RELATED GUIDELINES:
Ambulatory Regional Anesthesia
Care of the Postpartum Patient
Post Anesthesia Care on Labor and Delivery
Epidural and Intrathecal Infusion Analgesia (UCH Policy and Procedures)

APPROVED BY:
Director of OB Anesthesia
OB Medical Director
Birth Center Manager
Women’s Care Center Manager
Nursing Practice Guidelines Subcommittee

DESCRIPTION (PURPOSE): This guideline describes the care of the postpartum patient receiving continuous, patient-controlled intermittent, or episodic neuraxial pain control.

ACCOUNTABILITY (SCOPE/PERSONNEL): Registered Nurses, Anesthesiologists, CRNAs, and Obstetricians

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DEFINITIONS:
1. Regional Anesthesia: partial to complete loss of pain sensation below T4 level with varying degree of motor blockade depending on anesthetic agent used.
2. Neuraxial opioid analgesia: epidural or spinal administration of opioids.
3. Combined Spinal Epidural: allows for rapid onset of a spinal dose with the ability to prolonged pain management duration from a continuous epidural.
4. Respiratory Depression: reduced respiration rate (<10 breaths/min), reduced oxygen saturation (< 90-92%), or hypercapnia/hypercarbia; clinical signs (drowsiness, sedation, periodic apnea, cyanosis) may provide indications of respiratory distress.
5. Brudzinski sign: severe neck stiffness when neck is flexed causing a patient's hips and knees to flex.
6. Limited mobility

GUIDELINES FOR SINGLE AND INTERMITTENT NEURAXIAL ANESTHESIA:
1. Upon arrival to postpartum unit, patient may have an existing epidural catheter in place.
2. To ensure safe transfer from gurney to bed, a roller board should be used if patient is unable to lift buttocks off bed and assist in transfer.
3. Date and time of epidural placement noted in EHR and during nurse-to-nurse report
4. Initial/shift assessment of patient should be composed of the follow:
   - Pain (WILDA 1-10 scale)
   - Vital signs: blood pressure, heart rate, respiration rate, temperature, pulse oximetry.
   - Sedation Scale and Level of Consciousness
   - Dermatome level and motor abilities, if applicable
     - See EPIC Resource Tab for dermatome model
   - Presence of side effects
   - Presence of complications
   - Epidural insertion site and surrounding tissues for redness, tenderness, or edema
   - Ensure that dressing is intact and without leaking if epidural catheter is present.
   - See Care of the Postpartum Patient for remaining postpartum assessment needs.
5. Subsequent assessments should include:
   - Q 1 hour sedation scale and respiration rate x 12 hours then every 2 hours until 24 hours (12-24 hours)
   - Pain scale Q 4 hours or more frequent if patient’s condition warrants.
   - Complete vital signs Q 4 hours.
   - Epidural catheter dressing checks Q 4 hours if present. Monitor for edema, bleeding, or tenderness.
6. If epidural catheter needs to be replaced at any time, patient is to be transferred to a higher level of nursing care for placement and until epidural management is once again stable.
7. Monitoring should be dictated by patient’s clinical condition and concurrent medications.

Increased Pain Assessment
1. Notify anesthesia for pain that is not well controlled with initial epidural dose and Q 6 hour ketorolac for possible bolus or other pain intervention options.

Respiratory Depression Interventions
1. Notify anesthesia immediately if:
   a. The sedation scale is equal to or less than 2 (difficult to arouse) or the respiratory rate is less than 10 breaths per minute. Place pulse ox on finger, oxygen via mask at 10 L/minute.
   b. If sensory level (dermatome) rises above T-4 or if the patient complains of shortness of breath, chest heaviness, or upper extremity numbness. Place pulse ox on finger, administer O2 via mask at 10 L/minute, and turn off pump.
   c. If patient loses the ability to move legs independently.

Nursing Interventions
1. The registered nurse may remove the neuraxial catheter as ordered by the anesthesiologist.
   a. If catheter is placed in the intrathecal space, RN should discuss removal with anesthesiologist prior to removal.
2. Scheduled ketorolac (Toradol) Q 6 hours x 24 hours for pain control
   a. Monitor urine output every hour; if less than 30 mL/hour x 2 hours, hold next Toradol dose and notify anesthesia.
3. PO medications can be started 12 hours postpartum as ordered by anesthesia.
   a. Do not administer oral ibuprofen and Toradol together. Wait 6 hours between last Toradol dose and first ibuprofen dose.

GUIDELINES FOR CONTINUOUS NUERAXIAL ANESTHESIA:
1. Neuraxial anesthesia considered at a stable dermatome and sensation level prior to transfer to post partum unit.
2. Upon arrival to postpartum unit, patient will have an existing epidural catheter in place and a patient-controlled epidural anesthesia pump connected/infusing medication.
3. To ensure safe transfer from gurney to bed, a roller board should be used if patient is unable to lift buttocks off bed and assist in transfer.
4. Date and time of epidural placement noted in EPIC and passed along during nurse-to-nurse report.
5. Initial assessment of patient should be composed of the follow:
   a. Pain (WILDA 1-10)
   b. Vital signs: blood pressure, heart rate, respiration rate, temperature, pulse oximetry.
   c. Sedation Scale and Level of Consciousness
   d. Dermatome level and motor abilities
      i. See EPIC Resource Tab for Dermatome model
   e. Presence of side effects
   f. Presence of complications
   g. Epidural insertion site and surrounding tissues for redness, tenderness, or edema
   h. Ensure that dressing is intact and without leaking
   i. Ensure that tubing and PCEA are connected and operating if in use.
j. See *Care of the Postpartum Patient* for remaining postpartum assessment needs.

6. Continued assessment, based on time of epidural placement and stability.
   a. Stability will be achieved prior to transfer to postpartum unit
   b. The below assessment is for the entire placement of the Neuraxial anesthesia and does not need to be restarted upon transferring patient to postpartum unit. Assessments are based on time since epidural placement

<table>
<thead>
<tr>
<th>Assessment of Patients with no Risk Factors for Respiratory Depression</th>
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<tbody>
<tr>
<td>Vital Signs</td>
</tr>
<tr>
<td>Assess all vital signs every 5 (five) minutes for the first 15 minutes, repeating every 15 minutes until block is stable</td>
</tr>
<tr>
<td>Once stable – vital signs, including respiration rate and sedation scale every 30 minutes x 4 checks (2 hours)</td>
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<tr>
<td>Respiratory rate, sedation scale every hour x 12 hours, then every two hours as long as remaining stable with sensory level documentation</td>
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<tr>
<td>BP, P, T will be documented every 2 hours with sensory block. Vital signs may be assessed more frequently based on entire clinical picture</td>
</tr>
</tbody>
</table>

Assessment of patients with comorbidities or risk factors for Respiratory Depression.

Note: It may be necessary to monitor the depth and respiration and oxygenation saturations at frequent intervals or continuously, per anesthesia orders.

<table>
<thead>
<tr>
<th>Vital Signs</th>
<th>Dermatome (See EPIC Resource Tab) and Motor Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assess all vital signs every 5 minutes for the first 15 minutes or until block is stable. After stabilized, vital signs, respiration rate, sedation scale are monitored every 30 minutes x 4 exams (2 hours) after block is stabilized</td>
<td>Assess after the first 15 minutes repeating every 15 minutes until block is stabilized. Once stable, assess every 30 minutes x 4 (2 hours)</td>
</tr>
<tr>
<td>Assess all vital signs, respiratory rate and sedation scale every hour for the remainder of time with epidural/PCEA. These assessments may need to occur more frequently if patient condition warrants.</td>
<td>Assess dermatome and motor block every hour for remained of time with epidural/PCEA.</td>
</tr>
</tbody>
</table>
Risk Factors for Respiratory Depression
1. Obstructive Sleep Apnea (OSA), or suspected OSA
2. Pulmonary disease or dysfunction (COPD, etc.)
3. Obesity, BMI \( \geq 35 \text{ kg/m}^2 \)
4. Greater than 64 years old
5. Receiving other opioids or sedative medication in addition to PCEA
6. Impaired renal or hepatic function

Respiratory Depression Interventions
2. Notify anesthesia immediately if:
   a. The sedation scale is equal to or less than 2 (difficult to arouse) or the respiratory rate is less than 10 breaths per minute. Place pulse ox on finger, oxygen via mask at 10 L/minute, and turn off PCEA infusion pump.
   b. If dermatome rises above T-4 or if the patient complains of shortness of breath, chest heaviness, or upper extremity numbness. Place pulse ox on finger, administer O2 via mask at 10 L/minute, and turn off PCEA pump.
   c. If patient loses the ability to move legs independently.

Nursing Interventions
4. The registered nurse may remove the neuraxial catheter after infusion pump is discontinued as ordered by the anesthesiologist.
   a. If catheter is placed in the intrathecal space, RN should discuss removal with anesthesiologist prior to removal.
5. PO medications can be started as ordered by anesthesia

SIDE EFFECTS AND COMPLICATIONS INTERVENTIONS
1. Side Effects:
   a. Urinary retention – if not able to void 6-8 hours after indwelling foley catheter is removed, assess bladder by palpation; notify anesthesia and prepare for possible straight catheterization.
   b. Itching – notify anesthesia if uncontrolled with medication ordered by anesthesia (usually nalbuphine).
   c. Nausea – notify anesthesia if uncontrolled with medication ordered by anesthesia
2. Complications:
   a. Respiratory depression – see below for procedure if < 8 breaths/minute
   b. Abscess – back pain, flaccid paralysis followed by spastic paralysis, elevated WBC, sensory and motor changes and positive Brudzinski sign usually 1-3 days after epidural placement. Notify anesthesia.
   c. Epidural hematoma – severe back pain, lower extremity paresthesia, change in sensory or motor function. Notify anesthesia.
e. Intrathecal catheter migration – decreased BP and loss of motor function. Notify anesthesia
f. Sympathetic blockade – decreased BP and HR at times. Lower head of bed and notify anesthesia
g. Local anesthesia toxicity – lightheadedness, numbness of tongue and lips, visual and auditory disturbances, muscle twitches, unconsciousness, seizure, coma, respiratory arrest, prolonged PR and QRS intervals, Bradycardia, and sinus arrest. Notify anesthesia immediately and stop infusion
h. Allergic reaction – hives, respiratory distress, and anaphylaxis. Notify anesthesia and stop infusion
i. Dural puncture – verify with anesthesia prior to catheter removal and monitor for headache.
j. Breakthrough pain – notify anesthesia for orders
k. Limited mobility – raise head of bed to 30-45 degrees and notify anesthesia. Continue Q 1 hour sensory and sedation assessments or more frequent if patient’s condition warrants.

DOCUMENTATION:
1. RN to document above assessments in EHR with use of Epidural Group.

RELATED DOCUMENTS/REFERENCES:


