Acute Exacerbations of COPD

For Providers

Which factors may increase a patient’s risk for exacerbations?

- History of prior acute exacerbation and/or hospitalization for exacerbation
- Increasing age
- Long duration of COPD diagnosis
- Presence of Asthma, CHF, or other cardiopulmonary comorbidities
- Low FEV₁

When should you evaluate a patient with COPD for an exacerbation?

- Any acute subjective complaint such as shortness of breath, increased cough, change in sputum production/characteristics, fatigue, or confusion
- Noticeable decline in ability to perform ADL's or increase in debility
- Any changes from baseline in lab values, vital signs, or spirometry that indicate a decline in pulmonary function

What signs on physical exams will suggest a COPD patient is exacerbated?

- Acute desaturation (SpO₂ below 92% on room air or usual Oxygen therapy setting)
- Increase in respiratory rate (>24 breaths/minute)
- Increased wheezing

Which alternate diagnoses must be considered and what testing should be performed?

- Pneumonia must be ruled out in elderly patients with COPD.
- A chest x-ray and CBC with differential is recommended in the presence of fever, productive cough, and/or change in sputum characteristics.
- Exacerbation of Congestive Heart Failure should be considered in the presence of respiratory crackles, edema, or JVD on physical exam.
- Consider ordering a metabolic panel and BNP looking for electrolyte and/or fluid abnormalities.
- Pulmonary Embolism should be considered in patients at high risk for thromboembolic disease or those presenting with symptoms of DVT or pleuritic chest pain.
**What are the primary interventions indicated for treating an exacerbation?**

- O₂ therapy should be initiated or increased in desaturated patients to ensure maintenance of >92%SpO₂.
- Schedule regular nebulized bronchodilator treatments during the exacerbation to improve symptoms/pulmonary function (SABA and/or SAMA), and make sure there is a stop date.
  - Ipratropium Bromide/Albuterol- 0.5mg/2.5 mg per 3 mL Q6H
  - Albuterol- 2.5 mg Q2H PRN
- Oral Prednisone burst (40 mg PO QD x5 days)
- Supportive therapy (frequent vital sign monitoring, nursing assessments, hydration, etc.)

**When should antibiotic therapy be used in an acute exacerbation?**

- Should be reserved for exacerbated patients with signs/symptoms of bacterial infection (fever, dyspnea, sputum production/color) or those at risk for poor outcome (Age >65; FEV₁ <50% predicted; >2 exacerbations per year)
- Antibiotics used should cover common pathogens (*H. influenzae*, *M. catarrhalis*, and *S. pneumoniae*), and be prescribed for a 7-day course.
- Doxycycline; Macrolide (Clarithromycin); Amoxicillin-Clavulante; TMP-SMX are recommended options
- If patient is unresponsive to therapy, consider changing antibiotic therapy or sputum culture to rule out Pseudomonas or MRSA etiology.

**What are the implications of an exacerbation on long-term management of COPD?**

- Hospital admission due to exacerbation is associated with increased mortality.
- Each exacerbation increases risk for future exacerbation and likely decreases pulmonary function, progressing disease process.
- Patient may require alteration in long-term management (Supplemental O₂, Bronchodilators, inhaled corticosteroids, etc.) after recovery.

**How to prevent future COPD exacerbations:**

- Smoking cessation if still smoking
- Vaccination: yearly Influenza, PPSV23, and PCV13 (if age >65)
- Pulmonary rehabilitation
- Prophylactic antibiotics may be considered for high risk, frequently exacerbated patients (*adverse effects must be appropriately weighed*)

Sources:
- OPTIMISTIC COPD Exacerbation Protocol: Recommendations for Providers

Version 1.4 Last updated 2/4/2020

Content is subject to copyright of the Trustees of Indiana University and may be used for educational, non-commercial, purposes only. Copyright ©2020 The Trustees of Indiana University.