

Section: Division of Nursing
Approval: _____

* **PROCEDURE** *

Index: 6160.034b
Page: 1 of 3
Issue Date: July 16, 1990
Revised Date: May 2011

HACKETTSTOWN REGIONAL MEDICAL CENTER

Originator: A. Beardsley, RNC
Revised by: C. Burns, RNC, BSN
K. Rader, RN
P. Swanson, RN, MSN

MATERNAL SERVICES
(Scope)

TITLE: OXYTOCIN ADMINISTRATION PROTOCOL

PURPOSE: To define the scope of nursing practice related to care of patients receiving Oxytocin for induction or augmentation of labor.

Goal: Effective uterine activity sufficient to provide cervical change and fetal descent while avoiding hyperstimulation and fetal compromise.

LEVELS: ___ Independent X Interdependent ___ Dependent

SUPPORTIVE DATA: A. Physiological Basis for Oxytocin Use

1. Oxytocin is an endogenous (naturally occurring) hormone that is synthesized in the hypothalamus and released from the posterior lobe of the pituitary gland. Once released, Oxytocin binds to membrane receptors in the primary target sites; i.e., the uterine myometrium and mammary epithelium.¹
2. Endogenous oxytocin serves a dual role: initiating labor contractions through its direct effect on the myometrium and stimulating prostaglandin synthesis by the decidua. (Mercer, 1991)
3. Uterine muscle becomes susceptible to Oxytocin's effect only as the pregnancy nears term, and then only minute amounts of it are needed to cause contractility. Higher doses can result in hyper contractility.
4. Oxytocin also has pronounced cardiovascular and renal effects:
 - a. Cardiac output and stroke volume are increased thereby increasing potential for elevated maternal blood pressure.
 - b. Anti-diuretic effect can cause decreased urinary output which increases potential for fluid overload.
5. Factors that may influence the dose response to Oxytocin include maternal body surface area, parity, week of pregnancy duration and cervical status.

B. Indications for Oxytocin Administration

Those pregnancies at or near term for which delivery is medically/obstetrically indicated and for whom induction/augmentation is not contraindicated, and for prolonged 2nd stage of labor.

C. Contraindications for Oxytocin Administration Include: known CPD; fetal malpresentation; fetal macrosomia; placenta previa; placenta abruption; prior uterine incision; and non-reassuring fetal heart tracing; vasa previa; cord presentation; active herpes; invasive cervical cancer.

D. Physician/Midwife Role in Oxytocin Administration:

1. Provider to examine patient within one hour prior to the start of Oxytocin administration. (NJ DOH licensing regulation 8:43G-19.11 (d)).
2. Provider will document exam/assessment findings on the patient chart, and will also document medical indication for oxytocin use.
3. Provider will utilize standing orders for oxytocin administration that includes amount and type of I.V. solutions to be used for mainline I.V. and for Pitocin mixture which is premixed from pharmacy in a standard concentration; amount (rate/dose) that infusion is to be started at; amount and interval of rate (dose) increases; and any maximum dose level to be

- maintained (if reached prior to onset of labor contractions.)
4. The provider must be "readily accessible" during Oxytocin administration.

CONTENT:

NURSING COMPETENCIES

INITIATION PHASE:

- A. All patients will be assessed per unit procedures prior to Pitocin start, and continuously cared for by an RN.
- B. Electronic fetal monitoring protocol and procedure will be initiated at least 20 to 30 minutes prior to the start of Oxytocin and will be maintained throughout the duration of labor/Oxytocin infusion. Telemetry unit may be utilized. If cervidil has been utilized, oxytocin infusion should not be initiated until thirty minutes after it has been removed.
- C. I.V. protocol will be initiated for the start of the mainline I.V. fluids and for maintenance of the I.V. device site.
Rationale: adequate hydration increase skeletal muscle performance.
IV site must be maintained for adequate infusion and for access in the event of emergency.
 1. A large bore I.V. device will be used per unit standards (number 18 or greater); attach extension set for subsequent ease to convert to saline lock.
 2. A physiologic electrolyte solution (non dextrose containing) should be ordered for I.V. Solutions; for example: Lactated Ringers
 3. Initiate intake and output monitoring and record in CPN system.
- D. Oxytocin administration procedure initiated:
 1. Oxytocin infused via IV pump. Devise must be set for the specific administration of Oxytocin/Pitocin, chosen from pump's medication library.
 2. Oxytocin infused IVPB into the portal site closest to the I.V. insertion site.
 3. All other medications will be given IM or I.V. through mainline I.V. tubing portal sites

DOSAGE INCREASE

MAINTENANCE PHASE:

1. Patient will be assessed for both her and her fetuses' response with each dose increase or every 15 minutes, whichever is the shorter interval, for the following:
 - A. Maternal Status/Response to Oxytocin
 1. Uterine contractions for effective labor:
 - a. Should be no more than every 2 to 3 minutes in frequency.
 - b. Should last no longer than 90 seconds.
 - c. Should have good uterine resting tone between contractions.
 2. Uterine response will be evaluated by:
 - a. Observation and evaluation of fetal monitoring tracing on CPN.
 - b. Palpation of fundus both during a contraction and after.
 - c. Observation of maternal response to intensity, duration, and frequency of contractions, including her perception of uterine resting phase.
 3. Uterine tachysystole: >5 contractions in 10 minutes, averaged over 30 minutes. (AWHONN recommendation)
 4. Maternal physiological status will be monitored by:
 - a. Monitoring blood pressure and pulse with each oxytocin rate/dose increase; then

every one-half hour when at maintenance rate.

- b. Monitor intake and output (patient at risk for water intoxication) throughout I.V. Oxytocin infusion. Notify the patient care provider if urinary output observed to be < 30 cc/hr.

B. Fetal Status/Response to Oxytocin

1. Monitor fetal status per fetal monitoring protocol.
2. In the event of non-reassuring fetal heart rate changes:
 - a. Discontinue oxytocin therapy immediately.
 - b. Institute Emergency procedures to initiate intrauterine resuscitation:
 1. Administer oxygen to mother via NRBM
 2. Maternal position changes
 3. IV fluid bolus
 - c. Follow fetal monitoring protocol.
 - d. Notify patient care provider.

- DOCUMENTATION:
1. Document maternal responses per Oxytocin protocol.
 2. Document fetal responses per fetal monitoring protocol.
 3. Utilize QS system for labor annotations, document I&O in Cerner power chart.

- PATIENT TEACHING:
1. Answer patient questions and concerns.
 2. Instruct on procedures; i.e., I&O, I.V., fetal monitor.
 3. Inform patient on changing character of labor with Oxytocin.
 4. Reassure patient regarding pain relief. Offer alternate methods of pain relief, i.e. ambulation, hydrotherapy, massage, heat/cold pack applications, labor ball, rocking chair, frequent position changes.
 5. Offer reassurance and emotional support as labor progresses.

REFERENCE:

1. Brodsky, P.L. and Pelzar, E.M. "Rational for the Revision of Oxytocin Administration Protocols," J.O.G.N., vol. 20(6), 1991, pp. 440-444.
2. Mercer, B., Pilgram, P., Sibai, B. "Labor Induction with Continuous Low-Dose Oxytocin Infusion: a Randomized Trial," *Obstet/Gynecol* vol.77(5), 1991, pp.659-663.
3. "A.C.O.G. 1991 Induction and Augmentation of Labor," In Technical Bulletin, vol. 157, Washington DC: American College of Obstetricians and Gynecologists.
4. Kennedy, Betsy, Ruth, and Martin, E.Jean, 4th edition, 2009, Wolters Kluwer Health/Lippincott Williams and Wilkins.
5. Frigoletto, F., et. al., 1995. "A Clinical Trial of Active Management of Labor", New England Journal of Medicine, vol. 333 (12) pp 745-750.
6. Simpson, Kathleen R and Creehan, Patricia A, (2008) AWHONN Perinatal Nursing, Philadelphia: Lippincott
7. Mandeville, Lisa K., Troiano, Nan H., "High Risk & Critical Care Intrapartum Nursing" (2nd edition). AWHONN: Lippincott 1999.
8. Murray, Sharon Smith and McKinney, Emily Slone, "Fundamentals of Maternal-Newborn Nursing" (4th edition). St. Louis: Saunders/Elsevier. 2006.