Optimal Management of Asthma: Use the Right Tools
Session 1: Optimal Management of Asthma: Use the Right Tools

Learning Objectives

- Develop asthma management plans based on assessment of asthma severity and control using validated tools.
- Improve patient adherence using patient education strategies and planned care visits.

Faculty

Dennis E. Doherty, MD, FCCP
Professor of Medicine
Division of Pulmonary, Critical Care, and Sleep Medicine
University of Kentucky College of Medicine
Lexington
Chairman of Medicine
Lexington Veterans Affairs Medical Center

Dr Doherty is a professor of medicine and chairman of medicine at the Lexington Veterans Affairs Medical Center and is a professor of medicine in the Division of Pulmonary, Critical Care, and Sleep Medicine at the University of Kentucky College of Medicine and Chandler Medical Center in Lexington.

He completed his medical school training and internal medicine residency at The Ohio State College of Medicine, Columbus, and his Pulmonary and Critical Care Fellowship at the University of Colorado Medical Center and National Jewish Medical and Research Center, Denver. He served as chief of the Pulmonary and Critical Care Medicine Division at the University of Kentucky until 2007.

Dr Doherty has been the principal investigator on over 35 grants from the National Institutes of Health, Veterans Affairs, the American Lung Association, and other granting organizations for basic science and clinical studies. He has published over 100 articles, abstracts, and chapters on the subjects of acute and chronic lung inflammation, obstructive lung disease, and pulmonary fibrosis.

Faculty Financial Disclosure Statement

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Acronym List

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Definition</th>
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<tr>
<td>ICS</td>
<td>inhaled corticosteroid</td>
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<tr>
<td>LABA</td>
<td>long-acting β-agonist</td>
</tr>
<tr>
<td>SABA</td>
<td>short-acting β-agonist</td>
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Suggested Reading List


Yawn PB, Bertram S. The Asthma APGAR facilitates implementation of the asthma guidelines and helps modify practice. *J Asthma Allergy*. In press.

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Use the Right Tools
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Lexington, Kentucky

Jeremiah—Visit 1
Presentation and Brief History
- 11 yo accompanied by his parents
- 9 months ago, he was
  - Diagnosed with intermittent asthma
  - FEV1, was 95% of predicted with 12% reversibility
  - Prescribed inhaled short-acting beta agonist (SABA) PRN
  - No show for a follow-up visit because “he had been doing fine”
- Over the past 6 weeks, he has
  - Increased coughing—daytime and nighttime
  - Decreased activity—missed baseball practice twice
  - Increased inhaler use—about 4 days a week

Jeremiah—Visit 1
Physical Exam
- General appearance
  - Healthy; no respiratory distress
- Vital signs
  - All within normal limits; RR = 20
- Chest exam
  - No retractions
  - Diffuse end-expiratory wheezes

Jeremiah—Visit 1
Clinical Decision Point
What would you do next?
1. Order allergy tests
2. Order a chest x-ray
3. Order spirometry
4. Add another asthma medication
5. None of the above

Asthma Management Algorithm
Assess SEVERITY
Match treatment to severity
Controlled
Assess CONTROL
Not controlled
Why inadequate?
• Adherence
• Triggers
• Comorbidities
• Psychosocial
• Inhaler technique

Asthma Severity
Components and Classification

- Components
  - Impairment—symptoms, nighttime awakenings, SABA use, activity level, lung function
  - Risk—exacerbations
- Classification
  - Intermittent
  - Persistent—mild, moderate, severe


Selecting Initial Controller Therapy Based on Asthma Classification

<table>
<thead>
<tr>
<th>Components of Impairment</th>
<th>Classification of Asthma Severity (Children 5–11 years)</th>
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<tr>
<td>Impairment</td>
<td>Intermittent</td>
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<tr>
<td>Risk</td>
<td>Persistent</td>
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Jeremiah—Visit 1
Management Plan

- Diagnosis
  - Mild persistent asthma
- Pharmacotherapy
  - Step 2: low-dose inhaled corticosteroids (ICS)
- Patient education/counseling
  - Taught proper inhaler technique
  - Taught about trigger avoidance
  - Discussed goals of therapy
- Planned follow-up
  - Scheduled visit in 4 weeks

An inhaler technique workshop is offered during breaks.

Importance of Assessing What Patients and Families Consider Treatment Success

I want Jeremiah to not cough during class.
I want to stop being awakened by Jeremiah's coughing at night.
I want to not miss baseball practice.
Importance of Routine Follow-up Visits

- To achieve goals of asthma control, ERP-3 recommends periodic assessments
  - Generally 1- to 6-month intervals based on
    - Asthma severity
    - Level of asthma control

"Avoid the tyranny of the urgent"

Jeremiah—Visit 2
4-Week Follow-up

- Jeremiah has turned 12 since his last visit
- Mom reports that "things are not much better"
- He has been taking his ICS
- 4 days ago, he visited urgent care because of wheezing
- Was prescribed oral antibiotic and oral prednisone
- Filled the antibiotic prescription
- Was afraid to fill the prednisone prescription
- Didn’t call your office because he would be seeing you soon
- Aunt is visiting for 2 weeks

Jeremiah—Visit 2
Clinical Decision Point

What would you do next?
1. Increase the ICS dose
2. Add a long-acting beta agonist (LABA)
3. Order allergy tests
4. Assess control
5. Refer to a respiratory specialist

Asthma Management Algorithm
Goals for Jeremiah’s Visit 2

Assess SEVERITY
Match treatment to severity

Controlled
Not controlled

Assess CONTROL
Make modifications

Why inadequate?
- Adherence
- Triggers
- Comorbidities
- Psychosocial
- Inhaler technique

How Can We Assess Control?

Lung function?
Daytime symptoms?
Nighttime awakenings?
Use of fast-acting reliever?
Patient self-report of control?
Missed work and/or school?
Activity limitations?
Utilization of healthcare resources?
Satisfaction with care?
Direct or indirect inflammation?

Classifying Asthma Control Based on Assessment of Impairment and Risk

Documentation of Asthma Control Is Sparse

Clinicians don’t ask
Patients don’t report
Clinicians don’t document

How Is Your Documentation?
Perform a Chart Audit

- Can you determine control using information documented in your medical records?
- If so, you are unusual
- Most medical records do not have specific data
- Challenge: perform a chart audit to identify gaps in your documentation

Tools for Assessing and Documenting Asthma Control

- Asthma Control Test™ (ACT)¹
- Asthma Therapy Assessment Questionnaire© (ATAQ)²
- Asthma Control Questionnaire© (ACQ)³
- Asthma APGAR₄

ACT Asthma Control Questions¹

1. In the past 4 weeks, how much of the time did your asthma keep you from getting as much done at work or at home?
   - None of the time 4
   - A little of the time 3
   - Some of the time 2
   - Most of the time 1
   - All of the time 0

2. During the past 4 weeks, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?
   - Not at all 5
   - Once or twice 4
   - 1-2x/wk 3
   - 2-3x/wk 2
   - ≥4x/wk 1

3. During the past 4 weeks, how often did your asthma symptoms (wheezing, coughing, shortness of breath, chest tightness or pain) wake you up at night or earlier than usual in the morning?
   - Not at all 5
   - 1-2x/wk 4
   - 3-6x/wk 3
   - 1x/day 2
   - >1x/day 1

4. During the past 4 weeks, how often have you had shortness of breath?
   - None of the time 4
   - A little of the time 3
   - Some of the time 2
   - Most of the time 1
   - All of the time 0

A score of ≥20 indicates well-controlled asthma; ≤15 indicates poorly controlled asthma.²

ATAQ Asthma Control Questions

1. In the past 4 weeks, did you miss any work, school, or normal daily activities because of your asthma? (1 point for YES)
2. In the past 4 weeks, did you wake up at night because of your asthma? (1 point for YES)
3. In the past 4 weeks, do you believe your asthma was well controlled? (1 point for NO)
4. Do you use an inhaler for quick relief from asthma symptoms? If yes, what is the highest number of puffs in 1 day you took of this inhaler? (1 point for MORE THAN 12)

Scores range from 0 (no control problems) to 4 (4 control problems).

Asthma APGAR A New Tool for Assessing Control

- Designed to improve documentation of impairment and risk
- Measures 5 domains
  - A = Activities
  - P = Persistence of symptoms
  - G = triGGers
  - A = Asthma medications
  - R = Response to therapy

Scores range from 0 to 20. A score of 0-9 indicates severe control problems; 10-20 indicates moderate control problems; ≥21 indicates no control problems.
Asthma APGAR

Asthma Control Questions

In the past 2 weeks, how many times did any breathing problems (such as asthma) interfere with your ACTIVITIES or activities you wanted to do?

Never 1-2 times 3 or more times

How many DAYS in the past 2 weeks did you have shortness of breath, wheezing, chest tightness, cough, or felt you should use your rescue inhaler?

None 1-2 days 3 or more days

How many NIGHTS in the past 2 weeks did you wake up or have trouble sleeping due to coughing, shortness of breath, wheezing, chest tightness, or get up to use your rescue inhaler?

None 1-2 nights 3 or more nights

Do you know what makes your breathing problems or asthma worse?

Yes No Unsure

Please circle the things that make your breathing problems or asthma worse.

Cigarettes Smoke Cold Air Colds Exercise Dust Dust Mites Trees Flowers Cats Dogs Mold Other: ____________________

Can you avoid the things that make your breathing problems or asthma worse?

Seldom Sometimes Most of the time

List or describe medications you’ve taken for breathing problems or asthma in the past 2 weeks: Remember you may use nasal, oral, or inhaler medications.

List name, when taken, reasons for taking, and reasons for not taking.

When I use my breathing or asthma medicines I feel:

Worse No Different A Little Better A Lot Better

Scores on the Asthma APGAR range from 0 to 6; ≥2 indicates inadequate control.

Asthma Control Is Patient Centered

- Impairment
  - Symptoms, missed and modified activities
- Burden
  - Cost, adverse events, family disruption, anxiety, depression
- Risk
  - Emergency department (ED) and hospital visits
- Comorbid conditions

Use of Asthma APGAR Improves Documentation

Asthma APGAR

Pre- and Postintervention

Scores on the Asthma APGAR improve with intervention

Asthma Management Algorithm

Assess SEVERITY

Match treatment to severity

Not controlled

Why inadequate?

- Adherence
- Triggers
- Comorbidities
- Psychosocial
- Inhaler technique

Controlled

Assess CONTROL

Make modifications
Factors Affecting Asthma Control
P-A-C-T
- **P = Perception**
  - Locus of control, cultural
- **A = Adherence**
- **C = Comorbidities**
  - GERD, sinus disease, allergic rhinitis
- **T = Triggers**
  - Tobacco smoke, pets, cockroaches, etc

Factors Related to Patient Nonadherence
- **Medication Factors**
  - Difficulties associated with use of inhalers
  - Complicated regimens
  - Adverse events
  - Cost
  - Distance to pharmacies
- **Nonmedication Factors**
  - Misunderstanding/lack of information
  - Poor communication
  - Fears about adverse events
  - Inappropriate expectations
  - Underestimation of severity
  - Attitudes about ill health
  - Cultural factors

Triggers and Trigger Avoidance
- Triggers don’t have to be overwhelming
- Few people have more than 2 or 3 major triggers
- Triggers may change over time
- Gaining control is unlikely unless triggers are identified and avoidance strategies are used

Periodic Assessment of Control
Variability of Asthma

Jeremiah—Visit 2
Management Plan
- **Diagnosis**
  - Mild persistent asthma that is poorly controlled
    - Based on ACT score of 15
  - Poor control attributed to
    - Poor inhaler technique
    - New trigger—exposure to secondhand smoke from visiting relative
- **Pharmacotherapy**
  - Maintain Step 2 therapy with low-dose ICS

Jeremiah—Visit 2
Management Plan
- **Patient education/counseling**
  - Reteach proper inhaler technique
  - Reteach trigger avoidance
  - Discuss goals of therapy
- **Planned follow-up**
  - Schedule a nurse follow-up call in 1 week
  - Schedule a follow-up visit in 4 weeks, possibly with recheck of spirometry if not better
Asthma Action Plan

Patient-Centered Care Is Essential

The Care Model for the Office Practices and Outpatient Setting Domain

Community
- Resources and Policies

Health System
- Healthcare Organization

Self-Management Support
- Delivery System Design
- Decision Support
- Clinical Information Systems

Improved Outcomes
- Care that is patient centered, safe, timely, effective, equitable, and efficient.
- A healthcare system and workforce that is vital.


Patient Education

- Identify a respiratory champion for asthma education
- Asthma education is reimbursable
  - Visit the National Asthma Educator Certification Board website (www.nae cb.org) for detailed information
  - Attend the Pri-Med CME workshop Inha ler Basics: Teaching Patients Proper Technique to learn more

Jeremiah—Visits 4 and 5

- Was assessed and his asthma was found to be well controlled
- Was using proper inhaler technique
- Was avoiding triggers
- Patient education was reinforced
- Planned follow-up in 6 months
  - Will do spirometry to ensure he is not losing lung function

Jeremiah—Visit 6

- Last follow-up was 6 months ago
- Today’s assessment reveals poorly controlled asthma
- Excellent inhaler technique
- Good medication adherence to daily low-dose ICS
- Triggers assessed:
  - Formerly identified triggers are being avoided
  - New triggers noted—trees, flowers
- Plan:
  - Move to Step 3 therapy: add a LABA

Asthma Management Algorithm

Assess SEVERITY
- Match treatment to severity

Controlled
- Assess CONTROL
- Not Controlled
- Make modifications

Why inadequate?
- Adherence
- Triggers
- Comorbidities
- Psychosocial
- Inhaler technique

Rebekah Presentation

- 22-year-old, college student
- History of being diagnosed with wheezy bronchitis
- Had episode of shortness of breath that started during her soccer championship game a few days ago (she's the goalie)
- Taken to the ED via coach's car
- In ED
  - Shortness of breath
  - Given oral steroids
  - Given 3 SABA treatments via nebulizer with some improvement noted after about 30 minutes

Rebekah Pertinent History

- Rebekah
  - Active young adult; plays soccer
  - Positive family history of allergy
  - Regular menses
  - No sleep problems
  - No GERD
  - No postnasal drip
  - No medications except
    - Daily multivitamin
    - Occasional acetaminophen for headache

Rebekah Clinical Decision Point

Which of the following pieces of information do you want to know?

1. Do symptoms awaken her from sleep?
2. Do symptoms affect her daily activities?
3. What makes her symptoms worse? better?
4. Did she feel the need to use her inhaler more than prescribed?
5. A control score?

More About Rebekah

- History reveals
  - Other episodes that she treated with SABAs, but didn’t mention to the coach
  - She was using a friend’s inhaler for ICS sometimes
- Exam
  - Vital signs normal, no distress
  - Diffuse wheezes around lungs, no rales
  - Heart—no murmurs
- Spirometry
  - FEV1 was 85% of predicted with 18% reversibility

Rebekah Presentation

- Discharged from the ED on
  - SABA 4 times a day
  - Follow-up appointment in 1 week in your office
  - Just home for summer break
- Today in your office
  - Rebekah feels that the SABA “really didn’t do much”
Rebekah
Clinical Decision Point

What’s your diagnosis?
1. Asthma
2. Exercise-induced bronchospasm
3. Allergic rhinitis/sinusitis
4. Vocal cord dysfunction
5. Chronic bronchitis
6. GERD

Janet
Presentation

- 46-year-old, obese woman
- Former smoker
  - 5 pack years
  - Quit 20 years ago
- 3 year “on-and-off” history of symptoms
  - Coughing and wheezing
  - Shortness of breath with moderate exercise
- Over the past 2 years these symptoms have been worse

Janet
Physical Exam

- Afebrile
- Chest—diminished breath sounds and occasional end-expiratory wheezes
- Heart—RRR, no murmurs

Janet
Clinical Decision Point

What’s your diagnosis?
1. Asthma
2. COPD
3. Both asthma and COPD
4. Acute bronchitis
5. Not sure

Summary

- Assess asthma severity to determine initial treatment
- Assess level of control to determine changes in therapy
  - Step-up
  - Step-down
- Schedule regular follow-up
- Identify a respiratory champion to facilitate patient-centered care
- Use tools to implement guideline recommendations

Questions & Answers