Induction of labor

Sally Ault RN, MN
March 2016

OBJECTIVES
• Describe indications for inducing labor
• Identify various methods for inducing labor
• Discuss appropriate nursing management for the patient undergoing induction of labor

What is Induction of Labor?
Induction of Labor (IOL)
Artificial stimulation of uterine contractions before the spontaneous onset of labor in effort to achieve vaginal delivery

ACOG 2013

Incidence 23.4%
• one in four pregnant women
• doubled since 1990

(ACOG 2009; Bakker 2013; Simpson 2013)

Elective induction
Psychosocial Issues:
Partner leaving town, prolonged military engagement
Family in town
Anxiety/Depression
Adoption
Maternal Discomfort
Maternal Exhaustion

Logistical Reasons:
History of Rapid labor, remote from hospital

(ACOG 2012, 2013; Simpson 2013)
Why is it important to wait for spontaneous labor?
- Final weeks of gestation are important
- Risks are associated with induction

Indications for induction
- Abruptio placentae
- Chorioamnionitis
- Fetal Demise
- Gestational/Chronic Hypertension
- Preeclampsia, eclampsia
- PROM
- Post-term pregnancy
- Maternal Medical Condition (Diabetes, renal disease)
- Fetal Compromise (IUGR, Oligohydramnios)

Recommendations for Timing of Delivery (ACOG 2013)
- Condition
- General Timing
- Suggested Specific Timing

Contraindications
- Vasa Previa or complete Placenta Previa
- Transverse fetal lie
- Umbilical Cord Prolapse
- Previous classical cesarean birth
- Active genital herpes infection
- Previous myomectomy entering the endometrial cavity

Prior to starting the Induction
- Gestational Age Assessment
- Patient Counseled
- Availability of appropriate nursing staff
- Assessment of cervix, pelvic adequacy, fetal size, presentation
- Ability to monitor FHR/Contractions
- Physician capable of performing a cesarean delivery readily available

Confirmation of Term
- Ultrasound measurement at less than 20 weeks of gestation supports gestational age of 39 weeks or greater
- Fetal heart tones have been documented as present for 30 weeks by Doppler ultrasonography
- It has been 36 weeks since a positive serum or urine HcG pregnancy test result
Assessment of the Cervix

Favorable or Unfavorable?

IOL is more successful if the cervix is Favorable

Favorable Cervix = Bishop Score of 7 or Greater

Induction with favorable cervix is same risk for cesarean as spontaneous, if unfavorable cervix, risk for cesarean is 45% higher

[ACOG 2013]

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dilation</td>
<td>Closed</td>
<td>1-2</td>
<td>3-4</td>
<td>5 or greater</td>
</tr>
<tr>
<td>Effacement</td>
<td>0-30%</td>
<td>40-50%</td>
<td>60-70%</td>
<td>80-100%</td>
</tr>
<tr>
<td>Position</td>
<td>Posterior</td>
<td>Mid</td>
<td>Anterior</td>
<td>---</td>
</tr>
<tr>
<td>Consistency</td>
<td>Firm</td>
<td>Medium</td>
<td>Soft</td>
<td>---</td>
</tr>
<tr>
<td>Station</td>
<td>-3</td>
<td>-2</td>
<td>-1,0</td>
<td>+1,+2</td>
</tr>
<tr>
<td>Total</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Methods for Cervical Ripening

**Pharmacological**
- Prostaglandins
  - Dinaprostone PgE2 (Gel, cervidil)
  - Misoprostol PgE1

**Mechanical**
- Hygroscopic Dilators (laminaria)
- Balloon Catheters
- Membrane Sweeping/Striping
- Amniotomy

Cervical Exam:
Posterior, medium, -3, 60%, 2cm's
Prostaglandins

• effective cervical ripeners
• increase myometrial contractility
• not recommended for previous cesarean delivery or uterine scar

Management of Tachysystole During Cervical Ripening

Tachysystole with or without change in FHR
• Maternal repositioning
• IV Fluid bolus (500ml)
• Supplemental Oxygen
• Communication with provider/Charge Nurse
• Removal of cervidil insert (reversal in 15 mins)
• Consider 0.25 mg Terbutaline Subcutaneously
Induction Algorithm Washington State

Induction of Labor with Oxytocin

Oxytocin

*Most commonly used induction agent*

- Half life of 10 – 15 minutes
- Steady state in (40 minutes)

*When rate of administration is equal to rate of elimination*

Exogenous Oxytocin

- Artifically manufactured
- Works same in the body
- Increases strength/ frequency contractions
- Higher doses once stable phase has been reached result in low-intensity, coupling, tripling or tachysystole
- “Pit through” is a myth
- Treat desensitization with decrease or 30- 60 minutes off and 500 ml bolus of Lactated Ringer

Hypothalamus ➔ Pituitary ➔ Circulation

- Breast Stimulation
- Sensory stimulation of lower genital tract
- Cervical stretching and pressure
- Surge during second stage of labor with stretching of pelvic floor receptors the Ferguson reflex (+1 station)

Goal

Give the minimal amount of Oxytocin required to achieve effective contraction pattern with labor progress
Nursing Role

- Monitor FHR and Uterine Contractions
- Vital Signs
- Communication with Charge RN and Provider
- Follow Hospital Protocol

Tachysystole

- Tachysystole is most concerning side effect of oxytocin
- Decreases perfusion/fetal oxygenation
- Fetal Injury from Tachysystole is completely preventable

(Simpson, 2013; Helwick/Mahony 2012)

Oxytocin-Induced Tachysystole (Normal FHR)

- Maternal reposition
- IV fluid bolus 500 ml LR
- If not resolved in 10 – 15 mins, decrease by ½
- If not resolved after decrease in 10-15 mins discontinue
- If discontinued for 30 mins or more, re-start at initial dose ordered

(Simpson, 2013)

Oxytocin-Induced Tachysystole (Category II / III FHR)

- Discontinue oxytocin
- Maternal reposition (left/right lateral)
- IV fluid bolus 500 ml LR
- Consider oxygen at 10 L via non-rebreather
- Consider Terbutaline 0.25 mg SQ
- Resume oxytocin after resolution at ½ previous rate if less than 20-30 mins
- If oxytocin off longer than 30 mins, resume at initial dose ordered

(Simpson, 2013)
References

- Andrew J Satin, MD, FACOG, Division of Standards and Practice: Clinical Standards and Documents Section Approved by the ACNM Board of Directors: June 2012. Elective IOL Guideline: www.acog.org/About...I/~/.../20120120_ElectiveIOLGuideline.ashx
Thank you!