

General

Weight loss should be encouraged in all overweight patients with obstructive sleep apnea, however attempts to lose weight should not delay the initiation of additional treatment if indicated.

Patients should be informed of the potential for alcohol and sedatives to worsen obstructive sleep apnea and sleep hypoventilation.

Relief of nasal obstruction is not an effective treatment for obstructive sleep apnea.

Optimization of medical management is the first priority in the management of Cheyne-Stokes breathing in patients with heart failure.

CPAP

Continuous positive airway pressure (CPAP) at a fixed pressure is the primary treatment for patients with obstructive sleep apnea.

Automatic CPAP can be considered an alternative treatment to fixed pressure CPAP for obstructive sleep apnea in the absence of co-morbid conditions.

Persistently low CPAP use (less than four hours per night) over two months, following efforts to improve patient adherence, should lead to review of treatment.

Oral Appliances

Oral appliances are an appropriate first line therapy for patients with mild or moderate obstructive sleep apnea with minimal daytime symptoms.

Oral appliances are an appropriate alternative therapy for patients who are unable to tolerate CPAP.

Oral appliances should be fitted by qualified dental practitioners who have undertaken special training in sleep apnea.

Patients should undergo follow-up sleep monitoring with the oral appliance to ensure effective treatment once its position has been optimized by the dental practitioner.

Upper Airway Surgery

The presence of large tonsils in a patient with obstructive sleep apnea should prompt referral to an otolaryngologist for consideration of a tonsillectomy.

Obstructive sleep apnea should be excluded in patients before they are considered for upper airway surgery for snoring.

Patients being offered palatal surgery for snoring should be informed about the failure and success rate of the procedure and of the potential of difficulty using CPAP later if they develop obstructive sleep apnea.

Laser-assisted uvulopalatoplasty is not recommended for the treatment of obstructive sleep apnea.

Anaesthesia

Medications administered during anaesthesia and the post-operative period may increase the severity of obstructive sleep apnea postoperatively.

Patients with obstructive sleep apnea should be initiated on treatment prior to surgery and continued on it during the postoperative period.

Bibliography

Fleetham, JA, *et al.* Canadian Thoracic Society guidelines: Diagnosis and treatment of sleep disordered breathing in adults. *Can Respir J* 2006; 13; 1-7

Fleetham, JA, *et al.* Canadian Thoracic Society guidelines: Diagnosis and treatment of sleep disordered breathing in adults: 2011 Update. *Can Respir J* 2011;18(1)

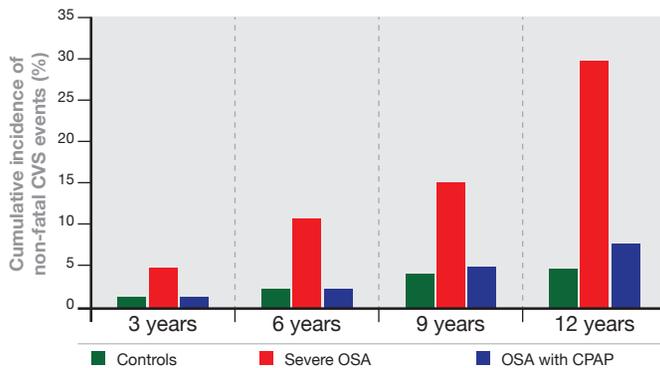
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Sleep Apnea

2011 Update



Non-fatal cardiovascular events in control patients, patients with severe OSA and patients with OSA treated with CPAP



Adapted from: Marin, J, Carrizo, S.J., Vicente, E., Agusti, A. Long-term cardiovascular outcomes in men with obstructive sleep apnoea-hypopnoea with or without treatment with continuous positive airway pressure: an observational study. *The Lancet*, 2005; 365 (9464), pp 1046-1053.

What is Sleep Apnea?

Sleep apnea affects at least 1 in 20 adults and is as common as diabetes and hypertension.

There are four different types of sleep apnea: obstructive sleep apnea (OSA), central sleep apnea, complex sleep apnea and sleep-hypoventilation.

It is important to distinguish between the different types of sleep apnea as the treatment differs between them.

Sleep apnea causes a variety of symptoms including recurrent nocturnal awakening, unrefreshing sleep and daytime sleepiness.

Bed partners of patients with obstructive sleep apnea often comment on loud snoring, nocturnal apnea and choking episodes.

Obstructive sleep apnea is more common in overweight patients but can occur in patients with a normal body weight.

Central sleep apnea of the Cheyne-Stokes variety is common in patients with heart failure and cerebrovascular disease.

Patients with obstructive sleep apnea are more likely to have car crashes due to excessive sleepiness and falling asleep while driving.

Physicians caring for patients with obstructive sleep apnea should be aware of the provincial legislation for reporting of drivers with untreated sleep apnea.

Patients with untreated obstructive sleep apnea are at increased risk to develop cardiovascular and cerebrovascular disease.

Patient education information for sleep apnea is available from www.lung.ca/lung-health/lung-disease/sleep-apnea. A handbook for patients recently diagnosed with sleep apnea is available from your provincial Lung Association.

Referral

All patients who have suspected sleep apnea should complete an assessment of daytime sleepiness such as the Epworth Sleepiness Scale.

Patients referred for medical assessment and/or sleep monitoring should be triaged on the basis of whether they have a co-morbid condition, work in a safety critical occupation or are at high risk of a car crash.

Co-morbid conditions: ischemic heart disease, cerebrovascular disease, congestive heart failure, refractory systemic hypertension, obstructive/restrictive lung disease, pulmonary hypertension, hypercapnic respiratory failure, pregnancy.

Safety critical occupations or patients at high risk of a car crash: Individuals working with machinery or employed in hazardous occupations. Commercial drivers, railway engineers, airline pilots, air traffic controllers, aircraft mechanics, ship captains and pilots. Car drivers who admit to having fallen asleep while driving within the last two years. (All patients in a safety critical occupation or at high risk of a car crash should be told to cease their occupation and/or personal driving until their medical assessment has been completed and/or appropriate treatment has been established).

Waiting Times

Medical assessment and/or sleep monitoring should be arranged and completed within 4 weeks for patients with suspected severe obstructive sleep apnea with a co-morbid condition or safety critical occupation. The maximum wait time for all other patients is six months.

Diagnosis

Level I (complete laboratory technologist attended polysomnography) remains the accepted standard for evaluation of sleep apnea and is the test of choice.

Level II (full ambulatory polysomnography), Level III (multi-channel cardio-respiratory recording devices) and level IV (oximetry) studies can be used to confirm the diagnosis of obstructive sleep apnea and institute appropriate treatment in patients with a moderate to high pretest probability of this disorder. This diagnostic approach should be integrated into a package of care that includes the appropriate level of physician and allied health professional expertise and the back-up availability of Level I polysomnography.

Level II, III and IV monitoring should only be used with caution in patients with co-morbid conditions and for the diagnosis of other forms of sleep apnea.

Although oximetry alone may have a role in the initial assessment of sleep apnea, its significant limitations in distinguishing different types of sleep apnea must be fully appreciated before using it to make diagnostic and therapeutic decisions.

Treatment

Which patients should be treated and how should they be followed?

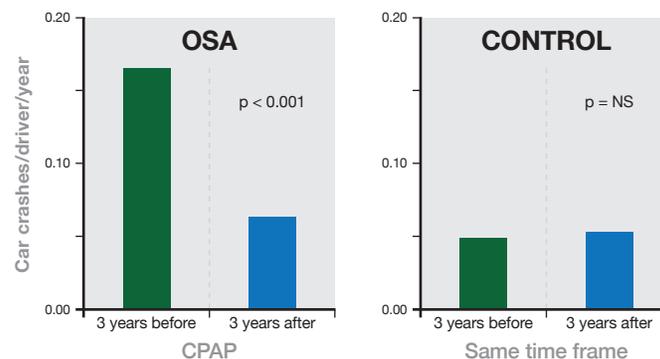
All patients with daytime symptoms and obstructive sleep apnea should be offered a trial of treatment to improve their symptoms.

The indications for treatment of patients with no daytime symptoms and obstructive sleep apnea are less clear. In these patients, treatment may be considered if they have co-morbid conditions, work in a safety critical occupation or have an apnea/hypopnea index > 19 events/hour.

Treatment adherence should be assessed within 2-4 weeks of initiation of treatment and patients should be seen in follow-up within 3 months to assess their symptomatic response to and adherence with treatment.

Long-term follow-up should be arranged at least annually in a similar fashion to other chronic diseases such as hypertension and diabetes.

Car crashes/driver/year in patients with OSA during the 3 years before and after CPAP treatment and control subjects during the same time frame.



Adapted from: George CFP Reduction in motor vehicle collisions following treatment of sleep apnea with nasal CPAP *Thorax*, 2001; 56: 508-512.