



## CLINICAL PROFILE OF PATIENTS OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE

### Medicine

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### ABSTRACT

**Background:** chronic obstructive pulmonary disease [copd] is the third leading cause of death in the us and a prevalent condition around the world that results in high mortality, morbidity, and functional limitations that impact the quality of life, clinical profile of patients of chronic obstructive pulmonary disease. **Methods:** we conducted a cross sectional study using baseline data from an ongoing clinical trial, additional study criteria required patients to be older than 26 to 75 years, patients reported their level of breathlessness. most of the patients with chronic obstructive pulmonary disease, study was conducted at All india medical sciences Patna bihar. **Conclusions:** chronic obstructive pulmonary disease, is a systemic disorder caused mainly by smoking and is characterized by progressive irreversible, copd was found to be more in males. and cough was the most common presenting symptoms. primary care chronic disease management model could improve quality of life for patients COPD.

### KEYWORDS

breathlessness, chest pain, smoking, cough, loss of weight

### INTRODUCTION

Chronic obstructive pulmonary disease [COPD] occurs when permanent blockages from within the pulmonary system [ the term " pulmonary refers to the lungs and respiratory system ] that interfere with the transfer of viral gasses, to be diagnosed with copd means that some portion of one bronchi or alveoli have become permanently obstructed, reducing the volume of air that can be handled by the lungs. there are two underlying disorder that can cause copd, emphysema and chronic bronchitis. Bronchitis is literally an inflammation of the bronchi. The walls of the bronchi inside the lungs become inflamed, and this inflammation decrease the bronchus diameter so that less air is able to flow through than normal. The inflammation process promotes excessive production of mucous. emphysema also reduces the efficiency of the gas exchange process, only in a different manner. Emphysema affects the alveoli, specifically their sensitive membrane through which the gas exchange occurs. Emphysema causes alveolar membrane to lose elasticity, and then actually rip and tear, broken alveolar membranes cannot be regenerated by the body. asthma is another respiratory disease that may be associated with copd but which is not itself classified as copd . people who have asthma have highly sensitive bronchi that are more reactive to environmental irritants like smoke, dust and pollen than are the bronchi of people who do not have asthma. treatment guidelines for copd differ based on disease severity classification and those are determined by spirometry test results an objective measure of airflow restriction along with patient symptoms and history of prior exacerbations. copd is the fourth leading cause of death in the world. It presents an important public health , as they are both preventable and treatable. Chronic morbidity and also death are caused by COPD. the most important and common co morbidity associated with copd is cardiovascular disease. Other complication that are under diagnosed are osteoporosis, depression. india has 17 million person living with chronic obstructive pulmonary disease number copd can also be associated with lung cancer and can be a major contributor to death in copd patients. during an asthma attack , asthma patients bronchi swell and narrow in a manner similar to what occurs in brochitis, restricting volume of gasses that can be transferred between the blood and the air.

Each time alveplar membranes burts , more surface area ithin the lung necessary for gas , asthma and copd is unclear, there is some evidence to support the dutch hypothesis that both asthma and copd have common genetic origins and may represent dutch hypothesis is accurate or not, but numerous researchers believed that it is at least partially true that asthamatic people may have a heightened genetic vulnerability for COPD. All available data indicate that COPD is often under diagnosed, detected very late and/or misdiagnosed as asthma.

Pulmonary rehabilitation has been shown in a number of randomized

clinical trials to improve functional exercise capacity and health related quality of life. Many intresting approaches, such as lung volume reduction, lung transplantation, nutritional support and mechanical ventilation, are in various stages of clinical use and evaluation.

### PATIENTS AND METHODS

We conducted a cross sectional study using baseline data, study was conducted at Department of medicine, All india institute of medical sciences Patna Bihar, patients with chronic obstructive pulmonary disease, patients reported their level of breathlessness using the copd informed consent was obtained from each patients.

Patients with known cases or newly diagnosed cases of chronic pulmonary obstructive disease and patients willing to give informed consent to participate in the study.

Patients other than COPD, patients who are not willing to participate in the study, seriously ill.

Physical examination to look for nutritional status, Spirometry with reversibility was carried out for each and every patient. Patient's name, age, sex, race, marital status, occupation and address were recorded. Symptoms such as dyspnoea, cough, fever, sputum, hemoptysis, chest pain, and loss of appetite, loss of weight, dysphasia, and night sweat were recorded and analyzed. Past history of anti- tubercular treatment, any associated co-morbidity, any medication patient taking, patient any hormonal therapy, any congenital or acquired heart diseases, any history of allergy and any history of surgery in past. Personnel history had been taken as smoking habit, alcohol intake and any other exposure to smoke and dust and any other addiction. Family history of infertility, diabetes, systemic hypertension and heart diseases was taken. Menstrual history had been taken of age of menarche, last menstrual period, and age of menopause. General physical examination includes height, weight, body mass index, pulse, blood pressure, edema, pallor, icterus, peripheral lymphadenopathy, mid arm circumference, mid-thigh circumference, cyanosis, clubbing and any signs of malnutrition like Bitot's spot , koilonychias etc and thoroughly respiratory , abdominal, central nervous and cardiovascular examination had been done. Spirometry with reversibility is done and classified COPD.

### RESULTS

Table 1 shows that mean age in case group (57.13 ± 11.149 years) was moderately higher than control group (54.60 ± 13.074 years). But there is no significant difference seen between COPD cases and control (p value = 0.34).

**Table 1: Age wise distribution of the COPD patients.**

Age in years						
Group	N	Mean	Standard deviation	Minimum	Maximum	P Value
Cases	75	57.13	11.149	32	75	
Control	25	54.60	13.074	26	75	
Total	100	56.50	11.643	26	75	

**Table 2: Sex wise distribution of the COPD patients.**

Sex	Cases		Control		Total
	N	%	N	%	N
Female	7	9.33	2	8	9
Male	68	90.67	23	92	91
Total	75	100.00	25	100	100

**Table 3: Symptom wise distribution of the COPD patients.**

	Cases		Control		Total	P Value
	NO	%	NO	%	NO	
SOB	75	100.00	15	60	90	<0.001
Cough	36	48.00	15	60	51	<0.001
Expectoration	20	26.00	3	12	23	0.003
Edema	13	17.33	3	12	16	0.75
Chest pain	2	2.67	5	20	7	0.013

Table 2 reveals the male dominance of the disease. Male cases were 90.67% and female cases were 9.33%. Controls were matched in this respect.

Table 3 represents that the symptoms of SOB was 100%, cough was 48%, expectoration was 26%, Edema was 17.33 % and chest pain was 2.67% where as in control groups SOB was 60 % , cough was 60 % , expectoration was 12 % edema was 17.33 % and chest pain was 2.67 % . Cough and expectoration and SOB are significant higher in the COPD cases as compared with the control group (p value <0.005).

Table 4 represents that the cases of COPD usually have grade III dyspnoea i.e. 50.67%, followed by grade II i.e. 33.33% of mMRC wise distribution in COPD cases whereas in control groups there are under 0 and 1 grade mMRC grading.

**Table 4: mMRC grading of dyspnoea wise distribution of COPD patients.**

mMRC	Cases		Control		Total
	NO	%	NO	%	NO
0	0	0.00	14	56	14
1	1	1.33	11	44	12
2	25	33.33	0	0	25
3	38	50.67	0	0	38
4	11	14.67	0	0	11
Total	75	100	25	100	100

**Table 5: Duration of illness wise distribution of COPD patients.**

Duration of illness in years				
Group	N	Mean	Std. Deviation	P Value
Cases	75	6.84	5.430	<0.001
Control	25	0.43	0.275	
Total	100	5.23	5.46	

**Table 6: Smoking history in pack year wise distribution of COPD cases and controls.**

Smoking history in pack/year				
Group	N	Mean	Std. Deviation	P Value
Cases	70	69.70	36.164	<0.001
Control	25	13.84	7.867	
Total	95	55.00	39.841	

**Table 7: Spirometry wise distribution of the COPD cases and controls.**

Variable	Group	N	Mean	Standard Deviation	P value
FEV1/FVC	cases	75	49.27	8.526	<0.001
	control	25	91.84	5.728	
FEV1 % predicted	cases	75	42.15	15.047	<0.001
	control	25	99.16	7.414	
FVC % predicted	cases	75	72.00	18.762	<0.001
	control	25	96.52	5.875	

Table 5 signifies that the duration of illness in COPD cases was 6.84 ± 5.43 years which was statistically significant higher as compared to the control group 0.43 ± 0.275 years (p value <0.001).

Table 6 shows that mean Pack-Years of smoking in COPD cases was 69.70± 36.164 and for controls was 13.84± 7.867 which is statistically significant (p value <0.001).

Spirometry parameter FEV1, FEV1 and FVC was statistically significant (p value <0.001) between cases and control groups as shown in Table 7.

**DISCUSSION**

The Age and range of the study COPD patients was between 26 – 75 years. According to Curkendall et al COPD is common in older population and is highly prevalent in those aged more than 75 years. Approximately 9-10% prevalence of COPD was found in adults aged less than forty years. The males are affected more than females. This study also indicates that majority of our patients were male (90%) with the mean age of 57.33 years. This observation agrees with the fact that COPD is common in males and is greater in older age groups. It was observed from the results of the current study that mean age of patients with COPD was 57.13±11.14 years in case group and 54±13.08 years in control group with the highest prevalence among those over 60 years. In contrary to our study, a study from 1998– 2009 showed that COPD prevalence was more in elder women of age 65-74 years as well as in elder men of 75- 82 years.

smoking is the main cause of COPD, the smoking habit and no. of pack years correlates with the disease severity in COPD patients. The likelihood of developing COPD increases with the total smoke exposure. In our study pack years had a statistically significant difference between cases and controls. The mean value of pack years was 69.74±36.16 in the case group while it was 13.84±7.86 in the control group. This difference was statically significant (P value <0.001). Our study matched with a study by Pirrozi et al who reported that exposure to personal smoke and second hand smoke increases the risk and frequent exacerbations. On the contrary in a study done by Seyed et al they observed no significant difference with respect to smoking habits.

our study statistically significant difference (p= <0.001) was observed between COPD case and control group on basis of duration of illness in years. In cases it was 6.8±5.43 years and control group it is 0.43±0.27 years. In the study done by Gupta et al, the mean duration of symptoms was 8.8±4.8 years. Thus duration of illness is much higher in COPD patient as compare to control groups.

The 75 cases of COPD had dyspnoea. Majority of them (50.67 %) had grade 3 dyspnoea according to mMRC scale and 33.33% of cases were dyspnoea at rest (grade 4), 14 % had grade 2 dyspnoea, 1.33 % had grade 1 dyspnoea whereas in control group 56 % had grade 1 and 44 % had grade 2 dyspnoea. This was found to be highly significant when compared with control group (P value <0.001). This was in contrast to lower dyspnoea reported by de Torres (grade 0-1 MMRC) in western population with COPD. This reflects the delay in seeking medical attention in Indian patients. More over majority of these patients tend to be smokers and usually ignore the cough which runs for years which is the second most common symptom in COPD cases which is 48 % in our study. The most common symptom that make patient to go to the doctor is breathlessness. According to GOLD guidelines patients usually experience worsening dyspnoea when their FEV<sub>1</sub> falls below 50% of predicted.

our study spirometry shows significant difference between the cases and control groups. It was observed from the results of the current study that mean of FEV<sub>1</sub>% predicted, FVC % predicted and FEV<sub>1</sub>/FVC ratio in patients with COPD was 42.15±15.04 %, 72.0±18.76 % and 49.27±8.52 % in case group as compared to 99.16±7.41%, 96.52±5.87 % and 91.84±5.72 % in control group subsequently. difference between the severities of disease (p value <0.001). In obstructive lung disease, the FEV<sub>1</sub> is reduced because of obstacle to escape of air from lungs. This will lead to reduced FEV1/FVC ratio.

**CONCLUSION**

Chronic obstructive pulmonary disease COPD is a systemic disorder caused mainly by smoking and is characterized by progressive irreversible, partially, it was more common in males compared to

females. Smoking was the most major risk factor for chronic obstructive pulmonary disease.

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