Induction of labour

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Indications and setting

- Most frequent indications:
  - post term pregnancy (>41 weeks certain gestation)
  - hypertensive disorders
  - pre-labour rupture of membranes.
- Setting: hospital with 24-hour emergency operating theatre capacity.
- Timing: Non-urgent elective delivery only beyond 39 weeks gestation (or with proven lung maturity)

Routine stretch and sweep from 39 weeks to reduce post-term IOL

The need for labour induction post-term may be reduced by routine sweeping of the membranes during antenatal visits from 39 weeks onwards. •

Using sterile precautions, a finger is introduced through the cervix and swept in an arc between the membranes and the lower uterine segment through 360 degrees

[This can be done at primary level as well]

Decision-making process for IOL

- Two stages:
- 1. Is it better to curtail the pregnancy or to wait?
  - 1. What is best for the mother?
  - 2. What is best for the baby?
- 2. If the pregnancy is to be curtailed, is it better to perform IOL or CD?
  - 1. What is best for the mother?
  - 2. What is best for the baby?
- A balance needs to be struck weighing the severity of the situation of the mother and the baby.

CONTRA-INDICATIONS FOR INDUCTION OF DELIVERY AT A DISTRICT HOSPITAL

- Breech presentation
- Fetal distress
- Previous caesarean section
- Parity ≥5
- HDP with severe features
- Large fetus (>4.5kg in non-diabetic mothers, >4.0kg in diabetic mothers) based on best clinical judgement, not necessarily ultrasound

Approach to induction of labour

- Confirm the indication
- • assess the mother carefully to confirm gestational age and presentation
- • assess the cervix clinically.
- • perform a pre-induction cardiotocograph (CTG) if available and repeat 4-hourly once contractions begin.
- If no CTG available, assess fetal movements and fetal heart rate clinically
- • If all prerequisites are fulfilled, and the pre-induction CTG is normal, induction of labour can be performed using one of the available methods.
- Counsel the woman about the risks: failed induction or uterine hyperstimulation, which may require emergency Caesarean delivery.

CERVIX CLINICALLY FAVOURABLE

- If HIV negative, (or HIV positive on ART >4 weeks or with recent undetectable viral load):
  - rupture the membranes;
  - start oxytocin if there are not adequate contractions within two hours.
- If HIV positive and viral load unknown, or on ART for <4 weeks
  - start oxytocin with membranes intact, or use misoprostol.
- Oxytocin, IV infusion, 2 units in 200 mL sodium chloride 0.9%.
- Start at an infusion rate of 12 mL/hour (i.e. 2 milliunits/minute).
- If absent or inadequate contractions, increase infusion rate according to the Table 9-1.
- [If no response to oxytocin, consider ineffective oxytocin due to cold chain failure]

Oxytocin

- Avoid oxytocin in women with previous Caesarean section or parity ≥5, unless approved by a specialist
- • Continuous electronic fetal heart rate monitoring is recommended
- • Aim for adequate uterine contractions (3–5 contractions in 10 minutes). Once adequate contractions achieved, do not increase the oxytocin rate further.
- • Once in the active phase of labour, stop oxytocin
- • Most women will experience adequate contractions at a dose of 12 milliunits/minute.

Tachysystole (>5 contractions in 10 minutes)

• Reduce or stop the oxytocin infusion to achieve 3-5 contractions in 10 minutes.

- If there are fetal heart rate abnormalities which persist despite stopping the oxytocin:
- administer salbutamol, 250 mcg IV, slowly over 2 minutes.
- Add 1 mL (i.e., 0.5 mg/mL) salbutamol to 9 mL sodium chloride 0.9% to make a solution of 50 mcg/mL. Administer 5 mL (250 mcg)

CERVIX CLINICALLY UNFAVOURABLE

- Extra-amniotic Foley catheter
- This is the first choice due to least risk of uterine hyperstimulation:
- Pass a Foley catheter with 30 mL bulb through cervix with sterile technique
- Inflate bulb with 50 mL water or sodium chloride 0.9%.
- Tape catheter to thigh with light traction. Alternatively, traction can be applied with a piece of string over the foot end of the bed with 1-2 x 200 mL bags of fluid, or 300ml water in a soft drink bottle suspended.
- Remove the bulb after 24-48 hours.
- If labour induction not urgent, consider a pause and re-starting later
- Bulb induction should preferably not be done for patients with overt lower genital tract infection or severe immuno-compromised patients/AIDS
- After the bulb is expelled, if not in established labour, do ROM or start oxytocin as for favourable cervix above
- Recently two or 3 Foley balloons side by side, with catheters taped together to keep them at the same level, have been used when considered safer than use of AROM or uterine stimulants.

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Full length article

Novel side by side Foley catheter balloons for 'extended labour induction': Concept, simulation study and clinical application

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ABSTRACT

Objective: To introduce the concept of extended or prolonged mechanical balloon labour induction as opposed to pharmacological methods and amniotomy after single balloon expulsion, by the novel use of side-by-side Foley catheter balloons. This method is of particular relevance when there is prior uterine surgery, fetal reserve is uncertain, the risk of vertical infection is high, or facilities for labour monitoring are limited.

Study design: We conducted simulation studies to compare balloon circumferences and resistance to passage through a simulation cervix between different gauge, fluid distension volume and number of Foley catheters. We describe an illustrative clinical case.

Results: In simulation studies we found modest increases in Foley catheter balloon circumference with increased catheter gauge and with increasing volume of distending fluid. We found that retention of Foley balloon(s) by a flexible simulated cervix was increased with the gauge, distending volume and number of balloons used side-by-side. We describe the case of a mother with pre-eclampsia with severe features and compromised fetal reserve in whom the side-by-side balloon method achieved spontaneous delivery after a single balloon had been expelled without labour commencing.

Conclusions: Institutional protocols for Balloon labour inductions should take into account the characteristics of locally-available balloon catheters. Further research is justified to determine the usefulness of extended mechanical labour induction with side-by-side balloon catheters, particularly with prior caesarean section, uncertain fetal reserve and settings with limited fetal monitoring capacity.

Fig. 3. Three side-by-side foley catheters retained by an 8 cm simulated apertur

- If bulb induction is unsuccessful, use Foley catheter PLUS :
- Prostaglandins, e.g.:
- • Dinoprostone gel/tablets intravaginally 1 mg. Repeat after 6 h. Max 4mg
- OR
- • Misoprostol, oral, 25 mcg 2 hourly until in labour, or up to 24 hours
- Oral misoprostol may be given as solution of one 200 mcg tablet in 200 mL water, i.e. 1 mcg/mL solution
- Label clearly with date and time, and discard solution after 24 hours.
- Give 25 mL 2 hourly.
- In nulliparous patients, consider increasing to 50ml orally 2-hourly if no response after 3 doses.
- Maximum 24 hours.
- Course may be repeated after a break if necessary.
- When the patient reports painful contractions, do a vaginal examination and a CTG.
- If she is in established labour, stop the misoprostol.
- If there are no contractions in 24 hours, repeat the cervical assessment and act accordingly

Caution

- Do not give oxytocin less than four hours after giving misoprostol
- Never use oxytocin and misoprostol simultaneously.
- Misoprostol and other prostaglandins are contraindicated in women with previous Caesarean delivery and relatively contra-indicated in grand multiparous women.
- Misoprostol in larger doses for labour induction at term, may cause uterine rupture.
- If there are no cervical changes after two courses of misoprostol, review the indication for induction. Consider combining misoprostol with the Foley bulb method.
- Do a Caesarean section for failed induction only if all the methods above have failed, and delivery is essential and urgent.
- If not urgent, consider deferring induction to a later date.

IOL AFTER INTRA-UTERINE FETAL DEMISE

- May be more difficult to initiate labour.
- Fetal demise is not a reason to increase the dose of misoprostol – the risk of uterine rupture remains the same.
- In a stable patient with fetal demise, the safest is to await spontaneous labour for up to 4 weeks. This requires considerable counselling
- If the pregnancy is 29 weeks and beyond: same as for a pregnancy with live fetus, apart from AROM.
- Before 29 weeks, a higher dose of misoprostol can be used (If there is a previous CD scar, consult with a specialist)
- Mifepristone 200mg orally as outpatient, then 12-24 hours later:
- 27-28 weeks: Misoprostol 100µg vaginally or sublingual every 4-6 hours (limit dosing to 5 times)
- 20-26 weeks: Misoprostol 200µg vaginally or sublingual every 4-6 hours (limit dosing to 5 times)

IOL AFTER INTRA-UTERINE FETAL DEMISE

- After fetal demise, CTG remains a useful technique to assess uterine activity, particularly monitoring for a hyperstimulation
- This situation can be extremely distressing for the woman, and her partner, if present
- Provide gentle, supportive care and conduct the IOL in a location separate from women with live fetuses
- Ensure companionship for as long as the woman wants.
- Consider referral after discharge to mental health support services - see mental health chapter.

IOL AFTER PROLONGED ROM AT TERM

- ROM >16 hours, antibiotic cover should be instituted.
- IOL can follow the usual protocol.
- Studies have indicated that that Foley catheter IOL may be used safely with ruptured membranes and antibiotic cover.

IOL AFTER PPROM (AT 34 WEEKS)

- PPROM is managed conservatively provided there is no evidence of amnionitis (see chapter on problems in pregnancy)
- When IOL is needed follow the same procedures as above, including the use of foley catheter with antibiotic cover.

IOL IN A SCARRED UTERUS

- • Misoprostol should not be used with a scarred uterus beyond 24 weeks (discuss with a specialist first).
- The method of choice is Foley catheter
- Once the cervix is favourable, consider ROM.
- Oxytocin may be used cautiously, with specialist approval.

Thank you