Does Asthma Presentation Change with Aging?

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Objectives

• 1. Describe the pathology of asthma in the elderly
• 2. Identify two comorbid conditions and the impact on asthma control
• 3. Understand how medications respond differently in elderly for asthma treatment
Definition:
Reversible airflow obstruction with inflammation and hyper-responsiveness of airways.

Questions for diagnosis:
1. Have you ever been told you have asthma?
2. Have you ever had wheezing or whistling in your chest in the past 12 months?
Prevalence of Asthma

- Asthma onset typically during childhood but...
- Over 65, 13% of population and
- 7% with asthma in USA
Prevalence cont.

- 25% develop before age 20
- 27% develop late onset after age of 60
- Women are affected more than men

Cardiovascular Health Study:
- 11-14% of smokers
- 4% nonsmokers
- 75% were women
- 20% over age of 80
Prevalence cont.

- Older adults are underdiagnosed
- 6-10% increase incidence with age
- Over 300 million affected
- 250,000 deaths
Comorbidity and Asthma

• 25% of people with Asthma will have other conditions
• 32% will have COPD and GERD symptoms combined
• As high as 77% will have heartburn symptoms in one study compared to 50% of the control group
Comorbidity cont.

• Untreated Obstructive Sleep Apnea has been demonstrated to have a negative impact on daytime symptoms of asthma
• CPAP treatment has been shown to improve asthma symptoms
• Other conditions affected by asthma
Physiologic Changes with Aging

- Decrease elastic recoil of lungs
- Decrease motion of diaphragm
- Restricted rib and chest wall motion
- Decrease in vital capacity
Pathophysiology of Asthma

- Related to remodeling from inflammatory markers:
  - Eosinophilia
  - Interleukin
  - T Helper cells
Pathophysiology cont.

- Vascular congestion
- Hypertrophy of mucous glands
- Edema

- Triggers:
  - 58% viral infections
  - 30% by animal allergies
  - 60% seasonal allergies
Challenges in Diagnosis

• Perception of disease
• Allergic vs Non-allergic causes
• Overlapping symptoms: COPD vs Asthma
• Ability to perform diagnostic tests

(photostock:1975 PFT machine)
Effect of Comorbid Conditions

- GERD
- Diabetes
- Obesity
- Metabolic Syndrome
- Rhinitis
Goal of Treatment

- Reduce Emergency and Hospital visits
- Decrease chronic symptoms
- Maintain level of activity
- Maintain quality of life
- Experience minimal side effects
- Reduce triggers causing symptoms
Treatment Options

- Short acting
- Long acting
- Steroids
- Anti-cholinergic
- Antihistamine
- Avoidance
Treatment Side Effects

**Asthma Treatment**
- Beta 2 Agonist
  - Tremor, Tachycardia, Reflux
- Steroid Inhalers
  - Candida, Cough, Voice change
- Steroids
  - Cataracts, Hypertension, Diabetes, Vertebral fractures

**Non-Asthma Treatment**
- Beta blockers for heart disease
- Non-steroidal Anti-inflammatory
- Timolol for Glaucoma
Noncompliance

• Increase in hospitalizations

• 50% reported noncompliance within 7 days of discharge

• Cost

• Access to medications

• Undertreated:
  • Only 40% using rescue inhalers
  • Only 30% using steroid inhalers
Noncompliance cont.

- Cognitive ability
- Dexterity
- Cost
- Side effects
Thank you!
References

- Chipps, B.E., Zeigler, R.S., Borish, L. et al. (2012). Key findings and clinical implications for the epidemiology and natural history of asthma: outcomes and treatment regimens (TENOR) study. Journal Allergy and Clinical Immunology; August; 130(2):332-42.