ASTHMA MANAGEMENT: DURING PREGNANCY AND LACTATION

GOALS OF THERAPY: ASThma CONTROL
• Minimal or no chronic symptoms day or night
• Minimal or no exacerbations
• No limitations on activities: no school/work missed

CLASSIFYING ASTHMA SEVERITY AND INITIATING TREATMENT

<table>
<thead>
<tr>
<th>Components of Severity</th>
<th>Mild Intermittent</th>
<th>Mild Persistent</th>
<th>Moderate Persistent</th>
<th>Severe Persistent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Symptoms/Day</td>
<td>≤2 days/week</td>
<td>&gt;2 days/week but &lt; daily</td>
<td>Daily</td>
<td>Continual</td>
</tr>
<tr>
<td>Symptoms/Night</td>
<td>≤2 nights/month</td>
<td>&gt;2 nights/month</td>
<td>&gt;1 night/week</td>
<td>Frequent</td>
</tr>
<tr>
<td>PEF or FEV₁</td>
<td>≥80%</td>
<td>≥80%</td>
<td>&gt;60% – &lt;80%</td>
<td>≤60%</td>
</tr>
<tr>
<td>PEF Variability</td>
<td>&lt;20%</td>
<td>20% – 30%</td>
<td>&gt;30%</td>
<td>&gt;30%</td>
</tr>
</tbody>
</table>

STEPWISE APPROACH FOR MANAGING ASTHMA

**Intermittent Asthma**

**Step 1** (Mild Intermittent)
No daily medication needed. Severe exacerbations may occur, separated by long periods of normal lung function and no symptoms. A course of systemic corticosteroid is recommended.

**Step 2** (Mild Persistent)
**Preferred treatment:** Low-dose inhaled corticosteroid.¹
**Alternative treatment (listed alphabetically):**
- Cromolyn, leukotriene receptor antagonist²
- Sustained-release theophylline to serum concentration of 5–12 mcg/mL.

**Step 3** (Moderate Persistent)
**Preferred treatment:**
- EITHER Low-dose inhaled corticosteroid¹ and long-acting inhaled beta₂-agonist
  - OR Medium-dose inhaled corticosteroid.¹
  - OR If needed (particularly in patients with recurring severe exacerbations): Medium-dose inhaled corticosteroid¹ and long-acting inhaled beta₂-agonist
  - OR If needed: Medium-dose inhaled corticosteroid¹ and either theophylline or leukotriene receptor antagonist.²

**Alternative treatment:**
- Low-dose inhaled corticosteroid¹ and either theophylline or leukotriene receptor antagonist.²
- If needed: Medium-dose inhaled corticosteroid¹ and either theophylline or leukotriene receptor antagonist.²

**Quick-Relief Medication for All Patients**
- Short-acting bronchodilator: 2–4 puffs short-acting beta₂-agonist³ as needed for symptoms.
- Intensity of treatment will depend on severity of exacerbation; up to 3 treatments at 20-minute intervals or a single nebulizer treatment as needed. Course of systemic corticosteroid may be needed.
- Use of short-acting inhaled beta₂-agonist³ >2 times a week in intermittent asthma (daily, or increasing use in persistent asthma) may indicate the need to initiate (increase) long-term-control therapy.

**Persistent Asthma**

**Step 4** (Severe Persistent)
**Preferred treatment:**
- High-dose inhaled corticosteroid AND
- Long-acting inhaled beta₂-agonist AND, if needed, Corticosteroid tablets or syrup long term (2 mg/kg/day, generally not to exceed 60 mg/day). (Make repeat attempts to reduce systemic corticosteroid and maintain control with high-dose inhaled corticosteroid.)¹

**Alternative treatment:**
- High-dose inhaled corticosteroid¹ AND Sustained release theophylline to serum concentration of 5–12 mcg/mL.

ADDITIONAL INFORMATION
• The stepwise approach is meant to assist, not replace, the clinical decisionmaking required to meet individual patient needs.
• Classify severity: assign patient to most severe step in which any feature occurs (PEF is percent of personal best; FEV₁ is percent predicted).
• Gain control as quickly as possible (consider a short course of systemic corticosteroid), then step down to the least medication necessary to maintain control.
• Minimize use of short-acting inhaled beta₂-agonist³ (eg, use of approximately one canister a month even if not using it every day indicates inadequate control of asthma and the need to initiate or intensify long-term-control therapy).
• Provide education on self-management and controlling environmental factors that make asthma worse (eg, allergens, irritants).
• Refer to an asthma specialist if there are difficulties controlling asthma or if Step 4 care is required. Referral may be considered if Step 3 care is required.

NOTES
1There are more data on using budesonide during pregnancy than on using other inhaled corticosteroids.
2There are minimal data on using leukotriene receptor antagonists in humans during pregnancy, although there are reassuring animal data submitted to FDA.
3There are more data on using albuterol during pregnancy than on using other short-acting inhaled beta₂-agonists.

REFERENCES