Asthma in Older Adults: overcoming the challenges of diagnosis and management

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April 9, 2016

Overview
• Background and definitions
• Diagnosis
• Treatment

Overview
• Adult-onset asthma
  • Mainly effects women in the age group 64-75
  • Prevalence is similar between men and women after age 75
  • Low remission rates
  • Less often associated with allergy and atopic diseases
  • Faster decline in lung function
  • More severe persistent airflow limitation

Asthma in older adults
• 2/3 deaths attributed to asthma occur in patients ≥ 65 years of age
• Pharmaceutical products represent ≥50% of health-care expenditures for asthma in patients aged ≥ 65 years of age
• Asthma-derived direct costs in elderly asthmatics were double those in younger adult patients


www.asthmanow.net
Asthma vs COPD

- Both are chronic inflammatory disease of the airways that induce airflow limitation

### Asthma

- Often starts in childhood and is associated with allergies
- Can remit and recur in adulthood
- May persist throughout adolescence into adulthood
- Can develop de novo at any age

### COPD

- Becomes apparent in middle to older age
- Strong association with cigarette smoke and with work and other environmental exposures

#### Asthma vs COPD

<table>
<thead>
<tr>
<th>Asthma</th>
<th>COPD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intermittent and variable wheeze</td>
<td>Gradually increasing dyspnea</td>
</tr>
<tr>
<td>Chest tightness</td>
<td>Cough</td>
</tr>
<tr>
<td>Shortness of breath</td>
<td>Mucous hypersecretion</td>
</tr>
<tr>
<td>Cough</td>
<td>Wheeze</td>
</tr>
<tr>
<td>Intermittent exacerbations</td>
<td></td>
</tr>
</tbody>
</table>

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Breathlessness in older adults

- Asthma
- Chronic obstructive pulmonary disease (COPD)
- Heart failure
- Malignancy
- Anemia
- Aspiration
- Infection
- Deconditioning/poor fitness
- Obesity
- Normal “aging process”

Work up of breathlessness

- Thorough histories
- EKG
  - If abnormal – consider ECHO and stress test
- H&H
- Chest imaging – start with 2 view CXR
- Pulmonary function testing

*Drugs Aging. 2005;22(12):1029-59*
### PFTs in older adults

- High quality results depend on:
  - Good learning capacity
  - Dexterity
  - Adequate seal on mouthpiece


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### Multidimensional interventions

- **Pharmacotherapy**
  - Short acting beta agonists (SABA)
  - Long acting beta agonists (LABA)
  - Inhaled corticosteroids (ICS)
- **Self management**
  - Inhaler device selection, education and assessment
  - Self management education
  - Action plan for exacerbations
- **Risk factor modification**
  - Smoking cessation
  - Weight loss interventions
  - Pulmonary rehabilitation
- **Treatment of co-morbidities**


### Asthma in the older adult

**Table 1. Summary of Physiological Comparisons between Asthma and Chronic Obstructive Pulmonary Disease (COPD)**

<table>
<thead>
<tr>
<th></th>
<th>COPD</th>
<th>Asthma</th>
<th>Chronic Obstructive Pulmonary Disease (COPD)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airway</td>
<td>Narrow</td>
<td>Increased</td>
<td>Narrow or increased during attacks</td>
</tr>
<tr>
<td>Spasm</td>
<td>Increased</td>
<td>Normal</td>
<td>Normal or increased during attacks</td>
</tr>
<tr>
<td>Eosinophilic inflammation</td>
<td>Increased</td>
<td>Normal</td>
<td>Normal or increased during attacks</td>
</tr>
</tbody>
</table>

*Respiratory function is measured by change in FEF 25-75% volume in 1 second (%). FEF 25-75% = forced expiratory flow, (%).* 2010;376: 803-813.


www.med.umich.edu
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Inhaled therapies and delivery devices

- Accuracy of device actuation and inhalation
- Adequate cognitive function
- Manual dexterity and hand strength


Action plan

- Frequency of ineffective inhalation because of device handling error
  - Age 20-40 yo -> 10-15%
  - Age 60+ yo -> 40%
  - Age 80+yo -> 60%


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Comorbidities

- Obesity
- GERD
- Sleep disordered breathing
- Cataracts
- Emphysema and chronic bronchitis
- Heart and vascular disease
- Mental and behavioral disorders
- Cancer

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Thank you