Outpatient Induction of Labour: Cervical Ripening

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GOALS/OBJECTIVES

Induction of labour (IOL) is indicated when the risk of continuing the pregnancy exceed the risks associated with induction of labour. The indication must be convincing, compelling, consented to, and documented. The most common indication is post-dates (ALARM, 2019).

Induction of labour in an outpatient setting is restricted to low-risk circumstances when cervical ripening and labour induction is carried out without an ongoing requirement for continuous or frequent maternal or fetal monitoring.

The use of outpatient induction of labour attempts to balance potential improvements in maternal satisfaction, convenience, reduced length of hospitalization and lower cost, against those of safety (both maternal and fetal) (Kelly, Alfirevic & Ghosh, 2013).

Outpatient ripening is defined as any cervical ripening or induction of labour intervention (with the exception of membrane sweeping) that can be continued at home or within community healthcare settings. It also includes a package of care initially provided in hospital (fetal monitoring, drug administration) after which the patient is allowed home until a later review or until admission in labour (Kelly, Alfirevic & Ghosh, 2013).

The efficacy and safety of controlled-release dinoprostone (Cervidil) are comparable whether it is used in the outpatient or the inpatient setting. For low-risk women, outpatient use may be a highly attractive option, potentially reducing hospital costs, and improving patient convenience.

Induction of labor in the outpatient setting should only be carried out if safety and support procedures are in place. The practice of outpatient induction should be audited continuously (Royal College of Obstetricians and Gynecologists [RCOG], 2008).

PREREQUISITES FOR OUTPATIENT INDUCTION

- Careful assessment of the patient's medical and obstetrical history. Appropriate patients must be selected excluding high-risk pregnancies and/or patient with contraindications for induction.
- Normal Biophysical Profile (BPP) within 7 days **OR** Normal Non-Stress Test (NST) + Amniotic Fluid Assessment within 48hrs.
- Assessment of cervical status (Bishop's score) (**See Appendix A**).
- Detailed verbal and/or written instructions about the induction process must be provided to the patient (**See Appendix B**).
- The patient must reside less than 1 hour away from the hospital.

At the time of discharge, the patient and support person should be provided with the telephone number of the obstetrical triage nurse or the Birthing Unit and instructed to call if they have any questions or concerns **(See Appendix B)**.

OPTIONS FOR CERVICAL RIPENING

Various methods can be used for cervical ripening. These methods can be divided in two groups:

1. Mechanical options: Foley - Balloon catheters
2. Pharmacologic options: Prostaglandins a) posterior fornix slow release PGE_2 (Cervidil®)
   b) vaginal PGE_2 gel (Prostin)
   c) intracervical PGE_2 gel (Prepidil)

NOTE: PGE_2 is available in different doses. Check the box carefully for type of gel and dosage before administering **(See Appendix C).**

Cervidil:	10 mg (controlled release)
Prostin:	1 and 2mg
Prepidil:	0.5 mg

CONSIDERATIONS

Mechanical options: Foley catheters or specifically designed obstetrical balloons. Balloon type catheters work via endogenous prostaglandin release; traction applied to the catheter wherein the balloon exerts pressure on the cervix is not necessary. Balloons are cost effective and carry a lower risk of uterine tachysystole (ALARM, 2019).

Prostaglandins: Cause relaxation of cervical smooth muscle and increase intracellular calcium levels, causing contraction of myometrial muscle.

Also known as dinoprostone, PGE2 is available as an intravaginal or an intracervical gel. Intravaginal gels or preparations are easier to employ, cause less patient discomfort, and are preferred because they result in more timely vaginal delivery than mechanical methods (ALARM, 2019).

PGE_2 is a bronchodilator and is not contraindicated in women who have asthma. Adverse cardiovascular events are rare, idiopathic, and usually occur almost immediately after the gel or preparation has been inserted (ALARM, 2019).

ALERT

It is important to ensure that vaginal agents (Prostin, Cervidil) are not inserted into the cervical canal because they have a much higher dosage than intracervical preparations (Prepidil).

EQUIPMENT

- Sterile gloves and procedure gloves
- Foley/balloon catheter or prostaglandin (PGE_2) preparation
- Foley Catheter kit (additional items to include):
  - No. 14 to 18 foley with a 30 ml balloon (if patient allergic to latex, catheter must be latex free)
  - 30 to 60 ml of water for inflation
  - Sterile bowl
  - Sponge forceps
  - Cord clamp or catheter plug to block drainage port
- Sterile speculum
- Soluble lubricant
- Adequate light source

PRE-ADMINISTRATION PROCEDURE

1. Review/explain procedure to the patient and support person and inform them that each visit to the hospital for cervical ripening can take up 2-3 hours depending on the method used.

2. Have the patient empty their bladder (if needed).

3. Assess and document baseline maternal vital signs.

4. Perform NST/ Electronic Fetal Monitoring (EFM) 30 minute window as appropriate.

5. Assessment of Bishop's Score by most responsible provider (MRP) as needed.

6. Pre-test the Foley/balloon catheter balloon before insertion.

ADMINISTRATION PROCEDURE

1. Insert/administer the Foley/prostaglandin of choice.

2. Provide pericare at completion of procedure (if needed).

POST-ADMINISTRATION PROCEDURE

1. Position patient in semi-Fowler or side-lying position and apply EFM according to Table 1:

TABLE 1 : Recommended FHS requirement associated with methods of cervical ripening and induction of labour **(obstetrical indications for EFM would take precedence)**		
Method	**EFM requirement PRIOR ripening**	**EFM requirement POST ripening**
Balloon devices including Foley	30 minutes	30 minutes
Prostaglandin E2 intravaginal gel 1-2 mg	30 minutes	60-120 minutes
Prostaglandins E2 controlled released vaginal gel 10 mg (Cervidil)	30 minutes	60-120 minutes
Intracervical gel	30 minutes	60-120 minutes
EFM: electronic fetal monitoring; FHR: fetal heart rate; FHS: fetal health surveillance; IA: intermittent auscultation. Adapted from Dore, Ehman et al. 2020.		

2. Discharge the patient home after insertion/administration if:
    - EFM is classified normal after 30-120 minutes of monitoring depending on the method of cervical ripening used. **Refer to TABLE 1**
    - Not in active labour
    - Membranes are intact
    - Maternal vital signs are within normal limits

3. Give the patient an appointment to return to hospital (usually no more than 6-12 hours, depending on the agent used). Advise the patient of reasons to return to the hospital prior to their appointment as per **Appendix B**.

4. A second dose of PGE_2 may be required.

ALERT

Uterine tachysystole**:** Management of tachysytole depends on whether FHR changes are present. A treatment protocol for tachysystole is recommended for every labour unit **(See Appendix D).**

DOCUMENTATION

Document according to your institutional policies and procedures.

REFERENCES AND FURTHER READING

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APPENDIX A: Bishop Score

BISHOP SCORE						
SCORE	**DILATATION (cm)**	**EFFACEMENT (cm)**	**STATION**	**POSITION**	**CONSISTENCY**	**FAVORABLE CERVIX Greater than or equal to 6** **A Bishop score greater than 8 increases the likelihood of vaginal birth similar to that of spontaneous labour.** Consider additional cervical ripening to improve Bishop's score prior to additional intervention.
0	Closed	Greater than 3cm	-3	Posterior	Firm	
1	1-2	2-3cm	-2	Mild	Medium	
2	3-4	1-2cm	-1, 0	Anterior	Soft	
3	Greater than 5	0 cm	+1, +2	----	----	**TOTAL SCORE**
SCORE						

APPENDIX B Outpatient Cervical Ripening Information Sheet

INSERT UNIT NAME AND TELEPHONE NUMBER HERE

Your health care provider has booked you for an outpatient cervical ripening before your induction. They will have talked with you about the risks and benefits for you and your baby.

DATE/TIME to expect call: _____ at _____
(YYYY/MM/DD) (HHMM)

If you have not received a call 4-6 hours from the expected time, you need to call the hospital.

You will get a phone call from the hospital telling you when to come in for your cervical ripening.

When you get to the hospital go straight to the nursing station [INSERT UNIT NAME]. There is a chance that when you arrive you will be asked to wait. If this happens, it is because the unit is very busy. In rare cases, you may be asked to return later in the day, evening or possibly the next day. Upon your arrival, a nurse will greet you and bring you to a room where the first assessment of you and your baby will begin.

The nurse will ask you questions while checking your vital signs. They will apply the fetal monitor to your belly to make sure that your baby is doing well before they start the cervical ripening process.

What to Expect:
If you are receiving a **Foley/balloon catheter** for mechanical cervical ripening, it is normal to have some discomfort throughout the procedure followed by menstrual-like cramps.

If you are receiving medication **vaginally**, it is normal to have some back pain and menstrual like cramping. In rare cases, contractions may start quickly and may happen too often. If this happens, some types of medications can be taken out. If the medication cannot be taken out, other medications may be given to help slow or stop the contractions you are having.

Whether you have a Foley or medications, you may have some spotting or pink discharge. If you and baby are coping well, you may be able to go home with a plan to return later.

After 12-24 hours, your health care provider will recheck your cervix to decide whether it is ready for labour.

If your cervix is ready for labour, a plan for induction will be made with you. This may include immediate admission or you may be asked to return home for a short period depending on the situation.
If your cervix is not ready for labour, your health care provider may insert a Foley/balloon or give you extra medications. This may be frustrating at the time, but is completely normal. Additional ripening of your cervix will increase your chance of having a successful vaginal birth. In some cases, cervical ripening can take 3-4 days.
During this time, you may have a shower or bath, eat normally, sleep and resume your usual activities.

You will need to call the triage nurse (PHONE NUMBER) 6 hours ( ) and 12 hours ( ) after you have gone home. This telephone call is very important. The nursing staff will ask you questions and answer any questions you may have. If you are tired and want to go to sleep before the time you are supposed to call for assessment, please call the triage nurse to let them know.

If your Foley/balloon falls out:
Throw it in the garbage and call the hospital to let them know. If it does not fall out, return to the hospital at the planned time for reassessment.

Call the nurse if:

- Your contractions are every 5 minutes or closer
- You have severe abdominal pain
- Your water breaks
- You are having bright red bleeding that is more than "pink mucousy discharge"
- You think your Cervidil or Foley/balloon has fallen out
- You have any concerns or are unsure of what to do
- You are planning to sleep or will be out of the house when the follow-up phone calls are due.

If you have a Cervidil for cervical ripening and you have contractions that are too close together, the triage nurse may ask you to pull it out. It has a string like a tampon and can easily be pulled out by putting your fingers into your vagina to grab the string and then pulling it out like a tampon.

Cautions:

- **Do not use any form of aspirin, ibuprofen or pain relief cream.**
- **When toweling off or after going to the bathroom, carefully pat (not wipe) your vagina so you don't accidentally remove the Cervidil or Foley/balloon. Make sure you do not tug on the Foley/balloon; tugging may cause additional cramping. If it falls out, DO NOT attempt to put it back in, call the hospital. You may be asked to return to the hospital.**

My questions for the labour and birth staff:

Your cervical ripening has been booked for _____ (date). If you have not heard from the hospital when expected, please call [INSERT NUMBER] to determine when would be the best time for you to arrive to the unit.

APPENDIX C: Cervical Ripening Options for Outpatient IOL

Cervical Ripening		Route	Dose	Number of doses	Contra-indications	Removal	Time until oxytocin	Management
Mechanical	**Foley Catheter**	Insert past internal os	No. 14 to 18 Foley with 30ml balloon Inflate 30-60ml of water	1	**RELATIVE:** ROM Genital tract infection _____ **ABSOLUTE:** Low-Lying Placenta	Remove within 24hrs if it has not fallen out	Immediately following removal or may use concurrently	Safe use with TOLAC Traction is not necessary Can be done as outpatient
Pharmacological	**PGE 2 Dinoprostone vaginal insert (Cervidil)**	Posterior fornix	10mg (release of 0.3mg/h) over 12hrs	2 (may be repeated once 12-24hrs later)	TOLAC	When in active labour or 12-24hrs post-insertion Easy removal by pulling on the string	30 minutes	Remain in supine position 1h after insertion Can be done as outpatient
	PGE 2 Dinoprostone vaginal gel (Prostin)	Posterior fornix ***(Not to be placed in the cervical canal)***	Initial dose: 1mg Repeat dose: 1 -2mg	2 (may be repeated once 6 hours later)	TOLAC	Not removable	6 hours	Remain in supine position 30min after insertion to prevent leakage May be considered with ROM at term Can be done as outpatient
	PGE 2 Dinoprostone intracervical gel (Prepidil)	Intracervical	0.5mg	1	TOLAC and PROM	Not removable	6 hours	Remain in supine position 10-15min after insertion to prevent leakage Can be done as outpatient

ROM= Rupture of membranes
TOLAC= Trial of labour after cesarean section
PROM= Prelabour rupture of membranes

APPENDIX D: Treatment of Tachysystole

DEFINTION: Tachysystole

- Greater than 5 contractions in 10 minutes, averaged over 30 minutes, and/or
- Inadequate resting tone (less than 30 seconds) **OR** the uterus does not return to resting tone between contractions, and/or
- Prolonged contraction: lasting greater than 90 seconds.

PROTOCOL FOR UTERINE TACHYSYSTOLE: INITIATE OR CONTINUE EFM

Tachysytole with Normal FHR:

- Maintain close continuous EFM
- Inform MRP to assess

Tachysytole with Atypical/Abnormal FHR:

- Assessment by MRP as soon as possible
- Initiate intrauterine resuscitation (see below)
- Consider acute tocolysis (see below)
- Consider scalp electrode/bedside ultrasound if any question about external FHR pick-up or uninterpretable tracing
- Expedite delivery if FHR remains abnormal despite intrauterine resuscitation interventions

INTRAUTERINE RESUSCITATION

- Change maternal position (left or right lateral)
- Assess maternal vital signs
- Consider IV bolus (if patient is hypotensive)
- Consider oxygen (if patient is hypoxic)
- Consider tocolysis
- Consider vaginal exam to rule out prolapsed umbilical cord

NITROGLYCERIN (NTG) ADMINISTRATION

- Monitor maternal BP prior to and following administration of each dose and **HOLD** dose if hypotensive.
- Dose: 50 mcg IV q 90 seconds to 3 min, maximum of 200 mcg over 15 minutes.
    - *Sublingual nitro does not work and will give the patient headache*
- Example of IV NTG mixing directions (ALARM 26th ed.) - Refer to individual hospital policy:
    - *Dilute: 1ml NTG (200mcg/mL) in 9 ml NS*
    - *Concentration : 20 mcg/mL*
    - *Dosage : 50 mcg = 2.5 ml*
- Nursing assessment
    - Maternal SaO_2 and vital signs
    - Continuous EFM
    - Reassess uterine activity following NTG administration and document evaluation
    - If unresolved and FHR remains abnormal, prepare for emergency cesarean section (C/S)