

Frequency of GERD in COPD Patients

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ABSTRACT

Objectives: To determine the frequency of GERD in COPD patients. **Study Design:** Cross-sectional study. **Place and duration of study:** Department of Pulmonology, DHQ Hospital, Faisalabad from 1/03/2014 to 31/08/2015. **Methodology:** 95 patients of COPD (All patients with established diagnosis of COPD according to operational definition, Age > 40 years, Either Gender, FEV1/FVC <0.7 with >20 pack-year history of smoking). **Results:** In our study, out of 95 cases of COPD, 38.95% (n=37) were between 40-60 years of age, while 61.05% (n=58) had >60 years of age, common age was 58.37±8.36 years, 90.5% (n=86) were male and 9.5% (n=9) were females. Frequency of GERD in COPD patients was recorded in 43.16% (n=41), **Conclusion:** it was concluded that the frequency of GERD is high among patients with COPD. So, it is recommended that every patient who present with COPD, should be sort out for GERD. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem.

Keywords: Chronic obstructive pulmonary disease, Gastroesophageal reflux disease, frequency.

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INTRODUCTION

Chronic obstructive pulmonary disease (COPD) is a major global health burden in both developed and developing countries. The disease is predicted to become the third leading cause of worldwide disease burden by 2030.¹ COPD is a common preventable and treatable disease, which is characterized by persistent airflow limitation that is usually progressive and associated with an abnormal inflammatory response of the lung to noxious particles or gases.²

Exacerbations of COPD are an important determinant of patient's quality of life and can aggravate disease progression which is associated with increased morbidity and the use of health care resource.³ Exacerbations of COPD are characterized by an acute increase in cough frequency and severity; dyspnea; and change in amount and/or character of sputum.⁴ The underlying mechanisms of acute exacerbation of COPD are still unclear. It is estimated that about 50-60% of cases are due to respiratory infections, 10% are due to environmental pollutions and 25-35% are of unknown etiology.⁵

One of the proposed risk factors for COPD exacerbations is gastroesophageal reflux disease (GERD). Gastroesophageal reflux disease is a common gastrointestinal disease that is defined as a

condition of troublesome symptoms and / or complications caused from reflex of stomach contents.⁶ GERD may cause, trigger or exacerbate many pulmonary diseases including chronic cough, bronchial asthma, bronchial pneumonia and pulmonary fibrosis.⁷ Microaspiration of gastric contents and vagal nerve induced bronchospasm from gastric acid irritation may contribute to the observed association between GERD and pulmonary disease. The physiological link between GERD and pulmonary diseases has been extensively studied in asthma; however, in other pulmonary diseases including COPD, the link has been less well studied.⁸

In a study done in Karachi, it was found that frequency of GERD in subjects with COPD was 39.7%.⁸ In another study conducted in Iran, it has been established that GERD positive patients experienced more exacerbations of COPD. The rate of hospitalization due to COPD exacerbations was significantly higher in GERD positive patients and they had more severe COPD and more concurrent use of multiple therapies as compared with GERD negative patients.⁵

The rationale of my study is to explore the frequency of GERD in COPD patients and to create awareness among health care professionals that

GERD is an important risk factor for COPD severity. This study will also help us in future to establish the fact that appropriate management and prevention of GERD in COPD patients will decrease morbidity.

Objectives

To determine the frequency of GERD in COPD patients

Operational Definitions

COPD

1. Diagnosis of COPD was accepted according to GOLD's criteria if: 8
2. FEV1/FVC <0.7
3. Age > 40 year
4. Smoker with >20 pack-year history of smoking

GERD

- GERD was evaluated with frequency scale for symptoms of GERD (FSSG) questionnaire consisting of 12 questions attached as an annexure. The frequency of each question was quantified on a scale ranging from 0 to 4 points as follows: 0: none (not in past year); 1: occasionally (a few times in past year); 2: sometimes (a few times in past month); 3; often (a few times in past week); 4: always (everyday). Patients with FSSG score of more than 8 were considered as GERD positive.⁹

METHODOLOGY

Setting: Department of Pulmonology, DHQ Hospital, Faisalabad

Duration: From 1/03/2014 to 31/08/2015

Study design: Cross-sectional study

Sampling techniques: Non probability purposive sampling

Sample size calculation: The sample size is calculated by using WHO sample size calculator. P: 39.7%,⁸ Confidence level: 95%, Absolute precision required: 10%, Sample size: 95

Inclusion criteria:

- All patients with established diagnosis of COPD according to operational definition
- Age > 40 years
- Either Gender
- FEV1/FVC <0.7
- >20 pack-year history of smoking

Exclusion criteria:

- Known respiratory disorders other than COPD (such a asthma or idiopathic pulmonary fibrosis) (ruled out by history, physical examination and pulmonary function tests)

- Known esophageal diseases such as cancer, achalasia, stricture or active peptic ulcer disease. (ruled out by history and physical examination)

RESULTS

A total of 95 cases fulfilling the inclusion/exclusion criteria were enrolled to determine the frequency of GERD in COPD patients.

Age distribution of the patients was done which shows that 38.95% (n=37) were between 40-60 years of age, while 61.05% (n=58) had >60 years of age, mean±sd was calculated as 58.37±8.36 years. (Table No. 1)

Patients were distributed according to their gender, which shows that 90.5% (n=86) were male and 9.5% (n=9) were females. (Table No. 2)

Frequency of GERD in COPD patients was recorded in 43.16% (n=41) while 56.84% (n=54) had no findings of the morbidity. (Table No. 3)

Table 1: Age distribution (n=95)

Age(in years)	No. of patients	%
40-60	37	38.95
>60	58	61.05
Total	95	100

mean±sd: 58.37±8.36

Table 2: Gender distribution (n=95)

Gender	No. of patients	%
Male	86	90.5
Female	9	9.5
Total	95	100

Table 3: Frequency of GERD in COPD patients (n=95)

GERD	No. of patients	%
Yes	41	43.16
No	54	56.84
Total	95	100

DISCUSSION

Gastroesophageal reflux disease (GERD) is one of the most common causes of chronic cough and a potential risk factor for exacerbation of chronic obstructive pulmonary disease (COPD). The association between gastroesophageal reflux (GERD) and chronic obstructive pulmonary disease (COPD) has been previously investigated.¹⁰ Cross-sectional studies with limited sample size have

reported, with some exceptions, that esophageal disease-related symptoms are more common and more severe in COPD patients than in other general medicine patients.¹¹⁻¹³ The cause of this important association is unknown, but these data suggest not only that GERD is more common in COPD, but also that by increasing exacerbations, GERD may alter COPD presentation and course.

We planned this study to explore the frequency of GERD in COPD patients and to create awareness among health care professionals that GERD is an important risk factor for COPD severity so that the results may help us in future to establish the fact that appropriate management and prevention of GERD in COPD patients will decrease morbidity.

In our study, out of 95 cases of COPD, 38.95% (n=37) were between 40-60 years of age, while 61.05% (n=58) had >60 years of age, common age was 58.37±8.36 years, 90.5% (n=86) were male and 9.5% (n=9) were females. Frequency of GERD in COPD patients was recorded in 43.16% (n=41).

Our findings are in agreement with a study done in Karachi, where they measured the frequency of gastro esophageal reflux disease (GERD) in subjects with chronic obstructive pulmonary disease (COPD) presenting at the department of Pulmonology, PNS SHIFA and recorded that frequency of GERD in subjects with COPD was 39.7%.⁸

Adel Khattab and others¹⁴ studied the prevalence of GERD in COPD patients and its effect on the number of exacerbations of COPD, they recorded that the prevalence of GERD in COPD patients was 53.3% in the moderate group, 73.3% in the severe group (total= 63.3%) by endoscopy & was 66.6% in the moderate group, 93.3% in the severe group ((total= 80%) by biopsy being more prevalent in the severe group of COPD. GERD severity increases as the degree of COPD increases (there were more patients with advanced grades among severe COPD than the moderate group). GERD increases with increase in the smoking (pack/year) both in moderate & in the severe groups. Moreover, there was increase in the frequency of exacerbations of COPD in GERD patients both in moderate & in the severe groups, the above study is in agreement with the findings of the study that GERD is associated with COPD, however, being the limitation of the current study we did not stratify the frequency according to the severity of COPD and causative factors of GERD i.e. smoking etc.

Another study by Mokhlessi et al¹⁵ using GERD questionnaire given to 140 patients and observed a high prevalence of GERD symptoms in patients with COPD with a trend to higher prevalence in severe COPD and increased use of acid suppressive medications among patients with COPD than the control; but this study had a limitation of not having objective measurements of acid reflux.

However, the findings of the current study are helpful for us in future to establish the fact that appropriate management and prevention of GERD in COPD patients may decrease morbidity.

CONCLUSION

We concluded that the frequency of GERD is high among patients with COPD. So, it is recommended that every patient who present with COPD, should be sort out for GERD. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

Name of Author	Contribution to the paper	Author's Signatures
Dr. Umar Usman	Data writing	
Dr. Muhammad Irfan	Interpretation & statistics	
Dr. Muhammad Faisal	Data collection	