

## Nursing Service Guidelines General Nursing

<u>Title:</u>	<b>CARE OF PATIENTS RECEIVING NEUROMUSCULAR BLOCKING AGENTS (NMBA) GUIDELINES</b>
<u>Responsibility:</u>	RN
<u>Purpose:</u>	Care directed toward minimizing the inherent risks and potential complications related to the pharmacological paralysis of a patient in the intensive care setting
<u>Equipment:</u>	
<u>Notes:</u>	The patient may expect nursing care to be directed towards: <ul style="list-style-type: none"> <li>▪ Meeting the physical and psychological needs.</li> <li>▪ Minimizing inherent risks and potential complications related to pharmacological paralysis.</li> </ul>

### Practice Guidelines

### Point of Emphasis

Nursing Care provided to chemically paralyzed patients includes, but is not limited to the following:

1. Obtain and document a **Baseline Assessment**
  - a. Vital Signs
  - b. Hemodynamic status (B/P, HR and pulmonary artery pressures if available)
  - c. Ventilatory status (mode of ventilation, rate, FiO<sub>2</sub>, peak inspiratory pressures and SaO<sub>2</sub>. ETCO<sub>2</sub> may also be monitored and documented)
  - d. Neurological status (LOC, mental status, pupillary response and movement of extremities).
  - e. General skin integrity assessment.
  - f. Comfort/pain status. If patient conscious, utilize Wong-Baker Scale. If unconscious, use changes in vital signs, and observation of tearing, grimacing and/or diaphoresis and FLACC pain scale.
  - g. Location of electrodes and condition of skin. (Refer to USE OF PERIPHERAL NERVE STIMULATOR TO MONITOR NEUROMUSCULAR BLOCKADE (NMBA) GUIDELINE for correct use of Peripheral Nerve Stimulator)
  - h. Amount of current (milliamps) required to elicit the supramaximal stimulation (SMS), or four vigorous twitches. **(Perform after maximal analgesia and sedation, but before administration of NMBA)**
  
2. Provide Sedation/analgesia as ordered.

It is imperative to obtain and document a thorough baseline assessment to assure the safety of the patient.

Assure that age appropriate teaching is provided to the patient and family. If possible, teaching of the patient should be performed prior to administering any sedation/analgesia. Ensure the patient and family understands the reason for the NMB and the temporary status of the NMB.

**How to calculate the SMS. If a strong response was noted at 20mA, increase the current to 30mA. If the intensity of the twitches is the same, the SMS is 20mA. If the intensity of the twitches is greater, increase the mA to 40. If there is an additional increase in twitch intensity, increase mA to 50. If not, the SMS is 40mA. Document the SMS.**

NMBA do not have any sedating or analgesic effects. Patients **must** receive adequate sedation and pain control prior to administration of NMBA and throughout the course of NMBA therapy.

### Practice Guidelines

### Points of Emphasis

3. Assessment Parameters During Neuromuscular Blockade:
- Obtain vital signs every 1 hour.
  - Hemodynamic monitoring parameters routinely.
  - Ventilatory status with careful attention to monitoring PIP (positive inspiratory pressure) and SaO<sub>2</sub>.
  - Neuro assessment every 1 hour (LOC, mental status, pupillary response and movement of extremities).
  - Adequacy of analgesia/sedation every 1 hour.
  - Monitor changes in VS, tearing, diaphoresis for pain assessment (Note: FLACC scale no longer applicable).
  - Electrolytes, BUN, creatinine and liver function tests as ordered.
- Train of Four (TOF) approximately 15 minutes after the bolus dose. Continue to retest every 1-2 hours until clinically stable and a satisfactory level of blockade is achieved. Once an adequate level is achieved, re-test every 4-8 hours.

Patients who are treated with NMBA lose the cough reflex. Monitoring the PIP allows the nurse to assess when it is necessary to suction and clear the airway.

A satisfactory level of blockade is when 1-2 twitches are elicited with a TOF at the SMS. This occurs when approximately 85-90% of the receptors are blocked. If there is no evidence of twitching, this indicates a higher than desired level of blockade and the drip should be decreased. If more than 2 twitches are noted, the receptors are not adequately blocked and the drip should be increased.

4. Necessary Interventions During Neuromuscular Blockade:
- Administer sedation/analgesia per physician orders, to assure adequate levels.
  - Change body position every 2 hours or more often as needed. Consider a pulmonary treatment bed.
  - Skin integrity assessments every 2 hours with turning.
  - Apply lubricants/artificial tears every 1 hour to prevent conjunctival and scleral injury.
  - Place a sign above the patient's bed stating, "patient is pharmacologically paralyzed".
  - Reorient the patient every 1 hour.
  - Explain all procedures and nursing care.
  - For patients pharmacologically paralyzed for prolonged periods, consider a Physical Therapy consult if not contraindicated.
- Apply skin care devices as ordered.

Document:

- All interventions performed.
- Patient response.

5. Discontinuation of NMBA therapy:
- Continually re-assess the need for NMBA. Discontinue as needed to assess status of patient.
  - Neuro assessments to include LOC, mental status, pupillary response, movement of extremities and motor strength every 1 hour until patient has returned to baseline.
  - Ventilatory status
  - Scleral and conjunctival care every 4 hours  
Assess patient for need of restraints according to Hospital Policy 3364-100-53-12.

It is recommended that NMBA therapy be temporarily stopped routinely in order to adequately assess the patient.

Document:

- All assessment parameters
- Patient response.

**Practice Guidelines**

**Points of Emphasis**

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References: Whetstone Foster, J. G. (2005). Peripheral Nerve Stimulators. In D. J. Lynn-McHale & K. K. Carlson (Eds.), AACN Procedure Manual for Critical Care (pp.837-844). Philadelphia, PA: Elsevier Saunders

Ballard, N., Robley, L., Barrett, D., Fraser, D>, Mendoza, I. (2006). Patients' recollections of therapeutic paralysis in the Intensive Care Unit [electronic version] American Journal of Critical Care 15(1), 86-95.