PROSTAGLANDIN ADMINISTRATION FOR CERVICAL PREPARATION

This LOP is developed to guide clinical practice at the Royal Hospital for Women. Individual patient circumstances may mean that practice diverges from this LOP.

1. AIM

- Cervical preparation prior to induction of labour

2. PATIENT

- Woman in whom induction of labour is indicated, where prostaglandin is considered the appropriate method of cervical preparation

3. STAFF

- Medical and midwifery staff

4. EQUIPMENT

- Cardiotocography (CTG) equipment
- Water-based lubricant
- Sterile gloves
- Ultrasound machine

5. CLINICAL PRACTICE

- Arrange nulliparous woman to be admitted by 0900hours and parous woman by 1400hours
- Perform midwifery admission on arrival and medical admission in a timely manner
- Review maternal and fetal history from clinical notes
- Confirm the gestation and indication for induction
- Check for any contraindications. Request medical review if any are present
- Prescribe vaginal prostaglandin. This must be ordered by an obstetric consultant or registrar
- Give patient information leaflet (Appendix 1 or 2)
- Explain the procedure to woman and her support person. This includes risks/adverse events associated with the use of vaginal prostaglandins
- Obtain verbal consent and document in the medical record
- Take full maternal observations including urinalysis
- Perform abdominal palpation including fundal height measurement. Confirm cephalic presentation with ultrasound and document (paper and electronic) using ultrasound stamp (on non eMR results mounting sheet) and in medical record
- Perform CTG and complete antenatal CTG sticker (place on non eMR results mounting sheet) and document in medical record
- Perform vaginal examination, following verbal consent, and document in the medical record
- Record Modified Bishop's Score (MBS) using the stamp (place on non eMR results mounting sheet) and in the medical record
- Administer vaginal prostaglandin if:
  - the MBS is <5 and
  - CTG is normal
- Record 4th hourly fetal heart rate (FHR), uterine activity, vaginal loss and any other observations as clinically indicated. If contractions become ≥ 1:10, record hourly FHR, uterine activity and vaginal loss
- Consider need for analgesia if painful uterine activity occurs without cervical change

Prostaglandin gel (Prostin®)

- Give nulliparous woman 2mg, followed by 1mg six hours later
- Give parous woman 1mg
- Insert prostaglandin gel (1mg or 2mg) into the posterior fornix of the vagina, avoiding the cervix

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- Perform CTG following insertion of prostaglandin for at least 30 minutes or until normal and document on the antenatal CTG sticker (place on non eMR results mounting sheet)
- Ensure the woman remains in lateral position for 40 minutes to promote uptake of gel
- Reassess the nulliparous woman after 6hours to administer the second dose of gel if required. Reassess multiparous woman after 6hours if no uterine activity (or the following morning before transfer to delivery suite)
- Do not administer the second dose of gel if:
  - regular and painful uterine activity
  - ruptured membranes
  - MBS ≥5
  - CTG is abnormal
- Perform Clinical procedure safety checklist level 1 in medical record
- Inform obstetric consultant/registrar if second dose not given. Reassess if uterine activity settles and consider administering second dose.
- Be aware dosage schedule may vary as per consultant's request
- Reassess the cervix at 0530hrs (or earlier if clinically indicated) the following morning. If the cervix is favourable for artificial rupture of membranes (ARM), transfer the woman to Delivery Suite
- Review by medical staff if MBS <5, to make a plan and document in medical record
- Avoid oxytocin infusion for induction within 6 hours of prostaglandin gel insertion

Prostaglandin pessary (Cervidil ®)

- Insert prostaglandin pessary and position it transversely into posterior fornix of the vagina
- Fold excess tape and place at the introitus to permit removal
- Advise the woman to remain in lateral position for 30 minutes to allow uptake of prostaglandin and for pessary to swell
- Monitor and document uterine activity and vaginal loss hourly depending on clinical situation
- Recommence the CTG if regular uterine activity occurs and document on the antenatal CTG sticker and in the medical record
- Cease CTG when normal and commence intermittent auscultation
- Assess the cervix 12 hours after insertion and document MBS in the medical record
- Remove the pessary at any point if:
  - cervix is favourable
  - regular (3:10) painful contractions, associated with cervical change
  - rupture of membranes
  - evidence of hyperstimulation or hypertonic uterine activity
  - abnormal CTG pattern
  - adverse maternal response to prostaglandin
  - up to 24 hours post insertion and at least 30 minutes prior to commencing oxytocin infusion for induction of labour[5]

Management of adverse events

Tachysystole

- Continue or recommence CTG
- Administer analgesia if required.
- Consider vaginal examination if indicated and notify medical officer.
- Cease CTG if tachysystole settles and CTG is normal

PROSTAGLANDIN ADMINISTRATION FOR CERVICAL PREPARATION cont'd

Hyperstimulation/Hypertonus

- Continue or recommence CTG.
- Notify obstetric registrar or CERS if criteria met
- Remove prostaglandin pessary if insitu
- Perform vaginal examination.
- Administer terbutaline 250 mcg subcutaneously (pursuant to standing orders)
- Administer analgesia if required

6. DOCUMENTATION

- Medical record
- Antenatal CTG sticker
- MBS stamp
- Ultrasound stamp

7. EDUCATIONAL NOTES

- Contraindications to administration of prostaglandin[6]:
  - allergy to prostaglandins
  - placenta praevia or vasa praevia
  - previous hysterotomy
  - previous caesarean section or full thickness uterine surgery (rate of rupture up to 5-6%)[6]
  - malpresentation
  - history of severe asthma, glaucoma, cardiovascular, hepatic or renal disease
- Caution with following situations:
  - multiple pregnancy
  - small for gestational age (SGA)/Intrauterine growth restriction (IUGR)
    - There is evidence from retrospective studies that use of prostaglandin methods for induction in SGA and IUGR babies increases the risk of an emergency caesarean section [10]
    - A retrospective cohort study examined over 14000 women with SGA (< 10th centile) babies and found a RR for CS of 2.3 for those who underwent prostaglandin induction of labour, without increased neonatal morbidity [10]
- Adverse events or side effects could include [6]:
  - uterine hyperstimulation
  - hypertonic uterine activity
  - abnormal FHR pattern
  - placental abruption
  - hypertension
  - allergic reaction
  - vaginal irritation/burning
  - dyspnoea
- Hyperstimulation/hypertonus occurs in 4-5% of women [6]
- Prostaglandin gel or pessary must be administered/supervised by staff member competent in performing vaginal examination. They must have been educated in the care and management of an adverse event following insertion of prostaglandin.
- Prostaglandin gel or pessary may be prescribed by a consultant obstetrician or an obstetric registrar who has written permission to do so from the Maternity Medical Co-director. Resident medical officer (RMO's) are not allowed to prescribe prostaglandin gel or pessary
- Prostaglandin gel or pessary may be given to woman with grand multiparity, antepartum haemorrhage (APH) or ruptured membrane after review by senior obstetric registrar or obstetric consultant.

PROSTAGLANDIN ADMINISTRATION FOR CERVICAL PREPARATION cont'd

- Administration of prostaglandin would normally be undertaken in antenatal ward. However, if continuous monitoring is required due to maternal or fetal compromise, the woman should be cared for in Delivery Suite [7]
- There is no evidence which suggests an optimal timing of doses, but surveys suggest women's satisfaction is improved with adequate rest between doses of prostaglandin gel [1]
- Costs (July 2017):
  - Cervidil ® pessary $116.90 – only one dose needed over 24 hours
  - Prostin® gel 1mg $ 57.23
  - Prostin® gel 2mg $ 71.04
  - 1-3 doses of Prostin® may be needed with associated increased ancillary costs e.g. clinical time required from midwife, more frequent CTGs
  - Foley's Catheter – approx. $2
  - Cooks Catheter approx. $45
  - Sterilisation of equipment required for Foleys and Cooks catheter $30
- Cervidil® pessary contains 10mg of dinoprostone which is released at the rate of 0.3mg per hour for a period of 12 hours. Release rate is dependent on vaginal pH and is equivalent to prostaglandin gel of 2mg every 6 hours [4]

8. RELATED POLICIES / PROCEDURES / CLINICAL PRACTICE LOP

- Induction of labour for woman with a low risk post-dates pregnancy
- Induction of Labour Policy and Procedure
- Terbutaline (Bricanyl)- Subcutaneous Injection for uterine hypertonus or acute fetal distress
- Postdates - Management of pregnancy beyond 41 weeks gestation
- Fetal Heart Rate Monitoring – Maternity – MoH GL2018/025
- Dinoprostone SESLHD/568

9. RISK RATING

- High

10. NATIONAL STANDARD

- CC – Comprehensive Care

11. REFERENCES

1. Facchinetti F, Fontanesi F and Del Giovane C (2012). Pre-induction of labour: comparing dinoprostone vaginal insert to repeated prostaglandin administration: a systematic review and meta-analysis *The Journal of Maternal-Fetal and Neonatal Medicine*, vol. 25, no. 10, pp. 1965-1969
2. NSW Ministry of Health (2014) 'Maternity – Oxytocin for the Induction of Labour at or Beyond Term Policy Directive, PD2011_075
3. Pfizer (2014) *Prostin F2 alpha product information,* NSW, Australia.
4. Prostin® E2 Vaginal Gel Dinoprostone (2020) *Consumer Medicine Information*.
5. Tathem K, Harris LJ, O'Rourke P and Kimble RM (2012) 'Dinoprostone vaginal pessary for induction of labour: safety of use for up to 24 hours', *Australian and New Zealand Journal of Obstetrics and Gynaecology,* vol. 52, no. 6, pp. 582-587
6. The Royal Australian and New Zealand College of Obstetricians and Gynaecologists, *Use of prostaglandins for induction of labour,* viewed 1st May 2019, https://www.ranzcog.edu.au/RANZCOG_SITE/media/RANZCOG-MEDIA/Women%27s%20Health/Statement%20and%20guidelines/Clinical-Obstetrics/Use-of-prostaglandins-for-induction-of-labour(C-Obs-22)Review-March-2019.pdf?ext=.pdf

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7. The Royal Women's Hospital Victoria (2018) 'Induction of Labour', *The Royal Women's Hospital Fact Sheet*.
8. Thomas J, Fairclough A and Kavanagh J. (2014) 'Vaginal prostaglandin (PGE2 and PGF2a) for induction of labour at term', *The Cochrane Database of Systematic Reviews.* Issue 6
9. SA Maternal & Neonatal Clinical Network (2014). "Induction of labour techniques". South Australian Perinatal Practice Guidelines
10. Boers KE, van der Post JA, Mol BW, van Lith JM and Scherjon SA. (2011). Labour and neonatal outcome in small for gestational age babies delivered beyond 36+0 weeks: a retrospective cohort study. *Journal of pregnancy*, *2011*, 293516. Doi:10.1155/2011/293516

REVISION & APPROVAL HISTORY

Approved to extend LOP to March 2025 RHW Business Rule Governance Committee 12.8.24
Reviewed and endorsed Maternity Services LOPs May 2020 Approved Quality & Patient Care Committee 17/8/17
Reviewed and endorsed Maternity Services LOPs group June 2017 Replaced:
Administration of prostaglandin for cervical ripening/induction of labour
Approved 17 November 2003
Reviewed and endorsed Maternity Services Clinical Committee 11/11/03 Approved Quality Council 17/3/03
Reviewed and endorsed Maternity Services Clinical Committee 11/3/03 Reviewed November 2003
Revised September 2004
Cervidil Guideline
Revised Therapeutic & Drug Utilisation Committee December 2008 Approved Quality Council 18/4/05
Reviewed and endorsed Maternity Services Clinical Committee 8/3/05

FOR REVIEW : AUGUST 2019

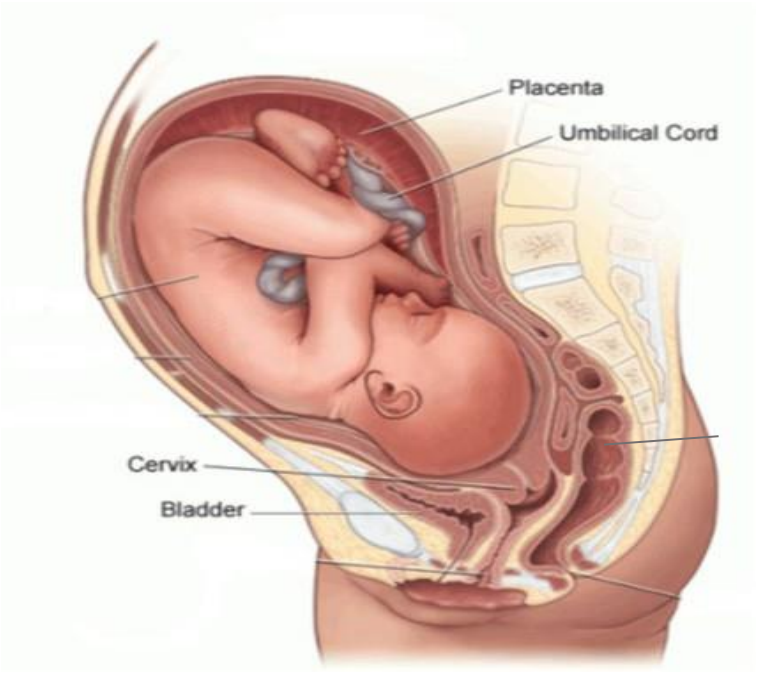
…../Attachments

Induction of labour – Prostaglandin Pessary

If you have been advised that you require an induction of labour and your cervix (neck of womb) is not yet soft and open enough to allow your membranes to be ruptured, you will need some help for this to happen. You will be prescribed a prostaglandin pessary by your doctor to help soften, thin and open your cervix.

The prostaglandin in the pessary is a drug similar to a hormone your body produces to help prepare your cervix for labour. It is used when induction of labour is planned before your cervix has softened and opened by itself. The pessary speeds up the process of softening, thinning and opening the cervix by releasing small amounts pf prostaglandin over time so that your membranes can be ruptured.

Before the pessary is inserted, the midwife will monitor your baby's heartbeat to ensure that it is normal. You will then have a vaginal examination. If your cervix is not yet open, the midwife will put the pessary into your vagina behind your cervix. Following this, you will be asked to stay lying down for 30 minutes while the pessary swells and releases the prostaglandin. When you start having uterine activity from the prostaglandin, your baby will again be monitored.



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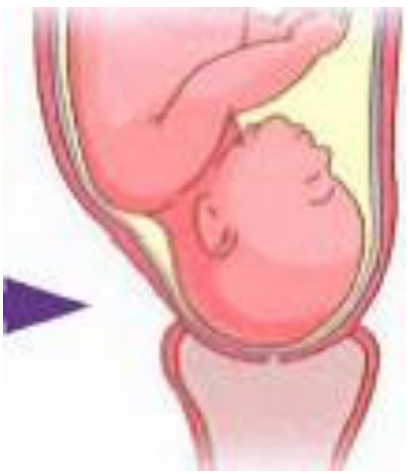


After the pessary has been put in and you have been advised to get up, you will be encouraged to walk around. There is no need for you to remain in bed.

It is common to have period like cramps and backache in the hours following insertion of the pessary. This mild pain usually settles with the use of hot packs, showers and some paracetamol. Sometimes stronger pain relief is required.

You will have another vaginal examination after 12 hours to see if your cervix has softened and opened. If your cervix is soft and open enough to allow your membranes to be ruptured, the pessary will be removed. If it still not soft or open enough, the pessary will stay in for another 12 hours before you are assessed again. If at any stage your membranes rupture, the pessary will be removed immediately. Most women will not go into labour from the pessary alone. The aim of the pessary is to start the cervix softening, thinning and opening.

There are side effects to the prostaglandin because it is a drug. Some are more important than others. There is 4-5% risk of the uterus contracting too often or having a contraction that does not go away within a normal period of time. This may affect your baby's ability to cope with the induction process. If this happens, we can remove the pessary and give you another drug, as an injection, to try and reverse the effects of the prostaglandin. We can discuss other ways of opening your cervix if this occurs. Other less serious side effects may include vaginal dryness/tenderness, nausea, vomiting and diarrhoea

During this process, the midwife will check both you and your baby. We will be observing your baby's heart rate and we need you to tell us if you are experiencing any of the following:

- any change in your baby's movements
- contractions
- bleeding
- ruptured membranes

You will be moved to the Delivery Suite the following day if your cervix is soft and open enough to have your membranes ruptured. Most women will need a hormone (oxytocin) drip to have contractions start. The hormone drip and rupture of membranes work together to start labour contractions.

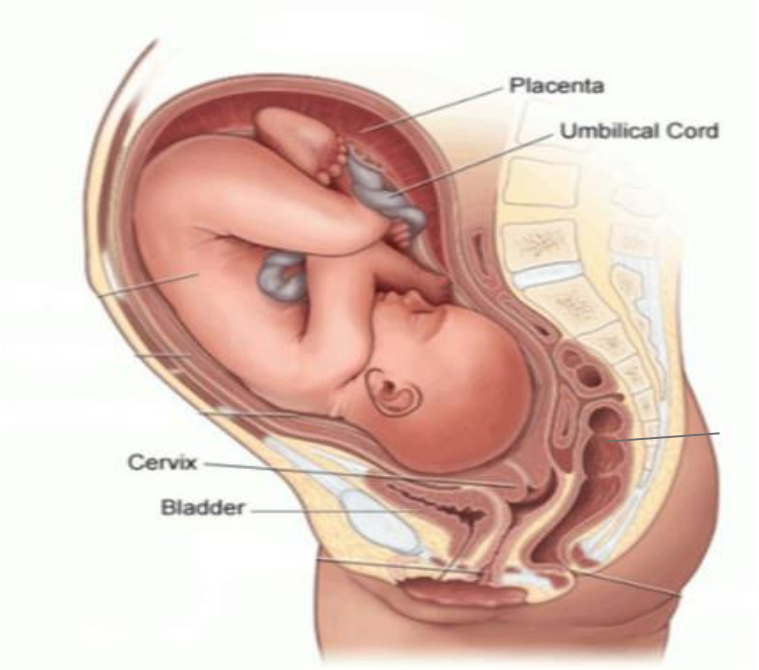
If you have any specific health problems, concerns or questions please raise them with your midwife or doctor caring for you. Sharing information with us can make a difference in your experience during your stay in hospital.

Induction of labour – Prostaglandin gel

If you have been advised that you require an induction of labour and your cervix (neck of womb) is not yet soft and open enough to allow your membranes to be ruptured, you will need some help for this to happen. You will be prescribed prostaglandin gel by a doctor to help soften, thin and open your cervix.

Prostaglandin gel is a drug similar to a hormone your body produces to help prepare your cervix for labour. It is used when induction of labour is planned, before your cervix has softened, thinned and opened by itself. The gel speeds up the process of softening, thinning and opening your cervix so that your membranes can be ruptured.

Before the gel is inserted, a midwife will monitor your baby's heartbeat to ensure that it is normal. You will then have a vaginal examination. If your cervix is not yet soft and open enough to allow your membranes to be ruptured, a midwife will put the gel into your vagina behind your cervix. Following this, you will be asked to stay lying down for 40 minutes while your body absorbs the gel. Your baby's heart rate will be monitored again during this time.



Once the gel is absorbed, you will be encouraged to walk around. There is no need for you to remain in bed.

It is common to have period like cramps and backache in the hours following insertion of the gel. This mild pain usually settles with the use of hot packs, showers and some paracetamol. Sometimes stronger pain relief is required.

You will have another vaginal examination approximately 6 hours after the first dose to see if your cervix has softened. If your cervix has not changed enough to allow your membranes to be ruptured, you will require another dose of gel at that time and your baby's heart rate will be monitored again. Most women will not go into labour from the gel alone. The aim of the gel is to start the cervix softening, thinning and opening.

There are side effects to the prostaglandin gel because it is a drug. Some are more important than others. There is 4-5% risk of the uterus contracting too often or having a contraction that does not go away within a normal period of time. This may affect your baby's ability to cope with the induction process. If this happens, you may be given another drug, as an injection, to try and reverse the effects of the prostaglandin. We can discuss other ways of opening your cervix if this occurs. Other less serious side effects may include vaginal dryness/tenderness, nausea, vomiting and diarrhoea

During this process, a midwife will check both you and your baby. We will be observing your baby's heart rate and we need you to tell us if you are experiencing any of the following:

- any change in your baby's movements
- contractions
- bleeding
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