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RESEARCH ARTICLE
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COMPREHENSIVE AUDIT ON THE MANAGEMENT OF ACUTE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AT LADY READING HOSPITAL MTI PESHAWAR ENHANCING QUALITY CARE AND BEST PRACTICES

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Abstract

To audit the Management of Acute Exacerbation of Chronic Obstructive Pulmonary Disease (COPD) at leady reading hospital MTI Peshawar Enhancing Quality Care and Best Practices

Methods: This was a clinical audit carried out at Lady Reading Hospital MTI Peshawar from February 2022 to October 2023. All patient charts with the diagnosis of COPD exacerbation were recovered. Our audit examined the factors that make COPD worse, such as smoking and work-related factors, spirometry to confirm COPM, predictive measures of COPA effects, and additional health issues for those with COPP. The study also examined the major complications that occur during a COPD onset, ways to recognize lung dysfunction, and the various drugs prescribed to individuals with this condition. Our findings were compared to those of the British Thoracic Society (BTS) in 2010. For data analysis SPSS software was used and percentage was calculated for various variables. Mean and standard deviation was calculated for BMI hospital stay and antibiotic description. The findings were displayed in the form of tables and graphs.

Results: A total of 125 patients were recorded whose mean age was 63(±12 SD) years. 64%, 36% were female and male respectively. Smoking and Occupational history was recorded 38 and 26% correspondingly. Oxygen saturation was rec
orded on all patients. Increase in the shortness of breath was recorded in 96% patients. Nebulized bronchodilators, intravenous steroids and intravenous antibiotics were prescribed to >90% of patients. Most of the patients were discharged on home treatment while in-hospital mortality was 13.68%.

Conclusion The clinical notes for COPD did not include any information on smoking, occupational background, and the three key indicators of exacerbation. Most COPD exacerbation and respiratory failure were managed in a way that was consistent with BTS standards, but the diagnosis was not precise in almost two-thirds of cases.

Keywords: Acute Exacerbation; BTS Guidelines; Clinical Audit; COPD; Respiratory Failure

Introduction

COPD stands for chronic obstructive pulmonary disease. It is the disorder of respiratory tract which is slowly progressive, preventable and curative and characterized by airflow inadequacy with systemic signs (1).Globally it is the fourth most common cause of death (2). There are various risk factors of developing COPD but the topmost is tobacco smoking. Other risk elements are burning fuel in devolving countries and genetic abnormalities.(3)Its diagnosis is based upon on the symptoms that meet the criteria of COPD(spirometry shows (FEV1/FVC smaller than 0.70 and an FEV1 < 80% of expected) and there is no alternative explanation for the symptoms and airflow obstruction(4)Forced expiratory volume in first second , body mass index, medical research counsel , dyspnea scale and co morbidities have a substantial impression on healthiness, diagnosis and exacerbations.(5)The majority of health care spending, or over 70% of the cost of medical care for COPD patients, is attributable to acute exacerbations of the disease and the hospital stays that follow. (6)An exacerbation is defined as an increase in the patient's baseline dyspnea and/or quantity and/or purulence of sputum that is more severe than usual, has an immediate start, and may require medication adjustments.(7). Many patients also show signs of infection-related respiratory failure, which calls for evaluation and may necessitate assisted breathing in addition to drug therapy consisting of corticosteroids, bronchodilators, and antibiotics. (8)(9) In spite of several guidelines released by different thoracic authorities, the diagnosis and treatment of COPD exacerbations have not proven optimal. According to a comprehensive multicenter UK audit of COPD exacerbation, 53% of patients had recorded spirometry (FEV1), 79% had blood gas results (interhospital range: 40–100%), and 64% had oxygen prescriptions (range: 9–94%) and ventilator assistance. Merely 30% of smokers now have recorded counsel on quitting.(10)The aim of this audit was the Management of Acute Exacerbation of Chronic Obstructive Pulmonary Disease (COPD) at leady reading hospital MTI Peshawar Enhancing Quality Care and Best Practices .

Objective: To review the administration of patients conceded with intense compounding of COPD.

Materials and method

This was a clinical audit carried out at Lady Reading Hospital MTI Peshawar from February 2022 to October 2023. All patient charts with the diagnosis of COPD exacerbation were recovered. Our research examined the factors that make COPD worse, such as smoking and work-related factors, spirometry to confirm COPM, predictive measures of COPA effects, and additional health issues for those with COPP. The study also examined the major complications that occur during a COPD onset, ways to recognize lung dysfunction, and the various drugs prescribed to individuals with this condition. Our findings were compared to those of the British Thoracic Society (BTS) in 2010.

Background information

BTS guidelines recommend spirometry and risk factors assessment for all COPD patients. The three clinical parameters that are crucial in defining exacerbation like Patients with exacerbation should be evaluated for dyspnea elevation and sputum oxygen saturation through pulse instruments, and ABGs should also be obtained in those with SPO2 levels below 92%. All patients with type 2 respiratory failure should receive controlled oxygen. Nebulized/inhaled bronchodi- purulence of sputum that is more intense than normal day and systemic steroids are prescribed as pharmacological treatments for exacerbation, provided there is no contraindication. Antibiotics may be recommended if there is evidence of infection. If the response to bronchodilators is poor, Aminophylline may also be considered. Despite the use of a structured preforms, information regarding bio-data, discharge date, diagnosis, hospital stay duration, medications, and discharge outcome were noted. Basic main features of COPD exacerbation were assessed (increase dyspnea, sputum volume).MBI was determined and spiromatery finding were noted.

To manage respiratory failure, it was suggested to monitor oxygen saturation through a finger pulse ox meter during presentation. Gas analysis (arterial blood) patients who had SpO2 < ninety two percent. To ensure compliance with the documented outcomes of discharge, patients were given either short-term oxygen therapy or continuous oxygen treatment. For data analysis SPSS software was used and percentage was calculated for various variables. Mean and standard deviation was calculated for BMI hospital stay and antibiotic description. The findings were displayed in the form of tables and graphs.

Results

A total of 125 patients were recorded whose mean age was 63(±12 SD) years. 64%, 36% were female and male respectively. Smoking and Occupational history was recorded 38 and 26% correspondingly. Oxygen saturation was recorded on all patients. Increase in the shortness of breath was recorded in 96% patients. The percentage of other parameters like SPO2 presentation, prescribed drugs Management of respiratory failure has shown in the (**table 1).** Common co-morbidities among patients were hypertension (14.5%), diabetes (10.5%) and post TB 9.6%. As represented in **Fig 1.**Respiratory failure recorded in the patients with COPD exacerbation are shown in **Fig 2.** Intravenous drugs used for the treatment of patients with COPD exacerbation were levofloxacin was the most common .Than moxifloxacin, ceftriaxone and other as displayed in **Fig 3.** Patients admitted with COPD exacerbation of which 80 % discharged 13% died and 7.8 were transferred to other unit. as presented in **Fig 4.**

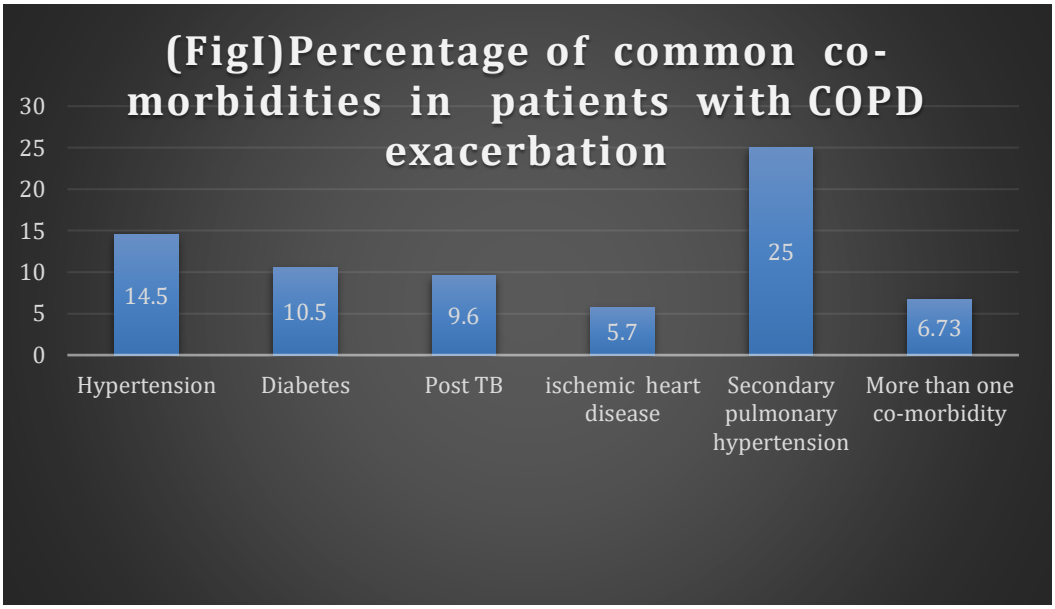
Discussion

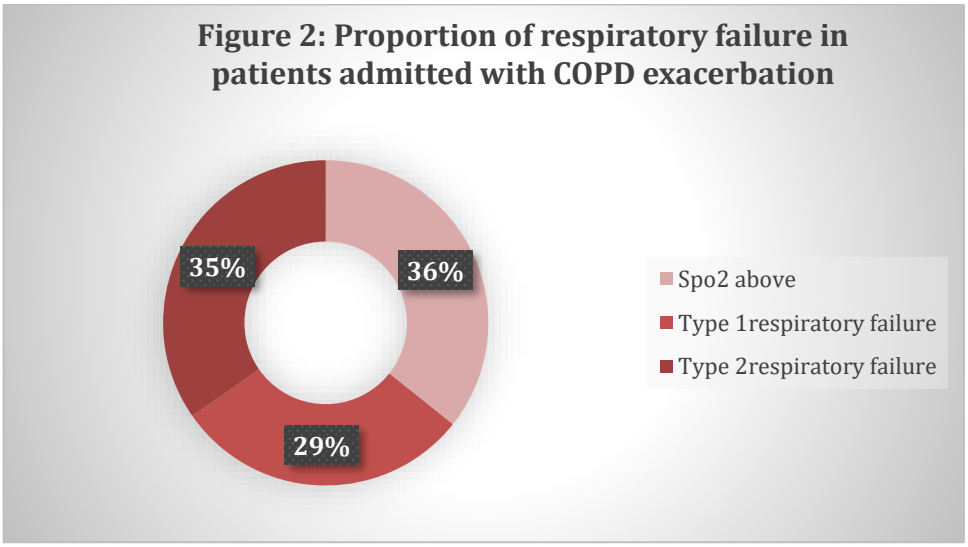
The audit has allowed for the documentation of the baseline and identified deficiencies in the management of acute failure, which was found in 35% of cases. Smoking has the most prevalent cause of COPD depend the history of years in our audit it was reported 38%.This is due to the fact that our study group female were more than male .a study conducted by MEG-1 reported 45%.(11).Meta-analysis studies explored that the main risk factor for COPD and lungs dysfunction is smoking as compared to non-smokers (12). It is important to document smoking history and past experiences for those with COPD (13). In the same way occupation history was documented 26% in our audit Impermissible clinical history prevalence in our study group. Pervious study reported that 15% cases of COPD were related to work history. (14) Smokers are more prone to developing diseases as a result of the need to prevent occupational exposures and smoking together, which is crucial in reducing the global disease burden. The diagnosis of COPD is based on spirometry, but FEV1 is the most reliable indicator of death. These patients were not found in any case records reflecting poor record keeping or attention to the disease. In the audit by Roberts et al (15) a conclusive identification of COPD (by depth of FEV1 in the age five years earlier or three months after the exacerbation) was made in only half-done of the fourteen hundreds cases. In our subjects Common co morbidities were Hypertension(14.5%), Diabetes(10.5%), Post TB(9.6%) and ischemic heart disease(5.7%). The Cochrane systematic review conducted by Holguin and colleagues revealed that hospitalized COPD

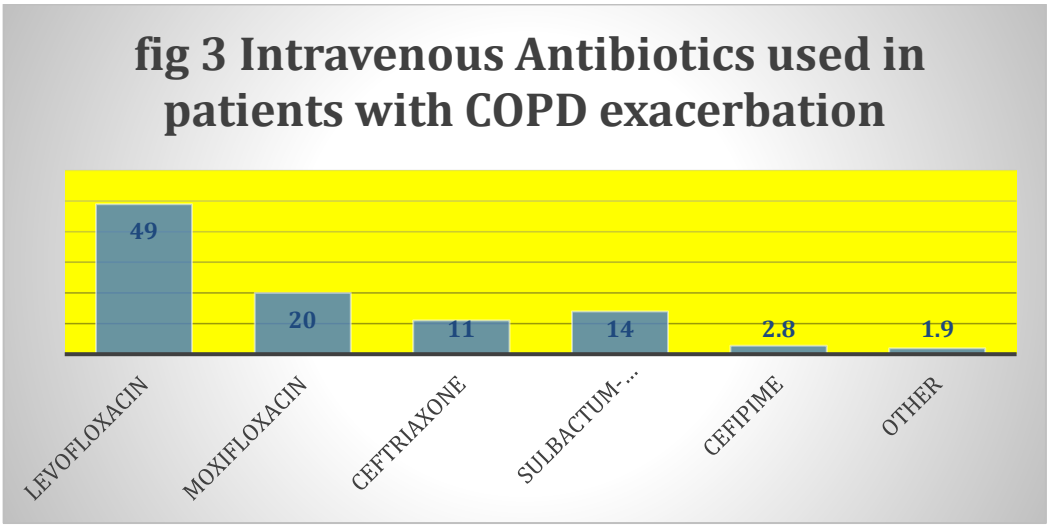
patients had higher rates of hypertension, cardiac disease, diabetes, and pneumonia. The most prevalent reason for emergency respiratory admissions due to COPD is the elevation of any one or more of the following parameters: i. e. The presence of dyspnea and sputum volume, as well as the disease. A significant clinical study on COPD found that two thirds of cases did not contain necessary entries.(16) .Mostly patient were treated by antibiotics ,bronchodilators and steroids .This therapy was not supported by previous study (17). In-hospital death in our patients was 13.68%. There is significant inconsistency among and unfluctuating within (17) . BTS audit has testified death of 14 percent at three months. A meta-analysis of 6 regiment studies documented that complex exacerbation require long stay at hospital (18). A prospective cohort study of COPD patients with exacerbation who were admitted to emergency departments in 16 hospitals has suggested that five clinical parameters predictive of mortality may aid in guiding clinicians in managing these patients. The patient's ED arrival is influenced by factors such as age, dyspnea, respiratory problems, and prior need for assisted ventilation or long-term home oxygen therapy.(19)

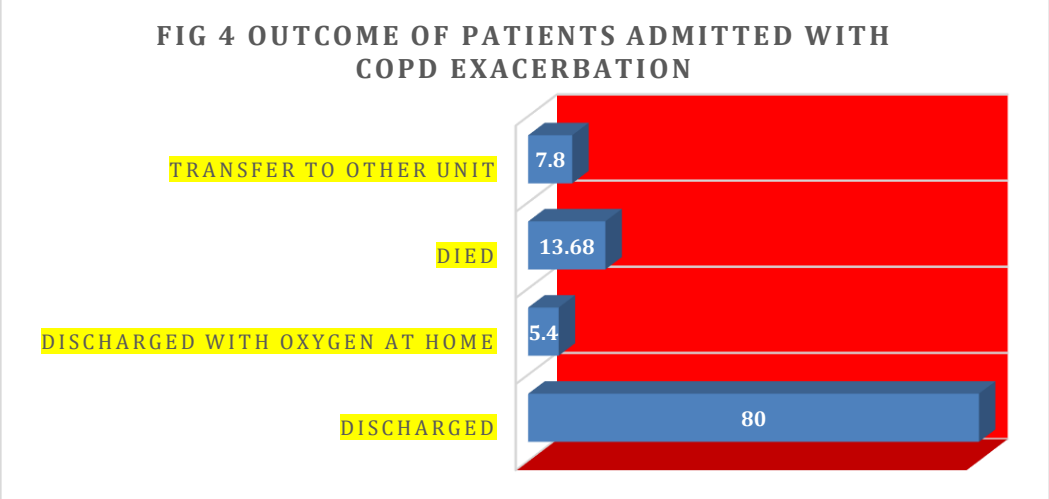
Table 1 Record of different variables related to clinical assessment and management of COPD exacerbation and respiratory failure.

Serial No	Variables (categories)	Variable (individual)	Percentage noted
1	**History**	1 History Smoking history	38
		2. History of Occupation	26
		3. cardinal features of COPD exacerbation	
		(i)Shortness of breath increased	96
		(ii) Volume of sputum	30
		(iii) Color of sputum	18
2	**Management of respiratory failure**	i. SPO2 at presentation	100
		ii. Respiratory failure (SPO2 <92%	68
		iii. Diagnosis of respiratory failure made in those with	30
		iv . SPO2 <92% or PO2 <60mm of Hg	92
		v . ABGs done when spo2 was < 92%	
		vi. Oxygen prescribed in treatment sheet to patients with spo2 <92%	80
		vii. Controlled oxygen prescribed (for type 2 respiratory failure)	98
		viii. BiPAPapplied (type 2 RF patients	18
3	**Recommended drugs for COPD exacerbation**	1.Salbutamol(Nebulized)	91.5
		2. (ipratropium)	99.1
		3. steroid(intravenous)	93
		4.antibiotics (intravenous)	99
		5.inravenous Aminophylline	62.1









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