INDUCTION OF LABOR

Induction: Process by which uterine contractions are stimulated before the onset of labor with a goal for vaginal delivery. Labor induction is performed when the physician decides that the risks of delivery are less than the risk of continuing the pregnancy.

- Indications:
  - Gestational HTN
  - Premature rupture of membranes (PROM)
  - Chorioamnionitis
  - Postterm pregnancy
  - Fetal demise
  - Preeclampsia/Eclampsia
  - Placenta abruption
  - Intrahepatic cholestasis of pregnancy
  - Fetal compromise (i.e. severe fetal growth restriction, isoimmunization)
  - Maternal medical conditions (renal disease, chronic pulm disease, HTN)
  - Logistical factors (risk of rapid labor, distance from hospital, psychosocial)

- Contraindications: (same as NSVD)
  - Complete placenta previa
  - Transverse fetal lie
  - Vasa previa
  - Active herpes infection
  - Prolapsed cord
  - Prior classical uterine incision (vertical uterine incision)

- Higher Risk Inductions (require OB consult, may need to transfer to OB)
  - 1 previous c-section
  - Polyhydramnios
  - Breech
  - Presenting part above pelvis inlet
  - Maternal heart disease
  - Severe HTN
  - Multiple gestations
  - Nonreassuring fetal tracing not requiring emergent delivery

- Required for induction (use induction scheduling worksheet)
  1. Confirm term gestation-must meet at least one ACOG criteria:
     - Fetal heart tones x 20 wks by fetoscope
     - Fetal heart tones x 30 wks by Doppler
     - 36 weeks since + UPT
     - Ultrasound at 6-12 wks supports 39+weeks EGA
     - Ultrasound at 13-20 weeks confirms EGA 39 weeks consistent with clinical history/physical exam (fundal height)
     - Amniocentesis result which confirms fetal maturity (OBTU)
  2. Cesarean section capability readily available
  3. Ability to schedule patient in Labor & Delivery
  4. Continuous fetal and uterine contraction monitoring -- external or internal

Non-pharmacologic Methods of Induction/Augmentation:

- Stripping of Membranes:
  Relatively common practice--term gestation
  Place finger in cervical os, "sweep" finger 360^0 to separate membranes from os obtain informed consent (verbal ok, document)
  Risks: infection, bleeding from previa or low-lying placenta, accidental ROM
  Studies are small but indicate that stripping membranes decreases post-term delivery incidence and may increase frequency of spontaneous labor (within 72 hours)

- Amniotomy:
  Early amniotomy has been shown to reduce duration of labor
  When induction is essential, should be performed ASAP
  When less urgent, better to wait until cervix is dilated >4 cm and head well applied
  Take care to palpate for umbilical cord and avoid dislodging fetal head; FHR to be
  recorded before and after procedure

Cervial Ripening Agents:

- Cervidil: prostaglandin controlled release vaginal pessary.
  CONTRAINDICATED IN VBACS.
  General information: The Cervidil vaginal pessary causes cervical ripening following insertion. Optimum location for insertion is the inpatient setting. Consider using this for a patient who needs induction but has a Bishop's Score of < 6-8.
  Inserting Cervidil:
  - 18 g IV must be in place before insertion
  - No warming of gel is required--bring from freezer
  - Assess cervical dilation, effacement, station and presenting part
  - Use small amount of lubricant; insert the pessary into the posterior vaginal fornix
  - Patient must lie supine with hip tilt x 2 hours after insertion
  - Continuous electronic fetal monitoring (EFM)

  Other Information:
  - Cervidil must be removed at least 30 minutes before Oxytocin initiated
  - Cervidil should be removed prior to amniotomy
  - Remove insert with any suspicion of hyperstimulation of uterus--may give Tocolytic if hyperstimulation continues

- Remove Cervidil 12 hours after insertion

Side Effects:

- Tachysystole (uterine ctx > 40 seconds or more frequently than every 2 minute in a 10 minute window with no reassuring fetal tracing)
- Maternal nausea/vomiting
- Maternal fever
- Late or repetitive, variable decels
- Fetal bradycardia
- Postpartum hemorrhage

- Misoprostol: (Cytotec) intravaginally 25 micrograms Q 6 hours. **CONTRAINDICATED IN VBACS.** *Much less expensive than Cervidil

Oxytocin (Pitocin) Orders: (Note: EPIC order set)

IV Solutions: Maintenance: LR 1000 ml at 100-125ml/hr
For induction: LR 1000 ml with 10 units Oxytocin
Maintenance IV need not run during induction unless indicated

Infusion with Rate Control Device:

- VBAC's require internal monitors when feasible. OB must be informed.
- Begin infusion at 0.5 - 1 mU/min
- Advance every 15-30 minutes at nurse's discretion until labor is established as follows: 1-2 mU/min until desired contraction pattern and cervix is 5-6 cm
- Apply fetal monitor at beginning of infusion (FHR, resting uterine tone, frequency/duration and intensity of uterine contractions documented q 15-20 min)
- Maternal vital signs documented q 1 hour
- In event of uterine hyperstimulation or fetal distress, Oxytocin to be discontinued (RN will do per nursing protocol)
- Interventions include oxygen, turning to left side, IV fluids, Terbutaline if persistent

OXYTOCIN AUGMENTATION:

- May be required with dysfunctional labor pattern (less than normal amount of uterine activity required to promote cervical effacement and dilatation and descent of presenting part)
- Orders for Augmentation -- see orders for induction.

Trial of Labor After C-section (TOLAC) /Vaginal Birth After C-section (VBAC's)

- **NO Cytotec or Cervidil**.
- Internal monitors placed with Pitocin use. Inform HCMC OB of patient as we do with all VBAC's.

Scheduling Inductions at HCMC:

- Family Medicine faculty physician must agree that patient should be induced.
- An "Induction Worksheet" should be filled out (in team centers)
- Schedule with L & D charge nurse (resident to call 873-4104). Schedule in advance.
- If elective induction (no medical indication), patient may be "bumped" to a different day depending on Labor & Delivery capabilities. No elective inductions on Mondays or Weekends.

Induction Duration:

- If medical reasons, continue until delivered.
- If elective and no progress in 24-36 hours, discharge from hospital. Unsuccessful inductions are costly.

REFERENCES:

FP Obstetrics.
ACOG Practice Bulletin, November 1999