Clinical guidance on chronic obstructive pulmonary disease (COPD) exacerbation risk and management

Identifying at-risk patients

Early identification of patients at risk for chronic obstructive pulmonary disease (COPD) exacerbations is critical. Utilize EHR data, laboratory findings and clinical history to flag risk indicators. Key diagnostic markers include prior exacerbations using eosinophil counts from a complete blood count with differential and the recognition of comorbidities, such as asthma, to determine the best prevention strategies.[1]

COPD exacerbations (i.e., lung attacks)

COPD exacerbations—also referred to as lung attacks—are acute, potentially life-threatening events comparable in severity to myocardial infarctions.[2,3] Timely recognition and intervention are essential to reduce morbidity and prevent recurrence.

Exacerbation risk assessments

Prior exacerbations are the strongest predictor of future events. Review EHRs for prior episodes, including recurrent "bad colds" and acute bronchitis preceding COPD diagnosis. The most common modifiable risk factors or treatable traits for COPD exacerbations (i.e., lung attacks) include[4,5]:

- Continued smoking or vaping
- Poor adherence to therapy
- Poor inhaler technique
- Comorbidities, including depression, uncontrolled asthma, gastroesophageal reflux disease and cardiovascular disease, for which treatment can lower COPD exacerbation risk

Assessment of risks should include patient-reported adherence, pharmacy fulfillment data and direct observation of inhaler use. Consider multidisciplinary consultation (e.g., respiratory therapy, cardiology, gastroenterology) when evaluating treatable traits.

For patients with advanced disease or frequent exacerbations, consider further evaluation for emphysema via imaging (i.e., computed tomography [CT] scans for lung cancer screening) and rapid lung function decline via spirometry.[6]

Risk-reduction strategies

Family physicians are well-positioned to address modifiable risk factors with strategies such as:

- Smoking and vaping cessation support
- Inhaler technique education via team-based care or online video demonstrations
- Immunization review and facilitation, including administration at local pharmacies
- Medication education on why, how and when to use all COPD maintenance and rescue inhalers

The American Academy of Family Physicians (AAFP) and the Global Initiative for Chronic Obstructive Lung Disease (GOLD) offer more recommendations for pharmacologic management.

The AAFP also offers videos and fact sheets with more information about prevention and adherence strategies.

Table 1. Therapeutic considerations for COPD exacerbation management

Category	Options
Pharmacologic escalation of maintenance therapy for uncontrolled exacerbations	• Chronic azithromycin • Roflumilast • Biologics: dupilumab, mepolizumab
First-time treatment combinations	• LAMA + rescue SABA • LAMA + LABA + rescue SABA • LAMA + LABA + ICS + rescue SABA
Surgical interventions	• Endobronchial valves • Lung volume reduction

Acronyms: LAMA = long-acting muscarinic antagonist; LABA = long-acting beta-agonist; SABA = short-acting beta-agonist; ICS = inhaled corticosteroid

Pulmonary rehabilitation

Pulmonary rehabilitation remains underutilized despite its proven benefits in improving functional status, reducing exacerbation frequency and potentially lowering one-year mortality in patients with prior severe events.[7,8]

Telerehabilitation has expanded access and increased feasibility for its inclusion in primary care.[7] Pulmonary rehabilitation should be prioritized post-exacerbation, analogous to cardiac rehabilitation following myocardial infarction.

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