



## A Case Study on COPD Associated with Seizures in a Tertiary Care Hospital

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### Abstract

Chronic Obstructive Pulmonary Disease (COPD) is a significant cause of morbidity and mortality. It provides a concise overview of the literature regarding the impact of COPD exacerbations on both the patient and the healthcare system, the recommendations for pharmacologic management of COPD, and the strategies employed to improve patient care and reduce hospitalizations and readmissions, and most importantly to improve the complications based on wrong treatment pattern.

### Case Study

A 73-year-old man came with a number of health issues to the hospital stating about breathlessness and nausea. The care team helped in resolving the issue, but forgot a standard treatment that causes unnecessary harm to the patient. A posterior drug error makes the situation worse, leading to a stay that's much longer than anticipated.

Mr. XYZ is a 73-year-old man with a long-standing history of a seizure disorder. He also has high blood pressure since few years and due to habitual smoking, also has a comorbidity of Chronic Obstructive Pulmonary Disease (COPD) [1]. He is more often admitted in our hospital because of his health-related conditions (a regular patient). At home, he takes a number of medications, specifically in case of COPD and Convulsions (Lamotrigine, Levetiracetam and Valproate) [2].

Mr. XYZ came to the emergency department last week, because he was wheezing and having trouble breathing. The medical officer in the Emergency (ER) department conducted a physical examination which revealed certain signs of an acute worsening of COPD, which can also be stated as COPD exacerbation. The physician in the emergency department advices a chest X-ray, which did not show any signs of pneumonia. He admitted Mr. XYZ to the hospital for treatment of acute COPD exacerbation, resulting from a relatively mild respiratory tract infection. Before leaving the emergency department, Mr. XYZ also underwent routine test namely, Complete Blood Count, Kidney Function Test, Liver Function Test etc., which showed an elevation in his creatinine, a sign that his kidneys were pressurized to work more harder due to his existing infection [3].

Patient was shifted to the neurology ward, the care team treated Mr. XYZ with oral steroids and inhaled bronchodilators (standard medical therapy for his condition), which resulted in a gradual improvement in his respiratory symptoms. Nurses also gave him IV fluids for the issue with his kidneys.

Mr. XYZ was steadily improving, so it seemed this visit to the hospital would be one of his shorter ones. But on the third day morning, Mr. XYZ complained to the junior doctor about acute pain in his left leg. This symptom, potentially indicated Deep Venous Thrombosis (a blood clot in his leg commonly known as DVT), thereby the concerned doctors were forced to address the existing condition by ordering an ultrasound of Mr. XYZ's lower extremities. (A primary concern with DVT is that blood clots in the legs may dislodge and travel to the lungs, causing a pulmonary embolism) [4].

The junior doctor based on the complaint then checked Mr. XYZ's medication orders and was surprised to see that the admitting doctor had not ordered prophylaxis for DVT (i.e., blood thinners, such as heparin or enoxaparin). The junior doctor was surprised because patient was admitted to the hospital typically in order to receive this treatment to prevent blood clots from forming while they lie in their hospital beds. Further, nothing about Mr. XYZ's medical record suggested he shouldn't have received this treatment as an important precautionary measure. Thus, USG reports came and, it was found that, there were blood clots present in Mr. XYZ's left calf. Due to his impaired kidney

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function, treatment for the blood clot required him to remain in the hospital on medication [5].

On 8<sup>th</sup> day in the hospital, at around 10 pm at night, a member of the environmental services (also known as housekeeping) staff found Mr. XYZ on the floor of his room. She immediately informed it to the nurses on the assigned ward. The nurses noted seizure activity and called the rapid response team to Mr. XYZ's bedside. The medical team reached to the ward on urgent appeal and gave him Intravenous (IV) medication of antiepileptic that stopped his seizure.

Since, there were no one present on bedside when he had a fall and seizure, thereby Mr. XYZ had to undergo an emergent CT scan of his head to check for any sign of bleeding. After regaining his mental consciousness, he complained of pain in his left shoulder and elbow, but X-rays of these joints showed no evidence of a traumatic fracture from his fall.

After ensuring that Mr. XYZ was stable, the overnight care team reviewed the chart and the medication history to try to determine the cause of Mr. XYZ's sudden seizure. Later they found that one of his old therapies of seizure medications (Levetiracetam) had not been given earlier in the day when it should have been. There was a notation in the Medication Administration Record (MAR) from the daytime nurse indicating that the ordered dose was not available in the pharmacy earlier in the day, staff wrote in the treatment chart as NA (Not Available) [6].

Furthermore, on discussions, the following day with the daily care team of doctors and nurses, it revealed that the nurses didn't notify the doctors or residents or the pharmacy that the essential medication was not administered. Neither did the staff explained the importance of the medicine and thereby it was not issued through manual method of procuring medicine from outside.

Fortunately, the overnight physicians restarted Mr. XYZ on his medication, and he suffered no apparent permanent harm. Mr. XYZ was discharged after 10 days in the hospital. Most hospitalizations for COPD are far shorter. In fact, many stay in hospitals only a couple days.

## Conclusion

Accurate therapy at the right time is a major part of patient care. Quality of treatment and care can only help the patient to sustain their health, so when a patient shows any sort of symptoms, being a healthcare professional, it is our responsibility to look into the matter and resolve it appropriately.

## References

1. Standards for the diagnosis and care of patients with chronic obstructive pulmonary disease. American Thoracic Society. *Am J Respir Crit Care Med.* 1995;152(5 pt 2):S77-S121.
2. Pauwels RA, Buist AS, Calverley PM, Jenkins CR, Hurd SS; GOLD Scientific Committee. Global strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease: NHLBI/WHO Global Initiative for Chronic Obstructive Pulmonary Disease (GOLD) Workshop summary. *Am J Respir Crit Care Med.* 2001;163:1256-76.
3. National Heart, Lung, and Blood Institute. COPD essentials for health professionals. NIH Publication No. 07-5845. December 2006. Bethesda, MD.
4. Stoller JK, Fromer L, Brantly M, Stocks J, Strange C. Primary care diagnosis of alpha-1 antitrypsin deficiency: issues and opportunities. *Cleve Clin J Med.* 2007;74:869-74.
5. Sutherland ER, Cherniack RM. Management of chronic obstructive pulmonary disease. *N Engl J Med.* 2004;350:2689-97.
6. Viegi G, Pistelli F, Sherrill DL, Maio S, Baldacci S, Carrozzi L. Definition, epidemiology, and natural history of COPD. *Eur Respir J.* 2007;30:993-1013.