

RISK FOR INJURY

related to labor

Definition

Accentuated risk of injury as a result of environmental conditions interacting with the individual's adaptive and defensive reserves

Assessment

- Previous pregnancies
- Prenatal history, including prenatal laboratory studies, pelvic measurements, allergies, weight gain, last menses, and estimated date of confinement
- Physical examination, including maternal vital signs, Leopold's maneuvers (to determine fetal position), palpation of uterus (to assess frequency, intensity, and duration of contractions), sterile vaginal examination (to assess ripeness of cervix [Bishop score]), presentation, estimation of maternal pelvis, and fetal heart rate
- Diagnostic studies, including ultrasound to determine gestational age and fetal size, and nonstress test or contraction stress test to assess fetal-placental function
- Laboratory studies, including complete blood count, blood type and Rh factor, platelets, Nitrazine test (to confirm rupture of membranes), and urine protein and glucose levels
- Contraindications to oxytocin stimulation, such as absolute cephalopelvic disproportion, fetal distress, grand multipara, overdistention of uterus from multiple gestation or polyhydramnios, vaginal bleeding, and unfavorable fetal presentation or position

Risk Factors

- Dysfunctional labor
- Home far from hospital
- Hypotonic contractions
- Postmaturity
- Previous precipitous delivery
- Prolonged rupture of membranes

Expected Outcomes

- Patient will have uterine contractions every 2 to 3 minutes, with intensity of 40 to 60 mm Hg (by internal monitoring).
- Continuous fetal monitoring will show fetal heart rate maintains variability of 6 to 10 beats/minute, with reassuring pattern.
- Patient will achieve good labor pattern, and neonate will be delivered without complications.
- Medical personnel will monitor patient closely for adverse reactions to oxytocin stimulation and will initiate appropriate interventions.
- Patient will maintain fluid balance.
- Patient and fetus will maintain optimal well-being.

Suggested NOC Outcomes*Fetal Status: Intrapartum; Maternal Status: Intrapartum; Risk Detection***Interventions and Rationales**

- Explain oxytocin protocol to the patient and her support person. Describe how oxytocin-induced contractions may peak more quickly and last longer than spontaneous contractions *to allay apprehension and encourage patient participation.*
- Before applying a fetal monitor or administering oxytocin, encourage the patient to void. Palpate the bladder every 2 hours for distention. *A full bladder causes discomfort, especially when equipment is placed on the patient's abdomen.*
- Monitor intake and output, and measure urine specific gravity. *Decreased output with increased specific gravity may indicate urine retention, which may impede fetal descent.*
- Place the patient in as comfortable a position as possible. Left lateral tilt relieves the pressure of a gravid uterus on the inferior vena cava and promotes blood flow to the placenta. *Correct positioning enhances patient comfort and may help you obtain a clearer fetal monitoring strip.*
- Apply the fetal monitor and obtain a 15- to 20-minute baseline strip *to ensure adequate assessment of fetal heart rate and contraction pattern.*
- Use an 18G or 20G catheter when starting a primary I.V. line *to prepare for possible emergency interventions, such as cesarean delivery or blood administration.*
- Prepare oxytocin, as ordered. Add the drug to a dextrose 5% injection or normal saline solution (initially, 10 units to 1,000 ml of solution). Label the bottle with the patient's name, amount of oxytocin, date and time prepared, and your name. Note that a physician must be present in the facility during oxytocin infusion. *Strict procedure ensures uniform administration and accurate assessment of uterine response.*
- Piggyback oxytocin solution to the primary I.V. line at the site most proximal to the patient. Use an I.V. infusion pump to control the flow rate. *Insertion at the most proximal site to the patient prevents bolus infusion if oxytocin is stopped and the flow rate of the primary I.V. solution is increased. The infusion pump guarantees exact dose administration.*
- Begin infusion at the rate of 0.5 to 1 mU/minute. Remain with the patient during the first 20 minutes. *Initiating oxytocin at this rate enables you to evaluate the patient's individual response to stimulation.*
- Increase the oxytocin infusion by increments of 1 to 2 mU/minute, as ordered, every 30 to 60 minutes until the desired contraction pattern is achieved and the cervix is dilated 5 to 6 cm. Monitor blood pressure before and after each increase in dosage. *Increasing oxytocin slowly avoids hyperstimulation, which can cause fetal distress and uterine hypoxia.*
- If you increase to an infusion rate of 20 mU/minute without the patient achieving the desired contraction pattern, notify the physician. *Increments above 20 mU/minute increase the risk of hyperstimulation and water intoxication.*
- Monitor maternal vital signs every 15 to 30 minutes, as indicated by facility policy, *to assess for oxytocin-induced hypertension.*
- Monitor the contractile pattern and fetal heart rate every 15 minutes. Assess contractions by palpation or intrauterine pressure catheter. At least every 30 minutes, document the heart rate, variability, and fetal monitor strip changes. *Assessment of the fetal heart rate and variability allows you to detect nonreassuring fetal heart patterns. Palpation of contractions or intrauterine catheter monitoring allows you to monitor uterine activity.*

- If the patient responds poorly to oxytocin infusion, take these steps:
 - Check the I.V. mixture.
 - Check the lines for patency.
 - Increase the oxytocin flow rate, according to facility policy.
 - Palpate the uterine fundus for quality, duration, and relaxation of contractions.

Errors in oxytocin mixture and I.V. administration can cause poor uterine response. An unripe cervix or uterus will also diminish the desired response. If the patient's response doesn't improve, the infusion may have to be discontinued after 8 to 12 hours and restarted the next day.
- Observe for hypertonicity—contractions lasting longer than 90 seconds and occurring less than 2 minutes apart. When using an intrauterine pressure catheter, a reading greater than 75 mm Hg indicates hypertonicity. *Because hypertonicity is unpredictable, the patient must be monitored carefully.*
- If you detect hypertonicity, discontinue infusion immediately. Check maternal vital signs and notify the physician. Increase the flow rate of the primary I.V. solution, and position the patient on her left side. *These measures will help arrest hypertonicity.*
- Monitor continuously for loss of variability, late decelerations, or persistent bradycardia to detect fetal distress. *Fetal distress may result from impaired uteroplacental perfusion caused by increased tonicity of contractions.*
- If you detect signs of fetal distress, take these steps:
 - Discontinue oxytocin infusion to minimize the risk to the fetus.
 - Administer 8 to 12 L of oxygen via a tight rebreathing mask to increase the oxygen supply to the fetus.
 - Increase the flow rate of the primary I.V. line to increase fluids.
 - Reposition the patient on her left or opposite side to increase placental blood flow.
 - Notify the physician to expedite medical evaluation of maternal and fetal status.
 - Assess maternal vital signs to monitor for early signs of distress.
 - Perform or assist with a sterile vaginal examination to rule out possibility of umbilical cord prolapse.
 - Make sure the patient isn't left unattended to promote safety.
- Assess the patient's intake and output, and monitor the amount of oxytocin administered over the course of stimulation. Total fluid intake shouldn't exceed 125 ml/hour. *Over time, the antidiuretic effects of oxytocin combined with the administration of large volumes of electrolyte-free solutions can lead to water intoxication.*

Suggested NIC Interventions

Bleeding Precautions; Electronic Fetal Monitoring: Intrapartum; Environmental Management; Intrapartal Care: High-Risk Delivery; Labor Induction; Medication Administration

Evaluations for Expected Outcomes

- Patient has contractions every 2 to 3 minutes that last 30 to 60 seconds and are of moderate intensity with adequate resting tonus.
- Continuous fetal monitoring shows fetal heart rate maintains variability of 6 to 10 beats/minute, with reassuring pattern.
- Patient achieves good labor pattern and delivers neonate without complications.
- Medical personnel monitor patient closely for adverse reactions to oxytocin stimulation and initiate appropriate interventions.

- Patient maintains fluid balance.
- Patient and fetus maintain optimal well-being during labor and delivery.

Documentation

- Patient's vital signs on admission and every 15 to 30 minutes, according to facility policy
- Baseline assessment of uterine activity (frequency, intensity, interval, duration, and tonus) before oxytocin stimulation and every 30 minutes thereafter via continuous electronic fetal monitoring
- Assessment of fetal heart rate, including baseline rate, long-term variability, short-term variability (with internal monitoring), accelerations, and periodic changes
- Patient's physical and emotional response to induction or augmentation of labor or both
- Nursing interventions to reduce risk of injury to patient or fetus from oxytocin stimulation
- Patient's response to nursing interventions
- Evaluations for expected outcomes

REFERENCES

- Mahlmeister, L.R. "Best Practices in Perinatal Care: Evidence-Based Management of Oxytocin Induction and Augmentation of Labor," *Journal of Perinatal & Neonatal Nursing* 22(4):259–63, October–December 2008.
- Miller, L.A. "Oxytocin, Excessive Uterine Activity, and Patient Safety: Time for a Collaborative Approach," *Journal of Perinatal & Neonatal Nursing* 23(1):52–58, January–March 2009.