

Sleep Disordered Breathing and Anesthesia

1 - Understand it

Definitions

Apnea: a cessation of air flow >10 seconds

Hypopnea: - a 30-50% reduction of air flow > 10 seconds associated with a fall in SpO₂

Apnea / Hypopnea Index: (AHI) # of events per hour

Respiratory Effort-Related Arousal: (RERA) - 10 second episode of reduced airflow leading to arousal, but not quite a Hypopnea

Classification:

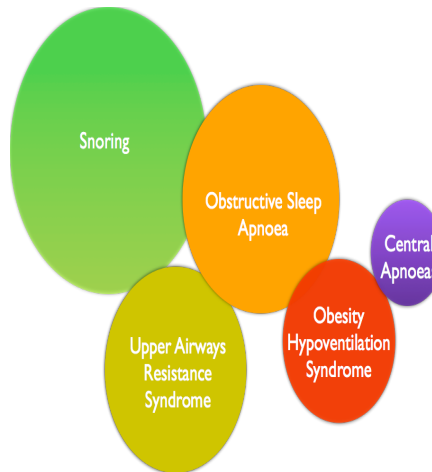
Mild = AHI 5-15

Moderate = AHI 15-30

Severe = AHI > 30

Pre-disposing Factors

Small Mouth - Receding Jaw - Large Tonsils - Nasal Obstruction



>80% of patients with Sleep Apnea are undiagnosed!

Signs and Symptoms

May be subtle!
Actively seek OSA in EVERY patient

Spectrum of Disease

- Mild OSA is common (15% of adult males).
- The undiagnosed moderate to severe OSA patients are at greatest risk in the peri-operative period.

Progression of Disease

- Moderate to severe OSA leads to hypertension, heart failure, and multiple other health problems.
- Some patients develop hypoventilation with CO₂ retention over time

2 - Seek it

Screening Tools

| | | | |
|----------|---|-----|----|
| S | Snoring: Do you snore loudly (loud enough to be heard through closed doors)? | Yes | No |
| T | Tired: Do you often feel tired, fatigued or sleepy during the daytime? | Yes | No |
| O | Observed: Has anyone observed you stop breathing during your sleep? | Yes | No |
| P | Blood pressure: Do you have or are you being treated for high blood pressure? | Yes | No |
| B | BMI: BMI more than 35 kg/m ² | Yes | No |
| A | Age: Age over 50 years | Yes | No |
| N | Neck circumference: Neck circumference > 40 cm | Yes | No |
| G | Gender: Male | Yes | No |
| | Total Score | | |

STOP-BANG Score of 3-4 at risk. Score 5-8 high risk

With permission: Toronto Western Hospital, UHN, University of Toronto

3 - Manage it

OSA Safe Anesthesia Principles

- Expect a difficult airway
- Regional if possible (caution with intrathecal opioids)
- If general anesthesia, use short acting agents
- Minimize opioids - use enhanced recovery principles.
 - Short acting
 - Avoid basal rates on PCA pumps
 - Consider Multimodal analgesia
- Ensure full reversal of NMB agents
- Sit up for extubation
- Mobilize early

Post-op Care

- Sit up in bed and position laterally if able.
- Very cautious with opioids
- If high risk then monitor with oximetry

Post-op CPAP

- Re-institute CPAP masks ASAP on day of surgery for those on home PAP therapy
- Check ABG if somnolent:
 - if PaCO₂ > 10mmHg above norm then consider bilevel pressure support

Long term

Discuss long-term health risks
Follow-up sleep evaluation



Further resources

www.SASMHQ.org