OSA Management 2019 Update

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Updates in Internal Medicine for the Primary Care Provider

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I Have No Conflicts of Interest

Objectives

- Identify patients who are at increased risk for obstructive sleep apnea
- Understand the role of obesity with respect to OSA pathophysiology, epidemiology and management
- List new developments in the management of OSA

OSA: Scope of the Problem

- Prevalence of OSA:
  - As common as asthma
    - » Wisconsin Sleep Cohort
      - 24% of men and 9% of women (Age 30 to 60)
      - 4% of men and 2% of women with daytime sleepiness
- Prevalence will increase as the population ages and obesity increases
- Estimate that up to 80% undiagnosed
- Undiagnosed OSA associated with morbidity and mortality
- Treatment can improve outcomes

OSA Risk Factors

- Age
- Men (Up to age 50)
- Postmenopausal state
  - Risk between genders similar after menopause
- Overweight and obesity (up to age 60)
- Ethnicity
  - African American, Asian, or Hispanic
- Upper airway anatomic obstruction
- Medical problems:
  - Congestive heart failure, history of a stroke, kidney failure

History and Physical Exam Alone Not Diagnostic in Many Cases

- Many patients won't have symptoms!
  - > 50% won't complain of daytime sleepiness
  - Some patients define their symptoms differently
  - Key point: The absence of daytime symptoms does not rule out the disease
- Bed partner history of snoring and witnessed apneas:
  - Positive predictive value of 64%
  - Witnessed apneas best historical predictor
- Expert healthcare provider subjective impression:
  - Correctly identifies only 50% of sleep apnea patients
- No single screening tool that consistently identifies patients at high risk for OSA

Question 1

Which one of the following patients would be the most appropriate to undergo home sleep apnea testing (HSAT) for obstructive sleep apnea?

A) 45 year old male (BMI 35 kg/m^2) with snoring, daytime sleepiness and hypertension.

B) 65 year old female (BMI 33 kg/m^2) with snoring, daytime sleepiness and congestive heart failure.

C) 70 year old male (BMI 26 kg/m^2) with snoring, daytime sleepiness and COPD.

D) 25 year old female (BMI 22 kg/m^2) with snoring, fatigue, fibromyalgia and depression.

Question 1: Answer

Which one of the following patients would be the most appropriate to undergo home sleep apnea testing (HSAT) for obstructive sleep apnea?

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SPECIAL ARTICLES

Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea: An American Academy of Sleep Medicine Clinical Practice Guideline

Vishesh K. Kapur, MD, MPH[1]; Dennis H. Auckley, MD[2]; Susmita Chowdhuri, MD[3]; David C. Kuhlmann, MD[4]; Reena Mehra, MD, MS[5]; Kannan Ramar, MBBS, MD[6]; Christopher G. Harrod, MS[7]

- PSG, or HSAT with a technically adequate device, can be used for the diagnosis of OSA in uncomplicated adult patients presenting with signs and symptoms that indicate an increased risk of moderate to severe OSA
  - An HSAT should **not be used for general screening of asymptomatic populations**

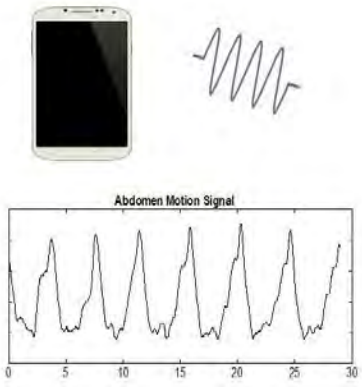
- PSG, rather than HSAT, should be used for the diagnosis of OSA in patients with significant hypoventilation, chronic opioid medications, a history of stroke or severe insomnia

Kapur V et al. Sleep 2017;13:479-504

Role of New Technology Unclear

Fitness Trackers

UW Apnea App for Smartphones



Pulse Oximetry

Beddit Sleep Monitor

Khosla, S et al. *J Clin Sleep Med.* 2018;14(5):877–880

Case

- A 55 year old male presents with symptoms of snoring, witnessed apneas and daytime sleepiness and is recently diagnosed with obstructive sleep apnea (OSA).
- PMHx: HTN, atrial fibrillation, DM, depression and obesity
- PE:
  - BMI: 32 kg/m^2
  - Vitals: BP: 150/90 P: 92 R: 12
  - Exam otherwise normal

Question 2

Which one of the following is the most likely to improve with OSA treatment?

A) Blood pressure
B) Daytime sleepiness
C) Depression
D) Weight

Question 2: Answer

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B) Daytime sleepiness

C) Depression

D) Weight

Treatment Outcomes for OSA: What to Expect

- Improves symptoms of daytime sleepiness
- Improves cognitive dysfunction in patients with dementia
- Reduces motor vehicle accidents
- Treatment can reduce blood pressure
  - Daytime sleepiness and uncontrolled HTN may predict a more robust BP response
  - Better adherence = Better BP response
- Improves LVEF in patients with systolic dysfunction
- May improve outcomes in patients with atrial fib
- Treatment is not associated with weight loss
- Improvement in DM, lipids and metabolic syndrome debatable
- The role of treatment for patients without daytime sleepiness is not clear

Treatments for OSA

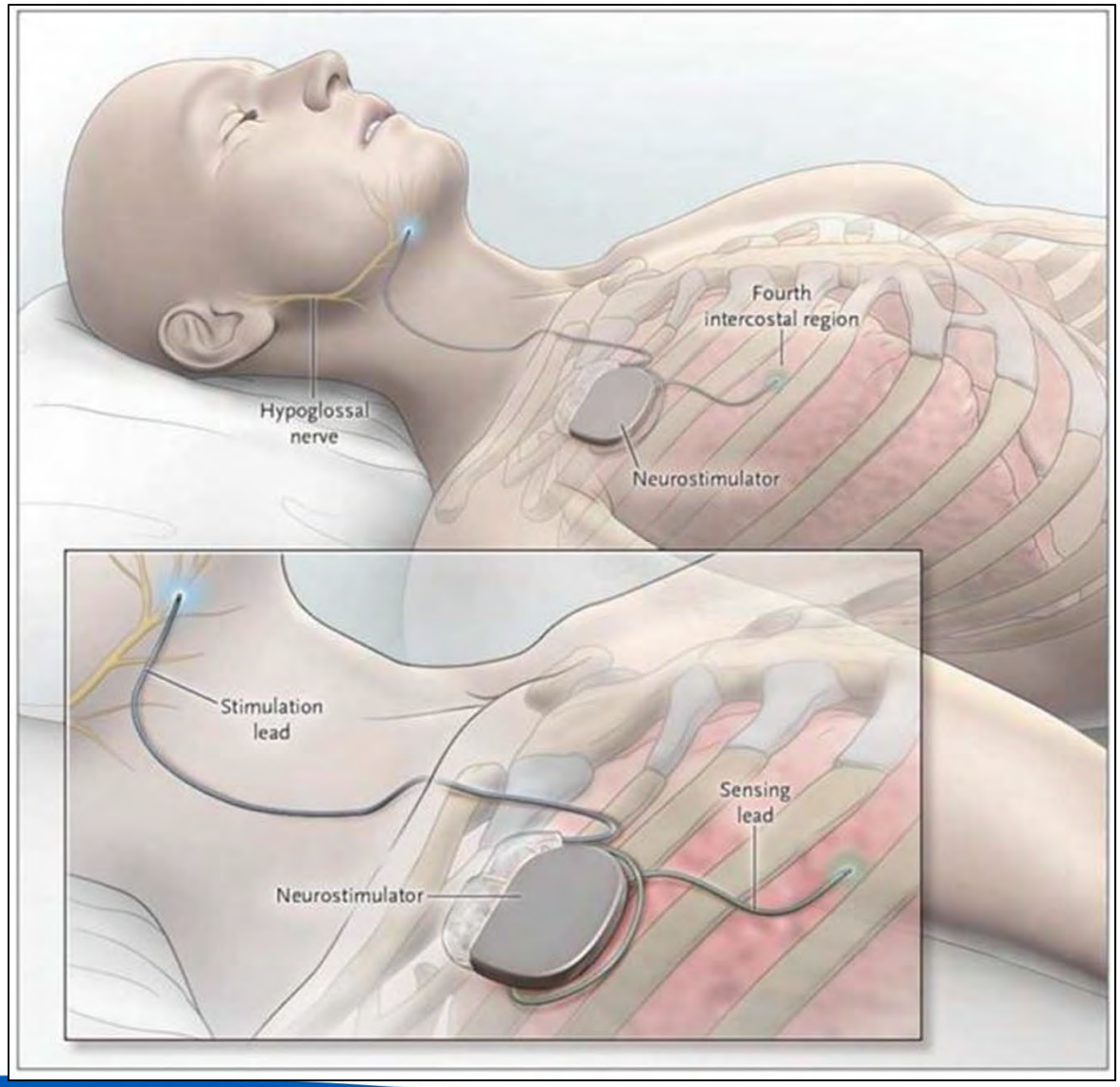
- Primary Therapies
  - PAP
  - Oral Appliances
- Secondary Therapies:
  - Weight loss
  - Position therapy
  - Avoidance of alcohol and sedatives
  - Hypoglossal nerve stimulation device
  - Surgery: Upper airway and bariatric

Weight Loss and OSA

- Few randomized controlled trials and much heterogeneity between studies
- Conclusions:
  - Surgical and medical weight loss typically result in reductions in BMI and AHI, but clinically significant OSA persists in the majority of patients
- Take home point:
  - Follow up sleep apnea testing recommended once maximum weight loss and maintenance achieved

Wong A et al. Sleep Med Rev 2018;42:85-99

Hypoglossal Nerve Stimulation Therapy



Hypoglossal Nerve Stimulation for OSA

- Approved by the FDA in 2014 and recently approved by local Medicare carrier
- Approved for:
  - Adults with BMI $\leq$ 32 kg/m^2, AHI 15 to 65
  - Intolerant to CPAP
- Current supporting data:
  - Improves OSA, daytime sleepiness and QOL with up to 5 years of follow up
    - » Mean 68% reduction in AHI over a year (AHI 29.3 to 9)
  - Low complication rate: < 2%
  - Concentric upper airway collapse predicts worse outcome
  - Newer data support better outcomes for women and older individuals
- Role in OSA therapy continues to be evolving
  - Cost and surgeon experience are the major factors

Pharmacologic Therapy

- Few well-done studies
  - Previous studies without significant improvements
- Treatment of residual daytime sleepiness
  - Modafinil, armodafinil,
  - New: Solriamfetol
- THC agonists
  - Dronabinol: Too early to tell
- Oxygen
  - Not recommended as primary therapy
  - CPAP better in patients with known CV disease
- Prescription hypnotics:
  - Probably don't make sleep apnea worse
- Future: Phenotype directed therapies

OSA: Conclusions

- Common and underdiagnosed
- Patients with daytime sleepiness tend to have better treatment outcomes than those without daytime symptoms
- Home sleep apnea testing is appropriate for patients with a high clinical suspicion for uncomplicated OSA
- Weight loss should be recommended, though follow up testing is necessary prior to modifying therapy
- Hypoglossal nerve stimulation therapy now approved by Medicare in our region
- Currently no pharmacologic therapy that significantly improves OSA

Thank You

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