Obstructive Sleep Apnoea (OSA)

Definition of obstructive sleep apnoea (OSA)
- A sleep disorder characterised by recurrent episodes of apnoea and hypopnoea caused by collapse of the upper airway during sleep.
- These episodes are associated with recurrent desaturations and arousals from sleep.

Epidemiology of obstructive sleep apnoea (OSA)
- High prevalence of undiagnosed OSA
  - Estimated that 5% of adults in Western countries have symptomatic OSA and 20% have asymptomatic/ mild symptoms
- 2-3 fold greater risk for men compared to women
- Prevalence increases 2-3 times in >65 year old group

Causes and risk factors of obstructive sleep apnoea (OSA)
- Structural
  - Nasal Obstruction
    - Polyps
    - Septal deviation
    - Tumours
    - Trauma
    - Stenosis
  - Pharyngeal Obstruction
    - Adenotonsillar hypertrophy
    - Mandibular hypoplasia
    - Micrognathia
    - High arched palate
    - Syndromes – Downs, Marfans, Prader-Willi, Acromegaly
- Non-Structural
  - Obesity – especially central fat distribution and large neck circumference (>17 inches)
  - Alcohol and sedative use
  - Smoking
  - Age and male sex
  - Postmenopausal state
  - REM sleep
  - Supine sleep position

Presentations of obstructive sleep apnoea (OSA)
- Snoring
- Witnessed apnoeas
- Nocturnal gasping and choking sensations that wake patient from sleep
- Non-restorative sleep and excessive daytime sleepiness
- Morning headaches
- Reduced libido
- Personality and mood changes
- Cognitive deficit
Differential diagnosis of obstructive sleep apnoea (OSA)
- Narcolepsy
- Obesity-Hypoventilation Syndrome (Pickwickian Syndrome)
- Paroxysmal nocturnal dyspnoea (PND) associated with cardiac failure
- Central sleep apnoea
- Periodic limb movement disorder

Investigation of obstructive sleep apnoea (OSA)
- Sleep studies and Polysomnography
  - Body position, snoring, abdominal, thoracic and leg movements
  - Oximetry
  - EEG
  - EMG
  - ECG
  - Electro-oculogram
  - Respiratory air flow

Staging of obstructive sleep apnoea (OSA)
- Apnoea hypopnoea index (AHI – number of apnoeas/hypopnoeas per hour)
  - Mild: AHI 5-14/hr
  - Moderate: AHI 15-30/hr
  - Severe: AHI 30/hr
- Epworth Sleepiness Scale (ESS)
  - Validated method (questionnaire) of assessing the likelihood of falling asleep in a variety of situations. Maximum score is 24.
    - Normal range – ESS < 11
    - Mild – ESS 11-14
    - Moderate – ESS 15-18
    - Severe – ESS > 18

Management of obstructive sleep apnoea (OSA)
- Behavioural interventions
  - Weight loss
  - Avoidance of alcohol, sleeping tablets and sedatives
  - Smoking cessation
- Non-Surgical
  - CPAP
  - BiPap in patients with ventilatory failure
  - Intra-oral devices
- Surgical
  - Palatal surgery
    - Use with MDT advice - may preclude future CPAP use

Complications of obstructive sleep apnoea (OSA)
- Hypertension
- Cardiovascular disease/ Coronary artery disease (IHD)
- Insulin-resistance and diabetes
- Depression
- Sleepiness-related accidents
  - Patients with OSA have 2-7 times increased risk of motor vehicle crashes

**Prognosis of obstructive sleep apnoea (OSA)**
- Short term prognosis in relation to symptoms is good with regular use of CPAP
  - Benefits seen within 4-6 weeks of use
- Independent risk factor for the development of and mortality related to cardiovascular disease

**References**

**Common questions concerning obstructive sleep apnoea (OSA)**

**What are risk factors for obstructive sleep apnoea (OSA)?**
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    - Polyps
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**What are the complications of obstructive sleep apnoea (OSA)?**
- Hypertension
- Ischaemic heart disease (IHD)
- Diabetes
- Depression
• Sleepiness-related accidents (patients with OSA have 2-7 times increased risk of motor vehicle crashes compared to controls)

**When should people with obstructive sleep apnoea (OSA) be treated?**
- Symptomatic patients with AHI ≥ 15 or a 4% oxygen desaturation rate at the level of > 10/hour

**What are the possible treatments in obstructive sleep apnoea (OSA)?**
- **Behavioural interventions**
  - Weight loss
  - Avoidance of alcohol, sleeping tablets and sedatives
  - Smoking cessation
- **Non-Surgical**
  - CPAP
  - BiPap in patients with ventilatory failure
  - Intra-oral devices
- **Surgical**
  - Palatal surgery