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Obstructive sleep apnoea

Obstructive sleep apnoea (OSA) is a common breathing disorder in sleep usually caused by repetitive upper airway obstruction. It is associated with reduced or absent breathing during sleep due to narrowing and relaxation of the upper airway in sleep and is commonly associated with snoring. It is estimated that around 5% of Australians, including about 25% of men over the age of 30 years, have clinically significant OSA.

Many people are unaware that they have the condition, or do not realise that it is severe and may have long-term health implications. People with OSA have about a 7-fold higher risk of death and heart disease, regardless of the severity of the disease, age or history of heart problems.

OSA is characterized by episodes of partial upper airway obstruction and/or intermittent complete obstruction of the upper airway during sleep. It disrupts normal ventilation and patterns during sleep.

Symptoms

Snoring is the most frequent symptom of OSA, occurring in up to 95% of people. Other key signs and symptoms include waking through the night with a sensation of choking or gasping, nocturia, night sweats, morning headache, gastro-oesophageal reflux disease, dry or sore throat in the morning, daytime sleepiness and decreased cognitive functioning. Recurring arousal from sleep, daytime sleepiness, and fatigue are signs of disturbed sleep.

A decline in cognitive functioning and memory impairment in older people with sleep apnoea may be misinterpreted as dementia.

Untreated obstructive sleep apnoea is associated with:

- hypertension
- arrhythmias such as paroxysmal atrial fibrillation
- night-time angina
- metabolic syndrome and insulin resistance
- cardiovascular mortality
- cerebrovascular mortality
- motor vehicle accidents, especially single-vehicle accidents at night
- impotence
- depression, anxiety, irritability

Risk factors

The strongest risk factor for sleep apnoea is obesity, especially central obesity. Obese adults have as high as a 45% risk of OSA, compared with a 25% risk in those who are overweight. Weight gain increases the risk of OSA by increasing upper airway collapsibility during sleep. Obesity is also associated with reduction in lung volumes, further contributing to increased work of breathing.

Sleep apnoea is more common in males than females and becomes more common with advancing age from 50 years. After menopause, the prevalence of OSA in women increases sharply.

Other risk factors for the condition include:

- Large neck circumference (>43cm for men and >40cm for women)
- Certain facial abnormalities, including a high, narrow, elongated, soft palate, a small chin, an abnormal bite and a small jaw
- Family history
- Cigarette smoking
- Excessive alcohol consumption
- Medications, especially sedatives at night

Comorbidities

Obstructive sleep apnoea may be associated with chronic obstructive pulmonary disease (COPD), asthma or other significant respiratory disorders. OSA is highly prevalent in patients with hypertension, coronary artery disease, stroke, and atrial fibrillation.

The Sleep Heart Health Study has shown that OSA is a significant predictor of incident coronary heart disease in men younger than 70 years, as well as increasing the risk of heart failure in middle-aged and older men. Severe OSA more than doubles the risk of death from cardiovascular events.

OSA is considered a modifiable and highly prevalent factor in the development of hypertension. Studies show treatment with continuous positive airway pressure (CPAP) lowers both systolic and diastolic blood pressure by around 2 mmHg.

Untreated OSA may increase the risk of diabetes. Three months treatment of OSA has been shown to decrease lipid levels, glycated haemoglobin levels (HbA1c), BMI, and abdominal fat content.

Restless legs syndrome may coexist with obstructive sleep apnoea and worsen sleep independently of the sleep-disordered breathing.

OSA may also have an impact on obesity and cause weight gain, with sleep fragmentation, unrefreshing sleep, daytime lethargy and somnolence leading to reduced physical activity and energy expenditure.

Management

An overnight sleep study, or polysomnography, is required to diagnose OSA.

The treatment of choice for moderate to severe sleep apnoea is continuous positive airway pressure (CPAP), a device which generates positive air pressure through a nose mask, creating a splint which keeps the airway unobstructed throughout the night. Treatment of sleep apnoea with CPAP devices has been shown to have a profound effect on both the quality of life and life expectancy. Nocturnal CPAP significantly reduces the frequency of respiratory events during sleep, decreases daytime sleepiness, improves systemic blood pressure, and improves quality of life across a range of disease severities. CPAP treatment of at least 4 hours each day is also associated with decrease cardiovascular mortality. Side effects such as nasal congestion and dry mouth are common, and adherence to CPAP therapy of greater than four hours per night is required to obtain ongoing benefits.

Weight loss in people who are overweight or obese significantly decreases or eliminates sleep apnoeas. Weight loss also has positive impacts on sleep quality, quality of life and other obesity-related diseases such as type 2 diabetes and hypertension. Exercise significantly improves symptoms of sleep apnoea.

Oral appliances are used to enlarge the airway at night by moving the tongue and mandible forward. Mandibular splinting devices prepared by dentists are usually effective only in mild to moderate obstructive sleep apnoea.

Positional therapy is recommended for patients with mild and moderate OSA. Positional therapy involves avoiding the supine position during sleep in patients who mostly have apnoeas while lying on their back.

A range of surgical interventions are also available, although the risks and preferences in older people usually prohibit surgery.

Benzodiazepines such as temazepam, diazepam, nitrazepam, alprazolam and oxazepam, should be avoided in people with sleep apnoea as these medications may relax the airway further and exacerbate already obstructed airflow.

Smoking cessation and use of intranasal corticosteroid sprays can reduce nasal resistance and improve symptoms of sleep apnoea.

No medications have been shown to be effective in the treatment of OSA.

Summary

Obstructive sleep apnoea is a common condition in older people and is characterised by repetitive episodes of complete or partial obstructions of the upper airway during sleep, leading to loud snoring. Untreated OSA is associated with significant cardiovascular morbidity and mortality, and often debilitating daytime symptoms. Obesity is a key modifiable risk factor for OSA. CPAP is considered first-line and the most effective treatment of sleep apnoea. Benzodiazepines should be avoided in all people with sleep apnoea.

References

Circulation 2010;122(4):352–360.
Medicine Today 2022; 23(6): 59-61.
Respiratory Medicine Today 2021; 6(2): 19-24.
Medicine Today 2021; 22(12): 29-35.

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