Clinical Indicators of Obstructive Sleep Apnea

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Clinical Question
Which clinical signs and symptoms are predictive of obstructive sleep apnea (OSA)?

Evidence-Based Answer
Clinical indicators (e.g., sex, snoring severity, history of apnea, age, menopausal status, waist-to-hip ratio, body habitus) can predict OSA as diagnosed using overnight polysomnography or sleep study. (Strength of Recommendation: B, based on multiple cross-sectional studies.) There is insufficient evidence to specify which measure of body habitus (i.e., body mass index [BMI] or neck circumference) is more predictive of OSA.

Evidence Summary
Nine cross-sectional studies examined the predictive value of varying clinical characteristics in patients with OSA. Almost all study participants were from referral populations. Varying apnea-hypopnea index threshold values were used to define OSA.

Four studies found a statistically significant association between male sex and OSA,1-4 whereas one study found no association.5 Other studies have demonstrated that persons who snore have an increased risk of OSA,2,6 and that there is a statistically significant correlation between breathing pauses and OSA (odds ratio [OR] = 2.09 to 2.47).2,4

Several studies examined the relationship between age and OSA, with conflicting results.1,2,4,7-9 One study found a statistically significant association between older age (as measured in 10-year increments) and increased prevalence of OSA,2 and another showed a nine- to 11-fold increased prevalence of OSA in persons 20 to 65 years of age.8,9 However, other study results did not demonstrate a statistically significant relationship between age and OSA.1,4,7

There is also a link between a larger waist-to-hip ratio and OSA (OR = 1.07 to 3.41).1,3,5 Two studies determined that a BMI greater than 30 kg per m² was not an independent variable for OSA,1,4 whereas two other studies showed that an increasing BMI (in increments of 5.3 or 5.6 kg per m²) was associated with an increased risk of OSA.2,3 A BMI greater than or equal to 31.1 kg per m² in men and 32.3 kg per m² in women was found to be predictive of OSA (OR = 7.8 and 12.8, respectively).8,9

Five studies examined the link between neck circumference and OSA, although each study used a different clinical indicator and results were conflicting.1,5 An incremental increase in neck circumference or percentage of predicted neck circumference (based on height) was found to be significantly associated with OSA (OR = 1.23 to 5.0).2,3,5 However, two studies found no statistically significant association between OSA and a predetermined neck circumference greater than 43 cm for men and greater than 47 cm for women.1,4

Recommendations from Others
According to the Institute for Clinical Systems Improvement, the following clinical indicators may suggest a significant risk of OSA: awakening with choking, hypertension, intense snoring, large neck circumference, male sex, postmenopause, obesity, apnea or choking as reported by sleep partner, atrial fibrillation, and daytime sleepiness.10

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Clinical Inquiries

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REFERENCES