

# The Role of Allergy Testing to Achieve Personalized Treatment Goals for Allergic Rhinitis and Asthma



# FACULTY

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# CASE

- 13 y/o boy; longstanding cough, runny nose
- Coughs frequently during the night, gets up several times to blow his nose
- Mother is concerned
- His grades have dropped; he has daytime sleepiness and trouble concentrating
- He has to stop basketball practice sometimes because he can't breathe
- Medical history: OTC antihistamine; short-acting beta-agonist



# EPIDEMIOLOGY OF ALLERGIC RHINITIS AND ASTHMA

- Allergic rhinitis (AR) affects up to 40% of children and up to 30% of adults in the US
- Asthma affects 1 out of every 12 people in the US
- AR can be associated with significant comorbidity and sinusitis
- Both conditions can negatively impact patients' quality of life
  - Affecting caregivers
  - Ability to function at school/work
  - Frequent medical visits
- AR costs an estimated \$25 billion a year; asthma costs upwards of \$80 billion



# CONFIRMING A DIAGNOSIS IS CRUCIAL

- AR and asthma are underdiagnosed and undertreated
  - Observational study of 250 patients in a real-life setting
    - 60% had uncontrolled AR
    - 50% used multiple medications
    - A minority were receiving allergen immunotherapy
- Allergy testing can confirm a suspected allergy
  - Skin-prick testing and specific IgE blood testing
  - In combination with past clinical history
  - Exam suspicious for an allergy-based disorder of the upper or lower airways
- Skin-prick testing and specific IgE blood testing are not recommended in symptom-free patients or for testing for drug allergies



# ALLERGY TESTING

- Majority of guidelines consider allergen-specific IgE blood tests as being equivalent to skin-prick testing
- Understanding the benefits and limitations of each method will allow the provider to choose the best test option for the patient
  - Measuring allergen-specific IgE is more helpful in a younger child or a child with severe eczema
  - Therapies taken for known allergies may interfere with skin testing
  - Blood testing requires one venipuncture and might be more comfortable and convenient as opposed to multiple skin pricks or a scratch test

# DIFFERENCES BETWEEN SKIN AND BLOOD TESTS

	Ease of procedure	Accuracy of results	Impact of medications	Risk	Cost
Skin test	<ul style="list-style-type: none"><li>• Several pricks</li><li>• Results in ~15 min</li></ul>	<ul style="list-style-type: none"><li>• Darker skin and presence of skin condition can affect the results</li><li>• Test for finite number of allergens</li><li>• Qualitative results</li></ul>	Steroid, antihistamine	Severe allergic reactions/ anaphylaxis	+
IgE blood test*	<ul style="list-style-type: none"><li>• One-time venipuncture</li></ul>	<ul style="list-style-type: none"><li>• Not affected by skin color or condition</li><li>• Test for large number of allergens</li><li>• Quantitative results</li></ul>	Not affected by medication	None	++

\* More recent enzyme-based blood tests are able to quantitate IgE levels more precisely than older radioallergosorbent tests (RASTs)

# GUIDELINES FOR INCORPORATING ALLERGY TESTING

- National Heart, Lung and Blood Institute and National Asthma Education
  - Allergen avoidance and exposure to triggers
  - Use of allergy testing for patients deemed to have persistent asthma
  - Consideration of immunotherapy in specific situations
- Allergic Rhinitis and its Impact on Asthma (ARIA)
  - Recommendations for choice of treatment of AR and considerations for choosing appropriate individualized treatment
- American Academy of Otolaryngology-Head and Neck Surgery Foundation
  - A consistent and systematic approach to initial evaluation of rhinitis



# GUIDELINES FOR INCORPORATING ALLERGY TESTING

- European Academy of Allergy and Clinical Immunology Task Force
  - Allergen immunotherapy cannot be considered until it is determined to which aeroallergens the patient is sensitized
- Global Initiative for Asthma (GINA)
  - Broad use of allergy testing to identify sensitization by skin testing or specific IgE blood testing
  - Allergen avoidance strategies, initiate immunotherapy, and guide pharmacotherapy



# CASE CONCLUSIONS

- Allergy testing would be recommended
  - Identify triggers
  - Determine strategy for avoidance and need for immunotherapy
  - Are allergies seasonal or perennial?
- Type of testing recommended
  - Specific IgE allergen blood panel



# IN SUMMARY

- Effective treatments are available for both AR and asthma, but they remain undiagnosed and undertreated
- Multiple evidence-based guidelines endorse use of allergy testing as a critical component of assessment and diagnosis; however, they are often not included in day-to-day comprehensive treatment
- Interprofessional approach to the management of asthma and AR: members of the team (eg, PCP, specialist, nurse) should ALL be well versed at all aspects of care, including allergy testing
- Referral to a specialist from a PCP should be considered when the patient is not meeting the goals of asthma or AR therapy, or patient is younger than 3