

Disease Management: Sleep Apnea

Obstructive Sleep Apnea (OSA): Repetitive interruption of ventilation during sleep caused by collapse of the pharyngeal airway. An obstructive sleep apnea is a ≥ 10 -second pause in respiration associated with ongoing ventilator effort. Most common form and occurs when throat muscles relax. Most sufferers are not aware that sleep was interrupted and think they slept well all night.

Risk Factors:

- Excess weight
- Male gender
- Neck circumference
- Advancing age
- Narrowed airway
- Retrognathia
- African American under 35
- Use of alcohol (sedative)
- Smoking
- CHF
- A-Fib
- DM2
- Stroke
- Treatment for refractory HTN
- Pulmonary HTN
- Nocturnal dysrhythmias
- Pre-op bariatric surgery
- High-risk driving populations

Diagnosis:

- Suspicion of OSA should trigger a comprehensive sleep evaluation
- Apnea-hypopnea index (AHI) >5
- Overnight oximetry
- Home-based/ambulatory unattended polysomnography
- In-hospital attended overnight polysomnography

Treatment Options:

- Continuous positive airway pressure (CPAP)
- Oral appliance therapy (alternative to CPAP)
- Positional therapy
- Weight loss
- Exercise
- Avoidance of alcohol and sedatives
- Good sleep hygiene
- Surgery
 - Uvulopalatopharyngoplasty
 - Tonsillectomy
 - Tracheostomy

Central Sleep Apnea (CSA): Occurs when the brain does not send proper signals to the muscles that control breathing. A central apnea is ≥ 10 -second- pause in ventilation with no associated respiratory affect. CSA syndrome is present when a patient has >5 central apneas per hour of sleep. This form is much less common, but sufferers will remember waking at night short of breath and have trouble getting back to sleep. Most common causes are heart failure and stroke.

Risk Factors:

- Male
- Advancing age
- Heart disorder
- Stroke
- Brain tumor

Diagnosis:

- Overnight oximetry
- Ambulatory polysomnography
- In-hospital polysomnography

Treatment Options:

- Positive airway pressure
- Supplemental oxygen
- Adaptive Servo-Ventilation (ASV) therapy*

**Advise patients to speak with their physician if they use ASV because the devices have been shown to increase CV mortality in heart failure patients – safety notice published May 13, 2015 (see references)*

Signs and symptoms of OSA and CSA:

- Excessive daytime sleepiness
- Morning headache
- Loud snoring (most common in OSA)
- Difficulty staying asleep
- Witnessed breathing cessation with sleep
- Attention problems
- Awakening with dry mouth or sore throat
- Nasal congestion

Patient education:

- Findings of sleep study and severity of disease
- Pathophysiology
- Natural course of disease and associated disorders
- Risk factor identification and modification education
- Treatment options
- What to expect from treatment
- Highlight patient's role in treatment: address concerns and set goals
- Consequences of untreated disease
- Drowsy driving/sleepiness counseling
- Genetic counseling when indicated

Complications from either type of sleep apnea:

- Cardiovascular conditions: high blood pressure, A-fib, CHF, sudden cardiac death during sleep, stroke
- Daytime fatigue
- Complications from medications and surgery
- Abnormal liver results
- Sleep-deprived partners
- Morning headaches
- Memory issues
- Nocturia
- Depression
- Children with untreated sleep apnea have higher incidence of ADHD

References

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*<http://www.resmed.com/us/en/consumer/newsandinformation/news-releases/2015/resmed-provides-update-on-phase-iv-serve-hf-study-of-adaptive-servo-ventilation-therapy.html>

