



CODEN [USA]: IAJPB

ISSN : 2349-7750

INDO AMERICAN JOURNAL OF PHARMACEUTICAL SCIENCES

SJIF Impact Factor: 7.187

<http://doi.org/10.5281/zenodo.4322682>
Available online at: <http://www.iajps.com>

Research Article

PULMONARY HYPERTENSION PREVALENCE IN COPD PATIENTS

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Article Received: October 2020**Accepted:** November 2020**Published:** December 2020**Abstract:**

Objective: The main objective of this research was to establish the prevalence of pulmonary hypertension in patients with a history of chronic obstructive pulmonary disease.

Place and duration of study: This research was carried out in a period of 15 months from December 2018 to February 2020 in Shaikh Zayed Hospital Lahore

Material and Methods: For this study, a total of 100 patients were chosen. This research included both male and female genders with an age greater than 30 years and a history of COPD greater than one year. This research excluded patients who had a previous history of connective tissue disorders, primary pulmonary hypertension, and chronic pulmonary edema. These patients were classified as COPD with a FEV1/FVC ratio of less than 0.70 on the basis of a pulmonary function test and an improvement in FEV1 of less than 12% after bronchodilator therapy. COPD GOLD recommendations were used and patients were split into various groups, and our research included patients with serious and moderate categories. To assess pulmonary artery pressure, transthoracic echocardiography was used and pulmonary hypertension was labelled as a pressure greater than 25mmHg.

Results: Our analysis included a total of 100 patients with COPD. The mean age was 61.21±12.79. Among the 81 patients, all had a history of smoking and were male. In 51 percent of patients, a severe form of COPD was seen. In 40 percent of the patients, pulmonary hypertension was seen. No major difference in gender was seen (P value 0.54). Patients with a history of COPD that has been seen in 36 (53.73 percent of patients for more than 5 years had a substantial p-value of p=0.001. In 23 (57.50 percent) of the patients who have extreme COPD, a similarly high p-value p=0.04 was seen. Conclusion: About half of the patients with COPD experienced pulmonary hypertension and this number was higher over more than 5 years in patients with a history of serious COPD.

Conclusion: Children with β thalassemia major can also suffer from hypothyroidism even in the absence of signs and symptoms. It is also absolutely important to routinely screen children with beta thalassemia for hypothyroidism in order to allow an early diagnosis and provide rapid care.

Keywords: Chronic Obstructive, Hypertension, Pulmonary Disease.

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Please cite this article in press Riffat Naeem et al, *Pulmonary Hypertension Prevalence In COPD Patients.*, Indo Am. J. P. Sci, 2020; 07(12).

INTRODUCTION:

In modern times, smoking and air pollution are a major issue that can impose a major limit on the economy by dramatically raising the burden of diseases. COPD is one of the major illnesses caused by smoking, and this is particularly prevalent in underdeveloped countries such as Pakistan, where air pollution is a major issue. In modern times, pulmonary hypertension is a well-known problem and the prevalence of pulmonary HTN in COPD patients is between 20-90 percent. Many patients present with COPD in the chest clinic and are typically diagnosed on the basis of history and symptoms, but the gold standard for diagnosing COPD is PFT, which can also help categorise patients into various classes of severity. As a result of COPD, numerous pulmonary and non-pulmonary complications can occur, including chronic hypoxia, polycythemia, pneumothorax, respiratory failure, cardiac arrhythmias, osteoporosis, diastolic and systolic disorders, etc. Pulmonary hypertension is commonly characterised as an increase in pulmonary blood flow resistance that leads to increased pressure in the right chambers of the heart. Echocardiography may be used to assess this pressure, but the catheter passed into the right heart chamber provides an exact pressure measure and is a gold standard. In the absence of heart failure, hypertension is known to have a pressure greater than 20-25mmHg.

MATERIALS AND METHODS:

For this study, a total of 100 patients were chosen. This research included both male and female genders with an age greater than 30 years and a history of COPD greater than one year. This research excluded patients who had a previous history of connective tissue disorders, primary pulmonary hypertension, and chronic pulmonary edema. These patients were classified as COPD with a FEV1/FVC ratio of less than 0.70 on the basis of a pulmonary function test and an improvement in FEV1 of less than 12% after bronchodilator therapy. COPD GOLD recommendations were used and patients were split

into various groups, and our research included patients with serious and moderate categories. To assess pulmonary artery pressure, transthoracic echocardiography was used and pulmonary hypertension was labelled as a pressure greater than 25mmHg.

COPD GOLD recommendations were used and patients were split into various groups, and our research included patients with serious and moderate categories. To assess pulmonary artery pressure, transthoracic echocardiography was used and pulmonary hypertension was labelled as a pressure greater than 25mmHg. Results: Our research included a total of 100 COPD patients. The mean age was 61.21 ± 12.79 . Among the 81 patients, all had a history of smoking and were male. In 51 percent of patients, a severe form of COPD was seen. In 40 percent of the patients, pulmonary hypertension was seen. No major difference in gender was seen (P value 0.54). Patients with a history of COPD that has been seen in 36 (53.73 percent of patients for more than 5 years had a substantial p-value of $p=0.001$. In 23 (57.50 percent) of the patients who have extreme COPD, a similarly high p-value $p=0.04$ was seen.

RESULTS:

Our analysis included a total of 100 patients with COPD. The mean age was 61.21 ± 12.79 . Among the 81 patients, all had a history of smoking and were male. In 51 percent of patients, a severe form of COPD was seen. In 40 percent of the patients, pulmonary hypertension was seen. No major difference in gender was seen (P value 0.54). Patients with a history of COPD that has been seen in 36 (53.73 percent of patients for more than 5 years had a substantial p-value of $p=0.001$. In 23 (57.50 percent) of the patients who have extreme COPD, a similarly high p-value $p=0.04$ was seen. Conclusion: About half of the patients with COPD experienced pulmonary hypertension and this number was higher over more than 5 years in patients with a history of serious COPD.

Gender	Pulmonary HTN		Total
	Yes	No	
Male	34 (41.97%)	47 (58.03%)	81 (100%)
Female	6 (31.57%)	13 (68.43%)	19 (100%)
Total	40 (40%)	60 (60%)	100 (100%)

P Value = 0.54

Table 02. Pulmonary HTN and duration of COPD

Duration of COPD	Pulmonary HTN		Total
	Yes	No	
5 years or less	4 (12.12%)	29 (87.88%)	33 (100%)
>5 years	36 (53.73%)	31 (46.27%)	67 (100%)
Total	40 (40%)	60 (60%)	100 (100%)

p value = 0.001

Table 03. Pulmonary HTN and severity of COPD

Severity of COPD	Pulmonary HTN		Total
	Yes	No	
Moderate	1 (11.11%)	8 (88.89%)	9 (100%)
Severe	16 (31.37%)	35 (68.63%)	51 (100%)
Very severe	23 (57.50%)	17 (42.50%)	40 (100%)
Total	40 (40%)	60 (60%)	100 (100%)

p value = 0.04

DISCUSSION:

COPD is a disorder that is curable and preventable. It has numerous pulmonary and extra pulmonary problems that can cause significant harm to your

health. With respect to additional pulmonary complications, the heart is mostly affected. The findings of our research showed that 40 percent of the 100 patients had pulmonary hypertension. Previous

experiments have shown variable outcomes. In his study, Roshke et al found that 80% of patients had pulmonary hypertension among serious cases of COPD and according to our study, these findings are twice as high. In another study by Kurundkar G et al, a prevalence of 53 per cent was observed. The involvement of pulmonary hypertension was established and the patients were then categorised according to the seriousness of the disease. In patients with COPD, 23 percent had mild hypertension, 18 percent moderate and 12 percent extreme. Naeji R et al showed completely different results as opposed to the previous one and our analysis. In his research, he showed that the prevalence of COPD pulmonary hypertension was only 10 percent .

This significant difference in research can be explained by the COPD severity factor used in the analysis. Patients with a history of COPD that has been seen in 36 (53.73 percent of patients for more than 5 years had a substantial p-value of $p=0.001$. In 23 (57.50 percent) of the patients who have extreme COPD, a similarly high p-value $p=0.04$ was seen. Our study findings are also confirmed by previous research indicating that the greater the severity of the condition, the greater the risk of developing pulmonary hypertension. Long-term illness also plays an important role in the seriousness of the disease, especially in non-compliant patients.

CONCLUSION:

About half of the patients with COPD experienced pulmonary hypertension and this number was higher over more than 5 years in patients with a history of serious COPD.

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