

317 Neonatal and infant morbidity and mortality among women with a failed trial of labor after cesarean

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OBJECTIVE: Despite the increased maternal risks associated with failed trial of labor after cesarean (TOLAC), it remains unknown whether failed TOLAC is also associated with increased morbidity and mortality in infants. The purpose of this study was to determine rates of early (EMR), late (LMR), post-neonatal (PMR) and infant (IMR) mortality in those with failed TOLAC as compared to those with successful TOLAC, specifically among women at 34-41 weeks who had induction or stimulation of labor. Secondary measures of neonatal morbidity (5-min Apgar score <4 and neonatal seizures) were also compared.

STUDY DESIGN: Linked birth and infant death cohort data, between 2000 and 2004, from the US were used to identify women with a prior cesarean who were between 34-41 weeks, delivered non-anomalous singletons, and underwent either labor induction or stimulation. Multivariable log-binomial regression models were fitted to estimate the risk ratio (RR) for infant morbidity and mortality in relation to TOLAC following adjustments for several confounders.

RESULTS: During the study period, the rate of successful TOLAC among the 164,113 women who met the inclusion criteria declined from 62% in 2000 to 52% in 2004 ($P < 0.001$). The rates of EMR, LMR, PNMR, and IMR for the overall cohort were 0.3, 0.3, 1.6 and 2.2/1,000 live births, respectively. A failed TOLAC was significantly associated with a higher risk of neonatal and infant mortality, as well as immediate neonatal morbidity (Table).

CONCLUSION: Among women undergoing labor induction or stimulation, failed TOLAC is associated with a significantly higher rate of neonatal morbidity, as well as neonatal and infant mortality.

	Successful TOLAC	Failed TOLAC	Adjusted RR (95% CI)
Mortality*	N=97,111	N=67,002	
EMR (0-6 days)	0.1 (14)	0.5 (32)	3.4 (1.8, 6.4)
LMR (8-27 days)	0.2 (18)	0.4 (28)	2.3 (1.3, 4.2)
PMR (28-365 days)	1.5 (148)	1.7 (116)	1.1 (0.9, 1.4)
IMR (0-365 days)	1.9 (180)	2.6 (176)	1.4 (1.1, 1.7)
Morbidity*	N=97,043	N=66,943	
5 min Apgar score < 4	0.8 (80)	2.4 (162)	2.9 (2.2, 3.8)
Neonatal seizure	0.5 (53)	0.9 (60)	1.6 (1.1, 2.3)

*Per 1,000 live births

318 The association between induction of labor and primary cesarean delivery in the Northeastern U.S. between 1996 and 2004

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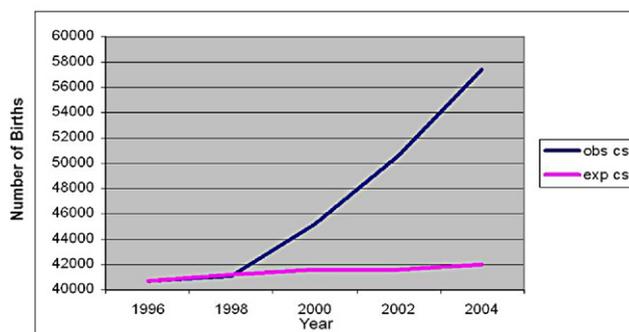
OBJECTIVE: The annual incidence rates of labor induction and cesarean delivery have increased dramatically over the past decade. We aim to examine the association between induction of labor and cesarean delivery among low risk nulliparous women in the northeastern U.S. over time.

STUDY DESIGN: This was a retrospective cohort study of non-anomalous, singleton, term, vertex live births by nulliparous women in the northeastern U.S. states between 1996 and 2004 using the U.S. Natality birth data. We excluded medical and obstetric conditions, yielding a low-risk population. The association between labor induction and cesarean delivery was examined by time trend in 2-year intervals using chi-square test and multivariable logistic regression. Population-based expected and observed numbers of cesareans over time were estimated using baseline cesarean risk and adjusted odds ratio based on induction of labor.

RESULTS: There were 1,300,393 live births meeting study criteria; of these, 21.4% had cesarean delivery. Compared to women without induction of labor, those induced had about 1.5 times the adjusted odds of cesarean: 1.58 for 1996 and 1998, 1.55 for 2000, 1.54 for 2002, and 1.55 for 2004. Of note, these odds ratios remained stable over the study period. However, the difference between observed and expected numbers of cesarean sections increased over time (Figure).

CONCLUSION: While nulliparous women who had induction of labor had higher odds of cesarean, this effect estimates were stable over time. However, the actual number of cesarean deliveries increasingly deviated from the expected amounts, suggesting that increase in labor induction only provides partial explanation for the current cesarean epidemic.

Number of observed vs. expected cesarean in the Northeast* US, over 1996-2004



*Northeast: CT, MA, ME, NH, NJ, NY, PA, RI, VT

319 Influence of oxytocin acceleration of nulliparous labor on perinatal outcome

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OBJECTIVE: Oxytocin augmentation successfully corrects dystocia in most slowly-progressing first labors, although its use has been sug-