

Optimizing Asthma Management

Satellite Conference and Live Webcast
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Faculty

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Objectives

- Definition and Overview
- Epidemiology
- Asthma Management
 - Assessing Current Management
 - Improving Asthma Control

Definition of Asthma

- A chronic inflammatory disorder of the small airways associated with airway hyper-responsiveness and obstruction
 - *leads to recurrent episodes of wheezing, breathlessness, chest tightness, and coughing*

“Typical” History


- Recurrent episodes of wheezing
- Troublesome cough at night
- Cough or wheeze after exercise
- Cough, wheeze or chest tightness after exposure to airborne allergens or pollutants
- Colds “go to the chest” or take more than 10 days to clear

- Asthma can be effectively controlled in most patients by intervening to suppress and reverse inflammation as well as treating bronchoconstriction and related symptoms



"I stopped to smell the flowers. Where's my inhaler?"

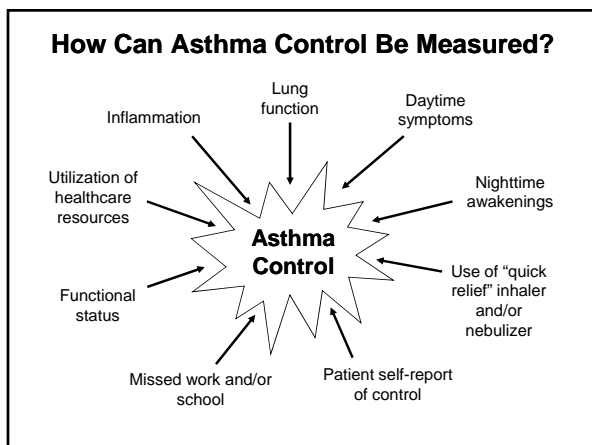
- Early intervention to stop exposure to the risk factors that sensitized the airway may help improve the control of asthma and reduce medication needs



"I stopped to smell the flowers. Where's my inhaler?"

Goals of Asthma Management

- Achieve and maintain control of symptoms
- Maintain normal activity levels, including exercise
- Maintain pulmonary function as close to normal levels as possible
- Prevent asthma exacerbations
- Avoid adverse effects from asthma medications
- Prevent asthma mortality



Asthma Control Test™ (ACT)

1. In the past **4 weeks**, how much of the time did your **asthma** keep you from getting as much done at work, school or at home?

All of the time	1	Most of the time	2	Some of the time	3	A little of the time	4	None of the time	5	<input type="checkbox"/>
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2. During the past **4 weeks**, how often have you had shortness of breath?

More than once a day	1	Once a day	2	2 to 5 times a week	3	Once or twice a week	4	Not at all	5	<input type="checkbox"/>
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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?

4 or more nights a week	1	2 or 3 nights a week	2	Once a week	3	Once or twice a week	4	Not at all	5	<input type="checkbox"/>
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Asthma Control Test™ (ACT)

4. During the past **4 weeks**, how often have you used your rescue inhaler or nebulizer medication (such as albuterol)?

3 or more times per day	1	1 or 2 times per day	2	2 or 3 times per week	3	Once a week or less	4	Not at all	5	<input type="checkbox"/>
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5. How would you rate your **asthma** control during the past **4 weeks**?

Not controlled at all	1	Poorly controlled	2	Somewhat controlled	3	Well controlled	4	Completely controlled	5	<input type="checkbox"/>
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Patient Total Score

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Addressing Uncontrolled Asthma

- Ineffective Delivery of Treatment (Poor Technique)
- Poor Adherence
- Inadequate Treatment
- Ongoing exposure to triggers
- Co-morbidity (e.g. rhinitis, GER)
- Severe Therapy-Resistant Disease
- Misdiagnosis

Case Study 1

- 10 yo Caucasian Male with Moderate Persistent Asthma
- Low dose inhaled steroid/long acting beta agonist
- History of 2 asthma exacerbations in last 4 months requiring increased albuterol use and a steroid burst

Case Study 1

- At baseline:
 - Has cough 3-4 nights a week that occasionally wakes him up
 - Frequent exercise induced cough, chest tightness and shortness of breath
- Uses albuterol 5 5x/wk and has missed 5 days of school due to asthma

Case 1 Cont'd

- DX. Moderate persistent asthma that is uncontrolled
- Possibilities:
 - Poor Inhaler Technique
 - Poor Adherence
 - Inadequate Treatment
 - Ongoing exposure to triggers
 - Co-morbidity (e.g. rhinitis, GER)

Investigate Further

- Check technique
- Ask about missed doses (normalize nonadherence)
 - How many?
 - Why?
 - Obstacles?
 - Refill history

Investigate Further

- Review triggers
- Co-morbidities - allergies, infection, gastroesophageal reflux, etc

Poor Technique

- Study of 175 mainly Latino youth (5-18 yo) in Chicago with asthma seen in ED
 - 27% had spacer
 - 75% had quick relief
 - 49% controller
 - Only 1 able to demonstrate 100% of inhaler steps

Inhaler Technique

- Steps most often performed incorrectly or forgotten
 - Shaking canister
 - Exhale before use
 - Wait before next puff
 - Inhale (with spacer and mouthpiece)

Inhaler Technique

- 31.6% did not actuate med
- 8 did not remove cap
- 34% did not inhale

Inhaler Technique

- The medicine doesn't work if it's not getting to the lungs
- Poor technique a common reason asthmatics continue to wheeze on good medications
- Technique *MUST* be taught, checked and reviewed in clinic

Inhaler Technique

- Not every child can use or wants to use every device as often as possible, adjust therapy according to patient preference

Devices for Administrating Meds

- www.asthma-education.com
- www.childrensal.org/asthma-education-resources
- Provide written, verbal instruction
- Demonstrate
- Ask and encourage questions
- Repeat!! Check and teach technique at each visit

Using a Spacer with a Facemask (Under 8 years old)

1. Stand up tall (if an infant hold in a sitting position)
2. Remove the mouthpiece cover from the inhaler
3. Shake the inhaler 4 to 5 times
4. Insert the inhaler into the spacer
5. Seal the mask over the child's mouth and nose and hold in place
6. Press down once on the inhaler to release one puff of medicine

Using a Spacer with a Facemask (Under 8 years old)

7. Continue to hold the mask sealed on the face while the child breathes 6 normal breaths
8. Remove the mask and wait 1 minute to allow medicine to reach the lungs
9. Repeat these steps for each additional puff of medicine needed for a dose

Using a Spacer with a Mouthpiece (8 years and older)

1. Stand up tall and look straight ahead
2. Remove the mouthpiece cover from the inhaler
3. Shake the inhaler 4 to 5 times
4. Insert the inhaler into the spacer
5. Breathe out fully
6. Place the mouthpiece over the tongue and seal lips snugly around the mouthpiece and hold in place

Using a Spacer with a Mouthpiece (8 years and older)

7. Press down once on the inhaler to release one puff of medicine
8. Take a slow, deep breath in over 3-5 seconds from the mouthpiece and remove the mouthpiece from your mouth
9. Hold your breath for 10 seconds after inhaling
10. Wait 1 minute to allow medicine to reach the lungs
11. Repeat these steps for each additional puff of medicine needed for a dose

Case Study 2

- 4-year-old ex-preemie with a history of moderate persistent asthma with 2 previous hospitalizations
- Symptoms worse now in daycare
 - Awakens with cough 1-2 nights a week
 - Coughs and gets short of breath with exertion, very active

Case Study 2

- Uses albuterol inhaler 1-2 times a week
- On inhaled corticosteroid via nebulizer twice daily
- Lots of rhinorrhea, itchy watery eyes, congestion

Case 2 Cont'd

- DX. Moderate persistent asthma that is poorly controlled
- Possibilities:
 - Poor Inhaler Technique
 - Poor Adherence
 - Inadequate Treatment
 - Ongoing exposure to triggers
 - Co-morbidity (e.g. rhinitis, GER)

Adherence in Asthma

- Study in New Zealand of 101 children with asthma who presented to ED
- Adherence monitored electronically for 6 months
- Median preventer adherence was 30%

Adherence in Asthma

- Inhaled corticosteroid adherence
 - < 50% in adolescents and adults
 - 49-73% in younger children
- Physicians are poor about predicting adherence
 - Only get it right 49% of time

Adherence in Asthma

- WHO: Increasing the effectiveness of adherence interventions may have a far greater impact on the health of the population than any improvement in medical treatments

Factors Involved in Non Adherence

Non-Medication Factors

- Misunderstanding / lack of information
- Inappropriate expectations
- Underestimation of severity
- Attitudes toward ill health
- Cultural factors
- Poor communication
- Family Functioning / Support

Factors Involved in Non Adherence Medication Usage

- Difficulties associated with inhalers (technique, spacer use)
- Complicated regimens
- Fears about or actual side effects
- Cost
- Distance to pharmacies / trouble with transportation
- Forget doses
- Child resists treatment

Strategies for Improving Adherence

- Normalize nonadherence - partnering not scolding
- Engage the family
 - Motivational interviewing, education, co-production
 - Treatment choices
- Financial obstacles - ask
 - Coupons, patient assistance programs, sign up for medicaid if eligible

Strategies for Improving Adherence

- Beliefs, misconceptions and expectations
 - what asthma is, how meds work and side effects, goals of treatment
 - What do you know about asthma, what are your concerns?
 - May believe child should not exercise or go outside, may believe will outgrow asthma, fears regarding steroids

Strategies for Improving Adherence

- Be aware of and try to work with
 - A Family's cultural influences, health beliefs
 - Family influences - supportive, present parents / caretaker vs nonsupportive or absent caretakers, divorce, substance abuse, and family chaos / stress

Case Study 3

- 15 yo African American Female with severe persistent asthma
- On high dose combination inhaled steroid and long acting beta agonist
- Coughs 2-3 nights a week
- Very athletic but having trouble with exercise lately

Case Study 3

- Unable to finish practice or game without stopping to take albuterol because short of breath, cough, chest tightness
- Not pretreating exercise
- Denies symptoms of gastroesophageal reflux, allergic rhinitis or infection
- FEV-1 70% reverses to 90% with bronchodilator

Case 3 Cont'd

- DX. Severe persistent asthma that is uncontrolled
- Possibilities:
 - Poor Inhaler Technique
 - Poor Adherence
 - Inadequate Treatment

Strategies for Improving Adherence

- Adolescents are a special group
- Concerned with independence, fitting in, and have greater risk taking behaviors
- Focused on short term not long term
- Mortality begins to rise in adolescence

Strategies for Improving Adherence

- **Between 15-34 yo the asthma mortality rate doubles compared to younger children**

Strategies for Improving Adherence - Adolescents

- **Work directly with adolescent**
- **Educate them on disease**
- **Encourage them to own their disease**
- **Give choices**
- **Review strategies (establishing routines, alarms, etc)**
- **Simplify regimens**
- **Consequences to actions**

Adherence

- **Key is to partner with patient and family**
- **Listen**
- **Respond to concerns and educate**
- **Personalize therapy (the best therapy is often the one that the patient will take, not necessarily what you prefer)**

Summary

- **Asthma is a serious, potentially life-threatening disease that affects millions worldwide**
- **Most asthma can be controlled with appropriate medical management and avoidance of risk factors when possible**

Summary

- **Attaining asthma control is important because:**
 - **Good control correlates with a better quality of life**
 - **Reduction in health care use**
 - **Reduction in asthma mortality**

Summary

- **Good asthma management requires health care providers who provide education and training, and who communicate well with patients and their families, and tailor therapies to each patient**

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