

The Impact of Prior VBAC on Subsequent TOLAC

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OBJECTIVE:

To compare pregnancy outcome in women attempting trial of labor after cesarean delivery (TOLAC) for the first time with women with a history of one or more successful vaginal birth after cesarean section (VBAC).

METHODS:

A retrospective cohort study of all women attempting TOLAC in a university-affiliated tertiary hospital (2007-2015). Delivery outcome of women with no prior VBAC were compared to those with one or more prior VBAC. Exclusion criteria included: pregnancies with non-cephalic presentation, estimated fetal weight >4000g and any contraindications for vaginal delivery.

RESULTS:

2,045 women underwent their first TOLAC and 1,211 had prior successful VBAC. The groups were comparable regarding rates of maternal co-morbidities, obstetrical complications and need for oxytocin augmentation ($p>0.05$).

	Group 1: Prior VBAC N=1211	Group 2: No Prior VBAC N=2045	p Value
Induction of labor	156 (12.9)	324 (15.8)	0.021
Oxytocin Augmentation	705 (58.2)	1124 (55.0)	0.08
Vaginal delivery	1104 (91.2)	1362 (66.6)	<0.001
Operative vaginal delivery	59 (4.9)	375 (18.3)	<0.001
Prolonged second stage	15 (1.2)	128 (6.3)	<0.001
NRFHR	42 (3.5)	241 (11.8)	<0.001
Other*	2 (0.1)	6 (0.2)	
CS	48 (4.0)	308 (15.1)	<0.001
Dystocia	12 (1.0)	121 (5.9)	<0.001
NRFHR	36 (3.0)	187 (9.1)	<0.001
Revision of uterine cavity	140 (11.6)	433 (21.2)	<0.001
PPH	60 (5.0)	164 (8.0)	0.001
Uterine disruption	14 (1.2)	59 (2.9)	0.001
Uterine rupture	9 (0.7)	33 (1.6)	0.036
Uterine dehiscence	5 (0.4)	26 (1.3)	0.015
Neonatal birthweight	3268.2±489.2	3215.5±478.6	0.003

Values are presented as median (interquartile range) or n (%)

CS – cesarean section; NRFHR – non reassuring fetal heart rate; PPH – post-partum hemorrhage;

*Other –no otherwise specified

Women in the prior VBAC group had higher rate of successful spontaneous VBAC (91.2 vs. 66.6%, $P<0.001$), and reduced risk for operative vaginal delivery (4.9 vs. 18.3%, $P<0.001$) compared to women with no prior VBAC. Induction of labor (IOL) was found to decrease VBAC rates significantly (OR 0.48 95%CI 0.36-0.63 $p<0.001$). The rates of uterine rupture (0.7 vs. 1.6% $P=0.036$) and uterine dehiscence (0.4 vs. 1.3% $P=0.015$) were also decreased in the prior VBAC group. In multivariate analysis controlling for induction of labor, oxytocin augmentation, time interval from previous surgery more than 2 years, vaginal delivery prior to cesarean delivery, and birth weight, previous VBAC was found to decrease the risk of uterine rupture (OR=0.45, 95% CI 0.21-0.96, $p=0.04$).

CONCLUSIONS:

- In women attempting TOLAC, prior VBAC is associated with higher rate of successful VBAC.
- Prior VBAC appears to be protective from uterine rupture during TOLAC.