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
- Maintain (near) normal pulmonary function
- Minimal use of short-acting inhaled $beta_2$-agonists[3]
- Minimal or no adverse effects from medications

CLASSIFYING ASTHMA SEVERITY AND INITIATING TREATMENT

	Classification of Asthma Severity During Pregnancy and Lactation			
		Persistent		
Components of Severity	**Mild Intermittent**	**Mild**	**Moderate**	**Severe**
Symptoms/Day	≤2 days/week	>2 days/week but < daily	Daily	Continual
Symptoms/Night	≤2 nights/month	>2 nights/month	>1 night/week	Frequent
PEF or FEV_1	≥80%	≥80%	>60% –<80%	≤60%
PEF Variability	<20%	20% –30%	>30%	>30%

STEPWISE APPROACH FOR MANAGING ASTHMA

Intermittent Asthma — **Persistent Asthma**

Step 1 (Mild Intermittent)
No daily medications, albuterol as needed.

Step 2 (Mild Persistent)
Preferred treatment:
Low-dose inhaled corticosteroid.[1]

Alternative treatment (listed alphabetically):
cromolyn, leukotriene receptor antagonist[2]
OR
theophylline.[4]

Step 3 (Moderate Persistent)
Preferred treatment:
EITHER
Low-dose inhaled corticosteroid[1] and long-acting inhaled $beta_2$-agonist
OR
Medium-dose inhaled corticosteroid.[1]
If needed (particularly in patients with recurring severe exacerbations): Medium-dose inhaled corticosteroid[1] and long-acting inhaled $beta_2$-agonist

Alternative treatment:
Low-dose inhaled corticosteroid[1] and either theophylline[4] or leukotriene receptor antagonist.[2]
If needed: Medium-dose inhaled corticosteroid[1] and either theophylline[4] or leukotriene receptor antagonist.[2]

Step 4 (Severe Persistent)
Preferred treatment:
High-dose inhaled corticosteroid
AND
Long-acting inhaled $beta_2$-agonist
AND, if needed,
Corticosteroid tablets or syrup long term (2mg/kg/day, generally not to exceed 60mg/day).
(Make repeat attempts to reduce systemic corticosteroid and maintain control with high-dose inhaled corticosteroid.[1])

Alternative treatment:
High-dose inhaled corticosteroid[1]
AND
theophylline[4]
AND,
if needed,
oral corticosteroids.

Step up
If control is not maintained, consider step up. First, review patient medication technique, adherence, and environmental control.

Assess control

Step down
Review treatment every 1–6 months; a gradual stepwise reduction in treatment may be possible.

Quick-Relief Medication for All Patients

- Short-acting bronchodilator: 2–4 puffs **short-acting $beta_2$-agonist**[3] 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 $beta_2$-agonist[3] >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.

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; FEV_1 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 $beta_2$-agonist[3] (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 (e.g., 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

[1]Budesonide is the preferred inhaled corticosteroid for use during pregnancy. However, pregnant patients whose asthma was well controlled on other inhaled corticosteroids before pregnancy may continue their treatment.

[2]There are minimal data on using leukotriene receptor antagonists in humans during pregnancy, although there are reassuring animal data submitted to FDA.

[3]There are more data on using albuterol during pregnancy than on using other short-acting inhaled $beta_2$-agonists.

[4]Achieve theophylline serum concentration 5–12mcg/mL.

REFERENCES

American College of Obstetricians and Gynecologists. Asthma in Pregnancy. ACOG Practice Bulletin No. 90. *Obstet Gynecol* 2008;111:457-64.

National Asthma Education and Prevention Program. Working Group Report on Managing Asthma During Pregnancy: Recommendations for Pharmacologic Treatment 2004. U.S. Department of Health and Human Services. http://www.nhlbi.nih.gov/health/prof/lung/asthma/astpreg/astpreg_full.pdf. Accessed November 26, 2012. .

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