Winnipeg Regional Health Authority
Office régional de la santé de Winnipeg

WRHA Surgery Program

Obstructive Sleep Apnea (OSA)

March 2010

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Objectives

1. Define obstructive sleep apnea (OSA).
2. Purpose of the guidelines.
3. Identify OSA care areas.
4. What's new?
5. Identify patients that may have OSA.
6. Assess the perioperative risk to the OSA patient.
7. Interpret the OSA risk score related to the care area required and discharge guidelines.
8. Determine and provide postoperative orders for the OSA patient.

Definition Obstructive Sleep Apnea (OSA)

According to the American Association of Anesthesiologists:

- A syndrome characterized by periodic, partial, or complete obstruction of the upper airway during sleep.
- OSA may cause oxygen desaturation, episodic hypercarbia, and cardiovascular dysfunction.
- The prevalence of OSA increases with age and Body Mass Index (BMI).
- OSA presents special challenges that need to be managed to minimize the risk of perioperative morbidity and mortality. The risk to the patient increases with the severity of OSA.

Purpose of the New Guidelines

- Provide a standard of care for perioperative OSA patients.
- Provide safe perioperative care to an increasing population of OSA surgical patients.

OSA Care Areas

OSA Care Areas are facility specific. Areas that your site may have designated as an OSA Care Area include:

- Monitored area;
- Intensive Care Unit (ICU);
- SDU; or

- Ward (with appropriate monitors and personnel).

What's New?

1. **OSA Identification and Risk Assessment Form**
    - Identifies significant probability that a patient has OSA based on completion of the STOP-BANG questionnaire;
    - Determines the Perioperative Risk Score by evaluating
        - OSA severity;
        - type of surgery; and
        - postoperative opioid requirements.
    - Provides guidelines for Interpretation of the Perioperative Risk Score, OSA Care Area and Discharge guidelines.
2. **OSA Standing Orders**
    - PAC assessment;
    - PAC anesthesiologist's orders;
    - Anesthesiology/Recovery Room orders; and
    - Surgical services postoperative orders for OSA patient.

3. **Visual Alerts for patients with OSA Risk**
    - PURPLE "OSA Risk" armband; and
    - PURPLE "OSA Risk" sign at head of bed.

Completion of OSA Identification and Risk Assessment Form

Section I: The identification of Perioperative OSA is to be completed, dated, and signed by either the surgeon or the family physician. Identification of OSA risk is determined following completion of the STOP-BANG questionnaire. The questionnaire consists of the following yes/no patient questions:

1. **S**noring
   Do you snore loudly (louder than talking or loud enough to be heard through closed doors?
2. **T**ired
   Do you often feel tired/fatigued/sleepy during daytime?
3. **O**bserved
   Has anyone observed you stop breathing during sleep?
4. **P**ressure (Blood)
   Do you have/are you treated for high blood pressure?

5. **B**ody Mass Index (BMI)
   BMI $\geq$35 kg/m^2 . If so indicate patient BMI using the attached chart.
6. **A**ge
   Age over 50 years?
7. **N**eck Circumference
   Neck circumference > 40 cm?
8. **G**ender
   Male gender?

Based on completion of the questionnaire, the patient's OSA risk is determined as **HIGH** (PAC referral required) or **LOW**. Reason for assignment of the risk must be indicated using the following:

- Patient answered YES to ≥ 3 items (high).
- Patient answered YES to < 3 items (low).
- Patient was previously diagnosed with OSA by a sleep study. If so indication of the Apnea-Hypopnea Index (AHI) should be indicated if known.
- Clinical judgment. This is based on consideration of the entire clinical setting. Some patients with low clinical score may be at risk for OSA (i.e profound obesity) while some with higher scores may have a lower clinical risk (i.e male over 50, hypertensive, non-obese, non-snoring).

Section II: Perioperative Risk due to OSA: ASA's OSA Score is to be completed, dated and signed by the anesthesiologist or PAC. Points from 1 – 3 are assigned for each category. Total risk score will be determined based on the total points. Perioperative risk is determined by consideration of:

A. OSA severity (as determined by AHI or if no study, use of clinical judgment. If uncertain, default to severe.) Assignment of points in this category is determined by:
   - None = 0 points
   - Mild (5 – 15 events/hour) = 1 point
   - Moderate (15 – 30 events/hour) = 2 points
   - Severe (>30 events/hour) = 3 points

   Note: 1 point is deducted if the patient uses a CPAP machine pre & postop.

B. Type of surgery and anesthetic points are assigned as follows:
   - Superficial/local/block/no sedation = 0 points
   - Superficial/mild sedation or GA = 1 point
   - Peripheral/neuroaxial/moderate sedation (only if no epimorph was used) = 1 point
   - Peripheral/GA = 2 points
   - Airway/moderate sedation = 2 points
   - Airway/GA (or neuroaxial with epimorph) = 3 points
   - Major/GA (or neuroaxial with epimorph) = 3 points

C. Postoperative opioid requirement points are assigned as follows:
   - No opioid requirement = 0 points
   - Low-dose oral = 1 point
   - High-dose oral/parenteral/neuroaxial = 3 points

Perioperative risk score will range from 0 – 6 and is determined as follows:
Total points A (OSA risk) ***plus*** the **greater** of **points from B** (Type of surgery and anesthetic **OR points from C** (Postoperative opioid requirements).

Interpretation of Risk Score, OSA Care Area and Discharge Guidelines: It is important to remember that these are guidelines only and that individual clinical judgment of the attending physician will make the final determination.

Risk Score ≤ 3

- Low risk for perioperative OSA complications
- Can be a day surgery case
- Rarely requires continuous postoperative monitoring

Risk Score 4

- Increased risk of perioperative OSA complications
- Requires careful evaluation
- May require overnight admission
- May require continuous postoperative monitoring. The patient shall not become hypoxemic or develop airway obstruction while breathing room air in a non-stimulating environment.

Risk Score ≥ 5

- High risk for perioperative OSA complications.
- Requires admission.
- Requires continuous postoperative monitoring as long as the patient is at risk:
    - Care supported in step-down or an OSA postoperative care area with appropriate equipment (pulse oximeter, airway supplies, and drugs) OR
    - Continuous observation by a dedicated trained health care provider.

- Transfer from OSA monitoring area should occur (by attending physician) only when
    - Baseline saturation status has been reached and is stable;
    - At most, low-dose oral narcotics are required; and
    - There are no observed episodes of airway obstruction in the previous 12 hours.

  Note: consider consult to Internal/Respiratory Medicine if above criteria are not met.

- Discharge home (by attending physician only) can be considered if:
    - Patient does not become hypoxemic or develop airway obstruction while breathing room air in a non-stimulating environment AND
    - The patient requires no or only low-dose oral narcotics.

Note: consider consult to Internal/Respiratory Medicine if above criteria are not met.

Day Surgery Patients diagnosed with OSA or an indication of significant probability of OSA:

- Risk score should be ≤ 4.
- Shall be monitored in PACU. Discharge from PACU requires anesthesiologist approval.
- O_2 Sat on R/A must reach baseline.
- Shall not become hypoxemic or develop airway obstruction while breathing room air in a non-stimulating environment.

Completion of OSA Standing Orders

PAC Assessment includes indication of:

- STOP-BANG Score (found on Identification and Risk Assessment in Perioperative Adults Form);
- ASA-OSA Risk; (found on Identification and Risk Assessment in Perioperative Adults Form);
- O^2 Sat Room Air %
- AHI (if known)

PAC Anesthesiologist's Orders must be signed and dated by the PAC anesthesiologist. Some orders are required while others are optional. The PAC anesthesiologist must indicate with a √ any optional orders deemed necessary.

Required orders include:

- Sleep lab report (if known);
- Need to apply "OSA Risk" purple wristband; and
- Indication that patient is provided with OSA brochure.

Optional orders include:

- Patient to bring his/her CPAP;
- Consult to respiratory medicine before surgery; and
- drawing of blood gas.

Anesthesiology/Recovery Room Orders must be signed and dated by the anesthesiologist. Some orders are required while others are optional. The anesthesiologist must indicate with a √ any optional orders deemed necessary.

Required orders include:

- "OSA Risk" sign at head of bed;
- "OSA Risk" purple wristband in place;
- Monitor per Recovery Room Protocol;

- Patient in Semi-Fowler's or lateral position (avoid supine position if possible); and
- Continuous pulse oximetry.

Optional orders include:

- Notify physician if $SpO_2 \leq 92\%$;
- ABG if $SpO_2 \leq 92\%$ or obstruction;
- O_2 @ ___ L/min to maintain $SpO_2 \geq 92\%$;
- Start CPAP/BIPAP (if applicable) at _____settings;
- Transfer to OSA Care Area; and
- Day Surgery patient may be discharged home when criteria is met.

Surgical Service Postoperative Orders for OSA Patient must be signed and dated by the surgeon. Some orders are required while others are optional. The surgeon must indicate with a √ any optional orders deemed necessary.

Required orders include:

- Admit to OSA Care Area based on criteria on "Interpretation of Risk Score, OSA Care Area and Discharge Guidelines";
- "OSA Risk" sign at head of bed;
- "OSA Risk" purple wristband in place;
- Maintain IV access until discharged;
- BP and HR
    - q 30 minutes for 1 hour
    - q 1 hour for 2 hours, then
    - q 4 hours or as per unit protocol;
- Continuous pulse oximetry: check q 1 hour while in bed;
- Notify MD if > 5L/min required to maintain $SpO_2 \geq 92\%$;
- RR and somnolence scale q 1 hour;
- Pain scale q 4 hours and prn;
- Observe for changes in sleep pattern and document upper airway obstruction on Postop Record;
- Notify physician of airway obstruction;
- Patient in Semi-Fowler's or lateral position (avoid supine if possible);
- Discharge from OSA Care Area when criteria met;
- Provided patient with OSA brochure;
- Patient OSA follow-up arranged for _____.

Optional orders include:

- Need to notify physician if $SpO_2 \leq 92\%$ when on continuous pulse oximetry and being checked q hour while in bed;
- Need for ABG if $SpO_2 \leq 92\%$ or obstruction when on continuous pulse oximetry and being checked q hour while in bed;
- Requirement for O_2 _____L/min to maintain $SpO_2 \geq 92\%$;
- CPAP/BIPAP including settings;

- Discontinuation of O_2 after 24 hours if Sat > _____%;
- Consult required for Internal/Respiratory Medicine if overnight obstruction AND/OR desaturation.

For questions related to the OSA Identification of Risk Assessment in Perioperative Adults form; Interpretation of Risk Score, OSA Care Area and Discharge Guidelines; OR the OSA Standing Orders contact _____
_____.