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# Induction of Labour

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Specialty: Maternity Services

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## INDUCTION OF LABOUR

**Policy Statement:** to provide a framework by which women can have labour induced in a safe and effective manner

### Scope

This policy applies to all staff working within the department of Obstetrics and Gynaecology.

This policy applies to women at gestation >24 weeks:

- With intact membranes
- With spontaneous rupture of membranes not already in labour

### Introduction

Induction of labour is any process that artificially initiates uterine contractions leading to progressive effacement and dilatation of the cervix followed by the birth of the baby.

It should be advised:

- When the risks of continuing the pregnancy outweigh the risks of induction and delivery for the mother and fetus
- When vaginal delivery is the appropriate mode of delivery

### **Indications: (not exhaustive or absolute)**

- Prolonged pregnancy (40 + 12)
- Repeated antepartum haemorrhage (without placenta praevia) from 37 weeks
- Significant raised blood pressure (with or without proteinuria)
- Altered Fetal movement pattern
- Obstetric Cholestasis
- Diabetic pregnancy
- Multiple pregnancy monochorionic 36-37 wks dichorionic 37-38 wks
- Presence of fetal growth compromise
- Maternal request (see below)
  - Maternal age greater than 40 years consider IOL at around 40 weeks

a. pre-labour rupture of membranes

i. Before 34 weeks: only if there are other obstetric indications

ii. Between 34 and 37 weeks: discuss with woman the risks to her and her baby, and neonatal intensive care facilities available.

iii. At or over 37 weeks: choice of induction or expectant management (induction appropriate after 24 hours).

b. intra-uterine fetal death (see specific protocol)

c. suspected IUGR

**Decision must be made by a Consultant Obstetrician for the following indications:**

1. Suspected macrosomia

2. Pelvic girdle pain

3. Social reasons – maternal request (However, under exceptional circumstances (for example, if the woman's partner is soon to be posted abroad with the armed forces), induction may be considered at or after 40 weeks NICE 2008 )

4. Oligohydramnios alone

**Contraindications:**

1. Abnormal CTG

2. Fetal malpresentation

3. Classical caesarean section previously or h/o myomectomy where the endometrial cavity was opened

4. For prostaglandin inductions: known hypersensitivity to prostaglandins and asthma, glaucoma and raised intra-ocular pressure

**Induction of labour decision and method for a woman with a previous caesarean section must be made by a Consultant Obstetrician.**

- Previous caesarean section: offer induction, caesarean section or expectant management on individual basis. Explain there is two- to three-fold increased risk of uterine rupture and around 1.5-fold increased risk of caesarean delivery in induced and/or augmented labour compared with spontaneous VBAC labour.

## **NOTE:**

1. Breech presentation: only if caesarean section declined, and external cephalic version failed, declined or contraindicated. Full discussion of risks to be provided by consultant obstetrician.
2. More than 2 previous caesarean section scars can only be induced following a full discussion with the consultant obstetrician

## **Timing of induction:**

Ideally inductions will be planned in the morning.

## **Risks of induction**

All women should be made aware of the risks associated with induction:

- Hyperstimulation (with prostaglandins and oxytocin)
- Painful labour
- Higher chance of instrumental and operative delivery

## **Planning of Induction**

### **Low Risk Pregnancies –Midwifery led care**

Indications: The reason for offering Induction of labour is usually to avoid the pregnancy proceeding beyond 42 weeks when the perinatal mortality is double that at 40 weeks. The decision to induce is normally made by the midwife, after the usual informed discussion with the woman.

Three options of management are:

- No intervention
- Membrane sweep
- Membrane sweep and book IOL for 40+12-14

Review woman at 40 weeks by community midwife and discuss policy for induction and induction process.

## **If induction agreed:**

1. Perform cervical assessment and membrane sweep
2. Give date and time for admission and record in notes
3. Give local information:

- Singleton - Ward 19, 01792 285405
- Princess of Wales – Ward 12, 01656 752309

4. Offer further sweeps

5. Give NICE patient leaflet. Record this in notes.

### **Pain Relief**

Explain:

- That induced labour is likely to be more painful than spontaneous labour
- Different pain relief options in different settings.

Encourage women to use their own coping strategies

### **Membrane sweeps;**

At 40 and 41 week antenatal visits, nulliparous women should be offered a vaginal examination for membrane sweeping.

At 41 week antenatal visit, parous women should be offered a vaginal examination for membrane sweeping.

Membrane sweep can:

- Make labour more likely
- Reduce need for induction with prostaglandins
- Can be uncomfortable
- Can cause vaginal bleeding.

### **If woman declines IOL:**

- Arrange assessment on DAU for CTG and liquor volume at 40+14. If she still declines after this arrange review with senior Obstetrician and arrange twice weekly CTG and liquor volume.

### **All other women (non MLC)**

The final decision to induce labour must be discussed with a consultant following full discussion with the woman. The indication for induction and the name of the decision maker must be documented clearly in the notes. All women offered IOL should be offered a prior membrane sweep. Cervical assessment prior to decision is an essential part of the informed choice and consent process.

### **Place of induction:**

Most Inductions will be undertaken on the antenatal ward.

Consider planning high risk induction on delivery suite.

### **Methods of induction**

- *Intact membranes*: vaginal prostaglandins are generally considered the method of choice regardless of parity or cervical favourability (see below for urinary catheter method)
- *Ruptured membranes*: Oxytocin infusion or vaginal prostaglandins are equally effective
- *Bishop's score 0-5*: Propress or balloon catheter
- *Bishop's score >5*: Prostin tablets
- *Artificial rupture of membranes and oxytocin infusion*: no longer first line.
  - **Caution: Grand multiparity >4**

In grand multiparous women the use of prostaglandin should be discussed with the consultant and this should be documented in the notes.

### **Procedure:**

The indication for induction must be confirmed and written clearly in the notes. The gestation should be rechecked, as well as the placental position. If less than 41 weeks the induction must be discussed with a consultant and the decision process documented.

Baseline observations of pulse, blood pressure, temperature and urinalysis should be documented, as well as abdominal palpation, station of head and auscultation of FH. Perform CTG 15 min prior to insertion of Prostaglandin in order to demonstrate fetal wellbeing. If prostaglandin induction inform the woman of risk of hyperstimulation. Perform vaginal examination and determine Bishop's score.

### Modified Bishop Score

	0	1	2	3
<u>Dilatation (cm)</u>	<1	1-2	2-4	>4
<u>Length (cm)</u>	>4	2-4	1-2	<1
<u>Station ( from ischial spine)</u>	<-3	-2	0 to-1	>+1
<u>Consistency</u>	Firm	Average	Soft	-
<u>Position</u>	Post	Mid/Ant.	-	-

#### **1. PGE2 (Prostin) tablets:**

With the exception of those with spontaneous rupture of the membranes aseptic technique is not necessary.

1. Insert 3 mgs PgE2 (Prostin) tablet high into the posterior vaginal fornix using small amount of lubricating gel (not Hibitane cream)
2. Monitor fetal heart for 30 minutes when contractions begin, to achieve a normal trace.
3. Repeat CTG before 2nd dose.
4. 2nd dose, 3 mgs PgE2 to be given after a minimum of 6 hours if labour does not start.
5. Failure to administer 2nd dose must be documented in case notes including the reason why.

#### **2. Propess**

##### Indications:

1. Primiparas with a Bishop Score of 5 or less
2. Patients with previous lower segment caesarean section scars
3. Consultant request.

### Plan:

1. Insert Propess pessary into the posterior fornix of the vagina.
2. Monitor when contractions begin.
3. Remove Propess pessary after 24 hours

### **Further management:**

1. Re-assess Bishop's score 6 hours after each PGE2 tablet or 24 hours after PROPESS.
2. If midwife considering withholding 2nd Prostin, discuss with Registrar on call.
3. If irregular tightenings only, then repeat Prostin.
4. Following 2nd dose of prostin or 24hr of Propess, women not suitable for ARM must be reviewed by a middle grade doctor around 8am prior to hand-over. The decision to use a further prostin must be discussed with a consultant.

### Spontaneous rupture of membranes (SRM) with Prostaglandin in situ

- If SRM occurs, a CTG should be performed.
- If the propess falls out it should not be re-inserted and transfer to labour ward for augmentation of labour with Syntocinon considered.
- no regular uterine activity the propess pessary can be left in situ . Maternal observations to be performed every 4 hours to exclude developing chorioamnionitis.
- If, however, the woman is having regular, painful uterine contractions, and she is requesting analgesia, then an aseptic vaginal examination should be performed to assess the cervix and transfer to labour ward if woman is in established labour.

### **Monitoring:**

1. Perform CTG when contractions begin.
2. Then use intermittent auscultation according to clinical judgement.
3. In established labour - should be monitored continuously.
4. All complicated pregnancies will need individual monitoring plans which should be recorded in the notes.

## **Complications:**

### Uterine tachysystole

1. Consider if contracting more frequently than 4 in 10 minutes.
2. Assess CTG - if normal do not remove propess seek medical advice.

### If CTG is abnormal

3. Remove Propess if present.
4. Consider Terbutaline 250 mcg s.c.
5. If uterine rupture is suspected, deliver baby by Caesarean section

## **3. Cervical Balloon Catheters**

This can be used as a second line induction technique with consultant approval.

A 16 Foley or similar catheter is inserted into the cervix by medical staff and the balloon inflated with 30 mls of water in the extra amniotic space. The catheter is strapped to the thigh and mobilisation encouraged. It will fall out when the cervix dilates sufficiently. With this method there is no risk of hyperstimulation.

## **Failure to Establish Labour after 24 hours**

- Obstetrician on call to assess woman's condition and pregnancy
- Assess fetal well being with electronic fetal monitoring
- Provide support and make decisions in accordance with woman's wishes and clinical circumstances.
- Management options include:
  - a further attempt to induce labour (timing to depend on clinical situation and woman's wishes)
  - Caesarean section

Do not use amniotomy alone or with oxytocin as a primary method of induction unless there are specific reasons for not using PGE2. Once the cervix is dilated sufficiently to enable rupture of the membranes, then the woman can be transferred to the Labour Ward.

#### **4. Artificial rupture of the membranes (ARM) and Oxytocin**

Prior to ARM cord presentation should be excluded and the presenting part should be engaged.

Amniotomy should be performed before oxytocin is commenced

CTG should be performed at the time of ARM and for a further 40 min

A plan for use of oxytocin must be documented in the records. It may be commenced:

- Immediately after ARM
- 2 hrs following if not in established labour

**DO NOT start oxytocin within 6 hrs of last prostaglandin tablet. It can be started 30min after removal of Propess.**

**The minimum dose of oxytocin should be used, titrated against contractions.**

#### **Oxytocin administration guideline**

**Indications:** Induction or augmentation of labour

**Dose:** A starting dose of 1milliunit/minute increased at intervals of 30 minutes or more to a maximum dose of 20 milliunits/minute

Oxytocin should not be started within 6 hours following administration of vaginal prostaglandins 3mg or 30minutes following removal of slow release propess. In women with intact membranes amniotomy should be performed where feasible prior to commencement of an infusion of oxytocin.

The minimum dose possible of oxytocin should be used and this should be titrated against uterine contractions aiming for maximum 3-4 contractions every 10 minutes.

Adequate contractions may be established at 12 millunits/minute. (In a nulliparous woman without a uterine scar the maximum dose may be raised to 32 milliunits/minute after personal review by a middle grade or senior obstetrician)

It may be possible to reduce the dose of oxytocin once the labour is established.

### Oxytocin Infusion Regimen

To reduce error, the following standardised dilution and dose regimens should be used.

All entries should be made in milliunits/minute (mU/min)

10IU Oxytocin in 500mls of normal saline, hence 3ml/hr = 1 milliunit oxytocin per minute.

Time after starting (m)	Volume Infused (mls/hour)	Oxytocin dose (mU/min)
	Dilution 10IU Oxytocin in 500mls normal Saline	
0	3	1
30	6	2
60	12	4
90	24	8
120	36	12
150	48	16
180	60	20
210	72	24
240	84	28
270	96	32

### Augmentation of labour

Augmentation of labour with Oxytocin should be considered with care. The decision to augment labour must depend on the circumstances, but in the active phase of labour dilatation of under 1cm/2 hours should be considered abnormal. Failure of the cervix to dilate over a 2-4 hour period will need to be investigated by abdominal and vaginal examinations to exclude obstructive causes of delay. **Augmentation of labour must always be a decision made by an obstetrician following review of the woman and a management plan clearly documented in the records.** The woman needs to be informed that augmentation with oxytocin will make labour faster and more painful, but will not reduce the need for Caesarean section (NICE 2008).

## Side effects

Uterine spasm –may occur at low doses

Water intoxication

Hypotension

Nausea and vomiting

Cardiac arrhythmias

Skin rashes

Anaphylactoid reactions (rare)

Uterine Hyperstimulation: Consider: Terbutaline 250mcg SC or slow IV over 2 min

## Induction of labour in women with a previous Caesarean section (see VBAC policy)

In general, women with previous caesarean section aiming for VBAC should be encouraged to aim for spontaneous labour as current evidence suggests the risks of scar rupture increase with IOL.

- Decision for IOL with previous caesarean section must be made by a consultant and include cervical assessment in the informed decision making process.
- Membrane sweep should be encouraged and may be repeated.
- If possible ARM should be performed and the women should be encouraged to mobilise, assuming CTG trace normal.
- If minimal uterine activity after 2 hours, oxytocin may be started.
- Continuous electronic fetal monitoring must be performed with regular uterine activity or when oxytocin commenced.
- Once in established labour, attempt to reduce or discontinue oxytocin to reduce the risk of scar rupture.
- In general, vaginal examination should be performed at 2-4 hourly intervals and if no progress despite uterine activity consider LSCS.
- If ARM is not possible, then preferably Propess or a balloon catheter may be inserted with the usual 'high risk' CTG monitoring.
- The consultant on call must be kept aware that a VBAC mother is undergoing IOL.

Maximum of 2 doses of Prostin can be administered after discussion with consultant.

References:

1. Prolonged pregnancy: When Should We Intervene - Doherty and Norwitz, Current Opinion in Obstetric Gynaecology 2008 20:519 – 527
2. NICE guidelines: July 2008 Induction of Labour
3. NICE guidelines: 13 Caesarean Section
4. Induction of labour in nulliparous women with an unfavourable cervix: a randomised controlled trial comparing double and single balloon catheters and PGE2 gel. CE Pennell et al. BJOG 2009, 116,11:1443-1452