Induction of Labour: Management of Term Rupture of Membranes with Misoprostol

Site Applicability

SPH – Pregnancy, Birthing, and Newborn Centre

Practice Level

- Basic: Physicians with obstetric privileges,
- Specialized: Registered Midwives with certification in specialized practice
- Basic: Registered Nurses with perinatal education

Requirements

Induction of labour (IOL) with misoprostol requires an order by the most responsible practitioner (MRP) and/or designate.

Verbal consent for misoprostol IOL is obtained and documented by the MRP/designate prior to the administration of misoprostol.

Misoprostol is used for in-patient IOL only.

Completion of the Misoprostol Safety Checklist is required prior to administration of misoprostol.

Misoprostol is considered a Hazardous Drug Group 2 and all providers must follow the Hazardous Drugs Handling Precautions Protocol.

Need to Know

IOL should be offered to all patients with confirmed rupture of membranes. In the absence of group B Streptococcus (GBS), active management can be deferred for up to 24 hours; in the presence of GBS, IOL should be offered as soon as resources allow and antibiotic prophylaxis should be initiated while waiting.

A vaginal exam is not required prior to the initiation of misoprostol or oxytocin in the context of confirmed pre-labour rupture of membranes and in the absence of risk factors and/or indications for further assessment.

Fetal presentation should be confirmed (by either abdominal palpation or ultrasound) prior to the initiation of IOL.

Misoprostol is used for:

- IOL only, not for augmentation of labour (i.e. in absence of a regular contraction pattern, painful contractions, or tachysystole)
- For patients with confirmed rupture of membranes

- At term – greater than or equal to 37 weeks and 0 Days gestation.

Misoprostol is administered orally, and may be repeated every 4 hours to a maximum of 4 doses, provided that fetal health surveillance (FHS) is normal, contractions are irregular and non-painful, and there is no tachysystole present.

Oxytocin may be started four hours after the last dose of misoprostol. (This includes oxytocin for induction or augmentation.)

A diet as tolerated is permitted until active labour starts, unless ordered otherwise.

Equipment and Supplies

- Electronic fetal monitor (EFM) and attachments
- Doptone
- Appropriate PPE for handling medication with Hazardous Drugs classification

Protocol

Assessment

Contraindications for the use of misoprostol for induction of labour for Term PROM:

- Previous Caesarean section or other uterine scar
- Less than 37 weeks gestation
- Parity greater than or equal to 4
- Abnormal or atypical fetal heart rate (FHR) tracing
- Oligohydramnios
- Fetal Growth Restriction (FGR)
- Regular uterine activity (UA) or contraction pattern – misoprostol is not an augmentation agent
- Outpatient induction planned
- Vaginal bleeding
- Placenta previa or vasa previa
- Abnormal fetal lie (i.e. footling breech, transverse lie)
- Any contraindication to vaginal delivery
- Previous uterine rupture
- Multifetal pregnancy
- Known allergy to misoprostol

Relative contraindications to the use of misoprostol for the induction of labour for Term PROM may include:

- Fetal malpresentation

Pre-Procedure

Provider

- Obtain maternal history and complete a physical examination including confirmation of ruptured membranes and fetal presentation prior to initiation of misoprostol IOL.
- Obtain the patient's verbal consent for Misoprostol IOL and document.
- Initiate PowerPlan in CST Cerner for misoprostol IOL: Misoprostol

Nursing

1. Complete the 'Misoprostol Safety Checklist' prior to administration of the first dose
2. Obtain baseline patient vital signs (VS) prior to EACH dose of misoprostol (blood pressure [BP], pulse [P], respiratory rate [RR], oxygen saturation [O_2Sat] and temperature [T])
3. Complete FHS prior to each dose of misoprostol:
    a. Prior to administration of **EACH** dose, do a Non-Stress Test (NST) for 30 minutes (see guidelines Antepartum Non-Stress Test (NST) and Fetal Health Surveillance (FHS): Intrapartum)
        i. NST must be classified as NORMAL in order to proceed
        ii. If NST is ATYPICAL or ABNORMAL:
            - Do NOT administer misoprostol,
            - Initiate intrauterine resuscitation
            - Notify Most Responsible Provider (MRP)/Designate
            - Obtain further orders
    b. Assess uterine activity and tone prior to administration of EACH dose of misoprostol (i.e. frequency, duration, strength, pattern and resting tone):
        i. Confirm the absence of regular, painful contractions or tachysystole
            - UA is equal or less than 2 contractions in 10 minutes and non-painful, administer next dose
        ii. Irregular or non-painful contractions are not a contraindication to subsequent doses
            - UA is equal to 3 or more and/or becoming painful, discuss with care provider whether it is appropriate to administer next dose
        iii. If TACHYSYSTOLE is present:
            - Do NOT administer misoprostol
            - Perform intrauterine resuscitation

- Apply EFM
- Notify MRP/designate
- Obtain further orders

4. Administer misoprostol following Hazardous Drug Handling Protocols
    a. Use a single-use, disposable medication cup and touchless technique
        i. Confirm dose with provider order and MAR
    b. Misoprostol is administered orally
        i. Patient is to swallow the medication quickly, with water, not allowing the medication to settle in the cheek or on the tongue, to prevent buccal or sublingual absorption

Post-Procedure

- After administration of EACH dose of misoprostol, perform EFM for a minimum 60 minutes and assess uterine activity
    - EFM may be discontinued after 60 minutes if:
        - FHS is NORMAL, and
        - TACHYSYSTOLE is absent
- Patient VS (BP, P, RR, O_2Sat, T) 60 minutes post-administration
- Patient is NPO for one hour after EACH dose of misoprostol

On-Going Assessments (between doses)

- In the absence of regular, painful contractions with risk factors or changes to patient/fetal status, IA is the preferred method of FHS:
    - Every 60 minutes
    - If IA is ABNORMAL:
        - Perform intrauterine resuscitation
        - Apply EFM
        - Notify MRP/delegate and charge nurse
        - Obtain further orders
- Assess the contraction pattern every 60 minutes:
    - Ask the patient to inform the RN when contractions begin
    - Assess and document contraction frequency, duration, strength and uterine resting tone
    - If patient is experiencing regular and/or painful contractions, notify the MRP/designate for further management
- Assess labour progress and vaginal examination:
    - When patient is requesting analgesia
    - Minimize the number of vaginal exams

- Report to MRP/delegate and charge nurse:
  - Patient not in active labour after administration of 4 doses of misoprostol
  - When labour is established
  - In the presence of atypical or abnormal FHS
  - In the presence of uterine tachysystole, and if unresponsive to uterine resuscitation measures
  - When patient experiences adverse effects that require intervention (see adverse effects below)

Interventions

Assess and document FHS as per guidelines Antepartum Non-Stress Test (NST) and Fetal Health Surveillance (FHS) - Intrapartum

- Once patient is in active labour, frequency of assessments is as per intrapartum requirements (i.e. every 15 to 30 minutes as indicated by method of FHS)
- Use method of FHS that is appropriate to the patient and situation (i.e. consider IA vs EFM in context of risk for adverse perinatal outcomes)
- FHR assessment and documentation includes assessment of uterine activity

When FHS is NORMAL:

- Encourage diet as tolerated until active labour is established (see guideline B-00-07-10021 – Nourishment and Hydration of Persons in Labour and Postpartum)
- Encourage ambulation on the unit

If FHS is ATYPICAL or ABNORMAL:

- Initiate/continue EFM
- Perform intrauterine resuscitation
- Notify MRP/designate and charge nurse
- Obtain further orders

If tachysystole occurs:

- Without fetal heart rate changes (i.e. NORMAL FHS):
  - Continuous EFM during tachysystole and for 60 minutes after tachysystole resolves
  - Notify MRP/designate and charge nurse
  - Obtain further orders
- With fetal heart rate changes (i.e. ATYPICAL or ABNORMAL FHS):
  - Perform intrauterine resuscitation
  - Continuous EFM during tachysystole, continue for 60 minutes after tachysystole resolves
  - Notify MRP/designate and charge nurse
  - Obtain further orders
  - Consider tocolysis or an urgent/emergency Caesarean section birth if abnormal fetal heart rate does not resolve

Observe for and document any adverse effects such as:

- Severe nausea and vomiting
- Diarrhea
- Headache
- Fever
- Abdominal pain
- Uterine tachysystole
- Atypical or abnormal FHS

Documentation

- Documentation will follow PHC and Cerner guidelines
- All assessments and interventions should be documented in real time
- FetaLink
    - Documentation of FHS can be electronic when using FetaLink or on paper when performing FHS during Downtimes
    - It is acceptable to document on the EFM tracing provided the features of the FHR are not obscured by the documentation
- Cerner PowerChart
    - Interactive View and I&O – all relevant bands and sections, including but not limited to:
        - Antepartum Band
        - Labour and Delivery Band
    - MAR
- Ad Hoc – Misoprostol Safety Checklist

Patient and Family Education

- Patients are fully informed about the induction process
    - Reason for and method of induction, including risks and benefits and alternate options
    - That the patient will need to stay in hospital so that we can monitor the patient and the baby to ensure they are safe
    - That if the misoprostol does not help get labour started within 24 hours, another method of induction may be needed
- Informed verbal consent is obtained from the patient by the provider
- Instructions on how to take the medication are explained
    - The pill is swallowed quickly so that it does not stick to the tongue or in the cheek, so the body absorbs the medication in the stomach not the mouth
- Patients are informed of their options for pain management

Evaluation

- Number of spontaneous vaginal or assisted vaginal births compared to Caesarean birth
- Number of spontaneous vaginal or assisted vaginal births within 24 hours of induction of labour
- Number of cases of chorioamnionitis
- Number of Caesarean births for specific indications (i.e. chorioamnionitis, uterine tachysystole with fetal heart rate changes)

Related Documents

B-00-07-10048 – Fetal Health Surveillance (FHS) - Intrapartum

B-00-07-10043 – Antepartum Non-Stress Test (NST)

B-00-07-10021 – Nourishment and Hydration of Persons in Labour and Postpartum

References

Alfirevic, Z., Aflaifel, N, Weeks, A. (2014). Oral misoprostol for induction of labour. Cochrane Database of Systemic Reviews: John Wiley & Sons, Ltd.

BCWH. (2023). C-06-13-62891: Misoprostol induction of labour for rupture of membrane at term. (Accessed from PHSA SHOP, May 17, 2023 - http://shop.healthcarebc.ca/phsa/BCWH_2/BC%20Women's%20Hospital%20-%20Maternal%20Newborn/C-06-13-62891.pdf)

Dore, S. et al. (2020). Guideline No. 396: Fetal health surveillance: Intrapartum consensus guideline. JOGC, 42(3): 316-348.

Kerr, R. S., et al. (2021). Low-dose oral misoprostol for induction of labour. Cochrane Database of Systemic Reviews: John Wiley & Sons, Ltd.

NICE. (2023). NICE Guideline 207: Inducing labour. (Accessed from National Institute for Health and Care Excellence, May 17, 2023 - https://www.nice.org.uk/guidance/ng207)

Perinatal Focus Group. (2022). PERI – Induction of labour (IOL) with misoprostol (PEG1) with a viable fetus guideline. Island Health Perinatal Quality Council.

RANZCOG. (2021). Best Practice Statement: The use of misoprostol in obstetrics and gynaecology. (Accessed from Royal Australian and New Zealand College of Obstetricians and Gynaecologists, May 17, 2023 - https://ranzcog.edu.au/wp-content/uploads/2022/05/The-use-of-misoprostol-in-obstetrics-and-gynaecology.pdf)

Robinson, D., et al. (2023). Guideline No. 432a: Cervical ripening and induction of labour – general information. JOGC, 45(1): 35-44.

Robinson, D., et al. (2023). Guideline No. 432b: Cervical ripening. JOGC, 45(1): 56-62.

Robinson, D., et al. (2023). Guideline No. 432c: Induction of labour. JOGC, 45(1): 70-77.

Vogel, J. P., West, H. W., Dowswell, T. (2013). Titrated oral misoprostol for augmenting labour to improve maternal and neonatal outcomes. Cochrane Database of Systemic Reviews: John Wiley & Sons, Ltd.

Weeks, A. D., et al. (2022). RCOG Scientific Impact Paper No. 68: Evaluating misoprostol and mechanical methods for induction of labour. BJOG, 129: 61-65.

Definitions

"Tachysystole" means more than 5 contractions in 10 minutes (averaged over 30 minutes), OR a single contraction lasting greater than 90 seconds, OR resting period between contractions is less than 30 seconds OR the uterus remains firm between contractions

"Risks for adverse perinatal outcome" means any antenatal or intrapartum, birthing person or fetal condition that increases the risk of adverse fetal outcomes (see Appendix A).

Appendices

Appendix A: Risks for Adverse Perinatal Outcomes

Appendix B: Misoprostol Safety Checklist

Appendix A: Risks for Adverse Perinatal Outcomes

Birthing Person	Fetus
• Hypertensive disorders of pregnancy • Diabetes: Pre-existing and gestational • Antepartum hemorrhage • Medical disease (e.g. cardiac, significant anemia, hyperthyroidism, vascular disease, renal disease) • Following Trauma/MVA (EFM recommended for a minimum of 4-6 hours) • Birthing person's perception of reduced or absent fetal movements • Pre-pregnancy BMI greater than 35 kg/m^2 • Vaginal bleeding in labour • Intrauterine infection/chorioamnionitis • Previous C/S or trial of labour after C/S • Prolonged rupture of membranes more than 24 hours • Combined spinal-epidural analgesia • Oxytocin induction or augmentation • Post-term pregnancy (greater than 42 weeks gestation) • Labour dystocia • Tachysystole • Difficulties in reliably determining UA and/or FHR with IA; or an abnormal IA • Other factors (e.g. smoking, substance use, limited prenatal care)	• Prematurity (less than 37 weeks gestation) • Intrauterine growth restriction • Single umbilical artery • Oligohydramnios • Polyhydramnios • Abnormal umbilical artery Doppler velocimetry • Abnormal BPP or NST • Significant fetal abnormality (compatible with life) • Isoimmunization • Multiple pregnancy • Velamentous cord insertion • Abnormal FHR on auscultation • Meconium stained amniotic fluid • Breech presentation • FHR arrhythmia • 3 or more nuchal loops

Appendix B: Misoprostol Safety Checklist

Providence Health Care

Place Patient Label Here

MISOPROSTOL SAFETY CHECKLIST

11523

Complete this form prior to initiating misoprostol for induction of labour with oral misoprostol for Term Prelabour Rupture of Membranes (TPROM) patients.

DO NOT initiate misoprostol unless this safety checklist is completed and signed. Provider must provide information and attend as needed.

History and Orders Documented by Provider		
Patient's verbal consent	☐ Yes	☐ No
Provider order placed for oral misoprostol	☐ Yes	☐ No
Indication for induction	☐ Yes	☐ No
History and antenatal record reviewed by provider	☐ Yes	☐ No
Fetal Assessment and Contractions		
Non Stress Test (NST) classified as normal	☐ Yes	☐ No
Normal resting tone (resting period between contractions is 30 seconds or more)	☐ Yes	☐ No
Absence of tachysystole	☐ Yes	☐ No
Maternal Assessment		
Maternal vital signs are within normal limits	☐ Yes	☐ No
No maternal contraindications present	☐ Yes	☐ No

Misoprostol Safety Checklist Completed by:

RN Signature _____ Printed name _____

Date (dd/mmm/yyyy): _____ Time: _____

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Groups/Persons Consulted:

MSQC (Maternity Safety & Quality Committee)

PHC Physician Program Director Maternity Services

PHC Obstetric Anesthesia Physician

PHC Physician Lead for Family Practice

PHC Assistant Department Head for Midwifery

PHC Head of Department for Pediatrics

PHC Program Director – Maternity Services

PHC Patient Care Manager – Maternity and NICU

PHC Clinical Nurse Leader – Maternity

PHC Clinical Nurse Educator – Maternity

PHC Clinical Nurse Leader – NICU

PHC Clinical Nurse Educator – NICU

PHC Professional Practice – Practice Consultant

PHC Professional Practice – Medication Safety

PHC Clinical Pharmacist – Maternity

PHC Maternity Registered Nurse

Developed/Revised By:

PHC Clinical Nurse Educator - Maternity

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