33 Prior preterm birth in first pregnancy and risk of small-for-gestational-age birth in second pregnancy: a population-based study

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OBJECTIVE: To evaluate risk of small-for-gestational-age birth in the second pregnancy following preterm delivery in first pregnancy

STUDY DESIGN: We conducted a population-based retrospective cohort study using birth certificate data from the Missouri maternally linked cohort from 1989 to 2005. The study sample included Caucasian and African American women who delivered their first 2 non-anomalous, vertex, singleton pregnancies between 20 and 44 weeks of gestation without chronic hypertension, preeclampsia, renal disease, or diabetes mellitus in both pregnancies (n=197,556). Multivariable logistic regression models were fit to estimate odds ratios and 95% confidence intervals for risk of small-for-gestational-age birth (SGA) in second pregnancy by gestational age in the first preterm births. Infants were classified as SGA <5 and <10 percentile (%tile according to a population-based birth weight reference).

RESULTS: Among women with a full-term 2nd pregnancy, those who delivered their 1st pregnancy at ≤28 weeks, 29 to 32 weeks, and 33 to 36 weeks of gestation had increased odds of <10%tile SGA in 2nd pregnancy by 71%, 90%, and 69%, respectively, after controlling for pregnancy interval, maternal age, race, pre-pregnancy BMI, cigarette use during pregnancy, and Medicaid status. Similarly, among women with a term 2nd pregnancy, those who delivered their 1st pregnancy at ≤28 weeks, 29 to 32 weeks, and 33 to 36 weeks of gestation had increased odds of <5%tile SGA in 2nd pregnancy by 126%, 106%, and 81%, respectively, after controlling for confounders. No significant increased risk of either <5 or <10%tile SGA in 2nd pregnancy was observed among women with recurrent preterm delivery. Conclusion: Prior preterm delivery is associated with increased odds of SGA births despite an uncomplicated term second pregnancy.

CONCLUSION: Prior preterm delivery is associated with increased odds of SGA births despite an uncomplicated term second pregnancy.

Table 1. Risk of SGA in 2nd pregnancy among women with preterm births in the 1st pregnancy

	Delivery < 37 weeks in 2nd pregnancy (n=17,169)				Delivery >= 37 weeks in 2nd pregnancy (n=180,387)			
	< 5 %tile SGA in 2nd pregnancy		<10 %tile SGA in 2nd pregnancy		< 5 %tile SGA in 2nd pregnancy		<10 %tile SGA in 2nd pregnancy	
Gestational age at delivery in 1st pregnancy	aOR	95% CI	aOR	95% CI	aOR	95% CI	aOR	95% CI
≤ 28 weeks	1.35	0.85, 2.13	1.49	0.90, 2.48	2.26	1.51, 3.39	1.71	1.23,2.36
29 to 32 weeks	0.69	0.25, 1.86	1.39	0.85, 2.28	2.06	1.42, 2.98	1.90	1.44, 2.50
33-36 weeks	1.03	0.42,2.54	1.33	0.97, 1.83	1.81	1.48, 2.22	1.69	1.46, 1.96
≥ 37 weeks	reference		reference		reference		reference	

34 The bladder flap at cesarean delivery–to create or not to create: a randomized controlled trial

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OBJECTIVE: Creation of the bladder flap has been an integral part of the standard cesarean delivery technique without evidence of benefit. We conducted a randomized controlled trial to test the hypothesis that omission of the bladder flap in both primary and repeat cesarean deliveries shortens operating time without significantly increasing intraoperative and postoperative complications.

STUDY DESIGN: We prospectively randomized 259 women undergoing primary and repeat cesarean deliveries at 32 weeks or greater to creation (n=132) or omission (n=127) of the bladder flap. Emergency cesarean deliveries, planned vertical uterine incisions, and prior abdominal surgeries besides cesareans were excluded. The primary outcome measure was total operating time. Secondary outcomes were bladder injury, incision to delivery time, incision to fascial closure time, estimated blood loss (EBL), postoperative microhematuria, postoperative pain, hospital days, endometritis and urinary tract infection (UTI). Analysis followed the intention-to-treat principle.

RESULTS: The median skin incision to delivery interval was shorter with omission of the bladder flap (9 [interquartile range 6 - 13] versus 10 [7 - 15] minutes, p=0.04), but there were no differences in total operating time (51[38-62] minutes versus 51 [range 43-68], p=0.10). No bladder injuries occurred in either group and there were no significant differences in EBL, change in hemoglobin level, postoperative microhematuria, postoperative pain, hospital days, endometritis or UTI (Table). Similar findings were obtained when analysis was stratified by primary or repeat cesarean deliveries.

CONCLUSION: Omission of the bladder flap at primary and repeat cesarean deliveries does not increase intraoperative or postoperative complications. Incision to delivery time is shortened while total operating time appears unchanged.

Surgical time/outcome	Bladder Flap (n=131)	No Bladder Flap (n=127)	p value
Total operating time (min), median(interquartile range)	51 (43-68)	51 (38-62)	0.10
Incision to Delivery time(min), median (interquartile range)	10 (7-15)	9 (6-13)	**0.04**
Incision to Fascial Closure time(min), median (interquartile range)	42 (32-56)	38 (28-52)	0.10
Estimated Blood Loss (mL), median (interquartile range)	800 (700-1000)	800 (700-1000)	0.08
Change in hemoglobin (g/dL), median (interquartile range)	-1.6 (-2.4 - -0.9)	-1.7 (- 2.4 - -0.7)	0.74
Bladder injury, n (%)	0 (0)	0 (0)	-
Microhematuria, n (%)			
1st Postoperative day	49 (44.5)	58 (54.7)	0.14
4 – 6 weeks Postpartum	3 (2.9)	2 (2.2)	0.94
Pain Score (0 – 10), mean(±SD)			
1st Postoperative day	3.3 (2.9)	3.4 (2.7)	0.70
4 – 6 weeks Postpartum	1.6 (1.9)	1.5 (2.0)	0.74
Endometritis, n (%)	3 (2.3)	4 (3.2)	0.72
Days Hospitalized, mean(±SD)	4.5 (4.8)	4.8 (4.8)	0.71
Urinary tract infection, n (%)	1 (0.8)	2 (1.6)	0.62

35 Long-term neurodevelopment in children after intrauterine transfusion for Parvovirus B19 infection

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OBJECTIVE: to determine the incidence of neurodevelopmental impairment (NDI) in survivors of fetal Parvovirus B19 infection treated with intrauterine blood transfusion (IUT).

STUDY DESIGN: Prospective cohort study of children born after IUTs performed between 1997 and 2009 for fetal Parvo B19 infection. We formally assessed neurologic functioning and development in children at least 1.5 yrs. NDI is a composite outcome defined as at least one of the following; cerebral palsy, severe developmental delay, bilateral deafness requiring hearing amplification and/or bilateral blindness.

RESULTS: A total of 45 IUTs were performed in 44 fetuses, 32 survived. All fetuses were hydropic. Mean gestational age at IUT was 22 weeks and at birth was 39 weeks. Three cases were lost to follow up, we excluded one case because of Buschke Ollendorff syndrome. In total, we included 28 children for follow up, at a median age of 6 yrs (range 1.5-14). One child was diagnosed with both cerebral palsy and severe developmental delay. Two others had severe developmental delay only. Minor neurologic dysfunction was found in 3 children, minor developmental delay in 2 others. Overall incidence of NDI was 11%.

CONCLUSION: In this largest follow-up study to date, children after IUT for Parvovirus B19 induced hydrops were found to be at increased risk

for long term impairment. In a group of survivors of fetal hydrops due to Rh-alloimmunization with hydrops, the rate of NDI was 12% (9/75). In our general population the rate of CP is 0.2% and the rate of severe development delay 2.15%. Larger, multicenter studies are needed to provide more insight in the causes and risk factors for an adverse outcome in this special group of children.