Asthma & COPD: Two Diseases or a Spectrum of One?

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The mission of ALLERGY & ASThma NETWORK is to end the needless death and suffering due to asthma, allergies and related conditions through outreach, education, advocacy and research.
Today’s Program

01 Historical perspective and definitions
02 Relevance
03 Practical pearls and future directions
Historical perspective and definitions

The Dutch Hypothesis (1961)

Results for “asthma COPD overlap”

Leung, et al. *CHEST*. 2022
Implications are limited by heterogenous definitions

<table>
<thead>
<tr>
<th>Source</th>
<th>Diagnosis of ACOS</th>
<th>Major Criteria</th>
<th>Minor Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>GOLD/ESP/ERS Consensus Guidelines (2012)</td>
<td>2 major criteria OR 1 major and 2 minor criteria</td>
<td>1. Very positive BHR (increase in FEV₁ of 15% and of 400 mL)</td>
<td>1. High total IgE</td>
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<tr>
<td>Louie et al. (2013)</td>
<td>2 major criteria AND 2 minor criteria</td>
<td>1. Provisional diagnosis of asthma and COPD</td>
<td>1. Significant BHR (FEV₁ of ≥ 12% and of ≥ 200 mL)</td>
</tr>
<tr>
<td>Czech guidelines (2013)</td>
<td>Diagnosis of COPD AND 2 major criteria OR 1 major AND 2 minor criteria</td>
<td>1. Stringent BPH (pH &lt; 45-50 ppb, elevated sputum eosinophil of ≥ 20%, or both)</td>
<td>1. Elevated total IgE</td>
</tr>
<tr>
<td>Merzeus et al. (2014)</td>
<td>Both major criteria</td>
<td>1. Postbronchodilator FEV₁ to PVC ratio of &lt; 0.7</td>
<td>1. Persistent airflow limitation (postbronchodilator FEV₁ to PVC ratio of &lt; 0.7 or LLN in patients age &lt; 40 y)</td>
</tr>
<tr>
<td>Finnish guidelines (2015)</td>
<td>2 major criteria OR 1 major AND 2 minor criteria</td>
<td>1. Significant BHR (FEV₁ of ≤ 15% and of &gt; 200 mL)</td>
<td>1. Elevated total IgE</td>
</tr>
<tr>
<td>Sin et al. (2016)</td>
<td>3 major criteria AND 1 minor criterion</td>
<td>1. Sputum eosinophils or elevated (&gt; 50 ppb) sputum eosinophil</td>
<td>1. Elevated total IgE</td>
</tr>
<tr>
<td>Gos et al. (2016)</td>
<td>1 major criterion OR 2 minor criteria</td>
<td>1. BHR to salbutamol of &gt; 15% and 400 mL</td>
<td>1. 3% of ≥ 10 y</td>
</tr>
</tbody>
</table>

Leung, et al. *CHEST*, 2022

Implications are limited by evolving definitions

- **2015**
  - **ACOS**
  - **GINA and GOLD published update on “ACOS”**

- **2017**
  - **Overlap**
  - **Updated to “asthma-COPD overlap”**

- **2020**
  - **A/COPD**
  - **ACO simply descriptor for those that have both features of asthma and COPD**
Scientific understanding of observations from 1961

- Intermittent / episodic symptoms
- Started before 40 years old
- History of smoking or toxic exposures; low birth weight or TB
- Asthma features

Varied prevalence given definition variance

- **0.9% - 11%** • in general population
- **11.1% to 61.0%** • in patients with asthma
- **4.2% to 66%** • in patients with COPD

Uchida, et al. *Allergol Int.* 2018
Relevance

Distinct clinical features of asthma-COPD overlap
Distinct immune features of asthma-COPD overlap

Milne, et al. JACI Pract. 2020

Distinct therapeutic features of asthma-COPD overlap
Distinct therapeutic features of asthma-COPD overlap


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Distinct therapeutic features of asthma-COPD overlap

IL-5 Receptor blockade (benralizumab) for eosinophilic COPD

Criner, et al. NEJM. 2019

Practical Pearls and Future Directions
Current clinical relevance

Future Directions
We’ll get to as many questions as we can!

Next Webinar

Moving Allergy & Asthma Science Forward

June 9, 2022
3:00 PM ET