Allergic rhinitis in Children – more than just a runny nose

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Disclosures

• Advisory board: for Seqirus, Sanofi
• Educational sessions: Stallergenes – Greer, Seqirus, Bayer, Mylan, Sanofi - Aventis
• Co – investigator GSK

Why the sneezy - wheezy patient ?

• Australia has the amongst highest prevalence of allergic disease world wide (1 in 4 people)
• 1 in 5 have AR
• 80% of asthmatics have AR, 40 - 60 % of AR patients have asthma (clinical / sub- clinical)
  • Can be dangerous (Melb Nov 21st 2016 – epic thunderstorm asthma event)
• LARGE impact on quality of life, productivity, school performance, emotional well being
• majority of sufferers in peak school / work stages of life
• 80% develop symptoms before age 20 , 40% by age 6

Is this allergic disease – presenting symptoms

• Blocked or congested nose +/- cyclical congestion
• Sniffing (nasal crease)
• Rhinorrhea
• Sneezing
• Itchy (nose, palate, throat)
  • Palatal clicking
• Ocular symptoms (rubbing, allergic shiners )
  • Sleep disordered breathing
  • BPhp/ sinusoidal issues
• Clinical / subclinical asthma

Rhinitis – tip of the iceberg

Acute Rhinosinusitis
Effusion dysfunction
ENT infections
Facial Growth Malocclusion
Adenoid hypertrophy
Tonality
Facial & Dental
Lower Airways
Ocular
Infection
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AR and Asthma

- Very strong association
- Treating the upper airway will provide better control of their lower airway
- Must screen all AR patients for asthma and treat the upper airways of asthma patients
- Action plans and management plans

Sleep disordered breathing

- Spectrum primary snoring – OSA
- Daytime sleepiness and fatigue are common
- Often also present with behavior issues
  - Hyperactivity
  - Poor impulse control
  - Poor concentration
- Effects mandibular and palatal growth – dental malocclusions
- Effect physical activity and sport
- Effects school performance (exams)

Rhinitis and exam performance

- Case-control analysis of 1834 students (age 15-17 years; 50% girls) sitting for national examinations. Cases were those who dropped 1 or more grades in any of 3 core subjects (Mathematics, English, and Science) between practice (winter) and final (spring/summer) examinations, controls were those whose grades were either unchanged or improved.
- Rhinitis Rx with sedating antihistamines – 40% more likely to drop a grade
- Seasonal allergic rhinitis is associated with a detrimental effect on examination performance in United Kingdom teenagers: Case-control study. J Allergy Clin Immunol 2007;120:381-7

Burden of disease

- BoD (2007) – allergy 21.5 billion (arthritis 11.7 billion)
- Seasonal allergic rhinitis is associated with a detrimental effect on examination performance in United Kingdom teenagers: Case-control study. J Allergy Clin Immunol 2007;120:381-7
- Allergic rhinoconjunctivitis in the Australian population: Burden of disease and attitudes to intranasal corticosteroid treatment. Am J Rhinol Allergy 2013 Nov-Dec

Behavioral, physical and emotional well being

- Anxiety
- Depression
- ADHD
- Self confidence and self esteem
  - Differences in leisure activities between children with allergic rhinitis and healthy peers. Engal–Yeger B. et al Intn Journ of Ped Otolaryn Dec 2010

Consequences of untreated AR

- Associated with later life onset of ....
  - Chronic sinus disease
  - Non – allergic rhinitis
  - Chronic obstruction requiring surgery
  - Eustachian tube dysfunction
- Impaired performance
  - Work
  - Education
  - Driving

Allergic rhinitis – allergen triggers

- Pollen (tree, grass, weed)
- Seasonal outdoors
- ASCIA pollen calendar
- Dust mite
- perennial
- AM symptoms, indoor, triggered by sweeping, vacuuming, dust collecting environments, bed
- Pet dander
  - Cat, dog, horse, rabbit, feathers
- Mould

Classification of Rhinitis

<table>
<thead>
<tr>
<th>Intermittent</th>
<th>Persistent</th>
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<tr>
<td>&lt; 4 days per week</td>
<td>4 days per week</td>
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Mild
- normal sleep and
- no impairment of daily activities, sport, leisure
- normal work and school
- no troublesome symptoms

Moderate-severe
- one or more items
- abnormal sleep
- impairment of daily activities, sport, leisure
- abnormal work and school
- troublesome symptoms

Evidence

- ICAR (International Consensus on Allergic Rhinitis) – 2018
- ARIA guidelines (Allergic Rhinitis and its Impact on Asthma) – 2016
- WAO (World Allergy Association) Position paper on SLIT - 2014
- GINA (Global Initiative for Asthma) guidelines – 2018
- US joint task force - 2017

ASCIA Clinical Guidelines 2017

In Summary

- INCS best first line choice across the board!
  - Both nasal and ocular symptoms
  - Topical antihistamine agent (eye, nose)
  - Oral non sedating antihistamine
    - not recommended for nasal symptoms but OK as an adjunct for eye or skin
Testing for IgE sensitization (previously known as RAST)
• THINK! – will it change my management
• SPT gold standard but serum IgE very good
• ONLY valuable in IgE mediated reactions
  • IgE – asthma, AR, anaphylaxis
  • AR, asthma – inhaled allergens (not food)
• SPT or IgE testing NOT indicated for non-allergic triggers (cig smoke, fumes, flowers, perfumes respiratory irritants, changes in temp, wind)
• NOT indicated for intolerances (IBS), non-specific rash, *eczema
  headaches, fatigue, food additives

* Eczema is a disorder of skin barrier dysfunction – it is a risk factor for development of allergic disease best to ask for advice before ordering any allergy tests.

Beware
Sensitization does NOT equal allergy

WHY order the tests?
• Can allergen be avoided (pets)
• Minimized or reduced (HDM)
  • Not expensive sheets and covers
  • Wash in hot water, use dryer, use freezer
• Consideration for immunotherapy - for those failing maximal medical management

What is immunotherapy? (i.e. can I just lick the cat?)
• Administration of specific allergenic protein over the course of 3-5 years to induce tolerance
• Specific protein amplified
• Aims to "turn off allergic drive and change the way the immune system responds to allergen"
• Tolerance induced by Treg cells found in high concentration in skin and under the tongue
• Benefit may begin in first few months but long duration needed to maintain tolerance
• Disease modifying: aim to reduce or alleviate symptoms