

Copd A New Frontier **Khalid Gafoor¹** **Bushra Mina²**

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Editorial

Patient A is a 65 year old man with a past medical history of COPD who was admitted with an acute exacerbation of COPD. The patient has a previous history of respiratory failure requiring mechanical ventilation. He is a current smoker and lives in a shelter. He was admitted to our institution five times in the last 4 month with the same condition. The patient refused pulmonary rehabilitation and smoking cessation counseling. He was discharged without oxygen supplementation due to his current tobacco consumption.

Patient B is a 56 year old male with past medical history of COPD, and substance abuse, was admitted with an acute exacerbation of COPD. He is a current smoker and lives in a shelter. The patient was admitted to our institution six times in the last 5 months with the same condition.

These are two examples which highlight the difficulties in treating some patients with acute exacerbation of COPD (AECOPD). It points to some of the obstacles that pulmonologists face in treating patients with COPD that are unrelated to the quality of care provided, but definitely impacts on patient outcomes. Patients' autonomy and socioeconomic status are factors that can impact on the care provided to that population.

In 2010, Chronic Lower Respiratory Diseases (CLRD) was the 3rd leading cause of death in the U.S. from 1999 to 2010. Death rates for CLRD in males decreased, while increased slightly in non-Hispanic whites females [1]. The data from the 2011 Behavioral Risk Factor Surveillance System (BRFSS), reported overall 6.3% prevalence of COPD among U.S. adults (an estimated 15 million), and among those aged ≥65 years was >11.6%. Prevalence of COPD varied amongst states, and factors such as ethnicity, gender, socioeconomic status, and previous history of asthma impacted on it [2]. Projected care costs for direct and indirect health care expenditures were nearly \$50 billion for 2010 (NHLBI, 2009). The number of patients hospitalized annually for AECOPD increased by approximately 18% (AHRQ, 2008).

The Hospital Readmissions Reduction Program, which requires the Center for Medicare and Medicaid Services (CMS) to reduce payments to inpatient prospective payment systems (IPPS) hospitals with excessive readmissions, effective October 1, 2012. In 2014, CMS finalized the expansion of the program to include patients admitted for an acute exacerbation of chronic obstructive pulmonary disease (COPD), or principal diagnosis

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of respiratory failure with a secondary diagnosis of COPD with exacerbation. The intention of these measures are to improve quality of care and improve mortality for a COPD patients with a overall prevalence rate among Medicare-Medicaid enrollees in 2008 was 18.9%, and 21.8% among individuals older than 65 years of age.

COPD is also a leading cause of readmissions to the hospital. The 30-day readmission rate among patients hospitalized for COPD is 22.6%, accounting for 4% of all 30-day readmissions [3]. Shah et.al. reported 3.5% index of COPD admissions among Medicare claims data from 2006 to 2010 in seven states. The 30 days readmission rate was 20.2%. Respiratory related diseases accounted for only one-half of the reasons for readmission, with COPD contributing only to 27.6% of all readmissions [4]. Earl et.al. reported that despite all the local and national efforts to improve the quality of care for COPD patients, there was an increase in the rate of hospitalizations and emergency room visits, and the age adjusted rates for hospitalization and ED visits have not changed significantly in the United States over the period from 2001-2012 [5].

There are many barriers in treating patient with AECOPD. Education and pulmonary rehabilitation are examples of such obstacles. The recent guidelines put forth by the American College of Chest Physicians and Canadian Thoracic Society recommend pulmonary rehabilitation to patients who have had a recent (<4 weeks) exacerbation of COPD to prevent further exacerbations, however there are many barriers to obtaining pulmonary rehabilitation. Implementation of pulmonary rehabilitation

programs in people with COPD is reported to be low, with only 3%–16% of eligible patients being referred to pulmonary rehabilitation programs, and as few as 1%–2% gaining ongoing access to such programs. Barriers identified as hindering referral to pulmonary rehabilitation have included: limited knowledge about pulmonary rehabilitation for COPD; limited knowledge of how to refer; actual or anticipated access difficulties for patients; questioning the need to do more to promote change in exercise behavior; poor familiarity with the guidelines [6].

At our institution we performed an anonymous survey of the medical residents regarding COPD. We chose to survey our medical residents as they are the first line of responders. Our survey included items regarding their comfort level treating COPD, their experience in treating COPD as an outpatient, if they consult a pulmonologist for AECOPD, if they feel they are getting adequate didactics regarding COPD, if they demonstrate how to use a MDI to a patient, and if they counseled patients on smoking cessation. 75% of the medical residents feel as though they are not getting enough didactics or clinic experience with COPD patients and only 17% were able to demonstrate to patients how to use an MDI to. 64% of residents took into account the socioeconomic status of the patient upon discharge planning. 77% counseled patient's on smoking cessation. Only 4% of medical residents consulted Pulmonology for an AECOPD.

The aim is to provide the best care to a patient with COPD in compliance with evidence based medicine, with a goal to improve outcomes with decreased readmission rates as one of the parameters. This goal can only be accomplished in a multidisciplinary approach involving all parties participating in patients care. Approaching a patient with acute exacerbation of COPD should be standardized with recognition of other comorbidities, and socioeconomic status that would impact on a patient's care and outcome measures. A successful model should have a positive economic impact. The recent evidence based guideline for prevention of acute exacerbation of COPD published by the combined effort of the American College of Chest physicians and Canadian Thoracic Society in 2015 should be utilized as tool to develop a standardized protocol to decrease the 30 days readmission rate for COPD [6].

The Quality Improvement Committee of the Pulmonary Division at our institution identified certain elements from evidence based medicine that can lead to decreased length of stay and decreased 30 day readmission rate. Items identified are

- 1) All patients with AECOPD admitted in the previous 24 hours should be identified
- 2) Admission to a respiratory unit
- 3) Standardized treatment order set- Protocol
- 4) Mandatory pulmonary consult within 12 hours of admission for those patients

- 5) Assessment of severity of illness by Gold criteria as group type A,B,C, or D
- 6) Evaluation and documentation of the precipitating factor and co-morbidities such as GERD, sleep disorders, pulmonary arterial hypertension, and thrombo-embolic disease
- 7) Educational session with respiratory therapist within 24 hour from admission
 - Compliance with inhalers
 - Need for supplemental home oxygen
 - Need for aero-chambers
 - Proper MDI techniques
 - Need for nebulizer compressor at home
 - Tobacco consumption
 - Oxygen saturation with exertion
 - Compliance with NIV
- 8) Nutritional status, physical therapy assessment , and social worker and case manager involvement within 24 hours of admission
- 9) Documentation in chart of daily progress from all disciplines
- 10) Palliative care consultation for severe COPD patients with discussion of goals of care and hospice need
- 11) Family meetings with 72 hours (if hospitalization is required) addressing goals of care
- 12) Discharge planning including vaccination, physical therapy, home oxygen, and family support
- 13) Outpatient follow up visits weekly for the first 30 days, and home visits by home services and PT with feedback to treating pulmonologist

Five elements were identified in the above proposed protocol, which are identifying patients with AECOPD, protocolized treatment plan, discharge planning, outpatient reach, and education of health care professionals. Departmental and institutional audits should be embedded in the program for assessment and evaluation of this initiative, thereby facilitating compliance/success. Inter-institutional cooperation is encouraged to address this issue that is impacting the health care system as a whole. Continued diligence and vigilance will be required of all disciplines to bring about a decrease in the 30 day readmission rate for COPD while efficiently managing the ever-increasing financial consequences associated with this diagnosis, certainly, an arduous task.

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