Inpatient Cervical Ripening and Induction of Labour with Misoprostol

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Inpatient Cervical Ripening and Induction of Labour (IOL) with Misoprostol

GOALS/OBJECTIVES

The goal of cervical ripening is to soften and dilate the cervix to increase the chances of successful labour and vaginal birth. Cervical ripening is often needed prior to commencing induction of labour with Oxytocin.

The goal of induction of labour (IOL) is to stimulate the uterine muscles to contract in order to effect labour and achieve a successful vaginal birth.

This policy refers to the use of Misoprostol for live gestation greater than or equal to 35 weeks only.

CONSIDERATIONS

IOL should be undertaken when continuing the pregnancy is believed to be associated with greater maternal or fetal risk than IOL.

IOL should only be conducted when there are no contraindications to vaginal birth.

Misoprostol (a synthetic prostaglandin E_1 analogue) is a pharmacologic option for **inpatient** cervical ripening with intact **AND** ruptured amniotic membranes.

DEFINITIONS

Cervical ripening: The use of pharmacologic or mechanical means to soften, efface, or dilate the cervix prior to IOL to increase the likelihood of a vaginal birth (ALARM, 2019).

Induction of labour (IOL): The initiation of contractions in a pregnant person who is not in labour to help achieve a vaginal birth within 24 to 48 hours (ALARM, 2019).

Augmentation of labour: The stimulation of ineffective uterine contractions in the active phase of labour to enhance uterine activity in an effort to effect vaginal birth.

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

Misoprostol: a synthetic prostaglandin E1 analogue (PGE_1) that is supplied in 100 or 200 mcg oral tablets which are then prepared by pharmacy to be delivered as 50 mcg doses **for the purpose of IOL for near-term (greater than or equal to 35 weeks) and term gestations**. Misoprostol causes both cervical ripening and uterine contractions in a dose-dependent fashion (ALARM, 2019).

POPULATION / INDICATIONS

Misoprostol should only be used in an **INPATIENT** setting. The indication for IOL must be convincing, compelling, consented to and documented. The reason for and method of induction should be discussed between the health care provider (HCP) and the patient in order to ensure an informed decision has been made (ALARM, 2019).

INDICATIONS TO USE MISOPROSTOL FOR IOL OF LIVE GESTATION GREATER THAN OR EQUAL TO 35 WEEKS

- Unfavourable cervix with indications for IOL
- Term Prelabour Rupture of Membranes (PROM)
- Preterm Prelabour Rupture of Membranes (PPROM) greater than or equal to 35 weeks
- Consider as first-line method for cervical ripening and induction for pre-pregnancy BMI greater than 40kg/m^2
- Following unsuccessful cervical ripening with the use of other mechanical or pharmacological cervical ripening methods

EXCLUSION CRITERIA

- Any contraindications to labour or vaginal birth, including but not limited to:
    - Placenta previa, vasa previa or cord presentation
    - Abnormal fetal lie or presentation (e.g. transverse lie or footling breech)
    - Prior classical or inverted T uterine incision
    - Significant prior uterine surgery (e.g. full thickness myomectomy)
    - Active genital herpes
    - Pelvic structural deformities
    - Invasive cervical carcinoma
    - Previous uterine rupture
- Less than 35 weeks gestation
- Previous Cesarean section (C/S)
- Abnormal Fetal Health Surveillance (FHS)
- Twins
- Fever
- Chorioamnionitis
- Known hypersensitivity to any prostaglandin
- Grand multiparity (greater than or equal to 5 prior vaginal births)
- Signs of placental insufficiency (e.g. fetal growth restriction or oligohydramnios)
- Active labour/regular or painful uterine contractions

SIDE EFFECTS

- Abnormal FHS (including tachysystole with and without associated Fetal Heart Rate (FHR) changes)
- Nausea
- Vomiting
- Diarrhea
- Abdominal pain
- Shivering
- Chills
- Fever

ALERT

- HCP must wear nitrile gloves while handling Misoprostol
- IV access should be established prior to administration of medication
- Prior to administering Misoprostol, wait:
    - 6 hours after administering Prostin gel
    - 30 minutes after removal of Cervidil
    - 4 hours after discontinuing an Oxytocin infusion

EQUIPMENT

- Misoprostol medication 50 mcg – PRE PACKAGED to be administered PO
- Nitrile gloves
- Cup of water

PRE-ADMINISTRATION PROCEDURE

1) Perform positive patient identification and confirm candidacy for procedure.

2) Discuss use of Misoprostol for induction or augmentation with the patient. Answer questions as applicable.

3) Ensure informed consent was obtained and Bishops score is documented.

4) Ensure patient has voided prior to medication administration (if needed).

5) Assist patient to a comfortable position. Position the patient with a wedge if supine.

6) Assess and document baseline maternal vital signs.

7) Perform a Non-Stress Test (NST)/Electronic Fetal Monitoring (EFM) as per institutional policy.

   a) **If FHS findings are atypical or abnormal**, defer to intuitional policy on FHS and manage accordingly. **Do not proceed with administration of Misoprostol** without notifying the most responsible provider (MRP) to assess the patient.

ADMINISTRATION PROCEDURE

1) Perform independent double verification of medication.

2) Administer Misoprostol 50 mcg PO.

   a) Instruct to swallow quickly to avoid sublingual absorption which may increase the risk of tachysytole.

POST-ADMINISTRATION PROCEDURE

1) Monitor FHR and uterine activity for a minimum of 60 minutes.

   a) If the FHS is normal and there is no uterine activity:

      i) Conduct FHS via auscultation q1h while not in labour.

      ii) Instruct patient to return for assessment if there is a change in uterine activity, vaginal bleeding, rupture of membranes or meconium staining.

   b) If the FHS is atypical or abnormal continue to monitor via EFM, notify MRP and start intrauterine resuscitation as appropriate.

   c) If the FHS is normal and uterine activity is present:

      i) Determine the frequency, duration and strength of contractions via palpation.

      - If the patient is not in active labour, the patient may ambulate prior to next dose. Instruct patient to return for assessment if there is a change in uterine activity, vaginal bleeding, rupture of membranes or meconium staining.

      - If the patient is in active labour, transfer to labour and birth unit.

      - If **tachysystole** present, initiate or continue EFM (for a minimum of 60 minutes), notify MRP and initiate treatment protocol as per institutional policy **(see Appendix A)**.

NOTE: If a break in the induction process is warranted and contractions are absent or mild 4 hours after the preceding dose and the FHR is normal, the patient may return home to rest as needed and continue induction at a later time.

ONGOING MANAGEMENT:

1) Assess maternal vital signs at least q4h (or as per institutional policy) and prior to each administration of Misoprostol.

2) Monitor for side effects.

3) Assess the level of maternal comfort frequently throughout the induction process. Provide relaxation techniques, emotional support, comfort measures, teaching and pharmacologic pain relief as requested and ordered/indicated.

4) Consider vaginal exam:

   a) after 2 hours of regular, painful uterine contractions;

   b) when patient requesting analgesia or pain relief measures;

   c) with rupture of membranes.

5) If contractions are occurring regularly or palpate as moderate to strong at the time of next dose, inform MRP and consider holding or discontinuing dose.

6) Notify MRP to reassess patient if labour has not begun after 4 doses of Misoprostol. MRP may consider alternative induction agents as indicated.

ADDITIONAL DRUG INFORMATION

Additional drug information: Misoprostol 50 mcg PO for IOL
Onset of action: 8 minutes
Peak: 30 minutes
Duration: 4 hours
Maximum doses: 4

DOCUMENTATION

Document according to your institutional policies and procedures.

REFERENCES AND FURTHER READING

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Queensway Carleton Hospital, (2018). Misoprostol (Cytotec) use for induction of labour (BU Policy 10-122).

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APPENDIX A: 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 a 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 C/S