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Reserach Article

A HISTORICAL COHORT INVESTIGATION OF PERIOPERATIVE RISK VARIABLES IN INDIVIDUALS WITH IDIOPATHIC PULMONARY FIBROSIS

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ABSTRACT

The overall mortality rate for Idiopathic Pulmonary Fibrosis is increasing, with a 28.4 percent rise in males and 41.3 percent increase in females when corrected for age. The research does not provide a full picture of perioperative outcomes in patients with Idiopathic Pulmonary Fibrosis. In Idiopathic Pulmonary Fibrosis patients who had diagnostic bronchoalveolar lavage, there was an elevated risk of acute aggravation of Idiopathic Pulmonary Fibrosis. Furthermore, surgical lung biopsy for the diagnosis of Idiopathic Pulmonary Fibrosis has been linked to a 2.1 percent incidence of Acute exacerbation - Idiopathic Pulmonary Fibrosis and a 5.1-7.1 percent 30-day death rate. In addition, lung cancer patients with Idiopathic Pulmonary Fibrosis have a greater rate of resection-related morbidity and mortality than those without Idiopathic Pulmonary Fibrosis. To evaluate the perioperative risk variables in individuals with idiopathic pulmonary fibrosis. One-year mortality was associated with increasing age (RR, 1.50; 95 percent confidence interval, 1.27 to 1.79; P<0.001), former tobacco smoking status (RR, 2.44; 95 percent confidence interval, 1.32 to 4.52; P<0.004), preoperative oral steroid use (RR, 2.17; 95 percent confidence interval, 1.34 to 3.51; P<0.002), and absence of intraoperative dexamethasone administration (RR, 0.19; 95) This is the first study to demonstrate a link between preoperative home oxygen consumption and postoperative acute respiratory worsening in Idiopathic Pulmonary Fibrosis patients. In addition, in our group, a longer operation length was related with an increased risk of acute respiratory worsening. Because of our discovery that preoperative home oxygen consumption is a predictor of postoperative acute respiratory worsening, we believe that this variable is the most clinically relevant and useful for the perioperative risk stratification of Idiopathic Pulmonary Fibrosis patients. In patients with fibrotic Interstitial lung disease, admission with acute respiratory worsening has been related with higher in-hospital and post-discharge mortality, regardless of the underlying Interstitial lung disease aetiology Furthermore, in patients undergoing thoracic surgery, increased intraoperative fluid administration has been linked to a higher risk of postoperative acute exacerbation of IP. We discovered a significant relationship between higher surgical duration and increased acute respiratory worsening. Patients with Idiopathic Pulmonary Fibrosis had a high link between their preoperative home oxygen need and their postoperative acute respiratory worsening, which was demonstrated in a study. Patients with this type of medical history may benefit from higher postoperative risk stratification, which may be indicated by home oxygen use and an anticipated longer surgical procedure.

Key words: - Preoperative , pulmonary fibrosis, patients.

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INTRODUCTION

Interstitial lung disease is a different set of lung problems with different conditions but the same method of fibrotic modification and inflammation in lung structure. [1,2] Men have 89 / 100,000 interstitial lung disease, while women have an average of 67 / 100,000, and women have a high survival rate. 3-5 Compared with non-Interstitial lung disease patients undergoing thoracic and non-thoracic surgery, patients with Interstitial lung disease had significantly higher perioperative diseases and mortality. The most common subset of Interstitial lung disease idiopathic pulmonary fibrosis. [2,11] Idiopathic Pulmonary Fibrosis is a very high risk of death among Interstitial lung diseases related to lung disease. [12,13] The overall mortality rate for Idiopathic Pulmonary Fibrosis is increasing, with a 28.4 percent rise in males and 41.3 percent increase in females when corrected for age. [14] The research does not provide a full picture of perioperative outcomes in patients with Idiopathic Pulmonary Fibrosis. In Idiopathic Pulmonary Fibrosis patients who had diagnostic bronchoalveolar lavage, there was an elevated risk of acute aggravation of Idiopathic Pulmonary Fibrosis. Furthermore, surgical lung biopsy for the diagnosis of Idiopathic Pulmonary Fibrosis has been linked to a 2.1 percent incidence of Acute exacerbation - Idiopathic Pulmonary Fibrosis and a 5.1-7.1 percent 30-day death rate. In addition, patients with lung cancer with Idiopathic Pulmonary Fibrosis have a higher rate of pain-related illness and death than those without Idiopathic Pulmonary Fibrosis. The aim of this study was to identify variability in preoperative risk of postoperative acute respiratory worsening, Acute exacerbation - Idiopathic Pulmonary Fibrosis, and other complications. About 2 to 70% of all patients who have undergone surgery have experienced postoperative pulmonary complications, according to the study. Patients' selection and procedure-related risk factors play a role in this large range, but varied definitions of postoperative complications account for a significant portion of the variability and make comparison of reported incidences across various studies problematic.

An recognizable disease or dysfunction that results in clinically significant symptoms and has a detrimental effect on the clinical course [1] is the ideal criterion for a postoperative pulmonary abnormality. This would encompass several important categories of clinically significant problems, such as ostoperative pulmonary complications, which contribute considerably to overall perioperative morbidity and mortality, as well as ostoperative gastrointestinal complications.

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Dr. Reddy Varaprasad babu D

Specifically, we will discuss the definition of postoperative pulmonary problems, the relevant anesthetic physiology, the identification of both patient and procedure-related risk factors, as well as the relevance of preoperative lung function testing and pulmonary risk indices. Strategies for decreasing postoperative pulmonary problems, as well as the evaluation of candidates for lung resection surgery, are reviewed in distinct sections of this chapter.

AIMS AND OBJECTIVES:

To evaluate the perioperative risk variables in individuals with idiopathic pulmonary fibrosis.

METHODS:

From May 2008 to May 2016, we analyzed one historical group of 18-year-old Idiopathic Pulmonary Fibrosis patients who underwent surgery at Sree Lakshmi Narayana Institute of Medical Sciences over a ten-year period.

Participants are chosen and described in detail:

Inpatient and outpatient surgical operations, as well as gastrointestinal endoscopic procedures were included in the study's surgical procedure inclusion criteria. Patients who had been diagnosed with preoperative pneumonia as well as those who were receiving emergency surgery were excluded from the study. When it came to anaesthetic method, there were no protocol-related exclusion criteria.

Despite this, because most photographic or image-guided processes are performed under cooling and have a high percentage of incomplete data, these processes were removed from the study. The electronic medical records of the study subjects were reviewed in person, and the collection was refined to include only people with a definitive diagnosis of Idiopathic Pulmonary Fibrosis as determined by computed tomography imaging or tissue biopsy tests, according to the findings. [2, 11]

Measurements:

Statistics are used in this study:

Prior to analysis, all variables were summarized to evaluate their distribution and to identify any inaccuracies. Ongoing variables have been subordinating to the histogram and areas of common opportunity to determine their frequency. The false detection rate method was used to adjust the P values to compare each result, represented as Q values, to calculate the probability of repeated tests. The statistical value limit was set at a Q value of 0.05 or less.

The association between the outcome variables and the independent variables was investigated using

bivariate logistic regression. When it came to interpreting the magnitude and direction of significant associations, risk ratios were used. A selection of the most significant variables for acute respiratory worsening is shown in the table.Age, gender, and physical status as defined by the American Society of Anesthesiologists were all included in the demographic data. The following conditions were included: hypertension, obstructive sleep apnea, coronary artery disease, history of deep vein thrombosis or pulmonary embolism, diabetes, pulmonary hypertension, chronic kidney disease stage III or greater, atrial fibrillation, chronic obstructive pulmonary disease, asthma, and cancer of any type. In addition, we found that patients either used pre-surgery corticosteroids or not, whether they used home oxygen or not, and whether they smoked or not. We obtained data on lung function in a patient for up to one year prior to the procedure and recorded significant forced force, forced ventilation volume, total lung capacity, and the ability to distribute carbon monoxide to the lungs prior to the procedure. The length of stay was computed based on the dates of admission and discharge. A variety of intraoperative data, including the type of surgery or intervention, airway managment, surgery length, blood transfusion, specific drugs, and intraoperative fluid administration, were collected and analysed.

RESULTS:

TABLE 1: FACTORS LEADING TO ACUTE RESPIRATORY WORSENING

	Rr	P
Acute respiratory worsening		
Surgery duration	1.03	<0.001
Home oxygen use	2.7	<0.001
One year mortality		
Age	1.50	<0.001
Tobacco	0.85	0.817
Former smoking	2.44	0.004
Oral steroid use	2.17	0.002
Intraoperative dexamethasone	0.19	0.004

Because there were an insufficient number of diagnostic cases to be considered for acute exacerbations - Idiopathic Pulmonary Fibrosis, pneumonia, or 30-day deaths in this group, randomized analyzes were performed with respiratory failure and one-year mortality. In Table 1, you will find a summary of results. Significant predictions of severe post-operative respiratory failure included preoperative oxygen consumption (RR 2.70; 95 percent confidence interval, 1.50 to 4.86; P 0.001) and duration of surgery (60 minutes) (RR 1.03) ; 95% confidence interval, 1.02 to 1.05; 0.001). One-year mortality was associated with increased age (RR, 1.50; 95% confidence interval, 1.27 to 1.79; P 0.001), pre-smoking status (RR, 2.44; 95% confidence interval, 1.32 to 4.52; P = 0.004) , use of oral steroid before surgery (RR, 2.17; 95% confidence interval, 1.34 to 3.51; P = 0.002), and no intraoperative dexamethasone administration (RR, 0.19; 95) [TABLE 1]

DISCUSSION:

This is the first study showing a link between home use before surgery and severe postoperative respiratory failure in patients with Idiopathic Pulmonary Fibrosis. In addition, in our group, longer working duration was associated with an increased risk of severe respiratory failure. Because of our finding that homeopathy using preoperative surgery is a predictor of severe postoperative respiratory failure, we believe that this variability is very clinically significant and is helpful in distinguishing the perioperative risk of patients with Idiopathic Pulmonary Fibrosis. In patients with fibrotic Interstitial lung disease, severe respiratory insufficiency has been associated with high hospital mortality and post-discharge, regardless of the underlying interstitial lung disease or the type of respiratory failure that has occurred. increase in hospital stay from one to three days, which led to an increase in surgical costs. Those who are indoctrinated with home oxygen often have severe limitations of exercise, dyspnea of exercise and / or rest, and a decrease in quality of life indicators. However, a few studies that have looked at household oxygen consumption have found no evidence of significant benefit. As a result, homeopathy may be associated with the development of a patient's Interstitial lung disease and is a sign of overall patient function. In addition, cases of pulmonary hypertension are exacerbated by the development of Idiopathic Pulmonary Fibrosis, have clinical features comparable to those of progression of Idiopathic Pulmonary Fibrosis, and are usually 30-50 percent in patients with severe Idiopathic Pulmonary Fibrosis. 28 Only 11 percent of our whole study group, and 18 percent of patients receiving home oxygen, were diagnosed with pulmonary hypertension, according to our findings. It is quite likely that in our group, undiagnosed pulmonary hypertension played a role in the significant association between home oxygen use and postoperative acute respiratory worsening, which was observed in the literature. The observation of patients' home oxygen use,

for example, may highlight the importance of rigorous preoperative risk stratification, with a particular emphasis on the search for right ventricular underperformance and pulmonary hypertension.

Postoperative pneumonia was observed to occur in 9.2 percent of Idiopathic Pulmonary Fibrosis patients, according to our findings. This is significantly greater than the rate recorded in people who do not have Idiopathic Pulmonary Fibrosis. Bacterial pneumonia is frequent in Idiopathic Pulmonary Fibrosis patients who are hospitalised, with an incidence of 9.5 percent and a death rate of 34 percent in the hospital. A 3.9 percent incidence rate of postoperative pneumonia was reported in previous reports of Interstitial lung disease patients of all categories. 8,31 Because of the greater risk associated with the Interstitial lung disease subgroup of Idiopathic Pulmonary Fibrosis, it is recommended that efforts be directed on identifying modifiable risk factors for postoperative pneumonia in this particularly vulnerable patient population.

We did not find any differences in our tested results between thoracic surgery and non-thoracic surgery when we performed the randomized controlled trial. Despite the fact that this may be due to a lack of appropriate sample size, given the large confidence intervals, it is worth noting that many of the current data obtained from research on Idiopathic Pulmonary Fibrosis patients receiving breast surgery may be effective in patients with transient Idiopathic Pulmonary Fibrosis. non-thoracic surgery. High concentration of oxygen after chest surgery, high volume after chest surgery, and increased airway breathing, according to one study, may all be associated with a higher risk of severe Idiopathic Pulmonary Fibrosis after thoracic surgery. [12] These findings, although based on limited sample size, are consistent with the adverse effects associated with mechanical ventilation in non-surgical patients of Interstitial lung disease who were admitted to the intensive care unit. In addition, in patients undergoing thoracic surgery, increased intraoperative fluid administration has been linked to a higher risk of severe IP after surgery. We found a significant relationship between the maximum duration of surgery and increased respiratory function. Despite the fact that consistent analysis reveals a link between severe respiratory failure and excessive fluid management and blood transfusions, various studies have found no evidence to confirm this.

CONCLUSION:

Patients with Idiopathic Pulmonary Fibrosis had a high link between their preoperative home oxygen need and their postoperative acute respiratory worsening, which was demonstrated in a study. Patients with this type of medical history may benefit from higher postoperative risk stratification, which may be indicated by home oxygen use and an anticipated longer surgical procedure. Postoperative pneumonia rates were much higher in Idiopathic Pulmonary Fibrosis patients than in the general population, and further research should be conducted to discover potentially modifiable risk factors.

REFERENCES:

1. Crystal RG, Gadek JE, Ferrans VJ, Fulmer JD, Line BR, Hunninghake GW. (1981). Interstitial lung disease: current concepts of pathogenesis, staging and therapy. *Am J Med.* 70, 542-68.
2. Raghu G, Collard HR, Egan JJ. (2011). An official ATS/ERS/JRS/ ALAT statement: idiopathic pulmonary fibrosis: evidence-based guidelines for diagnosis and management. *Am J Respir Crit Care Med.* 183, 788-824.
3. Putman RK, Hatabu H, Araki T. (2016). Association between interstitial lung abnormalities and all-cause mortality. JAMA. 315: 672-81.
4. Mannino DM, Etzel RA, Parrish RG. (1996). Pulmonary fibrosis deaths in the United States, 1979-1991. An analysis of multiple-cause mortality data. *Am J Respir Crit Care Med*. 153, 1548-52.
5. Coultas DB, Zumwalt RE, Black WC, Sobonya RE. (1994). The epidemiology of interstitial lung diseases. *Am J Respir Crit Care Med*. 150, 967-72.
6. Yuksel M, Ozyurtkan MO, Bostanci K, Ahiskali R, Kodalli N. (2006). Acute exacerbation of interstitial fibrosis after pulmonary resection. *Ann Thorac Surg* 2006; 82: 336-8.
7. Utz JP, Ryu JH, Douglas WW. (2001). High short-term mortality following lung biopsy for usual interstitial pneumonia. *Eur Respir J*. 17: 175-9.
8. Choi SM, Lee J, Park YS. (2014). Postoperative pulmonary complications after surgery in patients with interstitial lung disease. *Respiration.* 87: 287-93.
9. Kumar P, Goldstraw P, Yamada K. (2003). Pulmonary fibrosis and lung cancer: risk and benefit analysis of pulmonary resection. *J Thorac Cardiovasc Surg*. 125, 1321-7.
10. Tsubochi H, Shibano T, Endo S. Recommendations for perioperative management of lung cancer patients with comorbidities. *Gen Thorac Cardiovasc Surg.* 66, 71-80.
11. Collard HR, Ryerson CJ, Corte TJ. (2016). Acute exacerbation of idiopathic pulmonary fibrosis. An international working group report. *Am J Respir Crit Care Med*. 194, 265-75.
12. Leuschner G, Behr J. (2017). Acute exacerbation in interstitial lung disease. *Front Med (Lausanne).*
13. Moua T, Westerly BD, Dulohery MM, Daniels CE, Ryu JH, Lim KG. Patients with fibrotic interstitial lung disease hospitalized for acute respiratory worsening: a large cohort analysis. Chest. 149, 1205-14.

14. Johannson KA, Collard HR. (2016). Acute exacerbation of idiopathic pulmonary fibrosis: a proposal. *Curr Respir Care Rep* 2, 233-40.
15. Visca D, Tsipouri V, Mori L. (2017). Ambulatory oxygen in fibroticlung disease (AmbOx): study protocol for a randomised controlled trial. Trials.

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