Title: DAILY SPONTANEOUS BREATHING (DSB) TRIALS FOR PATIENTS ON THE SURGICAL CRITICAL CARE SERVICE AND ON MECHANICAL VENTILATION GREATER THAN 24 HOURS

Responsibility: Respiratory Therapist assisted by RN or Physician

Equipment: None Needed

Procedure:

1. Respiratory Therapist and RN will evaluate patient for any contraindications as outlined on the Daily Spontaneous Breathing (DSB) Trial Protocol. If a contraindication is present, Do Not Wean, document contraindication on the ventilator record and notify Surgical Critical Care (SCC) Resident.

2. RN will stop Propofol infusions at appointed time (strive for 0830; consult with RT to confirm)

3. Explain procedure to patient

4. Elevate Head of Bed to 30 degrees unless contraindicated

Point of Emphasis

Confirms that patient is eligible for DSB Trial and that criteria have been met. Protocol contraindications follow:

1. Hemodynamic instability
   a. Systolic BP < 90 mmHg
   b. Require infusion of vasoactive drugs to maintain BP or CO in acceptable range (dopamine, dobutamine, vasopressin, milrinone, amrinone, epinephrine, phenylephrine, norepinephrine)
   c. Require mechanical assist device to maintain cardiac output (CO) in acceptable range (Intraaortic balloon pump, ventricular assist device, ECMO)
   d. Heart rate > 120 or < 45 per min.

2. Intracranial hypertension (defined as requirement for ICP monitoring)

3. Pulmonary oxygenation failure
   a. PEEP > 5 cm H2O to maintain SpO2 > 90%
   b. FiO2 > 0.5 to maintain SpO2 > 90%

4. Marked impairment in pulm/chest wall static compliance (defined as plateau pressure > 30 cm H2O with VT equal or less than 5 mL/kg ideal body weight)

5. Marked acid-base imbalance (defined as pH < 7.3 or > 7.5)

6. High fever (defined as > 38.5°C)

7. Present use of neuromuscular blocking agents

8. Continuous infusion of sedative medication other than Propofol (see point 2 below)

9. Presence of underlying condition associated with marked compromise of respiratory muscle function (e.g., myasthenia gravis, Guillain-Barre, high cervical cord injury)

10. Evidence of ongoing myocardial ischemia (such as chest pain, ventricular dysrhythmias, or ST changes on EKG)

11. Evidence of active hemorrhage requiring transfusion or fluid management

Infusion of sedatives decreases respiratory drive
Explanation will decrease anxiety and provide reassurance to patient
Head of bed elevation will decrease diaphragmatic pressure making it easier for patient to breathe and decreasing the risk for aspiration
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**Procedure**

5. Respiratory therapist will set mode to PSV of 5 cm H2O and CPAP of 5 cm of H2O (if ventilator capable, set to flow trigger). For patients with an endotracheal tube size less than 7.5, use PSV of 8 cm of H2O.

This trial is for 1 hour. If patient tolerance is unclear, continue trial for up to 2 hours.

6. Suction endotracheal tube as necessary

7. RN and Respiratory Therapist will monitor patient for fatigue parameters.

   If fatigue parameters are present, the patient will be returned to their previous ventilator settings. The RT and/or RN will notify SCC Resident of the fatigue.

   If no fatigue parameters are present, SCC Resident will be notified to evaluate the patient for possible extubation.

**Point of Emphasis**

These values of PSV/CPAP compensate for the increased work of breathing caused by the ventilator circuit and endotracheal tube.

Fatigue parameters may indicate respiratory compromise.
- \( \text{SpO}_2 \ < \ 90 \)
- Change in systolic BP >20% from baseline
- HR >120 or <50 or 20% increase from baseline
- Change in RR >10 per min or absolute RR >30 per min or apnea >30 sec
- Abnormal breathing pattern (i.e. paradoxical respiratory pattern, use of accessory muscles, etc.)
- Change in neurologic condition (i.e. diaphoresis, seizures, somnolence, agitation, etc.)
- Abnormal ABG (pH <7.3 or >7.5, PaO2 <60).

This will allow adequate rest before repeating trial. A failed trial can precipitate respiratory muscle fatigue.

**Documentation**

Respiratory Therapist documentation:
- Ventilator Record:
  - Contraindication, if applicable
  - DSB Trial start time
  - DSB Trial end time
  - Fatigue parameter, if applicable

RN Documentation:
- SICU Flow Sheet - Fatigue parameter, if applicable (i.e. patient behavior)
- MAR - Sedative stop and restart times, if applicable.

Approved by: 

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References: