REACTIVE AIRWAYS DISEASE VS ASTHMA

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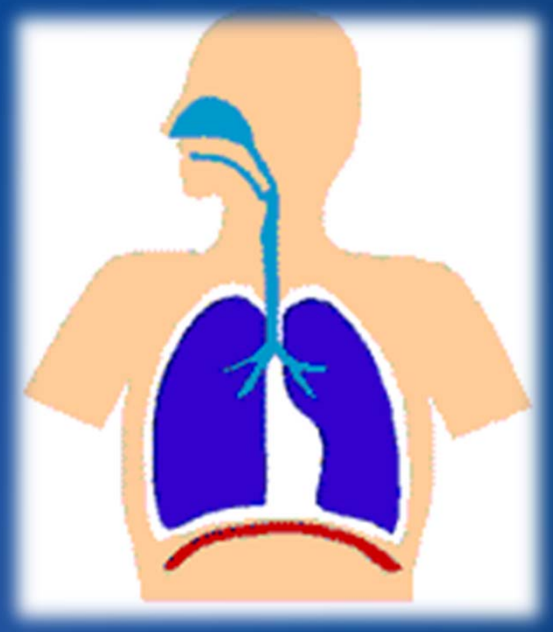
Allergy/Immunology

August 2015

CONFLICTS OF INTEREST

- TEVA Respiratory
- Thermofisher Scientific



OUTLINE

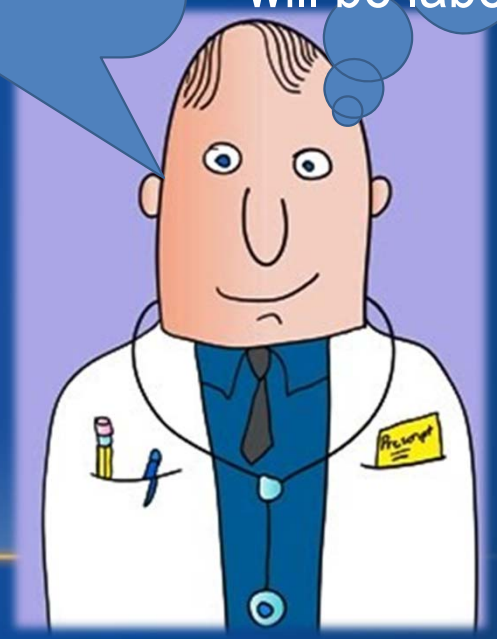
- Definitions
  - Reactive Airways Disease (RAD)
  - Reactive Airways Dysfunction Syndrome (RADS)
  - Asthma
- Diagnosis: Clinical vs. Coding
- Treatment: Does it matter?

CONFUSION ABOUNDS

My little guy doesn't have asthma, does he?

Well….not exactly, he has reactive airways disease

He has an airway problem, it could be asthma but hard to prove, I'm going to treat it like asthma, if I say "asthma" he will be labelled!



DEFINITIONS: MEDICAL TERMINOLOGY

- Infants and toddlers
  - “Transient early wheezers”
  - “Happy wheezers”
  - “Recurrent bronchiolitis”
  - “Wheezy bronchitis”
  - “Reactive airway disease”
- RAD = asthma Used interchangeably
- RAD ≠ asthma Asthma suspected but not confirmed

REACTIVE AIRWAY DISEASE (RAD)

FROM WIKIPEDIA, THE FREE ENCYCLOPEDIA

- RAD: group of conditions that include reversible airway narrowing due to an external stimulation. Conditions generally result in wheezing.
- Conditions within this group: asthma, COPD, viral URIs among others.
- RAD sometimes is misused as a synonym for asthma. Current medical use of the term RAD is used in pediatrics to describe an asthma-like syndrome in infants, that may later be confirmed to be asthma when they become old enough to participate in diagnostic tests such as the bronchial challenge test.

WHAT DOES ARE GOVERNMENT THINK?
ICD-9 (INTERNATIONAL CLASSIFICATION OF DISEASES)

- Coding RAD for billing purposes?

ICD-9 CODE	ICD-9 CODE DESCRIPTION
508.8	RESPIRATORY CONDITIONS DUE TO OTHER SPECIFIED EXTERNAL AGENTS

ICD-9 CODE	ICD-9 CODE DESCRIPTION
519.8	OTHER DISEASES OF RESPIRATORY SYSTEM NOT ELSEWHERE CLASSIFIED

2015 ICD-10-CM Index Line 23007

Disease, diseased > airway > reactive

"REACTIVE AIRWAYS DISEASE" A LAZY TERM OF UNCERTAIN MEANING THAT SHOULD BE ABANDONED

- JOHN V. FAHY, and PAUL M. O'BYRNE American Journal of Respiratory and Critical Care Medicine, Vol. 163, No. 4 (2001), pp. 822-823.

Highly nonspecific term without clinical meaning; unhelpful, potentially harmful.

RAD may be used in clinical contexts for asthma, wheezy bronchitis, to viral bronchiolitis or even to pneumonia.

In pediatrics, especially very young children, diagnosis of asthma may be problematic because:

- History is difficult to obtain
- Good quality PFTs cannot be obtained
- Asthma is a diagnosis that carries a negative connotation.

DEFINITION: ASTHMA (2007 NHLBI/EPR-3)

Common chronic disorder of the airways that is complex and characterized by variable and recurring symptoms (cough, wheezing, chest tightness)

- Airflow obstruction
- Bronchial Hyper-responsiveness
- Underlying inflammation

There is no age requirement for diagnosis of asthma!

DIAGNOSIS OF ASTHMA:

- Medical History
  - Symptoms, timing, triggers, response to medications
- Family History
- Examination: can be normal
- Testing
  - Lung function: spirometry (before and after albuterol)
  - Chest x-ray: rules out other causes
  - ? FeNO: measures airway inflammation
  - Lab: eosinophilia

CHILDHOOD ASTHMA

- Various phenotypes of asthma; only 30% of infants who wheeze go on to develop asthma.

Tucson Children's Respiratory Study: wheezing phenotypes and natural history				
Never wheezed (51.5%)		Not associated with asthma		
Transient early wheezers (19.9%)	Only wheezed <3 yo	Not associated with asthma (by 22 yo), but theoretical increased risk of COPD		
Persistent wheezers (13.7%)	Wheezed at <3 yo and 6 yo	40% non-atopic	**"Non-atopic wheezers"**	RSV at <3 yo associated with wheezing up to 11 yo (no significant risk at 13 yo)
		60% atopic	**"Atopic wheezers"**	High risk for asthma • 70% with asthma at 22 yo were persistent or late-onset wheezers • 49% of subjects with h/o asthma dx or current wheeze by 22 yo • 31% with active asthma at 22 yo
Late-onset wheezers (15%)	Wheezed at 6 yo	Atopic		

Martinez FD, et al. Asthma and wheezing in the first 6 years of life. N Engl J Med 1995;332:133–8

Wayne J. et al. "Outcome of Asthma and Wheezing in the First 6 Years of Life", AJRCCM, Vol. 172, No. 10 (2005), pp. 1253-1258.

REACTIVE AIRWAYS DYSFUNCTION SYNDROME (RADS)

FROM WIKIPEDIA, THE FREE ENCYCLOPEDIA

- RADS: term from 1985 to describe an asthma-like syndrome developing after a single exposure to high levels of an irritating vapor, fume or smoke. It involves coughing, wheezing, and short of breath.
- Manifest in adults with exposure to high levels of chlorine, ammonia, acetic acid or sulfur dioxide creating symptoms like asthma. Symptoms can vary from mild to fatal.
- Create long-term airway damage depending on the amount of exposure and the concentration of chlorine. Some experts classify RADS as occupational asthma.

TREATMENT ISSUES: RAD VS ASTHMA

Does the diagnosis of RAD change the treatment?

- Prevent work up of *cause*
- Over treatment: receive medications inappropriate
- Under treatment: not receive appropriate medications
- Doesn't address role of underlying inflammation
- We have treatment guidelines for asthma, not RAD

START DAILY CONTROLLER IN INFANTS (NHLBI)

- >3 episodes of wheezing in past year
- Lasted more than 1 day
- Affected sleep and …
- Who have risk factors for the development of asthma
  - Parental history of asthma or
  - Physician diagnosed atopic dermatitis
  - Or 2 of the following
    - Physician-diagnosed allergic rhinitis
    - Wheezing apart from colds
    - Peripheral blood eosinophilia

2014 COMPENDIUM OF FEDERAL MEDICINE ASTHMA/DEPARTMENT OF DEFENSE/PULMONARY DISEASE

- Unlike 10 years ago, military services now accept recruits who had childhood asthma but have not been symptomatic since *age 13*.
- Reason: relaxed standards partly because of increasing incidence of asthma in general population.
- New policy: a success: great majority of service members with waivers for childhood asthma staying in the military once they get past basic training.

WILL ASTHMA KEEP ME OUT OF THE MILITARY?

- New standards exclude only those who have been diagnosed or symptomatically presented with asthma, reactive airway disease, exercise-induced bronchospasm or asthmatic bronchitis after age 13.[1]

Martin BL, Engler RJM, Nelson MR, Klote MM, With CM, Krauss M, Asthma and its Implications for Military Recruits in Recruit Medicine. Eds. Lenhart MK, Lounsbury DE, North RB., Office of the Surgeon General, Department of the Army, Washington DC, 2006;89-108.

“CALL A SPADE A SPADE”

A figure of speech which explicitly calls out something as it is, by its right name.

If it’s asthma, call it asthma!

CONCLUSIONS:

- 50% of infants wheeze; only 30% of them go on to have asthma!
- RAD: a non-specific term, best to avoid! Be specific.
- RADS: a specific type of irritant-induced asthma.
- Asthma: Don't be afraid to use the "A" word.
- Asthma or RAD before age 13 will not impact military entrance