Prenatal Care: Asthma

Week 37

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Reading Assignment:
ACOG Practice Bulletin #90
Asthma in Pregnancy
LEARNING OBJECTIVES

• To understand the asthma severity classification

• To be able to counsel patients on the effects of pregnancy on asthma and the effects of asthma on pregnancy

• To identify appropriate stepwise pharmacotherapy for asthma during pregnancy
CASE VIGNETTE

• Ms. Respira Profunda, a 27 yo G1 P0 at 14wga, presents to clinic for an antepartum visit and would like to discuss management of her asthma during pregnancy.
FOCUSED HISTORY

What elements of the patient’s history are most relevant?

- **PMH:**
  - Asthma diagnosed 2 years ago by her PCP and classified as “mild intermittent”
    - Denies previous intubations, ICU admissions, or hospitalizations
    - One ED visit when symptoms resolved with nebulizer treatment
    - Denies oral corticosteroid use
    - Exacerbated by allergies and URTIs
    - Best peak flow ~350 L/min (within normal range)
  - Seasonal allergic rhinitis
- **PSH:** Tonsillectomy at age 4
- **OBH:**
  - Current pregnancy uncomplicated other than PMH noted above and up to date on prenatal care
  - Has not yet felt fetal movement
  - Denies ctx, lof, vb
  - Denies current symptoms of her asthma. Uses albuterol inhaler once every 2 weeks
  - No current symptoms of allergic rhinitis.
- **PGYNH:** Regular menses prior to pregnancy. Denies history of STIs or abnormal paps. Denies history of fibroids or cysts.
- **MEDS:** PNV, Albuterol PRN
- **All:** NKDA
- **FH:** HTN
- **SH:** Denies tob, drug, etoh use. No tob use in her home. Denies IPV. Accepts blood products.
PERTINENT PHYSICAL EXAM FINDINGS

What elements of the patient’s physical exam are most relevant?

• General: Well appearing woman, VSS
• CV: RRR
• Resp: **CTAB, good air movement throughout**
• Abd: Soft, ND, NT, appropriately gravid
• FHR 150s bpm
• Ext: WWP
ASTHMA

What percentage of pregnancies are affected by asthma?
• 4-8%

What is the basic pathophysiology of asthma?
• Chronic airway inflammation
• Increased airway responsiveness to a variety of stimuli
• Airway obstruction that is completely or partially reversible
# Asthma Severity Classification

## Table 1. Classification of Asthma Severity and Control in Pregnant Patients

<table>
<thead>
<tr>
<th>Asthma Severity* (Control(^1))</th>
<th>Symptom Frequency</th>
<th>Nighttime Awakening</th>
<th>Interference With Normal Activity</th>
<th>FEV(_1) or Peak Flow (Predicted Percentage of Personal Best)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermittent (well controlled)</td>
<td>2 days per week or less</td>
<td>Twice per month or less</td>
<td>None</td>
<td>More than 80%</td>
</tr>
<tr>
<td>Mild persistent (not well controlled)</td>
<td>More than 2 days per week, but not daily</td>
<td>More than twice per month</td>
<td>Minor limitation</td>
<td>More than 80%</td>
</tr>
<tr>
<td>Moderate persistent (not well controlled)</td>
<td>Daily symptoms</td>
<td>More than once per week</td>
<td>Some limitation</td>
<td>60–80%</td>
</tr>
<tr>
<td>Severe persistent (very poorly controlled)</td>
<td>Throughout the day</td>
<td>Four times per week or more</td>
<td>Extremely limited</td>
<td>Less than 60%</td>
</tr>
</tbody>
</table>

Abbreviation: FEV\(_1\), forced expiratory volume in the first second of expiration

*Assess severity for patients who are not taking long-term-control medications.

\(^1\)Assess control in patients taking long-term-control medications to determine whether step-up therapy, step-down therapy, or no change in therapy is indicated.
EFFECTS OF PREGNANCY ON ASTHMA

Are there any predictors of the effect of a patient’s pregnancy on her asthma control?

• Her asthma control in prior pregnancies

What is the likelihood of asthma exacerbation or hospitalization during pregnancy with:

• **Mild asthma**
  • Exacerbation 12.6%
  • Hospitalization 2.3%

• **Moderate asthma**
  • Exacerbation 25.7%
  • Hospitalization 6.8%

• **Severe asthma**
  • Exacerbation 51.9%
  • Hospitalization 26.9%
EFFECTS OF ASTHMA ON PREGNANCY

Can women with mild and well-controlled asthma have excellent maternal and perinatal pregnancy outcomes?

• Yes

What are some of the risks of severe and poorly-controlled asthma in pregnancy?

• Increased prematurity, need for cesarean delivery, preeclampsia, growth restriction
ASSESSMENT OF WOMEN WITH ASTHMA DURING PRENATAL CARE

What clinical evaluation should be performed at each prenatal visit?

• Subjective assessment of symptoms

• Pulmonary function tests
  • Spirometry is preferred method
  • Peak expiratory flow measurement with peak flow meter is sufficient
  • Lung auscultation
What is the goal of asthma therapy in pregnancy?
- Maintain adequate oxygenation of the fetus by preventing hypoxemic episodes in the mother

Are asthma medications safe in pregnancy?
- Yes
- Per The National Asthma Education and Prevention Program, "it is safer for pregnant women with asthma to be treated with asthma medications than it is for them to have asthma symptoms and exacerbations."

What nonpharmacologic approaches should be used for asthma during pregnancy?
- Avoiding allergens and irritants
  - Tobacco smoke, mold, dust mite, animal dander, cockroaches
- Control GERD
- Correct use of inhalers
- Education by medical provider
STEPWISE PHARMACOTHERAPY FOR ASTHMA DURING PREGNANCY

What is the preferred inhaled corticosteroid in pregnancy?
• Budesonide

What is the preferred rescue therapy in pregnancy?
• Albuterol

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<th>Step Therapy Medical Management of Asthma During Pregnancy</th>
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<td><strong>Mid Intermittent Asthma</strong></td>
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<tr>
<td>• No daily medications, albuterol as needed</td>
</tr>
<tr>
<td><strong>Mid Persistent Asthma</strong></td>
</tr>
<tr>
<td>• Preferred—Low-dose inhaled corticosteroid</td>
</tr>
<tr>
<td>• Alternative—Cromolyn, leukotriene receptor antagon-</td>
</tr>
<tr>
<td>• theophylline (serum level 5–12 mcg/mL)</td>
</tr>
<tr>
<td><strong>Moderate Persistent Asthma</strong></td>
</tr>
<tr>
<td>• Preferred—Low-dose inhaled corticosteroid and salmeterol</td>
</tr>
<tr>
<td>• or medium-dose inhaled corticosteroid and albuterol</td>
</tr>
<tr>
<td>• Alternative—Low-dose or (if needed) medium-dose inhaled</td>
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<tr>
<td>• corticosteroid and either leukotriene receptor antagonist</td>
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FETAL SURVEILLANCE

What fetal surveillance should be considered for pregnant women with asthma?

• Serial growth ultrasound and antenatal fetal testing should be considered for women with poorly controlled asthma, moderate-to-severe asthma, or recovering from an asthma exacerbation
  • Starting 32 weeks gestation

• Ensure they are well-dated to facilitate fetal growth assessment throughout pregnancy

• Fetal kick counts
Black patients are dying from asthma at a rate disproportionate to their prevalence of asthma.
Description: Asthma in Pregnancy Counseling

We reviewed the implications of asthma during pregnancy. Their asthma currently is classified as ***. Their current medication regimen is *** and has been managed by ***. Baseline peak expiratory flow is ***.
CODING AND BILLING

Antenatal Testing Counseling

• ICD-10 Codes
  • 099.5
    • Diseases of the respiratory system complicating pregnancy, childbirth, and puerperium

• CPT Codes
  • 99214
    • Office or other outpatient visit for the evaluation and management of an established patient, which requires at least two of these three key components:
      • A detailed history; a detailed examination; medical decision making of moderate complexity.
      • Counseling and/or coordination of care with other physicians, other qualified health care professionals, or agencies are provided consistent with the nature of the problem(s) and the patient's and/or family's needs.
      • Usually, the presenting problem(s) are of moderate to high severity.
      • Typically, 25 minutes are spent face-to-face with the patient and/or family.
EVIDENCE
