INDUCTION OF LABOUR

CLINICAL GUIDELINE MCSA.MBC.2.1

Induction of labour is indicated when the maternal and/or fetal risks associated with continuing the pregnancy are greater than the risks associated with delivery.

Indications for and timing of induction of labour

Be sure of your reasons for Induction of Labour (IOL)

Indication	Timing
Chronic or gestational hypertension	38w0d (possibly up to 40w if well controlled and uncomplicated)
Preeclampsia (depending on gestation, severity, Doppler's and growth)	34w or at diagnosis if develops after 34w or at any time when contra-indication to expectant management is present (e.g., serious maternal end-organ dysfunction or fetal compromise)
Diabetes mellitus • Gestational & pre-gestational – uncomplicated • Gestational & pre-gestational – poorly controlled or complicated	• 38w • Individualise based on severity, preferably after 34w0d
Previous abruptio placentae of unknown cause	38w (earlier if more than1)
Previous Stillbirth of unknown cause	38w (earlier if more than1)
Preterm prelabour rupture of membranes	34w or at diagnosis if after 34w
Prelabour Rupture of Membranes	At diagnosis or expectant management for 24 hours if no contraindications are present and patient has been informed about risks
Suspected chorioamnionitis	Consider immediate delivery vs trial of antibiotics if low suspicion
Post-dates pregnancy	41w
Fetal growth restriction (FGR) in singletons • FGR - Otherwise uncomplicated with normal Dopplers and CTG • FGR with normal UmbA RI (<P95) and CTG but with concerning features (oligohydramnios, EFW < P3, redistribution, poor interval growth maternal co-morbidity...) FGR with UmbA RI > P95 but positive EDF	• 38w0d • 37w (earlier if more than one concern – suggested using published algorithm) • 34w
Social reasons (e.g. patient staying far from the hospital, previous precipitous labour, maternal request)	≥39w

Contraindications for induction of labour (preferred elective CS)

- FGR with absent (32-34w) or reversed umbilical artery flow (30-32w)
- Fetal malpresentation (39w)
- Abnormal pelvis (39w)
- Cord presentation
- Placenta/vasa praevia
- Previous uterine surgery other than 1x lower segment transverse CS (e.g., classic/fundal incision Caesarean Sections or myomectomy etc.)
- Active genital herpes (39w)
- Obstructive condylomata accuminata (HPV) (39w)
- Any contraindication to normal vaginal delivery (39w)

Patient counselling prior to IOL

Healthcare professionals should counsel women being offered induction of labour on the following aspects:

- The reasons for IOL being recommended or offered as well as alternative management options
- The risks and benefits of IOL in specific circumstances
- The procedure for IOL and the proposed induction methods
- The arrangements for support and pain relief options (women are likely to find IOL more painful than spontaneous labour)
- That IOL may be unsuccessful and what options are available following a failed IOL
- It is essential to record that patient understands the issues - Obtain informed consent

Membrane sweeping:

Membrane sweeping as an option to increase the chance of spontaneous labour needs to be discussed with the patient:

- To be offered prior to offering IOL in a low-risk patient
- Describe what a membrane sweep is
- Inform patient that discomfort and/or vaginal bleeding is possible from the procedure
- Discuss further delivery options if spontaneous labour does not follow within 7 days

Assessment prior to induction of labour

- Ensure indications for IOL are still valid – Rule out contraindications
- Ensure adequate staffing for safe care and monitoring
- Abdominal exam (fetal lie, presentation, Estimated Fetal Weight, Head Above Brim)
- Cervical assessment using the Modified Bishops score

Modified Bishop Score (favorable if Bishop score ≥8)

Cervical feature	0	1	2	3
Dilatation	<1cm	1-2cm	3-4cm	>4cm
Length	>4cm	3-4cm	1-2cm	<1cm
Station	-3	-2	-1	+1/+2
Consistency	Firm	Medium	Soft	
Position	Posterior	Midposition	Anterior	

Bishop score modifiers - Points are added or subtracted according to special circumstances as follows:

One point is added to the total score for:

1. Existence of pre-eclampsia
2. Each previous vaginal delivery

One point is subtracted from the total score for:

1. Postdate/post-term pregnancy
2. Nulliparity (no previous vaginal deliveries)
3. PPROM; preterm premature (prelabor) rupture of membranes

The cervix is regarded to be unfavourable if the final score is less than 8 (7 or less)

Monitoring during IOL

- Vital Signs
  - Low risk patient – 6 hourly initially when not contracting, 4 hourly when in latent labour
  - Once in active labour or with epidural or oxytocin, at least hourly
  - Any abnormal observation warrants more frequent observation and/or action.
  - High risk patients – increased frequency depending on specifics
  - If unsure – contact Doctor

- CTG monitoring
  - prior to intervention (e.g., AROM, PG administration, oxytocin dose increase)
  - 1 hour after repeat PG dose
  - continuous once contracting
  - continuous while on oxytocin

IOL with Unfavourable cervix (Bishop score 7 or less):

- Consider mechanical induction with a Foley's catheter, esp. in women with a previous CS (aseptic technique, 60-80mls water in bulb, bulb above internal os, with or without traction, can be left in situ for up to 24 hours)
- Consider prostaglandin administration until AROM possible. Options include:
    - Oral misoprostol 200µg tablet in 200ml water. Shake well until tablet is dissolved. Label the solution (patient details, dosage, and time). Shake well before every dosage. Give 25ml every 2 hours per os (PO) x 12 dosages
    - Dinoprostone (Prostaglandin E2, Propess®) 10mg per vagina (PV) to be left in for up to 24 hours or until contracting
    - Dinoprostone (Prostin E2® tablets) recommended dose = 1 tablet (3mg) PV, repeat after 6-8h
    - Dinoprostone (Prandin® gel administered vaginally into the posterior fornix 1mg 6hrly x 3 doses (2mg can be used for the 1st dosage in primigravidas)
- CTG before and after each dose for 20 minutes
- If patient reports contractions, assess for strength and frequency of contractions, cervical changes, and fetal well-being (CTG)
- If CTG abnormal, start intrauterine resuscitation, omit the next prostaglandin dose, consider acute tocolysis and call doctor
- If 2 moderate contractions in 10 minutes, do not administer the next PG dose

If after previous caesarean delivery (TOLAC):

- Foley balloon catheter
- NO Misoprostol
- Use PGE2 vaginally as above and explain increased risk of rupture compared with balloon
- Risks: Increased risk of emergency caesarean delivery, uterine rupture

Once cervix favourable and AROM possible:

- CTG for 15 minutes to assess for fetal wellbeing
- AROM using a sterile technique
- CTG for 20 minutes after AROM
- Mobilise patient for at least 1 hour
- Only start oxytocin infusion after 6 hours of last prostaglandin dose if the patient is not having adequate contractions (i.e., 3 strong contractions (>40 seconds) in 10 minutes).
- Oxytocin Protocol to be signed off for each patient and individualised if necessary
- Continuous CTG monitoring once oxytocin commenced

LOW VOLUME OXYTOCIN REGIME

(See attached form to be used - Appendix 1)

- Add 12 IU (= 12 000 mIU) of oxytocin in 200ml of normal saline (0.9%), to be used as a side line (= 60 mIU/ml)
- Only flush IVI line once the oxytocin has been added to the normal saline
- Flush the IVI line prior to connecting the infusion to the patient
- Commence the infusion at 2ml/hr (= 2mIU/min)

- Increase the infusion dosage every 30 min by 2ml/hr until there are 3 – 4 strong (>40 seconds) contractions in 10 minutes using manual palpation. Maintain same dosage once limit of 3 - 4 contractions in 10 minutes is reached.
- Reduce oxytocin by 1-2 steps if more than 4 contractions in 10 minutes but CTG normal
- Manually palpate contractions for 10min prior to increasing the infusion
- Ensure that the CTG is reassuring prior to increasing the infusion rate
- Stop oxytocin and contact Dr if oxytocin infusion rate at 20ml/hr for 6hrs without adequate contractions

Stop Oxytocin immediately if:

- There are 5 or more contractions of any strength in 10min manually palpated
- The uterus does not relax in between contractions (coupling or hypertonic contraction lasting > 1.5 minutes)
- There are any signs of fetal distress: including any decelerations, fetal tachycardia, fetal bradycardia or decreased variability
- If uncertain, call Doctor
- Consider weaning oxytocin if the woman has 2 hours of sustained 3 - 4 strong contractions in 10 minutes. Should contractions decrease after lowering the dose, increase it again to the previous infusion level and attempt weaning again after 30 minutes

If there are signs of hyperstimulation of the uterus or fetal distress:

- Stop oxytocin infusion immediately. Replace IVI line with Ringer's lactate
- Turn patient onto left lateral position
- Call Doctor immediately
- If no improvement in the contraction pattern: administer bolus of Salbutamol
- Salbutamol 500µg/ml. Use 250µg or 0.5ml in 9.5ml saline. Give slowly IVI over 5 minutes
- Continuous fetal monitoring.
- Only administer facemask oxygen 40%, if the mother's saturations are <94%
- If no improvement: book patient for emergency caesarean delivery
- If hyperstimulation resolves, one can restart the oxytocin infusion at 1 or 2 steps lower

IOL with Favourable cervix (Bishop score 8 or more)

- Consider artificial rupture of membranes (AROM) if no contra-indication and CTG normal
- Contraindications to AROM:
    - HIV positive with detectable viral load
    - IUFD unless abruptio placentae suspected
    - High presenting part (risk of cord prolapse)
    - Breech
    - < 35 weeks
- AROM using a sterile technique
- Controlled AROM in the case of polyhydramnios (this to be done by Doctor only)
- Do a CTG for 20 minutes after AROM to ensure a reassuring CTG
- Mobilise patient for at least 1 hour
- Consider Oxytocin after 1 hour if not having 3 strong contractions (>40 seconds) in 10 minutes (See regimen and precautions above)
- Oxytocin Protocol to be signed off for each patient and individualised if necessary)

Failed IOL

- Failed induction is defined as a patient not progressing into active labour after 24 hours/one cycle of treatment with prostaglandins
- If induction fails, healthcare professionals should discuss this with the woman and provide support. The woman's condition and the pregnancy in general should be fully reassessed, and fetal wellbeing should be assessed using electronic fetal monitoring.
- If induction fails, decisions about further management should be made in accordance with the woman's wishes and should consider the clinical circumstances.
- If induction fails, the subsequent management options include either a further attempt to induce labour with AROM and oxytocin following prostaglandins, caesarean section or awaiting spontaneous labour for a few days. The decision depends on the clinical situation and the woman's wishes.
- No repeat courses of misoprostol are recommended, except in exceptional circumstances following discussion with the patient

Augmentation of labour

- Do not routinely offer active management of labour (augmentation)
- Using oxytocin after spontaneous or artificial rupture of membranes will bring forward the time of birth by an hour or two, but will not influence the mode of birth or other outcomes
- Long labour exacerbated by the use of oxytocin can result in an obstructed labour leading to fetal distress and also difficult caesarean delivery because the fetal head is deeply wedged into the pelvis
- In a setting where monitoring of the fetal condition and the uterine contractions can be guaranteed, routinely discontinuing oxytocin in the active phase of induced labour is neither beneficial nor harmful, but will reduce the incidence of uterine hyperstimulation and abnormal FHR traces and is therefore recommended
- In case of fetal heart rate abnormalities or uterine hyperstimulation, turning off the oxytocin is an important first step to safeguard the fetus and mother, and birth attendants can be reassured that this will not significantly increase the likelihood of caesarean section, or adversely affect other outcome measures

Never use Oxytocin in the second stage of labour

Definitions

Term, Acronym or abbreviation	Definition
Vitals	This includes vital signs – temperature, heart rate, respiratory rate, blood pressure and saturations
SROM	Spontaneous Rupture of Membranes
AROM	Artificial Rupture of Membranes
CTG	Cardiotocograph
FGR	Fetal Growth Retardation
IOL	Induction of Labour
PV	Per Vagina
PO	Per Os
IU	International unit
mU	milliunit
TOLAC	Trial of Labour after C/S

Oxytocin

Each one IU of oxytocin contains 1000milliunits. Therefore 12IU is the equivalent of 12 000milliunits

When mixing 12IU in 200mls this gives the strength of 60milliunits per ml

Therefore at 2mls/hour this contains 120milliunits

120milliunits per hour gives a dose of 2milliunits per minute

References

1. Adam, S. Soma-Pillay, P. Obstetric Essentials. 2018. 3rd Edition. University of Pretoria
2. NICE Guideline. GC190 Intrapartum care for healthy woman and babies – Intrauterine Resuscitation guidelines (2014) Updated 2017

Authorship

These guidelines were drafted by a clinical team from Mediclinic and were reviewed by a panel of experts from SASOG and the BetterObs™ clinical team in 2019 and was revised by the scientific committee of BetterObs™ in 2022. All attempts were made to ensure that the guidance provided is clinically safe, locally relevant and in line with current global and South African best practise. Succinctness was considered more important than comprehensiveness.

All guidelines must be used in conjunction with clinical evaluation and judgement; care must be individualised when appropriate. The writing team, reviewers and SASOG do not accept accountability for any untoward clinical, financial or other outcome related to the use of these documents. Comments are welcome and will be used at the time of next review.

Released on date: 2023 01 10

Appendix 1

LOW VOLUME OXYTOCIN REGIME

Patient Details: _____

Place 12 international units (12IU) of oxytocin in 200ml of normal saline (0.9%). Only flush the IVI line once the oxytocin has been added to the normal saline. This may now be connected to the patient using an infusion pump. The infusion dosage may be increased every thirty minutes (30min) until there are 3 – 4 strong contractions (>40s) in 10 min. Maximum dosage 20ml/hr = 20mU/min

DOSE	TIME	CONRACTIONS IN 10 MIN (record number of seconds)	FHR	CTG reactive or reassuring	Signature
2ml/hr (2mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
4ml/hr (4mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
6ml/hr (6mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
8ml/hr (8mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
10ml/hr (10mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
12ml/hr (12mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
14ml/hr (14mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
16ml/hr (16mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
18ml/hr (18mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	
20ml/hr (20mU/min)		☐ ☐ ☐ ☐ ☐		Yes/ No	

PLEASE NOTE:

- Monitor patient's on Oxytocin infusion with continuous CTG
- Ensure the CTG is reassuring before increasing the oxytocin infusion.
- Stop oxytocin IMMEDIATELY if:
    1. There are five or more contractions (of any strength) in 10 minutes
    2. The uterus does not relax between contractions
    3. There are any signs of fetal distress (i.e. any decelerations, fetal bradycardia/tachycardia or decreased variability)
    4. If midwife unsure, contact the attending doctor
- If there are signs of a hypertonic uterus or fetal distress:
    1. Stop oxytocin infusion
    2. Turn the patient onto the left lateral position
    3. Give 100ml of normal saline (0.9%) or Ringer's lactate fluid bolus
    4. Only administer facemask oxygen 40%, if the maternal saturations are <94%
    5. Call doctor immediately and discuss the need for Salbutamol
    6. Salbutamol 500µg/ml. Use 250µg or 0.5ml in 9.5ml saline. Give slowly over 5 minutes

_____ _____ _____

Signature of Doctor Time Date

_____ _____ _____

Signature of Midwife Time Date

History and version control

Author	Version	Details of update	Effective date
Cape Gate Obstetrician Working Group	1	Initial Release	2016 01 01
External Expert Obstetrician	1.1	Validated	2017 01 01
A. Hall	1.2	Rebranded and edited to Mediclinic Clinical Guideline All drug names changes to active ingredients	2018 10 01
SASOG Scientific Committee Dr C Groenewald	2.1	Slight changes especially related to indications for adding and subtracting points from the Bishop score. Cut-off for Bishop score also changed from ≥9 to ≥8 for favourable Cx Monitoring during IOL specified Dinoprostone (ProstinE_2) dosage lower to 1 tablet Also added that if 2 moderate contractions in 10min then do not administer the next PG dose Oxytocin can be reduced by 1-2 steps if more than 4 contractions but CTG normal	2023 01 10

Approval and sign-off

Department/ Area/ Group/ Forum	Representative name	Signature	Designation	Date
Clinical Department	Dr Gerrit De Villiers		Chief Clinical Officer	2023 04 26