Management of Obstructive Sleep Apnea (OSA)

Pre-Operative / Pre-Procedure Phase

Screen for OSA
Screen patients for OSA risk by using the STOP-Bang Questionnaire* at these locations:
- OSU Preoperative Assessment Center (OPAC) – Ross, James, UH
- Preadmission Testing (PAT) – UH East
- Surgeon’s Office

Anesthesia screens patients for OSA risk by using the STOP Questionnaire** at these locations:
- Ambulatory Surgery Units (ASU) / Preop
- Inpatient Unit

High Risk for OSA
- STOP-Bang Questionnaire* (Answering yes to 3 or more items)
- STOP Questionnaire** (Answering yes to 2 or more items)

Previously Diagnosed with OSA
- Instruct patient to bring in CPAP and prescription for CPAP pressure levels at time of surgery
- If patient not using CPAP or does not have machine yet, instruct patient to bring in prescription for CPAP pressure levels

Surgeon’s Office
- Refer to:
  - OPAC – Ross, James, UH
  - PAT – UH East
  - Sleep Clinic if time permits (call 257-2500)

OPAC or PAT
- Refer to Sleep Clinic if time permits (call 257-2500)

ASU or Inpatient
- Refer to:
  - OPAC – Ross, James, UH
  - PAT – UH East
  - Sleep Clinic if time permits (call 257-2500)

- Document on chart / alert all staff involved in patient’s perioperative care to follow OSA care (see page 2: Post-Operative and Post-Procedure Phase and OSA Care, next page).
- Anesthesiologist shares OSA risk with surgical team during Sign-In/Anesthesia Assessment portion of “OSU Surgical Team Safety Checklist.”
- Consider regional anesthesia as appropriate.
- Provide patient / family with education about OSA.

* STOP-Bang Questionnaire
1. Snoring – Do you snore loudly (louder than talking or heard through closed doors)?
2. Tired – Do you often feel tired, fatigued, or sleepy during daytime?
3. Observed – Has anyone observed you stop breathing during your sleep?
4. Blood Pressure – Do you have or are you being treated for high blood pressure?
5. BMI – More than 35 kg/m²?
6. Age – Over 50 years old?
7. Neck Circumference – Greater than 40 cm?
8. Gender – Male?

** STOP Questionnaire
1. Snoring?
2. Tired?
3. Observed?
4. Blood Pressure?
Post-Operative / Post-Procedure Phase and OSA Care

CPAP / Cardiopulmonary

- Have positive airway pressure (CPAP or BiPAP) available when appropriate, based on clinical judgment. Refer to Post-op Positive Airway Pressure (PAP) Guideline on page 3.
- Adjust O₂ sat to maintain baseline levels. Note: Patient's previously prescribed pressure levels may need to be increased if receiving narcotics.
- HOB up 30-40 degrees if not contraindicated.

Outpatient Surgery Patients

- Maintain continuous pulse ox post IV opiates until discharge.
- Maintain cardiac monitor / telemetry until discharge.

Inpatient Surgery Patients

- Maintain continuous pulse ox 24 hours post IV opiates. Pulse ox after 24 hours must be re-evaluated by physician.
- Maintain cardiac monitor / telemetry 24 hours post-op. Cardiac monitor / telemetry after 24 hours must be re-evaluated by physician.
- Consider the following information for discontinuation of pulse oximetry / telemetry for patients with OSA or at risk:
  - Blood pressure within 10-20% of baseline
  - Heart rate within 10-20% of baseline
  - Not receiving sedative medications (e.g., opioids, antiemetics, anxiolytics)
  - Oxygen saturation ≥ 92% on room air or baseline O₂ while sleeping
  - RASS and/or MEWS Score not indicating sedation or hyperactivity. Agitation and somnolence are equivalent indicators of inadequate ventilation.

Medications

- Discontinue injected pain medication as soon as feasible.
- Use local measures (heat, cold), acetaminophen and NSAIDs for pain control.
- Minimize sedating medications such as narcotic analgesics, antiemetics, anxiolytics and soporifics.

Recovery from Anesthesia

- Discuss OSA status and possible need for OSA care and orders during Sign Out/Debrief portion of “OSU Surgical Team Safety Checklist."
- Consider need for prolonged stay, based on anesthesiologist / physician evaluation.
- Discharge back to floor / home when patient meets OSUWMC Phase 1 post-anesthesia period protocol criteria. (James and UH)
- Send CPAP with patient if appropriate.

Patient Discharge

Outpatient

- Provide patient and family with OSA education.
- Consider follow-up with Sleep Clinic.

Inpatient

- Maintain nocturnal CPAP; if requiring continuous CPAP, consider other causes (fluid overload, over-sedation).
- Observe OSA Care.
- Consider follow-up with Sleep Clinic.
- Provide patient and family with OSA education.

Order Set

- OSU IP ANE: Frequent PACU Orders [2097]

References

- OSU Surgical Team Safety Checklist. The Ohio State University Wexner Medical Center, Rev. 2012.

Quality Measures

- Frequency of order set use
- Rate of OSA screening and documentation among surgical patients
- Percent of surgical patients with OSA who require telemetry/continuous pulse ox
- Percent of surgical patients with OSA who undergo sleep study prior to procedure
  - Percent of patients placed on CPAP device

Guideline Author

- Ryan Dalton, MD

Guideline Approved

- September 18, 2013. Fourth Edition

Disclaimer: Clinical practice guidelines and algorithms at The Ohio State University Wexner Medical Center (OSUWMC) are standards that are intended to provide general guidance to clinicians. Patient choice and clinician judgment must remain central to the selection of diagnostic tests and therapy. OSUWMC’s guidelines and algorithms are reviewed periodically for consistency with new evidence; however, new developments may not be represented. Copyright © 2013. The Ohio State University Wexner Medical Center. No part of this publication may be reproduced in any form without permission in writing from The Ohio State University Wexner Medical Center.
**Appendix: Post-op Positive Airway Pressure (PAP)**

**Sleep Study Done?**

- **No**
  - **Sleep Study Not Done**
    - or unknown prescribed level of CPAP
      - **Known Abnormal Cardiac Function**
        - (AFib, LVEF < 50%, ADHF)
          - Recommend Pulmonary/Sleep Medicine consult
      - **Presumed Normal Cardiac Function**
        - Patient on > 4 LPM oxygen and/or AutoPAP not available?
          - Yes
            - Consider Pulmonary/Sleep Medicine consult
          - No
            - Place patient on AutoPAP with bleed-in oxygen if needed
            - CPAP level
              - ≤ 15 cm H2O: Maintain CPAP level as tolerated with oxygen if necessary
              - > 15 cm H2O: Consider fixed BiPAP with calculated CPAP level = IPAP and EPAP = IPAP – 4 cm H2O
      - **Place patient on home device or hospital AutoPAP**
  - **Yes**
    - **Sleep Study Done**
      - with results indicating normal cardiac function
        - Patient on > 4 LPM oxygen?
          - Yes
            - Use hospital CPAP device with prescribed level of PAP. (Home device not recommended but may be used if current requirements consistent with home therapy.)
          - No
            - Maintain CPAP level as tolerated with oxygen if necessary

*Série Formula: CPAP = (0.193 X BMI) + (0.077 X neck circumference in cm) + (0.02 X AHI) – 0.61. Note: If AHI is unknown, use 10. May be used with post-Roux-en-Y patients.