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Sydney enjoys: Spending time with his family, running, and surfing

Myths and Misconceptions in Pediatric Asthma

Myths and Misconceptions
in Pediatric Asthma

Practical Pediatrics
4/16/16
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Disclosures

- None

The Soup from a Fat Hen

- Asthma is a disease known since antiquity, Maimonides suggested “the soup from a fat hen” as a useful therapy in his 12th century *Treatise on Asthma*

- Asthma is now generally defined as recurrent and (somewhat) reversible airflow obstruction due airway inflammation, smooth muscle bronchospasm, and mucus hypersecretion
Myths and Misconceptions in Asthma

Outline

• Case Presentation
• RAD vs. Asthma
• Asthma Predictive Index
• Treatment
  • Nebulized vs MDI?
  • Montelukast vs ICS?
• Side effects
  • Inhaled Corticosteroids
  • Combination therapy-Long Acting Beta Agonists (LABA)

Case Presentation-Pediatrician’s office

• HPI
  • 2 year old boy
  • Caught a cold from his sister
  • Mother has noticed increased cough especially at night and wheezing for the first time
• Family History
  • Mother with allergies and childhood asthma
• Exam
  • Wheeze at both lung bases
  • Prolonged expiratory phase
  • No retractions or tachypnea
  • O2 sats 99% on RA
  • Flexural eczema
Case Presentation

- Give a nebulized albuterol treatment in clinic and wheeze resolves
- Sent home with nebulizer and albuterol nebs

Advantages - 2 delivery systems

**Nebulizer**
- Passive
- High dose
- Mixing possible
- Dose established with ICS (budesonide)

**Spacer with mask**
- Decreased time
- Quiet
- Portable
- More agents available
Myths and Misconceptions in Asthma

Misconception: Nebulizer superior to inhaler/spacer in young children

N = 42 total (19 neb, 23 MDI)

- • x age = 16 mos (10 mos – 4 yrs)
- • albuterol (q 20’ x 3):
  4 p (Nebuchamber with mask)
  0.5 ml (Aeromist nebulizer*)

Rx given every 20’

NO DIFFERENCE


Case Presentation

- Patient discharged home with spacer/mask and Albuterol
- Patient has two more episodes like this over the winter
- Coughing at night once per week
- Diagnosed with Reactive Airways Disease and scheduled to see asthma specialist
Myths and Misconceptions in Asthma

Question:
What age can asthma be diagnosed in a child?

A) Less than Two Years of age  
B) Two to Four Years of age  
C) Four to Six Years of age  
D) When they can do PFTs  
E) At any age

Myth: Asthma can not be diagnosed in young children

- Answer E - Asthma can be diagnosed at any age  
- “Reactive Airways Disease” (RAD) - highly non-specific with no clinical meaning  
- Reactive airways dysfunction syndrome (RADS) is a different diagnosis as well

JOHN V. FAHY and PAUL M. O'BYRNE “Reactive Airways Disease”  
Myths and Misconceptions in Asthma

Myth: Asthma commonly presents with sole symptom of chronic cough

Differential diagnosis of chronic cough

- Infants:
  - Infectors
    - Chlamydia
    - Pertussis
  - Non-infectious
    - Asthma
    - Congenital anomalies
    - Foreign body
    - Reflux
    - Other

- Children:
  - Infectious
    - Pneumonia
    - Sinusitis
  - Non-infectious
    - Asthma
    - Psychogenic
    - Foreign body
    - Drug

How do we diagnose the likelihood asthma in young children that wheeze?

Modified Asthma Predictive Index (API)


Myths and Misconceptions in Asthma

Question:
The 3 major criteria for a positive modified API:

A) Parental asthma
B) Eczema
C) Allergic Sensitization to 1 aeroallergen
D) Eosinophilia
E) Change in FEV1 on Spirometry
Modified Asthma Predictive Index (API)

1 major criterion

Parental asthma
Eczema
1 + aeroallergen

2 minor criteria

Wheezing apart from a cold
Food allergy
Eosinophilia

OR

Stringent: ≥ 3 episodes wheezing /yr

Myths and Misconceptions in Asthma

Case Presentation: Allergist office

• Sent to allergist
• Skin testing positive to dust mite
• Positive API
  • > 3 episodes of wheezing with URIs
  • History of eczema
  • Maternal asthma

• 2 oral steroid courses in last 6 months
• Night time cough 2x/month
• Diagnosed with Mild persistent asthma
Question:
Should we start a Leukotriene Antagonist (LTA) or Inhaled Corticosteroid (ICS)?

1. LTAs vs ICS
   - LTA’s reasonable option for **mild** asthma (convenient, easy to take)
   - Efficacy data in young children limited
     - never studied for indication < age 6 yrs
   - ICS still “best return on your money”
Our patient: Back in Pediatrician’s Office

- Pediatrician would like to start daily ICS dosing
- Parents worried about side effects of daily ICS therapy - adult height loss

Mother expresses concerns about steroid side effects

On average how much linear growth loss is seen in patients who are on long term daily ICS?

A) 0.55 cm
B) 1.2 cm
C) 2.1 cm
D) 3.4 cm
E) 4.3 cm
Myths and Misconceptions in Asthma

**Answer: B = 1.2 cm is correct**

**Combined and daily grps 1.2 cm less than placebo grp; rescue grp no different than placebo**

Myths and Misconceptions in Asthma

Our patient- Fast forward 10 years

- PT is now 12 years old
- Has continued to need daily ICS and on medium dose for age
- Still needing 2 oral steroid courses per year
- Having daily symptoms
- Allergist considering Advair
LABA Safety Question

• Is it safe to step up to Combination therapy ICS + LABA?
  • Mother is worried about “black box” warning

Myths and Misconceptions in Asthma

At step 3, considering step 4

NHLBI 2007
Myths and Misconceptions in Asthma

Summary
• Reactive Airways Disease is not a helpful diagnosis
• Spacer/Mask has higher adherence than nebulizer
• Inhaled Corticosteroids are generally “better bang for buck” than LTAs
• Inhaled Corticosteroid benefits outweigh risks
• Long Acting Beta Agonist (LABA) concerns are overstated

Thank you!

Please feel free to contact me with any questions you may have:
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