Induction of labour

Introduction

- normal pregnancy involves three stages: **prelabour, cervical ripening and labour**
- These occur as a continuum rather than as isolated events
- Endogenous prostaglandins play a part in all these processes

- Labour induction is one of the most frequent medical procedures in pregnant women.
- It is a major intervention in the normal course of pregnancy, with the potential to set in motion a cascade of interventions, particularly Caesarean section. However, with modern methods of labour induction, this risk appears to have diminished.

When should labour be induced?

There are three options:

- allowing the pregnancy to continue,
- inducing labour
- performing elective Caesarean section.

Benefits to the Mother

- Improving a medical condition which is caused or aggravated by pregnancy, including pre-eclampsia, placental abruption, certain respiratory, hepatic and cardiac disorders.
- Relieving discomfort, such as from multiple pregnancy poly- hydramnios.
- Allowing essential treatment to be commenced, such as for cervical cancer;
- Relieving emotional distress after intrauterine death; or alleviating anxiety about the baby's well-being

Anticipated benefits to the baby

- Improved growth and development when intrauterine growth is suboptimal
- Reduced risk of intrauterine death from complications such as diabetes.
- Prolonged pregnancy (beyond 41 weeks), amnionitis, prelabour ruptured membranes.
- Rhesus immunization, fetal compromise
- Cholestasis of pregnancy.

The ‘ripeness’ of the uterine cervix

- The process of softening, shortening and partial dilation of the cervix usually takes place in the days or weeks prior to the onset of labour, but the timing of this process is variable.

- An unfavourable or ‘unripe’ cervix is one

  which has under gone minimal change and is more resistant to attempts at induction of labour.

Methods of induction of labour with a favourable cervix

- Artificial rupture of the membranes (amniotomy) using a toothed forceps or purpose-designed plastic hook.
- oxytocin infusion may be started with the amniotomy or may be used only if progress after amniotomy is inadequate.
- A typical dosage schedule would be1 mU/min, doubling the rate of infusion every 20–30min until adequate uterine contractions are achieved or a rate of 32 mU/min is reached.

Methods of induction of labour with an unfavourable cervix

- The mainstay of induction of labour with an unfavourable cervix is the use of exogenous prostaglandins.

- or methods to stimulate the release of endogenous prostaglandins to ‘ripen’ the cervix and induce contractions.

prostaglandins for labour induction

- Labour induction with prostaglandin F2 alpha was
- introduced in the 1960s. Subsequently, formulations of prostaglandin E2 (PGE2, dinoprostone) were developed which largely replaced the use of F2 alpha.
- The most common route of administration is vaginal, and tablets, suppositories, gels and pessaries have been developed.

- PGE2 tablets
- (3 mg 6–8 hourly to a maximum dose of 6 mg) are recommended in preference to PGE2 gel)
- PGE2 may be administered into the cervical canal, in smaller dosages than those used vaginally.

Misoprostol

- Misoprostol, an orally active, stable prostaglandin E1 analogue, has entered clinical use in Obstetrics and Gynaecology
- Misoprostol is commonly used for labor induction. It causes uterine contractions and the ripening of thecervix.[It significantly less expensive than the other commonly used ripening agent
- Guidelines for induction of labour recommend that misoprostol 25 µg 3- to 6- hourly is effective for induction

of labour (level A evidence), and 50 µg 6-hourly may be Appropriate in some situations, though increased risk of complications has been reported (level B evidence).

Complications of misoprostol

- **Uterine hyperstimulation**
- vaginal misoprostol in the dosages used to be associated with more uterine hyperstimulation with non-reassuring fetal heart rate changes than is PGE2.
- **Precipitate delivery** (labour < 2 h)
- Rupture of un scared uterus
- GIT upset