Controlling Asthma in Children

Florence Update 11/8/13

C. Michael Bowman, PhD, MD

Director, Pediatric Pulmonology
Medical Univ. of South Carolina

bowmanm@musc.edu
Disclosures

Dr. Bowman is a full-time faculty member at MUSC and has no financial conflicts or relationships to disclose. He is a volunteer member of the SCAA Board of Directors.

Many medications for children with asthma are often used outside of FDA labeling. Dr. Bowman will recommend medication use on label and will be informative about off-label uses if questioned.
Objectives

Members of the audience will be able to:

• Discuss symptoms of childhood asthma, even before the diagnosis is made, including chronic problems and acute flares;

• Understand recommended best approaches to management of children with asthma;

• Recognize the impact of triggers and their control in managing childhood asthma;

• Recognize the value of care coordination between the family, caregivers and school.
Introduction

Why is this worth talking about?

- Significance of asthma – most common chronic illness in children (10-20%)
- Severity / cost / school absences
- Wide variations with ethnic disparities
- Complexity of treatment
- Important outcomes can be achieved
- Patients live in a home with important surroundings (eg, school)
Asthma Under-world
Why is asthma still such a problem?

• **Under** – diagnosis
  – “It’s just another cold”
  – “He’s just shy” (exercise)
  – “You know she’s in daycare”

• **Under** – treatment
  – “The albuterol worked well”
  – “I don’t want him on so many drugs”

• **Under** – referral to asthma specialists
  – “It’s just her sinuses”
  – “The prednisone works really well”
Patient Scenario

What is problematic for this child?

- 6 yo boy referred for chronic cough
- Mult episodes of pneumonia, some response to albuterol and antibiotics
- CXRs mild hyperinflation, perihilar haziness
- Family reports more cough at night; URIs last 15-20 days; he’s “shy” and does little activity
- Exam unremarkable; Spirometry: FEV1 92% pred; 18% bronchodilator response
- Likely asthma; ? GER; start controller
Diagnosing the Child with Asthma

• Chronic symptoms – cough, wheeze, exercise intolerance; prolonged colds
• Responses to therapies
• Triggers, if noted
• Markers of severity
• Markers of control
• Pulmonary function testing
**Treatment Thought Process**

- Does the patient need daily inhaled steroids (ICS) for control?
- Does the spacer need mask or mouthpiece?
- What’s the best formulation (neb; metered-dose inhaler [MDI], dry powder inhaler [DPI])?
- What’s the necessary medication strength?
- What teaching is needed?
- Do we need peak flow monitoring?
- Prepare for treatments in multiple locations with asthma action plans.
Rescue Medications

Short – acting Beta Agonists – Inhaled

• Use only as “needed” for symptoms
• Albuterol vs. levalbuterol (Xopenex)
• Side-effects – tachycardia, hyper, shaky
• Documented differences
• Dosing
• Approval
• Needed in multiple locations
Controller Choices

- ICS alone – Neb (Pulmicort), MDI (Flovent, Qvar, Alvesco), DPI (Pulmicort, Asmanex)
- Combinations – ICS + LABA* (Advair – MDI / DPI, Symbicort or Dulera -- MDI)
- Leukotriene antagonist – Montelukast (po)
- Cromolyn – rarely used anymore
- Dose counter or not
- Always use spacers with MDIs

* LABAs carry boxed warnings
**Triggers – Recognition**

- Each patient has triggers for asthma symptoms
- Tobacco smoke is a general airway irritant
- Prenatal tobacco increases the frequency and severity of asthma
- Common childhood triggers are viral illnesses, allergies, exercise, odors, emotions, GE reflux
- When does the child get sick?
- What is the day vs. night-time predominance?
- Controlling trigger exposure is crucial for adequate control of asthma
Triggers – Avoid +/or Treat

- ETS avoidance
- Allergies (esp. w eczema) – recognize, avoid
- Asthma-friendly schools are crucial
- Viruses – minimize
- GER, sinuses – identify (hs sxs), treat
- Exercise – DON’T stop
Key Teaching Points - for parents

• What symptoms does your child show?
• What is wheezing? Maintain activity!
• Asthma management – rescue, controller
• How do you use a spacer?
• How do you use your specific devices?
• How do you use a peak flow meter (if given)?
• Asthma action plans for home & school
  —When and how should you contact us?
Markers of Asthma Control

• Brief URIs (3-4 d, not 2 weeks)*
• Full activity (check tolerance and amount!)
• Good sleeping
• No school absences
• Rare symptoms (rescue Rx 1-2 X / month*)
• Normal spirometry (no bronchodilator response*)
• Systemic steroids 1-2 X / year maximum
• No drug side effects

* “Bowmanism” criterion
Step-up, Step-down Control

- Don’t reclassify severity with every visit
- Assess control of asthma and of triggers
- If not good control, may step-up strength of Rx
- Always check compliance / refill history / technique before saying a medicine didn’t work; also check trigger control / exposure
- If good control, and not approaching bad season, step-down strength of control
- Two main steps – off LABA and then off ICS
- Continue close monitoring after changes
Bowman’s Postulate

What you don’t take can’t help you!

• The right drug needs to be prescribed in an appropriate preparation
• Family needs to know how to take it
• It needs to be approved, filled, picked up, taken correctly, taken as often as prescribed, and then refilled until YOU stop it!
• Any and all of these steps can be missed and will sabotage your treatment!
Being “on a medicine” does **not** mean “getting the medicine”

- Prescriptions – correct, right pharmacy
- Inhaled medications – neb / MDI / DPI
- Use with spacers
- Effective technique – instructions **and** coaching!
- Dose intervals – chemistry vs. family chaos
- Refills – important to monitor
Peak Flow Meters

• Does the patient need a peak flow meter?
• Allows measurement to document symptoms
• Takes the PFT lab to the site of symptoms
• Adds another “thing to do”
• Helps caregivers assess status somewhat objectively
• PEFR not the same as FEV1
• PEFRs often drive asthma action plan zones and care instructions
Becoming a “Control Freak”

• Many families think they can’t alter the course
• May rarely do something for future benefit or to change an outcome
• Recognition of symptoms may be difficult
• Competing priorities; must take, refill meds
• Limit use of the ER vs. medical home
• Long-term treatment is crucial and effective
• Age of self-care varies
• Many care locations – teach all
The School Environment

The Asthma-friendly School

• School-wide priority and commitment
• Smoke-free; little/no automobile exhaust
• No furred animals
• No chemicals, mold, inhalants around kids
• Knowledgeable faculty, staff and students
• Communication between staff, parents, MD
• Asthma plans / preparation
• Ready for problems at ALL times
Asthma Action Plans

- A written plan in advance for appropriate action
- Name, contacts for MD office / medical home
- Routine daily treatments
- Instructions for rescue treatments for mild, moderate, severe symptoms and when (and who) to call for help
- Peak flow meter measurements if indicated
- Circulate to family, school, day care (ALL possible caregivers)
- Update to always be current
**Summer Attack on Asthma**

- Back to school asthma flares every year
  - Increased admissions X 5; Medicaid +40% ($1.2M)
- Multiple causes
  - ? Rhinoviruses; environment
  - Off medications for “summer vacation”
- What to do – expect your kids to get sick
  - Maintain controller medication use
  - Update asthma action plans
  - Utilize summer appointments for asthma education
  - Complete forms needed for school
**Take-home Messages**

- Recognize the disease
- Recognize the triggers
- Treat the disease appropriately
- Avoid, treat the triggers; control tobacco
- Teach the family; prepare school/others
- Promote compliance via success
- Utilize asthma action plans
- “Summer Attack on Asthma” – an opportunity to improve outcomes
**References**

- **General authoritative resources:**
  - Asthma Care: Quick Reference: Diagnosing and managing asthma 2012: [www.nhlbi.nih.gov/guidelines/asthma/asthma_qrg.pdf](http://www.nhlbi.nih.gov/guidelines/asthma/asthma_qrg.pdf)

- **Asthma action plans:**

- **Controller use:**
References, II

• Environmental control:

• High-risk asthma:

• Peak flow rate monitoring:

• Rescue medication choices:

• Risk:
• Schools:
  – Asthma-friendly schools: www.CDC.gov/asthma/schools.html

• Spacers and technique:

• Step-up / step-down management:

• Tobacco: