CHRONIC OBSTRUCTIVE PULMONARY DISEASE TREATMENTS

Risk Factors:
- genetic factors, exposure to particles (tobacco smoke, occupational dusts, outdoor air pollution), oxidative stress, respiratory infections, nutrition, comorbidities.

Classification
- Stage 1: Mild – FEV₁/FVC<0.70; FEV₁≥80% predicted.
- Stage 2: Moderate – FEV₁/FVC<0.70; 50%≤FEV₁<80% predicted.
- Stage 3: Severe – FEV₁/FVC<0.70; 30%≤FEV₁<50% predicted.
- Stage 4: Very Severe – FEV₁/FVC<0.70; FEV₁<30% predicted or FEV₁<50% predicted + CRF.

Step-wise treatment – Visit the Global Initiative for Chronic Obstructive Lung Disease (GOLD) website at www.goldcopd.org for information about use of medications at various stages of COPD.

<table>
<thead>
<tr>
<th>Generic</th>
<th>Brand</th>
<th>Form</th>
<th>Usual Dosage</th>
</tr>
</thead>
</table>

**LONG-ACTING BETA₂-AGONISTS (LABAs)**

- **Arformoterol**
  - **Brovana¹**
    - soln
    - Adults: Inhalate 15mcg twice daily (AM & PM) by nebulization (max: 30mcg/day). Use standard jet nebulizer with air compressor (see literature).
    - Children: Not recommended.

- **Formoterol**
  - **Foradil Aerolizer**
    - DPI
    - Adults: 1 inh (12mcg) every 12hrs using Aerolizer inhaler (max: 24mcg/day)
    - Children: Not recommended.

- **Indacaterol**
  - **Perforomist¹-²**
    - soln
    - Adults: One 20mcg vial twice daily (AM & PM) by oral inhalation via nebulizer (max: 40mcg/day)
    - Children: Not recommended.

- **Salmeterol**
  - **Serevent Diskus²**
    - DPI
    - Adults: 1 inh (50mcg) twice daily (AM & PM) every 12hrs
    - Children: Not recommended.

**SHORT-ACTING ANTICHOLINERGICS**

- **Ipratropium bromide**
  - —¹
    - soln
    - Adults: 500mcg by oral nebulization 3–4 times daily every 6–8hrs
    - Children: Not recommended.

- **Atrovent HFA¹**
  - MDI
    - Adults: 2 inh 4 times daily (max: 12 inh/day)
    - Children: Not recommended.

**LONG-ACTING ANTICHOLINERGICS**

- **Tiotropium bromide**
  - **Spiriva HandiHaler**
    - caps
    - Adults: 2 oral inhalations of one 18mcg caps once daily, using HandiHaler device. Do not swallow caps.
    - Children: Not recommended.

**ANTICHOLINERGIC + BETA₂-AGONIST**

- **Ipratropium bromide + albuterol**
  - —¹
    - soln
    - ≥18yrs: 1 vial (3ml) 4–6 times daily via nebulizer
    - <18yrs: Not recommended.

- **Combivent Respimat²**
  - MDI
    - Adults: 1 inh 4 times daily (max: 6 inh/day)
    - Children: Not recommended.

**ANTICHOLINERGIC + LONG-ACTING BETA₂-AGONIST (LABA)**

- **Umeclidinium + vilanterol**
  - **Anoro Ellipta**
    - DPI
    - Adults: 1 inh once daily
    - Children: Not established.

**CORTICOSTEROIDS**

- **Budesonide + formoterol**
  - **Symbicort 160/4.5²**
    - MDI
    - Adults: 2 inh of 160/4.5mcg twice daily
    - Children: Not recommended.

- **Fluticasone + salmeterol**
  - **Advair 250/50 Diskus²³**
    - DPI
    - Adults: 1 inh of 250/50mcg twice daily
    - Children: Not recommended.

- **Fluticasone + vilanterol**
  - **Breo Ellipta**
    - DPI
    - Adults: 1 inh once daily
    - Children: Not established.

**PDE4-INHIBITOR**

- **Roflumilast**
  - **Daliresp¹,²**
    - tabs
    - Adults: One 500mcg tab once daily
    - Children: Not recommended.

**NOTES**

- Key: CRF = chronic respiratory failure; DPI = dry powder inhaler; FEV₁ = forced expiratory volume in one second; FVC = forced vital capacity; MDI = metered dose inhaler
- ¹Indicated only for COPD.
- ²Not indicated for the relief of acute bronchospasm.
- ³Only Advair 250/50 Diskus twice daily is approved for maintenance treatment of COPD because an efficacy advantage of the higher strength Advair 500/50 over Advair 250/50 has not been demonstrated. Other strengths and formulations of Advair are available. Not an inclusive list of medications and/or official indications. Please see drug monograph at www.eMPR.com and/or contact company for full drug labeling.

(Rev. 6/2014)