Chronic Obstructive Pulmonary Disease

Epidemiology

- 10% to 20% of over-40s. 2.5 miilion deaths/year worldwide.

Pathology

- Chronic inflammatory condition which causes progressive airflow obstruction secondary to parenchymal damage
- With little or no reversibility
- It includes chronic bronchitis and emphysema

Aetiology

- Smoking
- Alpha 1 Antitrypsin Deficiency

Usual Presenting Complaint

- Cough, sputum, dyspnoea, wheeze
- Very little diurnal variation in symptoms

Family History

- Alpha 1 Antitrypsin Deficiency

Social

- Smoking

Signs

- Tachypnoea
- Use of accessory muscles
- Hyperinflation
- Decreased cricosternal distance
- Decreased expansion
- Resonant or hyperresonant percussion note
- Quiet breath sounds
- Wheeze
- Cor Pulmonale
- Prolonged expiratory phase of breathing
- Expiratory polyphonic wheeze

General Exam

- Above signs in a Respiratory Exam
- Ankle Oedema, Raised JVP
- Sputum Pot
- Oxygen

Investigations

- FBP (PCV Increased)
- Chest X-Ray (See below)
- ECG (Right Atrial and RV Hypertrophy, RBBB)
- ABG (Decreased PaO2 +/- Hypercapnia)
- Lung Function Tests (Obstructive + Air Trapping)
- Trial of oral steroids

Radiological Findings

- Hyperinflation (>6 ribs above diaphragm)
- Flat Hemidiaphragms
- Decreased Peripheral Vascular Markings
- Bullous Emphysema

Prevention There is no known prevention for the condition other than the reduction of risk factors.

Management

BTS/NICE Guidelines

General

- Stop Smoking
- Exercise
- Treat poor nutrition (underweight and obesity)
- Influenza and pneumococcal vaccinations
- Pulmonary Rehabilition
- PalCare
- Air Travel is risky if FEV1 is <50% or PaO2 <6.7kPa

Mild

- Anti-muscarinic or Inhaled Beta-2 agonist as required

Moderate

- Regular Anticholinergic or LABA + ICS, especially if FEV1 <50% and 2 or over exacerbations per year.
- Oral Theophylline plays a role

Severe

- LABA + Inhaled Steroid + Anti-Cholinergic
- Consider Steroid Trial (30mg Pred/24h PO for 2 weeks) and home Nebs
- Refer to Specialist

Pulmonary Hypertension

- Assess the need for LTOT
- Treat Oedema with Diuretics

Long Term Oxygen Therapy

- RCT showed that if PaO2 was maintained >8kPa for 15h a day; 3 year survival improved by 50%

Indications:

- Need to be clinically stable non-smokers with PaO2 <7.3kPa, despite maximal treatment.
- Values should be stable on two occasions, three weeks apart

Or:

- Pa02 7.3 - 8 and pulmonary hypertension + cor pulmonale

Or:

- Terminally ill people

Complications

- Acute Exacerbations + Infections
- Polycythaemia
- Respiratory Failure
- Cor Pulmonale
- Pneumothorax
- Lung Carcinoma