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*October 2020*
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# Chronic obstructive pulmonary disease: Global strategy for the diagnosis, management, and prevention of COPD, a report (2019)

## About the Guideline

- Global Initiative for Chronic Obstructive Lung Disease (GOLD) began work on COPD guidelines in 1997 in collaboration with the National Heart, Lung, and Blood Institute, the National Institutes of Health, and the World Health Organization. The goal was to develop guidelines for evidence-based care of the patient with COPD, shaped by committees of leading experts around the world. GOLD's first report was published in 2001, revised in 2006 and 2011, and updated in 2013, 2014, 2015, and 2016. This current version includes literature from January 2016 to July 2017.
- One major difference from the previous version is that spirometry readings have been separated from the "ABCD" groups, allowing pharmacotherapy recommendations to be based on patient symptoms and history of exacerbations.

## Overview

- Become familiar with the recommendations provided in this guideline, especially if you work in an acute care setting.
- Chronic obstructive pulmonary disease (COPD) develops from significant exposure to noxious particles/gases that cause airway/alveolar abnormalities.
- COPD is currently the fourth leading cause of death in the world and is projected to become the third leading cause of death by 2020.
- COPD is preventable and treatable.

## Key Clinical Considerations

**Diagnosis and assessment**

- Patients tend to underreport symptoms. COPD should be considered if the patient has any of the following symptoms:
    - Dyspnea (progressive over time, worse with exercise, persistent)
    - Chronic cough (may be recurrent and a wheeze may be present)
    - Chronic sputum production of any pattern (progressive over time, worse with exercise, persistent)
    - Recurrent lower respiratory tract infections
    - History of risk factors (genetic, congenital, exposure to tobacco smoke, smoke from home cooking and heating fuels, and occupational exposures)
    - Family history of COPD
    - Other childhood experiences such as low birth weight and childhood respiratory infections
- Certain comorbid conditions may be mistaken for COPD. These conditions include:
    - Asthma
    - Heart failure
    - Bronchiectasis

  - Tuberculosis
  - Obliterative bronchiolitis
  - Diffuse panbronchiolitis
- In addition to an assessment of the patient's physical symptoms (using the COPD Assessment Test [CAT™] and/or the patient's dyspnea scale using the modified Medical Research Council [mMRC] score), spirometry is required to make the diagnosis of COPD.
- Spirometry readings, assessment of symptoms, and history of exacerbations (moderate-severe) are required to determine the severity of COPD. The Refined ABCD assessment tool provides information about symptom burden and risk of exacerbation, which can be used to guide therapy.
- All patients and their family members should be screened for alpha-1 antitrypsin deficiency (AATD), especially in areas with high prevalence of AATD.

**Prevention and maintenance**

- Smoking cessation is important in both the prevention and maintenance of COPD.
- Medications can reduce COPD symptoms, decrease number and severity of exacerbations, and improve health and exercise tolerance.
- The best inhaler is one that the patient will use. The licensed independent practitioner (LIP) should individualize therapy considering the severity of symptoms, risk of exacerbations, patient response, side effects, comorbidities, ability of patient to obtain medication (cost, drug plan), the ability to use various delivery types, and patient preference.
- Recommendations:
  - Influenza and pneumococcal vaccinations
  - Pulmonary rehabilitation
  - Long-term oxygen as indicated
  - Consider:
    - Noninvasive ventilation (NIV) for acute respiratory failure
    - Surgical/bronchoscopic interventions with advanced emphysema
    - Palliative approaches for symptom control

**Treatment of Stable COPD**

- The type of inhaler device prescribed should be individualized to each patient's ability, preference, cost, and access.
  - Patient education, including repeat demonstrations, at each visit is essential and should be considered prior to changing therapy.
- Inhaled long-acting beta$_2$-agonists (LABA) and long-acting antimuscarinic antagonists (LAMA) are preferred over short-acting beta$_2$-agonists (SABA), except for occasional dyspnea.
- Long-term use of monotherapy with inhaled corticosteroids (ICS) is NOT recommended but use of ICS combined with a LABA is more effective than individual medications.
  - Oral glucocorticoids are NOT recommended.
- Other medications that may decrease exacerbations are:
  - Phosphodiesterase-4 ($PDE_4$) inhibitors
  - Long-term azithromycin and erythromycin over 1 year
  - Mucolytics/antioxidants
- Alpha-1 antitrypsin augmentation therapy may be used for patients with AATD.
- Nonpharmacologic therapy includes:

- Education
- Self-management
- Pulmonary rehabilitation
- Vaccination
- Nutritional support
- End-of-life/palliative care
- Long-term oxygen therapy
- Noninvasive ventilation
- Interventional bronchoscopy and surgery

**Management of Exacerbations**

- The most common cause of a COPD exacerbation (acute worsening of symptoms) is a respiratory tract infection.
- First-line treatment is a SABA, followed with a LABA.
  - Treatment with systemic corticosteroids and antibiotics (if necessary) should last no longer than 5 to 7 days.
  - For patients who need mechanical ventilation, noninvasive ventilation (NIV) should be considered over intubation.
- Follow-up within 1 month after hospital discharge is recommended and should include:
  - Review of all laboratory/clinical data
  - Maintenance therapy and inhaler technique
  - Tapering or discontinuation of medications
  - Management of comorbid conditions
- Additional follow-up is recommended at 3 months. The need for long-term oxygen therapy can be better assessed.

**Comorbidities**

- Other diseases coexist with COPD, such as:
  - Lung cancer
  - Heart failure
  - Ischemic heart disease
  - Arrhythmias
  - Peripheral vascular disease
  - Hypertension
  - Osteoporosis
  - Depression
  - Anxiety
  - Obstructive sleep apnea
  - Diabetes
  - Gastroesophageal reflux
- Usually these diseases do not change COPD treatment, but the treatment of these diseases should be considered in the complexity of the overall care of the patient with COPD.

**Reference:**

Global Initiative for Chronic Obstructive Lung Disease, Inc. (2017). Global Strategy for the diagnosis, management, and prevention of chronic obstructive pulmonary disease. Accessed September 2018 via the Web at http://goldcopd.org/gold-2017-global-strategy-diagnosis-management-prevention-copd/

**Link to Practice Guideline:**
http://goldcopd.org/gold-2017-global-strategy-diagnosis-management-prevention-copd/