Chronic obstructive pulmonary disease (COPD) & Bronchiectasis

Dr Piyush Tailor
COPD

- Out lines
  - What is the COPD?
  - Overview
  - Causes of COPD
  - Symptoms of COPD
  - What's the difference between COPD and asthma?
  - Diagnostic tests needed for COPD
  - Medical management of COPD
  - Preventive measures
  - Nursing intervention
  - Outlook and Prognosis
COPD

Chronic obstructive pulmonary disease (COPD) refers to a group of lung diseases that block airflow and make breathing difficult.
A Normal Lungs

- Trachea (windpipe)
- Airways
- Right lung
- Left lung

Bronchioles (tiny airways)

Detailed view of lung cross-section

B Lungs With COPD

- Bronchioles lose their shape and become clogged with mucus
- Walls of alveoli are destroyed, forming fewer larger alveoli

Detailed view with COPD
In COPD

- Less in and out of the air flow due to
- lose their elastic quality.
- walls between air sacs are destroyed.
- walls of the airways become thick and inflamed.
- more mucus than usual.
Cause

- Smoking
- Air pollution
- Alpha 1 anti trypsin deficiency
- Immunodeficiency
- genetic (hereditary) risk
Clinical features

• Productive Cough
  – Mucus to Purulent
• Breathlessness
• Fever
• Other symptoms of COPD can be more vague
  – weight loss
  – tiredness
Examination

Inspection / Palpation / Percussion

• Barrel chest (Ant-Post diameter increase)
• Tachypnia
• Tachycardia
• Wide intercostal space
• Indrawing of intercostal muscles

Auscultation

Dr Piyush Tailor
Do you know what TVF means?

Tactile Vocal Fremitus
Normal Breath Sound

- Vesicular Breath
- Broncho-vesicular
- Bronchial
- Tracheal
Difference between COPD and Asthma

- **In COPD**
  - permanent damage.
  - narrowed airways fixed
  - Chronic symptoms
  - Treatment open up the airways limited.
  - > 35 years

- **In asthma**
  - inflammation in the airways
  - Acte airways narrowing.
  - Acute & intermittent symptoms
  - Treatment open up the airways well.
  - < 35 years
Investigation

- Routine Blood Investigation
- Sample of sputum
- Chest x-ray
- High-resolution CT (HRCT scan)
- Pulmonary function test (spirometry)
- Arterial blood gases test
- Pulse oximeter
Bronchiectasis with marked airway dilatation

HRCT shows clustering of markedly dilated airways in both upper lobes (arrows). Courtesy of Alan Barker, MD.
Characteristic central bronchiectasis 2/2 ABPA
Medical management

• Antibiotics
  – Cephalosporins
  – fluoroquinolones
  – Macrolides

• Bronchodilators
  – Aminophylline
  – Adrenaline
  – Ipratropium bromide

• Anti-inflammatory
  – Steroid – Glucocorticoid

• Oxygen –
  – In acute episode, in limited amount only

• Chest physiotherapy and postural drainage

• Ventilatory support if Respiratory failure
COPD

Preventive measures

• To prevent irritation and infection of the airways, instruct the patient to:

• Avoid exposure to cigarette
• Avoid exposure to dusts and powders.
• Avoid use of aerosol sprays.
• Avoid exposure to cold and high humidity.
• Immunization against influenza & pneumococci