The Use of Oxytocin at Ben Taub Hospital and Pavilion for Women

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Background

ACOG recognizes both low- and high-dose oxytocin regimens, however, a numeric value for the maximum dose has not been established.[1] Based on pharmacokinetic studies of synthetic oxytocin, a steady state level of oxytocin in plasma is achieved by 40 minutes. Therefore, any dosing regimen that increases the infusion rate significantly faster than 40 minutes will result in additional drug being given before the full effects of the previous dose can be known.[2] In addition, aggressive hydration and increased glucose administration have been shown to shorten labor and reduce the need for oxytocin administration.[3-5]

A checklist-based system was developed for the administration of oxytocin that focused on uterine and fetal response to oxytocin, rather than on any specific dosing regimen.[6] In the absence of uterine tachysystole with fetal heart rate decelerations or signs of fetal intolerance of labor, the authors felt the dose to be virtually irrelevant; thus, the protocol allowed for any of the oxytocin regimens approved by ACOG. The protocol was based on maternal and fetal response to oxytocin rather than infusion rate. Following adoption of this protocol at a tertiary care hospital, the authors found that the maximum oxytocin used to achieve delivery was significantly lower in the checklist managed group. There was no difference in the length of any stage or phase of labor, total time of oxytocin administration, or rate of operative vaginal or abdominal delivery. The cesarean delivery rate declined and newborn outcome was improved.

Therefore, the BCM OB/Gyn Perinatal Guidelines Committee endorses the use of a pre-oxytocin and in-use oxytocin checklist protocol in Labor and Delivery. The Ben Taub and PFW Checklists are listed on the following pages. In addition to this policy, the Harris Health System Perinatal Nursing Policy for Oxytocin Administration for the Induction or Augmentation of Labor states the following:

- A qualified licensed professional shall reevaluate the patient at 20 mU per minute oxytocin rate
- There shall be an attending physician assessment, progress note and order to exceed greater than 40 mU per minute with a maximum dose noted.

Ben Taub Hospital Pre-Oxytocin Checklist

This pre-oxytocin checklist represents a guideline for care, however individual medical care is directed by the physician.

If the following checklist cannot be completed, oxytocin should not be initiated.

- ✓ Physician or midwife order on chart.
- ✓ Current history and physical exam on the chart.
- ✓ Indication for induction/augmentation is documented.
- ✓ Pelvis is documented by physician or midwife to be clinically adequate in women with no prior term vaginal delivery.
- ✓ Estimated fetal weight within past week (clinical or ultrasound) less than 4500-5000 grams in a non-diabetic person or less than 4250-4500 grams in a diabetic person.
- ✓ Gestational age documented.
- ✓ Consent signed (general L&D consent).
- ✓ Physician with cesarean delivery privileges is aware of the induction/augmentation and readily available. (A physician with privileges to perform a cesarean delivery must be on site at all times and available for urgent situations)
- ✓ Status of the cervix is assessed and documented.
- ✓ Presentation is assessed and documented.
- ✓ **Fetal assessment completed and indicates: (ALL criteria should be satisfied)**
  - **A minimum of 30 minutes of fetal monitoring is required prior to starting oxytocin.**
  - **At least 2 accelerations (15 bpm x 15 sec) in 30 minutes are present, OR a biophysical profile of 8/10 is present within the past 4 hours OR moderate variability for at least twenty (20) minutes.**
  - **No late decelerations in the last 30 minutes.**
  - **No more than 2 variable decelerations exceeding 60 seconds and decreasing greater than 60 bpm from baseline within the previous 30 minutes prior to starting oxytocin infusion.**

This document does not apply to a formal Oxytocin challenge test without the intent to induce or augment labor.

Ben Taub Hospital In-Use Oxytocin Checklist

This in-use oxytocin checklist represents a guideline for care, however individual medical care is directed by the physician.

- **Oxytocin should be initiated at no more than 2 mU/min and increased by no more than 2 mU/min every 30 min to avoid uterine tachysystole with FHR abnormalities. Tachysystole is defined as >5 contractions in 10 minutes, averaged over 30 minutes.**
- Checklist will be completed with every oxytocin titration or at a minimum of every 30 minutes, even if there is no change to the oxytocin regimen.
- **Oxytocin should be stopped or decreased if the following checklist criteria are not satisfied:**
    - **If oxytocin is stopped, is not increased, or is decreased, the indication for such action should be documented (for example, sustained Montevideo units >200 mm Hg, fetal heart rate abnormality).**

Fetal Assessment indicates (ALL criteria should be satisfied):

- ✓ At least 1 acceleration of 15 bpm x 15 seconds in 30 minutes or moderate variability for 10 of the previous 30 minutes.
- ✓ No more than 1 late deceleration occurred.
- ✓ No more than 2 variable decelerations exceeding 60 seconds in duration and decreasing greater than 60 bpm from the baseline within the previous 30 minutes.

Uterine Contractions (ALL criteria should be satisfied):

- ✓ No more than 5 uterine contractions in 10 minutes averaged over thirty (30) minutes.
- ✓ No two contractions greater than 120 seconds duration.
- ✓ Uterus palpates soft between contractions.
- ✓ If IUPC is in place, oxytocin should be increased to achieve sustained Montevideo units of at least 200 mm Hg, but must calculate less than 300 mm Hg and the baseline resting tone must be less than 25 mm Hg.
    a. If tachysystole is present but Montevideo units are less than 200 mm Hg, IUPC functionality should be evaluated (i.e., “flush” and “zero” the IUPC, confirm return of amniotic fluid per vagina if amnioinfusion is in process).

If oxytocin is stopped, the pre-oxytocin checklist will be reviewed before oxytocin is reinitiated. An order shall be required to restart the infusion, including the rate at which to restart the infusion.

- If oxytocin has been off for less than 30 minutes, restart at half the rate that was infusing at time of discontinuation If oxytocin has been off for greater than 30 minutes, restart the infusion as per the order.

Oxytocin should be discontinued immediately once a decision is made to proceed with cesarean delivery.

Pavilion for Women Pitocin Checklist

Pitocin Initiation Checklist (ALL criteria must be satisfied to initiate Pitocin)
☐ **1. Minimum of 30 minutes of fetal monitoring prior to start**
~Must include ONE of the following~
☐ **2 or more accelerations (15 bpm x 15 sec) in 30 minutes**
☐ **BPP of 8/10 present within the past 4 hours**
☐ **Moderate variability**
☐ **No late decelerations in the last 30 minutes**
☐ **No more than 2 variable decels > 60 sec in duration & decrease > 60 bpm in past 30 min**
Pitocin In Use Checklist (The "In Use" checklist will be completed every 30 minutes. Pitocin should be decreased or stopped if the following checklist criteria are not satisfied.)
Fetal Assessment indicates ALL of the following:
☐ **At least 1 acceleration of 15 bpmX15 bpm in 30 minutes or adequate variability for 10 of the previous 30 minutes**
☐ **No more than 1 late deceleration in previous 30 minutes**
☐ **No more than 2 variable decels > 60 sec duration & decrease > 60 bpm in past 30 min**
~Must include 1 of the following 2 criteria~
☐ **At least 1 accel of 15 bpm x 15 seconds in 30 minutes**
☐ **Moderate variability for 10 of the previous 30 minutes**
Uterine Contractions
~(must meet ALL criteria)~
☐ **No more than 5 uterine contractions in 10 min, averaged over 30 min**
☐ **No 2 contractions greater than 120 seconds duration**
☐ **Uterus palpates soft between contractions**
☐ **If IUPC, MVU must be NO more than 300 MVUs**
☐ **If IUPC, baseline resting tone must be < 25 mm Hg**
***if oxytocin is stopped the Pitocin Initiation checklist will be reviewed before Pitocin is reinitiated.** Of import ***reduce** Pitocin as first measure. Do not turn Pitocin off completely without notifying provider. Reducing should be the first step, not turning it off **MVU=Montevideo Units**

References

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