



## “PREVALENCE OF BRONCHIECTASIS IN COPD PATIENTS”

### Pulmonary Medicine

**Dr. Vikash Kumar** M.D. Assistant Professor Department of T.B. and Chest, NMCH, Jamuhar, Rohatas, Bihar

**Dr. Anjali P. Ghare\*** M.D. Associate Professor Department of T.B. and Chest, NMCH, Jamuhar, Rohtas, Bihar  
\*Corresponding Author

### ABSTRACT

**BACKGROUND** :- COPD is a leading cause of morbidity and mortality worldwide and results in an economic and social burden to individual and the Community. Exacerbations and co-morbidities leads to the overall severity in individual patients. Different studies have shown that the presence of bronchiectasis is associated with colonization with pathogenic bacteria especially Pseudomonas and may be a predictor of exacerbations.

**AIMS AND OBJECTIVES** : To study the prevalence of prevalence of bronchiectasis in COPD patients.

**MATERIAL AND METHOD** : This study was done on COPD patients diagnosed in NMCH, Jamuhar between November 2017 and February 2019. All COPD cases were subjected to HRCT thorax. Diagnosis of bronchiectasis was done from HRCT thorax.

**CONCLUSION** :- the prevalence of bronchiectasis in COPD patients in our study came out to be 9.75%. In male it came to be 10.2% while in female it came to be 9.09%.

### KEYWORDS

COPD, Bronchiectasis, HRCT, Exacerbations.

### INTRODUCTION

Chronic obstructive pulmonary disease (COPD), a common preventable and treatable disease, is characterized by persistent airflow limitation that is usually progressive and associated with an enhanced chronic inflammatory response in the airways and the lung to noxious particles or gases<sup>1</sup>.

Chronic obstructive pulmonary disease is a leading cause of morbidity and mortality world- wide and it always leads to economic, mental, physical and social burden to patients and the community<sup>2,3</sup>. Exacerbations and comorbidities leads to the overall severity in individual patients of chronic obstructive pulmonary disease. Different studies in past have shown that the presence of bronchiectasis is associated with colonization with pathogenic bacteria like Pseudomonas and it can be a predictor of exacerbations of chronic obstructive pulmonary disease<sup>4</sup>. Spirometry is required to make the diagnosis of chronic obstructive pulmonary disease. The presence of post bronchodilator FEV1/FVC<0.07 along with clinical symptoms (breathlessness, cough ) confirms the diagnosis chronic obstructive pulmonary disease<sup>4</sup>.

Bronchiectasis is permanent dilatation of bronchii. Due to the widespread use of high resolution CT (FIRCT) scanning now a days in patients with respiratory symptoms, bronchiectasis is being diagnosed in Chronic obstructive pulmonary disease Patients which was not diagnosed on clinical basis usually in past. Patients with classical, idiopathic, postinfectious and congenital bronchiectasis are usually well described<sup>5</sup>. In 2002, Barker showed the overlapping features between bronchiectasis and Chronic obstructive pulmonary disease<sup>6</sup>

Martinez-Carcla and colleagues<sup>7</sup> found 57.6% bronchiectasis in high resolution CT (FIRCT) scan of 91 Spanish patients. A study done in East London<sup>8</sup> showed 50% of bronchiectasis in COPD patients. In context of above background we did our own study to find out prevalence of bronchiectasis in Chronic obstructive pulmonary disease patients attending NMCFI Jamuhar. If we can know the magnitude of bronchiectasis on Chronic obstructive pulmonary disease patients we can take measures to reduce the frequency of exacerbations.

### AIMS AND OBJECTIVES

To study the prevalence of bronchiectasis in chronic obstructive pulmonary disease patients.

### MATERIALS AND METHODS

**Study duration** - November 2017 to February 2019.

**Inclusion criteria** - Cases of COPD patients of age 40-70yr attending NMCH Jamuhar.

### Exclusion criteria-

1. Presence of secondary immunodeficiency states like HIV.
2. Patients having past history of pulmonary TB or having active TB.
3. Patients having other chronic lung disease (ILD)

### DATA COLLECTION

A written informed consent was taken from each patient for inclusion in the study. A detailed clinical history and previous treatment history for anti-tuberculosis therapy was taken from every Patient. All patients were subjected to sputum-smear microscopy for acid-fast bacillus (AFB) and chest radiography at the time of enrollment in for the study. PFT was done in every patient. After diagnosis of chronic obstructive pulmonary disease each patient enrolled in study were asked to get HRCT thorax done. Diagnosis of bronchiectasis was done from HRCT thorax only.

### RESULTS –

Spirometry was done in each Patients. The following parameters were recorded- forced expiratory volume in ls(FEV1), forced vital capacity (FVC) and FEV1/FVC%. The presence of post bronchodilator FEV1/FVC<0.07 along with

clinical symptoms confirms the diagnosis chronic obstructive pulmonary disease. **Table 1.** Base line value.

AGE (mean value)	59.67
MALE	49
FEMALE	33
GOLD Stage-1	15.85%
GOLD Stage-2	30.48%
GOLD Stage-3	25.60%
GOLD Stage-4	28.04%
(FEV1) in litre	1.31
(FEV1) % of predicted	51.26%
(FVC) in litre	2.39
FEV1/FVC%.	0.57

Of all patients 15.85% belongs to GOLD Stage-1of chronic obstructive pulmonary disease, 30.48% belongs to GOLD Stage-2 of chronic obstructive pulmonary disease, 25.60% belongs to GOLD Stage-3 of chronic obstructive pulmonary disease, 28.04% belongs to GOLD Stage-4 of chronic obstructive pulmonary disease

**Table 2-** Prevalence of BRONCHIECTASIS in chronic obstructive pulmonary disease

SEX	TOTAL	COPD WITH BRONCHIECTASIS	PREVALENCE
MALE	49	5	10.2%
FEMALE	33	3	9.09%
TOTAL	82	8	9.75%

## DISCUSSION

The aim of our study was to investigate the prevalence of bronchiectasis in chronic obstructive pulmonary disease patients. In this study 86 patients were enrolled out of which only 82 students (49 males and 33 females) completed the study. Out of 49 male patients 5 had bronchiectasis. Out of 33 female patients 3 had bronchiectasis. In one of patients location of bronchiectasis was in upper lobe. In three of patients location of bronchiectasis was in middle lobe. In four of patients location of bronchiectasis was in lower lobe. Prevalence of bronchiectasis in chronic obstructive pulmonary disease patients in our study came to be 9.57% which is lower than Martinez-Carcla and colleagues<sup>7</sup> study who found 57.6% bronchiectasis in HRCT scan of 91 Spanish patients. While a study done in East London<sup>8</sup> showed 50% of bronchiectasis in chronic obstructive pulmonary disease patients.

Our study have some limitations. First, it was done on small population group.

Second, the patients in this study were from a single medical college.

## CONCLUSION

In our study prevalence of bronchiectasis in chronic obstructive pulmonary disease patients came to be 9.75%. In male it came to be 10.2% while in female it came to be 9.09%

## REFERENCE-

1. GOLD update 2014 page no.2
2. Lopez AD, Shibuya K, Rao C, et al. Chronic obstructive pulmonary disease: current burden and future projections. *Eur Respir J* 2002;27:397-412.
3. Mathers CD, Loncar D. Projections of global mortality and burden of disease from 2002 to 2030. *PLoS Med* 2006;3:e442
4. Zwar NA, Marks GB, Hermiz O, Middleton S, Comino EJ, Hasanl, Vagholkar S, Wilson SF. *Med J Aust.* 2011 Aug 15; 195(4): 168-71.
5. O'Donnell, A.E. Bronchiectasis. *Chest.* 2008; 134: 815-823
6. Barker, A.F. Bronchiectasis. *N Engl J Med.* 2002; 346: 1383-1393
7. Martmez - Garcia, M.A., Soler - Cataluna, J.J., Sanz, YD et al. Factor associated with bronchiectasis in patients with COPD. *Chest.* 2011; 140: 1130-1137
8. Patel, IS, Vlahos, I, Wilkinson, TM et al. Bronchiectasis, exacerbation indices and inflammation in COPD. *Am J Respir Crit Care Med.* 2004; 170: 400-407