

ASTHMA: THE ISSUES

Tee L. Guidotti, MD

The George Washington University
Medical Center

Mid-Atlantic Center for Children's Health
and the Environment

What Is Asthma?

- Reversible airflow obstruction
- A collection of similar disorders characterized by airways reactivity
- A common manifestation of allergy
- A common problem for kids that limits activities, burdens families and (rarely) disables or kills

What Causes Asthma?

- A condition of chronic inflammation of the airways
- The inflammation can be set off by
 - sensitization
 - viral infection
 - irritating exposures (an adult problem)

What Causes Asthma? (cont'd)

- The inflammation is then perpetuated
- Genetics
- Home environment?
 - Evidence that the home environment is most important: lots of antigens
 - Th1/Th2 hypothesis, adaptation to sources of infection
- Air pollution? Not so obvious

The Home Environment and Asthma

- Th 1 / Th 2
- Lots of allergens
 - dust mites
 - cockroaches
 - molds
 - animal dander
- Indoor air quality
- Molds and bioaerosols

What Triggers Asthmatic Reactions?

- Allergens
- Dust
- Smoke
- Viral infections
- Air pollution, esp. ozone

Does Air Pollution *Cause* Asthma?

- Certainly can trigger episodes
- Evidence that it (especially ozone) plays a role in sensitization
- Known to be associated with mortality, morbidity from respiratory disease
- Surprise! No connection with *prevalence* of asthma
- Is there an association with *incidence*?

Research Needs and Asthma

- Air quality and triggering attacks
- Incidence studies, age specific rates
- Sensitization to specific antigens
- Home environments
- Optimal care
 - specialized asthma centers
 - health insurance
 - Anti-inflammatory therapy

Policy Issues

- Regulation of ambient air quality
 - Ozone, for risk of new onset?
 - Oxidants, PM for triggers
- Indoor air quality issues
- Shift in asthma management strategies
- Children's health insurance