in 83% of the cases. Breathless was found out to be in 98% of the cases.

Table 5: Co-morbidities of patients of COPD.

Co-morbidities	Number	%
Diabetes mellitus only	15	15
Hypertension only	16	16
Diabetes mellitus and hypertension	11	11
Diabetes mellitus, hypertension and hypothyroidism	1	1
Ischemic heart disease	4	4
Chronic liver disease	1	1
No co-morbidity	52	52
Total	100	100

Table 5 shows co-morbidities of patients of COPD. 15% of the

cases of the COPD had diabetes only as the comorbidity along with COPD and no other co-morbidity. 16% of the cases of the COPD had hypertension only as the co-morbidity along with COPD and no other comorbidity. 11% had diabetes mellitus and hypertension as the co-morbidity along with COPD. 4% had Ischemic heart disease as the co-morbidity along with COPD. 52% had no co-morbidities existing with the COPD. Two patients were found to have chronic liver disease and two were found to have diabetes mellitus, hypertension and hypothyroidism.

Table 6: Investigations of patients with COPD.

Parameters	Mean	SD
Vitals		
Pulse (beats/min)	91	13
Systolic blood pressure (mmHg)	126	13
Diastolic blood pressure (mmHg)	73	9
Investigations		
Haemoglobin (gm/dl)	10.9	1.8
PCV	44.9%	2.3
ESR (mm)	35	17
Bio chemical tests		
Urea (mg/dl)	42.5	9.9
Creatinine (mg/dl)	0.8	0.2
Proteins (mg/dl)	5.7	0.8
Albumin (mg/dl)	2.9	0.6
Others		
BMI (kg.m2)	21.8	5.4
FEV1	62%	23
6 min walk distance (meter)	308.3	106.6

Table 6 shows vital parameters and investigations. The mean pulse rate was 91 beats per min. the mean systolic blood pressure was 126 mmHg. The mean diastolic blood pressure was 73 mmHg. These vitals were found to be in normal these COPD patients. But the hemoglobin level was less than normal at mean value of 10.98 gm/dl. The PCV was 44.9% and the ESR mean value was 35 mm which is significantly increased. The urea mean level was 42.5 mg/dl. Serum creatinine was found to be within normal limits of mean value of 0.8 mg/dl. The protein mean value was 57 mg/dl. The albumin mean value was 2.9 mg/dl. The ejection fraction on echo was found out to be 50.1% on an average. The mean BMI was within normal limits and the six min walk mean.

DISCUSSION

Authors found out that the males were more affected with COPD as compared with females. The male to female ratio was found out to be 2.4:1. Pendone C et al, ⁷ found in their study that the mean age of the patients was 73.3 years and the male to female ratio was 3.29:1 which is in accordance to the findings of the present study.12 Ko FW et al, found a higher male to female ratio in their study and they reported that it was 5.94:1 which is higher than the findings of the present study.¹³

“The lung health study” was carried out in people who smoked and were aged 35-60 years of age and it was found that they had obstruction in the airway which was of mild to moderate in nature. They were followed for over a period of 14 years. Only 12% of these people died during this follow up period. Out of these who died, 33% died due to cancer while 22% died due to diseases of the cardiovascular system. Only in 8% of the cases it was possible to attribute the cause of the death as respiratory disease. They did a different analysis of causes of death among patients with having severe degree of COPD. Thus, here they found that the commonest cause of death was due to diseases of the respiratory system.¹⁴

A study tried to assess the relation between the severe COPD and the nutritional status in Canada. They followed the people for 3-5 years. Underweight was the strongest predictor of mortality in this study. But they cautioned to conclude like this as it was not an interventional study.¹⁵

Marti S et al, noted that if the body mass index was less than 25 kg/m2 along with the presence of the comorbidities then it was a very strong predictor of the deaths in patients with

COPD. They suggested that low body mass index and also the presence of co-morbidities should be considered when the physician wants to manage a case of COPD. Marti S et al, noted that if the body mass index was less than 25 kg/m² along with the presence of the comorbidities then it was a very strong predictor of the deaths in patients with COPD. They suggested that low body mass index and also the presence of co-morbidities should be considered when the physician wants to manage a case of COPD.¹⁶

Soriano JB et al, concluded at the end of their study that for classification of the risk clinically GOLD COPD is difficult to use as a predictor beyond three years of follow up.¹⁷

Boutou AK et al, showed that gas transfer proved to be a good predictor of survival. It was rated to be better than spirometry by the author. Thus, the authors supported the use of gas transfer technique.¹⁸

Egan TM et al, observed in their study that the osteoprotegrin levels were low in patients with COPD. They had increased levels of C reactive proteins. These levels were very high in patients who were having repeated episodes.¹⁹

Soler-Cataluna JJ et al, found that if a patient had repeated episodes of acute exacerbations of COPD, then the chances of such patients dying is much more than the patients with stable COPD. This rate can still increase if there is needed to repeatedly admit the patient in the hospital for the treatment of the acute exacerbations of COPD. Hence based on these findings, the author suggested that the attempts should be made to treat the patient in such a way that he will again not suffer from acute exacerbations of COPD so that outcome can be improved.²⁰

CONCLUSION

Thus we conclude that COPD was observed common among the male population in elderly patients more than 60 years of age. Smoking and Exposure to chullah smoke and occupation such as labourer, farmers and house wives who are exposed dust are at risk of developing COPD. The most common presenting symptom among the study patients was breathlessness followed by cough. Diabetes and hypertension were the most common co-morbidities found. Thus, the studies of clinical profile of patients with COPD has thrown a considerable light on the way the patients presented to the outpatient department, the most common presentation of the COPD, the co-morbidities present in the cases with the COPD. This picture gives an idea for further management of the cases with the COPD.

Conflict of Interest: None declared

Ethical Approval: The study was approved by the Institutional Ethics Committee

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