

Clinical Insights

Diagnosis and Treatment of Obstructive Sleep Apnea

Alejandra C. Lastra, MD; Julie M. Neborak, MD, MS; Babak Mokhlesi, MD, MSc

Introduction

Obstructive sleep apnea (OSA) affects 1 billion adults worldwide, with 425 million having moderate or severe OSA as defined by an apnea-hypopnea index of 15 to 29 or 30 or more events per hour, respectively. Primary care clinicians play a crucial role in screening, diagnosis, and management (Figure).

Screening

Several questionnaires have been validated to screen for OSA. The STOP-Bang (snoring, tiredness, observed apnea, blood pressure, body mass index, age, neck size, gender) questionnaire is simple and has been validated in multiple settings, including in primary care.



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For moderate to severe OSA, the questionnaire has a sensitivity of 93% or higher and a negative predictive value of 77% and 91% to exclude moderate or severe OSA, respectively.¹ Patients screened and identified as high risk benefit from a subsequent sleep study or referral to a sleep medicine specialist.

Diagnostic Testing

A diagnosis of OSA must be confirmed with an attended in-laboratory polysomnogram (PSG) or a home sleep apnea test (HSAT) administered

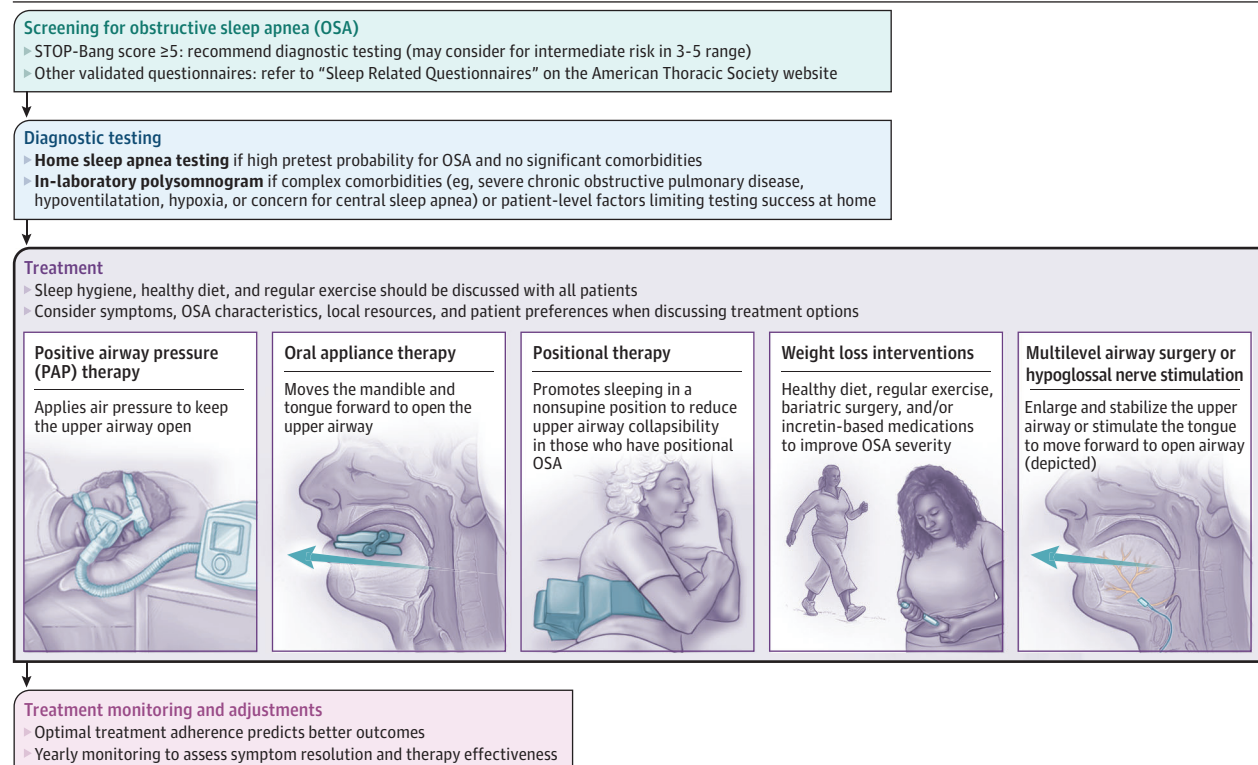
by accredited sleep centers. There is no difference in diagnostic accuracy between PSG and HSAT for moderate to severe OSA. Generally, HSAT should be avoided in patients with considerable cardiopulmonary disease, hypoventilation, awake hypoxemia, recent stroke, long-term long-acting opioid use, or factors that preclude adequate data acquisition.² PSG should be considered if clinical suggestion for moderate or severe OSA remains high after a negative, inconclusive, or technically inadequate HSAT.

Treatment Options

Positive Airway Pressure Therapy

In symptomatic patients with OSA (ie, excessive daytime sleepiness or impaired sleep-related quality of life) and those with hypertension, positive airway pressure (PAP) is recommended over no treatment regardless of the severity of OSA.³ There is insufficient and inconclusive evidence to either recommend or withhold PAP to treat nonsleepy adults with OSA to reduce cardiovascular events or mortality. Three randomized clinical trials assessing the effect of continuous PAP (CPAP) on secondary prevention of cardiovascular events in nonsleepy patients with OSA did not demonstrate a decrease in cardiovascular events compared to usual care; however, an individual-participant data meta-analysis of these randomized clinical trials revealed a reduced risk of major adverse

Figure. Practical Approach to Obstructive Sleep Apnea Identification, Evaluation, and Management



cardiac and cerebrovascular events with 4 or more hours per day adherence to CPAP.⁴ Empirical nonrandomized data from clinical populations have also suggested a dose-response relationship between PAP adherence and incident major cardiovascular events in OSA, particularly in patients with severe OSA.⁵ Healthy adherer bias could impact these results because patients with higher adherence to PAP therapy may also be more adherent to other medical therapies. Therefore, discussions based on the latest evidence and patient preferences should guide the decision to treat OSA with PAP, acknowledging that some patients may place a high value on interventions that may improve cardiovascular outcomes, while others may prefer a conservative approach with symptom monitoring.

PAP therapy can be delivered as autoadjustable pressure (APAP), continuous fixed pressure (CPAP), or as bilevel PAP. In most patients with uncomplicated OSA, APAP is not inferior to CPAP and can be cost effective by obviating the need for a PAP-titration PSG. APAP and CPAP are more cost effective than bilevel PAP for routine care of patients with OSA. Nasal mask and nasal pillow interfaces are preferred over oronasal masks. However, oronasal masks have an important role in obligated mouth breathers. After initiation of PAP therapy, close clinical follow-up is needed to assess objective PAP adherence, effectiveness, and symptom resolution. Importantly, optimal treatment adherence is associated with better outcomes.

Oral Appliance Therapy and Positional Therapy

An oral appliance (OA) is recommended over no therapy in adults with OSA. The clinician prescribes a custom-made, titratable OA (allows for progressive mandibular advancement) to be fitted by a qualified dentist. Dentists should monitor to reduce dental-related adverse effects or occlusal changes. Follow-up sleep study with OA should be ordered to assess treatment efficacy, as subjective feedback is insufficient to optimize the OA setting. Limited data suggest no difference in clinical effectiveness between CPAP and OA in patients with mild OSA. Consider patient preference, cost value, and other patient-related factors when prescribing OA therapy.⁶

Positional OSA refers to when obstructive apneas and hypopneas occur predominantly or exclusively in the supine position. Positional therapy (PT) consists of a device worn by the patient during sleep to promote nonsupine position. PT is recommended as a supplement to primary therapies for OSA when OSA severity is

lower in nonsupine sleep. In patients with no evidence of OSA during nonsupine sleep (including during nonsupine rapid eye movement sleep), PT can be an effective monotherapy. Periodic follow-up is recommended for progression to nonpositional OSA, as OSA can worsen with aging and weight gain.

Weight Loss Interventions

Recommendations for sleep hygiene, a healthy diet, and regular exercise must be discussed with every patient and concomitant effective OSA treatment offered for symptomatic patients. Referral to nutrition services and/or obesity medicine should be placed when available. Bariatric surgery and antiobesity drugs are safe and more effective than lifestyle interventions alone in achieving weight loss. Bariatric surgery such as sleeve gastrectomy can lead to 20% to 30% weight loss. Most patients can achieve 15% to 20% weight loss in 1 year with optimal dosing of incretin-based medications such as semaglutide or tirzepatide. In the SURMOUNT-OSA trial, tirzepatide for treatment of moderate to severe OSA and comorbid obesity led to substantial weight loss and improvement in OSA severity.⁷ In 2024, the US Food and Drug Administration approved tirzepatide for the treatment of moderate or severe OSA in patients with obesity.

Referral to Sleep Surgery

Referral to a sleep surgeon should be discussed with patients who are intolerant or are unable to improve adherence to PAP or OA therapy. Multilevel upper airway surgery can be effective in selected patients with OSA. In appropriately selected patients, hypoglossal nerve stimulation is an effective treatment option for patients with moderate or severe OSA who are intolerant to CPAP.

Conclusions

OSA is prevalent, underdiagnosed, and associated with serious health consequences. With decision support and referral pathways, primary care clinicians can lead OSA care, improving diagnosis, treatment adherence, and reducing OSA burden. Validated tools enable efficient risk stratification. Diagnostic approaches can be tailored to comorbidities and clinical presentation. Treatment should be patient centered, weighing the benefits and limitations of PAP, oral appliances, PT, weight loss, and surgery, based on symptom burden, risk profile, and patient preferences.

ARTICLE INFORMATION

Author Affiliations: Section of Pulmonary and Critical Care, Department of Medicine, The University of Chicago, Chicago, Illinois (Lastra); Division of Pulmonary, Critical Care, and Sleep Medicine, Department of Internal Medicine, Rush University Medical Center, Chicago, Illinois (Neborak, Mokhlesi); Rush Lung Center, Rush University Medical Center, Chicago, Illinois (Mokhlesi).

Corresponding Author: Babak Mokhlesi, MD, MSc, Rush Lung Center, Rush University Medical Center, 1750 W Harrison St, Jelke 293, Chicago, IL 60612 (babak_mokhlesi@rush.edu).

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