## 29 The impact of elective induction of labor on cesareans and obstetric outcomes

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**OBJECTIVE:** A growing body of evidence supports improved or not worsened birth outcomes with induction of labor at 39 weeks compared to expectant management. Our goal was to compare outcomes for electively induced term pregnancies with those that were not electively induced in a population cohort.

**STUDY DESIGN:** Retrospective cohort study using chart-abstracted data on births from Jan1, 2012 - Dec 31, 2017 at hospitals that participated in a quality initiative in the Northwest USA. The study was restricted to singleton hospital births at $37^{+0}$–$42^{+6}$ weeks. Exclusions included previous cesarean, missing data for delivery type or gestation, antepartum stillbirth, pre-labor cesarean, fetal anomaly, gestational diabetes, pre-pregnancy diabetes, and pre- pregnancy hypertension. The cesarean rate for elective inductions was evaluated by gestational week (37-40 weeks) and compared to the rate in on-going pregnancies that were not electively induced in that gestational week. Maternal outcomes were also compared between the two groups at 39 and 40 weeks. Logistic regression modeling was used to produce odds ratios for outcomes adjusting for maternal age and BMI. Results were stratified by parity.

**RESULTS:** The final cohort comprised 73608 singleton births at 21 hospitals. The rate of elective induction at term was 9.5% (3584/37810) in multiparas and 1.7% (592/35798) in nulliparas. Nulliparas electively induced at 39 weeks had decreased odds of cesarean birth (aOR 0.59; 95% CI 0.41 - 0.86) (Table 1). For multiparas, elective induction at 39 weeks was associated with decreased macrosomia. Gestational hypertension/preeclampsia was decreased in both electively induced multiparas and nulliparas.

**CONCLUSION:** Our results are consistent with recent trials reporting elective induction at 39 weeks to be associated with a decrease in cesarean births in nulliparas. Elective induction was also associated with a decrease in pregnancy related hypertensive disorders in both nulliparas and multiparas.

| | Week at birth | Rate in Elective Inductions % | Rate in all those *not* Electively Induced at this Gestational Week % | aOR | 95% CI | p-value |
|---|---|---|---|---|---|---|
| **Nulliparas** | | | | | | |
| Cesarean | 37 | 0.0 | 22.1 | - | - | - |
| | 38 | 16.7 | 22.5 | 0.91 | 0.08-11.1 | 0.944 |
| | 39 | 14.8 | 23.9 | 0.59 | 0.41-0.86 | 0.007 |
| | 40 | 24.6 | 27.0 | 0.96 | 0.75-1.24 | 0.764 |
| PreE/Gest Htn | 39 | 2.2 | 7.3 | 0.28 | 0.09–0.67 | 0.001 |
| | 40 | 1.4 | 6.0 | 0.22 | 0.07-0.53 | <0.001 |
| PPH | 39 | 3.9 | 4.3 | 0.91 | 0.41-1.77 | 1.000 |
| | 40 | 2.2 | 4.5 | 0.49 | 0.21-0.99 | 0.049 |
| Macrosomia | 39 | 7.4 | 5.5 | 1.38 | 0.79-2.28 | 0.190 |
| | 40 | 4.2 | 5.8 | 0.71 | 0.39-1.20 | 0.250 |
| **Multiparas** | | | | | | |
| Cesarean | 37 | 0.0 | 3.5 | - | - | - |
| | 38 | 5.0 | 3.5 | 1.49 | 0.36–6.20 | 0.587 |
| | 39 | 3.2 | 3.7 | 0.81 | 0.63–1.04 | 0.178 |
| | 40 | 4.7 | 4.2 | 1.07 | 0.82–1.40 | 0.613 |
| PreE/Gest Htn | 39 | 0.9 | 3.5 | 0.26 | 0.16-0.40 | <0.001 |
| | 40 | 0.6 | 2.8 | 0.23 | 0.10-0.44 | <0.001 |
| PPH | 39 | 2.8 | 2.7 | 1.05 | 0.79-1.37 | 0.730 |
| | 40 | 3.1 | 3.0 | 1.03 | 0.73-1.42 | 0.869 |
| Macrosomia | 39 | 4.5 | 5.9 | 0.75 | 0.61-0.93 | 0.007 |
| | 40 | 4.7 | 4.1 | 1.16 | 0.88-1.52 | 0.256 |

## 30 Does mechanical induction of labor increase the risk of preterm birth in a subsequent pregnancy?

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**OBJECTIVE:** Mechanical induction with a Foley catheter is a frequent used method for induction of labor. Concerns have been raised on whether the mechanical aspect of this procedure can cause damage to the cervix and increase the risk of preterm birth (PTB) in a subsequent pregnancy. Here, we compare PTB rates (before 37 weeks of gestation) in subsequent pregnancies in women randomised to induction of labor with a Foley catheter versus Prostaglandins (PGE).

**STUDY DESIGN:** We performed a follow study of two multicentre randomised controlled trials (PROBAAT 1 and 2). In these trials, women with a singleton pregnancy at term in cephalic position with an indication for labor induction were randomised to either a 30c Foley catheter or PGE (vaginal PGE2 in PROBAAT 1 or oral PGE1 in PROBAAT 2). There were 10 hospitals who agreed to participate in the follow up study. We collected data on subsequent pregnancies, including their outcome, from hospital charts.

**RESULTS:** Of the 852 eligible women (414 in PROBAAT 1 and 438 in PROBAAT 1), 98 were lost to follow up (10% in each group). Of the 394 woman randomised to a Foley catheter, 199 women (51%) had a subsequent pregnancy beyond 16 weeks of gestation, versus 193 women (52%) among the 370 women who received PGE. There were no differences in baseline characteristics. The PTB-rate was 8/199 (4.0%) in the Foley induction group versus 7/193 (3.6%) in the prostaglandin group, respectively (RR 1.11; 95%CI 0.41–3.0). After excluding women with a multiple pregnancy (n=6) and an iatrogenic PTB (n=3), spontaneous PTB rates were 1.6% versus 1.6%, respectively (RR 0.97; 95%CI 0.25-3.82).

**CONCLUSION:** In women with a singleton pregnancy at term, induction of labour with a Foley catheter does not increase the risk of spontaneous PTB in a subsequent pregnancy as compared to induction of labor with Prostaglandins.