

Madigan Army Medical Center

Referral Guidelines

Obstructive Sleep Apnea Management with Continuous Positive Airway Pressure Therapy

Diagnosis/Definition

- The most common form of sleep apnea is Obstructive Sleep Apnea (OSA) which is diagnosed with overnight polysomnography (sleep study). Either an attended in-lab polysomnogram or 4-channel home polysomnogram (specifically for individuals without significant cardiovascular disease or other medical co-morbidities and a high pre-test probability of OSA) are acceptable for the initial diagnosis.
- Patients require an Apnea Hypopnea Index (AHI) of > 5 /hour to have a diagnosis of OSA.
 1. Patients with mild OSA, defined by an AHI of 5-15 hour should be treated if they have symptoms of excessive daytime somnolence (sleepiness) or co-morbid cardiovascular disease.
 2. Patients with an AHI > 15 /hour should be treated.
 3. Patients with an AHI > 30 have severe OSA which is associated with an increased risk of death from cardiovascular disorders and should always be treated.

Initial Diagnosis and Management

Symptoms suggestive of OSA include:

1. Loud, bothersome snoring.
2. Witnessed apneas.
3. Excessive daytime sleepiness.
4. Hypertension
5. Obesity

If a patient has 4 or more of these criteria, they are highly likely to have OSA and warrant a referral for evaluation.

- The most accepted form of therapy for OSA is Continuous Positive Airway Pressure (CPAP). CPAP does not provide ventilatory support for patients. It acts as a pneumatic splint to maintain airway patency. It also effectively treats snoring.
- CPAP may be used in one of two modalities:
 1. CPAP which is a fixed pressure, such as 8 cm H₂O
 2. Auto-titratable PAP (APAP) which operates over a range of pressures, typically from 5-20 cm H₂O
- The decision regarding CPAP or APAP is usually based on whether or not the patient had a CPAP titration during their polysomnogram. If the patient has a diagnosis of OSA but did not have a titration, then a CPAP pressure was not determined and either a repeat polysomnogram with CPAP titration or a trial of APAP is warranted.
- APAP may be used in the following situations:
 1. Patients with a diagnosis of OSA without complicating factors
- APAP should not be used in the following situations:

1. Patients with central apneas or other disorders of nocturnal ventilation such as obesity hypoventilation or severe oxygen dependent chronic obstructive pulmonary disease with CO₂ retention.
 2. Patients with significant cardiovascular or other medical co-morbidities
 3. Hypertension that is not controlled on two agents
 4. Coronary artery disease
 5. Cerebrovascular disease
- Typical Prescriptions:
 1. CPAP: pressure 8 cm H₂O (as determined by CPAP Titration study, noting 8 cm H₂O is only a sample pressure and the actual pressure would depend on the findings of the study) with a ramp time of 15 minutes from a base pressure of 5 cm H₂O with heated humidification best fitted mask, tubing and filters.
 2. APAP: pressure range of 5-20 cm H₂O with heated humidification, best fitted mask, tubing and filters.
 - Soldiers should receive the RESMED S 9 or 10 unit as this is the standard equipment through medical logistics.
 - In all cases the prescription for CPAP or APAP is sent to a Durable Medical Equipment (DME) company.
 1. In most cases the DME Company closest to a patient is acceptable.
 2. If a patient is likely to move or PCS a national DME company should be considered.
 3. The DME Company is responsible for ensuring the patient has appropriate teaching regarding the usage of CPAP/APAP, placing the mask on, general cleaning and troubleshooting once the unit is used at home.

Ongoing Management and Objectives

- Initial follow-up after CPAP/APAP start: 4- 6 weeks:
 1. Assess compliance with CPAP/APAP.
 1. Compliance is best assessed with a download from the CPAP unit.
 1. Downloads can occur by:
 1. DME Company either faxed to provider or given to patient to bring to clinical follow up.
 2. Performed in outpatient respiratory therapy clinic for patients followed in Pulmonary/Sleep Medicine.
 2. Ideal compliance is greater than 7-8 hours/night used every night of the week
 3. Minimal acceptable compliance is 4 hours/night used 70% of nights.
 2. Assess for resolution or persistence of sleepiness.
 1. An Epworth Sleepiness Scale (ESS) is recommended.
 2. If the ESS is less than 10, then sleepiness is considered resolved.
 3. If the ESS is greater than 10, then further evaluation of sleepiness may be warranted.
 1. Appropriate questions also include: does the patient have problems staying awake while driving or have they had a car accident due to sleepiness, do they have problems with work due to sleepiness, etc.
 2. An elevated ESS does not in and of itself warrant further studies as in most cases short sleep duration is the cause, however clinical correlation is required.
 3. If the patient is NOT compliant with PAP therapy, then this is the most important aspect to initially address for persistent sleepiness.

3. Assess understanding or maintenance, function and cleaning of CPAP/APAP.
 4. If clinical issues or non-compliance is identified, the patient should have an appropriate plan and follow up again in 4-6 weeks until they are compliant or alternative therapies are pursued.
- Yearly follow-up with their Sleep Provider or PCM is required to determine continued efficacy, compliance and that no clinical changes have occurred to their on-going management of OSA with CPAP/APAP.

Indications for Specialty Care Referral

- All Active Duty members who are on CPAP/APAP
- Patients who fail CPAP/APAP therapy and alternative therapies are needed
- Patients with complicated nocturnal ventilatory disorders that require such modalities as BiPAP, ASV etc.

Criteria for Return to Primary Care

- Anyone who is not active duty military or on active status who have uncomplicated OSA

References

Kushida C, Litner M Hirshkowitz M et al. Practice Parameters for the Use of Continuous and Bilevel Positive Airway Pressure Devices to Treat Adult Patients with Sleep-Related Breathing Disorders. *Sleep* 2006; 29 (3):375-380.

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Referral Guidelines require review every three years.

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