Update on COPD Treatment Guidelines
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Classification of airflow limitation in patients with FEV1/FVC < 0.70

<table>
<thead>
<tr>
<th>GOLD</th>
<th>Classification</th>
<th>FEV1 % predicted</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mild</td>
<td>≥ 80%</td>
</tr>
<tr>
<td>2</td>
<td>Moderate</td>
<td>50% ≤ FEV1 &lt; 80%</td>
</tr>
<tr>
<td>3</td>
<td>Severe</td>
<td>30% ≤ FEV1 &lt; 50%</td>
</tr>
<tr>
<td>4</td>
<td>Very severe</td>
<td>FEV1 &lt; 30%</td>
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Smoking Cessation

- Ask tobacco abuse status
- Advise strongly encourage all users to stop
- Assess determine willingness to quit
- Assist help the patient with a quit plan, provide support
- Arrange schedule follow-up contact
Vaccinations

- Influenza vaccination reduces serious illness and death in COPD patients
- PPSV23 has been shown to reduce incidence of community-acquired pneumonia in COPD patients age < 65 years with FEV1 < 40%
- PCV13 in adults greater > 65 years age reduces the bacteremia and serious invasive pneumococcal disease

Bronchodilators in stable COPD

- Inhaled bronchodilators in COPD are the main medication in symptom control
- Combination of SABA and SAMA are superior compared to either medication alone in improving symptoms and FEV1
- LABAs and LAMAs significantly improve lung function, dyspnea, health status, and reduce exacerbation rate
- LAMAs are better than LABAs in exacerbation and hospitalization reduction
- LAMA/LABA increases FEV1 and reduce symptoms and exacerbations compared to monotherapy
- Tiotropium improves effectiveness of pulmonary rehabilitation and exercise performance
- Theophylline small bronchodilator effect

Inhaled corticosteroids in stable COPD

- ICS/LABA combo is better that individual components in improving lung function, health status, and reducing exacerbations in moderate to very severe COPD
- Increase risk of pneumonia in severe disease
- ICS/LAMA/LABA improves lung function, symptoms, health status and reduces exacerbation compared to ICS/LABA or LAMA
Other anti-inflammatory therapy in stable COPD
- Oral steroids – no proven benefit
- PDE4 inhibitors (Roflumilast)
  - Improves lung function and reduces moderate and severe exacerbations
- Antibiotics – azithromycin and erythromycin reduces exacerbation over one year
- Simvastatin – no proven benefit
- Mucolytics – may reduce exacerbations

Pulmonary Rehabilitation
- Improves dyspnea and health status
- Improves exercise tolerance
- Reduces hospitalizations in patients with recent exacerbations

Supportive and End-of-Life Care
- Opiates
- Oxygen
- Fans
- Nutritional supplements
Oxygen Therapy and Ventilatory Support

• Long term oxygen therapy increases survival in chronic hypoxemic patients
• NIPPV improve hospitalization free survival in patients with a recent hospitalization with daytime persistent hypercapnia (PaCO2 ≥ 52 mm Hg)

Treatment of Stable COPD

• LABAs and LAMAs are preferred over short acting agents
• Inhaler technique
• Theophylline
• Long-term on monotherapy with ICS is not recommended
• Long-term ICS/LABA for patients with history of exacerbations
• Long-term therapy with oral corticosteroids is not recommended
• PDE4 inhibitor should be considered in patients with exacerbations despite LABA/ICS or LABA/LAMA/ICS
• Statin therapy is not recommended
• Alpha-1 antitrypsin deficiency should be augmented with therapy
Modified British Medical Research Council (mMRC) Questionnaire

<table>
<thead>
<tr>
<th>Grade</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I only get breathless with strenuous exercise</td>
</tr>
<tr>
<td>1</td>
<td>I get short of breath when hurrying on the level or walking up a slight hill</td>
</tr>
<tr>
<td>2</td>
<td>I walk slower than people of the same age on the level because of breathlessness, or I have to stop for breath when walking on my own pace on the level</td>
</tr>
<tr>
<td>3</td>
<td>I stop for breath after walking about 100 meters or after a few minutes on the level</td>
</tr>
<tr>
<td>4</td>
<td>I am too breathless to leave the house or I am breathless when dressing or undressing</td>
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ABCD Assessment Tool

Assessment of symptoms/risk of exacerbations

Exacerbation history

- Group A
  - Continue, step up by alternative type of bronchodilator
  - Evaluate efficacy

- Group D
  - LABA + ICS

- Group C
  - LAMA

- Group D
  - LABA + ICS

- Group B
  - LAMA + LABA

- Group A
  - Further exacerbation

- Group D
  - LABA + ICS

- Group C
  - LAMA

- Group D
  - LABA + ICS

- Group B
  - LAMA
Management of Acute Exacerbations

• Outpatient
  • Oral steroids
  • Antibiotics
  • Increase short acting bronchodilators
• Inpatient
  • Floors
  • ICU

Management of Acute Exacerbations
When to hospitalize?
• Severe symptoms
• Acute respiratory failure
• New physical signs
• Failed outpatient treatment
• Co-existing conditions

Management of Acute Exacerbations
What to order?
• CXR
• ABG
• IV or oral steroids
• Antibiotics
• SABA +/- anticholinergics
• Oxygen
• NIPPV
• DVT prophylaxis
• CT with PE protocol?
Management of Acute Exacerbations
ICU
• NIPPV
• Pending respiratory failure (hypoxemic and/or hypercapneic)
• Respiratory muscle fatigue
• Invasive mechanical ventilation

Reference
• GOLD Guidelines 2017