



Original Research Article

A study of COPD and its associated factors in patients attending the OPD of a tertiary care hospital

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ABSTRACT

Introduction: Chronic obstructive pulmonary diseases is a major cause of health care burden worldwide and the only leading cause of death that is increasing in prevalence. The common risk factors are tobacco smoke, occupational dusts, indoor air pollution, poorly vented dwellings and outdoor air pollution.

Materials and Methods: A descriptive case series study was conducted in a tertiary care centre to study the risk factors associated with COPD.

Results: A total of 50 patients with COPD attending pulmonology clinic were included in the study. All the patients were smokers with a maximum of 60 pack years and minimum of 20 pack years.

Conclusion: Smoking was found to be the most common associated factors, thus interventions towards creating awareness regarding smoking tobacco and its ill effects on health is essential.

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1. Introduction

The global initiative for obstructive lung diseases (GOLD) (1) defines chronic obstructive pulmonary diseases (COPD) as, a disease state characterized by airflow limitation that is not fully reversible. The airflow limitation is usually both progressive & associated with an abnormal inflammatory response of the lungs to noxious particles & gases. The common risk factors for COPD are tobacco smoke, occupational filths, indoor air pollution, poorly vented abodes and outdoor air pollution.

Worldwide COPD is one of the major cause of health care burden and is the major cause of death.¹ Globally, the upsurge of COPD will place the disease at 3rd position as the cause of death and at 5th position as the cause of loss of disability adjusted life years (DALY'S) by 2020.² COPD is the fifth leading cause of premature mortality, it can be attributed to the increasing number of deaths in India, China and other Asian countries. It is difficult to estimate the

true burden of COPD because it is usually not recognised until the persons develops symptoms or the disease has progressed moderately. Thus this study aims at assessing the risk factors associated with COPD and provide knowledge to develop preventive measures.

2. Materials and Methods

A descriptive case series study was conducted in a tertiary care teaching hospital for a period of 18 months between 2017 and 2019. All patients attending the respiratory medicine and general medicine OPD were included in the study after attaining informed consent. The study was conducted for a period of two years post ethical committee clearance. Socio demographic, personal history and symptoms were collected by using a pretested questioner. Clinical examination was done to assess the disease. Chest X-rays and pulmonary function tests were done to assess the disease progression.

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3. Results

A total of 50 patients with COPD attending pulmonology clinic were counted in the study. The mean age of the participants was 63.28 ± 10.60 (maximum 85 years and minimum 43 years Table 1. All the patients were smokers with a maximum of 60 pack years and minimum of 20 pack years. As seen in Table 2, 28%(14) of patients did not had any co morbid conditions, 26%(13) had DM alone, 32%(16) had Hypertension alone, 14%(7) had both DM & Hypertension. In our study 6% and 12% of patient were underweight and obese respectively. Symptoms like cough with expectoration, wheeze, and exertional dyspnea were considered, Majority of COPD patients (21) had symptoms for 6 to 10 years. Of the 50 patients 10%(5) had cyanosis, 12%(6) had clubbing, 18%(9) had pedal edema and 82%(41) didn't had any of the above mentioned signs. Among the participants 20%(10) had mild airway obstruction, 46%(23) had moderate airway obstruction, 20%(10) had severe airway obstruction, 14%(7) had very severe airway obstruction. It was observed that 32% (16) had signs of increased bronchovascular markings, 30% (15) features of emphysema, 12% (6) had Cardiomegaly and 26% (13) of the participants had normal chest X-ray

Table 1:

Age	Frequency	Percentage
40-49	4	8%
50-59	15	30%
60-69	14	28%
70-79	13	26%
80-89	4	8%

4. Discussion

Literature says that COPD is common among males than females. The M: F ratio varied for 1.32:1 to 2.6:1 with median ratio of 1.6:1.5. There were some variations in the prevalence rates depending upon the place of residence and socio economic grouping but significant differences were observed based on habit of smoking and exposures to combustion of solid fuels and environmental tobacco smoke.³ Smoking is the best-studied COPD risk factor, it is not the only one and there is consistent evidence from epidemiologic studies that non-smokers may develop chronic airflow obstruction.

When compared to non-smokers, a higher prevalence of respiratory symptoms and lung function abnormalities are seen among smokers, which is adding to the decline of annual rate of in FEV1 and increasing the COPD mortality rate among smokers. The risk for COPD in smokers is dose related.⁴ The present study also showed that all the study participants had history of smoking. It was observed in the study that chronic air flow obstruction was dose related. The present study revealed that the presentation of the

Table 2:

Variable	Frequency	Percentage
Smoking in pack years		
20-25	10	20
26-30	10	20
31-35	6	12
36-40	8	16
41-45	6	12
46-50	6	12
51-55	0	
56-60	4	8
Comorbidities		
Diabetes	13	26
Hypertension	16	32
Both	7	14
None	14	28
BMI		
Less than 18 Underweight	3	6
18-25 Normal	24	48
25.1- 30 High normal	17	34
30.1 -35 mild obesity	6	12
35.1- 40 Moderate	0	0
Signs		
Cyanosis	5	10
Clubbing	6	12
Pedal oedema	9	18
None	41	82
Pulmonary function test		
Mild	10	20
Moderate	23	46
Severe	10	20
Very severe	7	14
Chest X ray		
Increased bronchovascular markings	16	32
Features suggestive of emphysema	15	30
Cardiomegaly	6	12
Normal	13	26

disease was increasing as the age advanced. Elderly COPD patients often have other disabling diseases and may lack supportive social networks which would enable home care and diminish readmissions. The present study showed 70% of the participants had comorbidities, Although the present study cannot explain the association of the comorbidities, chronic diseases like diabetes mellitus and hypertension could be because of decreased physical activity among COPD patients.

Comorbidities are often associated with COPD and have a significant impact on patients' quality of life, exacerbation frequency, and survival. It is found in literature that coexistence of cardiovascular disease (IHD, heart failure, and atrial fibrillation), PHT, lung cancer pulmonary fibrosis, diabetes, peptic ulcer disease, and CKD are worsening the prognosis of the disease process. Associated comorbidities,

overlapping symptoms, underdiagnoses contributes to the difficulty of establishing the true prevalence of COPD in the community. Although further work is required to develop screening strategies to identify specific comorbidities, similar to those that are standard of care for diabetes and hypertension management in primary care settings, which will help in early diagnosis and thereby improving the quality of life of COPD patients,^{5–7} thus there is a need to explore this situation and educate the patients regarding importance of physical activity and regular follow up. Majority of the study participants had normal BMI in our study. There is clear literature stating the role of nutrition as an independent risk factor for development of COPD. Malnutrition and weight loss can reduce respiratory muscle strength and capacity, apparently by decreasing both respiratory muscle mass and the strength of the remaining muscle fibres.^{8,9}

17% of COPD patients had malnutrition this study showed that malnutrition and low BMI affect the pulmonary function tests negatively and that the amount of protein in the diet content is important to protect the muscle mass. In addition to these, malnutrition was found to be associated with the severity of the disease. Thus the study recommends that nutritional status should be evaluated in every COPD patient, and the diet should be tailored individually according to the needs.^{10,11}

5. Conclusions

It is observed that smoking is the most common associated factor with COPD, thus interventions towards creating awareness regarding smoking tobacco and its ill effects on health is essential. Comorbidities with COPD will decrease the quality of life of the patients, hence screening for associated comorbidities and awareness programs will help the patients modify the possible risk factors and improve their quality of life.

6. Source of Funding

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7. Conflict of Interest

None

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