

Uncomplicated Term Pregnancy : When to Terminate? A Dilemma

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Gestation period begins at the time of conception and ends at birth and it lasts for an average of 280 days (40 weeks) from the last menstrual period to estimated date of delivery. The gestation between 37 weeks to 42 weeks was taken as term pregnancy¹. Neonates born before and after this interval are having adverse outcome. The neonatal outcome even in this five weeks interval of term pregnancy varies especially in regards of respiratory morbidity. Due to this variable neonatal outcome, a work group including representative from National Institute of Child Health And Human Development, the American College of Obstetrician and Gynecologist and the Society for Maternal and Fetal Medicine (SMFM) was convened in late 2012² and they recommended that term pregnancy should be replaced by designations early term, full term, late term and post term pregnancy³.

- Early term- 370/7 Weeks through 386/7 weeks
- Full term- 390/7 weeks through 406/7 weeks
- Late term – 410/7 weeks through 416/7 weeks
- Post term – 420/7 weeks and beyond

WHO defines a post-term pregnancy as one that has extended to or beyond 42 weeks (294 days) of gestation period. Prolongation of pregnancy beyond 40 weeks occurs in about one out of every 10 pregnancies and these run a higher risk of fetal compromise and adverse maternal and neonatal outcome.

Fetal and neonatal problems includes increased risk of perinatal mortality, intrapartum fetal distress, meconium aspiration, low apgar at birth, macrosomia associated with prolonged labor and shoulder dystocia with its associated risk of neurological injury and fracture⁴. There is increased risk of caesarean section, prolonged labor, instrumental and traumatic delivery⁵.

Induction of labor is a common obstetrical intervention, performed when the benefits of expeditious delivery outweigh the risk of continuing pregnancy. It is the process of artificially stimulating the uterus to start labor. Unfortunately, labor induction may itself cause problems especially when the cervix is not favourable⁶. This procedure should be carried out only when there is clear indication since it carries the risk of uterine hyperstimulation, fetal distress and uterine rupture. Furthermore, the ideal timing for induction of labor is not clear. Earlier it was tendency to wait for spontaneous labor until 42 completed weeks. Hence, appropriate timing of labor induction is very crucial in improving neonatal outcome without increasing caesarean rate.

Induction of labor to shorten the pregnancy is rising over decades and in developed countries, up to 25% of all deliveries at term now involve induction of labor⁷. In developing countries, the rates are generally lower, but in some settings they can be as high as those observed in developed countries⁸. WHO Global Survey data on Maternal and Perinatal Health including 373 health-care facilities in 24 countries and nearly 300 000 deliveries resulted that 9.6% of all the deliveries were by induced labor. Rate of labor induction was found to be lower in African countries (lowest: Niger, 1.4%) as compared to Asian and American countries (highest: Sri Lanka, 35.5%)⁹.

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Various methods of induction are as follows:

- Non pharmacological methods: sweeping of fetal membranes
- Pharmacological methods:
 - PGE2- intracervical or intravaginal
 - PGE1
 - Oxytocin
- Mechanical method: balloon catheter
- Surgical method: Amniotomy

One of the most common indications for induction is post dated pregnancy. Many recent guidelines have been formulated for elective induction of labor to prevent the post term pregnancy related complications.

Various studies have been conducted over years to find out the optimum gestation at time of induction so as to have optimum neonatal outcome and least chances of cesarean section.

In a study conducted by Heimsted et al in 2007 among 508 women, there was a trend toward more frequent meconium stained amniotic fluid in women who had antenatal induction after 41 weeks as compared to those who were induced at 41 week gestation. The induced group included more precipitate labors, more short active second stage labors and fewer long second stage labors. The two groups were similar in rate of caesarean section¹⁰.

A large cochrane systematic review came in 2006 to evaluate the benefits and harms of a policy of labor induction at term or post-term were compared to awaiting spontaneous labor or later induction of labor. They included 19 randomized controlled trials reporting on 7984 pregnant women. The results showed that labor induction at 41 completed weeks or beyond were associated with fewer perinatal deaths⁶.

Stock et al carried out a retrospective cohort study using an unselected population database to determine neonatal (perinatal mortality and special care unit admission) and maternal outcomes (mode of delivery, delivery complications) of elective induction of labor at 37, 38, 39, 40, and 41 weeks' gestation compared with expectant management. They concluded that elective induction of labor at term gestation can reduce perinatal mortality in developed countries without increasing the risk of operative delivery. At each gestation between 37 and 41 completed weeks, elective induction of labor was associated with a decreased odds of perinatal mortality compared with expectant management (at 40 weeks' gestation 0.08%

(37/44 764) in the induction of labor group versus 0.18% (627/350 643) in the expectant management group; adjusted odds ratio 0.39, 99% confidence interval 0.24 to 0.63), without a reduction in the odds of spontaneous vertex delivery (at 40 weeks' gestation 79.9% (35 775/44 778) in the induction of labor group versus 73.7% (258 665/350 791) in the expectant management group; adjusted odds ratio 1.26, 1.22 to 1.31). However, NICU admission increased in elective induction group before 41 week (8.0% at 40 weeks) compared with 7.3% in expectant group¹¹.

Macer et al, carried out a retrospective study to compare maternal and neonatal risk associated with elective induction compared with spontaneous labor. They study uncomplicated pregnant women with gestation between 37 and 41 weeks and 253 women in which labor was induced were compared with 253 women with spontaneous labor. They observed higher incidence of meconium staining of liquor in spontaneous group than in induced group (16.2% vs 6.7%). Although rate of cesarean section and maternal complication (intarpartum and postpartum) were similar in both the groups¹².

Guidelines are formulated by various obstetrical societies to state the best period of gestation for elective induction at term.

WHO (2011) gave its recommendations on elective induction of labor at term and beyond term based on Cochrane systematic review of 22 randomized controlled trials on 6274 women. The trials had evaluated the effect of inducing labor at 37–40 weeks, 41 completed weeks, and 42 completed weeks of gestation, and the intervention was compared with expectant management with fetal monitoring at varying intervals. There was significant reduction in perinatal deaths when labor was induced at 41 completed weeks. WHO recommended that labor induction should be offered to women with uncomplicated pregnancy who are known with certainty to have reached 41 completed weeks of gestation. The quality of evidence for this recommendation is low¹³.

As per RCOG (2001) recommendations, women with uncomplicated pregnancy should be offered induction of labor beyond 41 weeks. Ultrasound should be offered before 20 weeks gestation to reduce perceived post term pregnancies. Twice weekly CTG and amniotic fluid index should be offered to women who decline for induction at 42 weeks. They concluded that rate of caesarean section (19.6% vs. 21.7%) and meconium staining of amniotic fluid

(20.0% vs 25.3%) was decreased with the policy if induction as 41weeks as compared to expectant management¹⁴.

According to NICE guidelines (2008), women with uncomplicated pregnancies should usually be offered induction of labor between 41+0 and 42+0 weeks to avoid the risks of prolonged pregnancy. From 42 weeks, women who decline induction of labor should be offered increased antenatal monitoring consisting of at least twice weekly cardiotocography and ultrasound estimation of maximum amniotic pool depth.

SOGC clinical practice guidelines (2008) are evidence based guidelines for management of pregnancy at 41+0 weeks to 42+0 weeks. Accurate dating is important to avoid preterm birth as delayed ovulation can be important cause of perceived postdated pregnancy¹⁵. Gestation age of the women should be calculated from ultrasonography when there is more than 5 days or 10 days difference in last menstrual gestation age and first or second trimester USG gestation age respectively. Membrane sweeping should be offered at 38 to 41 weeks and induction should be done at 41+0 weeks to 42+0 weeks to decrease perinatal mortality without increased risk of caesarean section. Monitoring should include at least one non-stress test and amniotic fluid volume assessment¹⁶.

Most of the trials and guidelines suggest that an uncomplicated singleton pregnancy should be terminated at 41 weeks of gestation to achieve best maternal and fetal outcome.

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