

greater in magnitude than that associated with the choice of trial of labor. These increased risks are not offset by a substantive reduction in the risk of neonatal morbidity.

Composite adverse outcomes per pregnancy

	Elective cesarean in first pregnancy				Trial of labor in first pregnancy			
	1st pregnancy	2nd pregnancy	3rd pregnancy	4th pregnancy	1st pregnancy	2nd pregnancy	3rd pregnancy	4th pregnancy
Maternal outcomes	0.830%	1.148%	1.973%	5.777%	0.541%	0.558%	0.768%	1.606%
Neonatal outcomes	0.126%	0.307%	0.312%	0.368%	0.154%	0.354%	0.356%	0.363%

109 The association between mid-trimester cervical length and cesarean delivery at term

Emily Miller¹, William Grobman¹

¹Northwestern University, Obstetrics and Gynecology, Chicago, IL

OBJECTIVE: An ultrasonographically diagnosed short cervix has been associated with an increased risk of preterm birth, but the obstetric consequences of longer cervical lengths have been less well defined. The objective of this study was to determine the association between cervical length and cesarean delivery among women at term.

STUDY DESIGN: This is a cohort study of women with a singleton gestation who underwent routine mid-pregnancy transvaginal cervical length assessment and delivered at term. Women who underwent planned cesarean delivery without intent to labor were excluded from analysis. Women were grouped into quartiles based on cervical length, and the association of their cervical length quartile with cesarean delivery was determined in both univariable and multivariable analysis.

RESULTS: 5806 subjects were included in this analysis, of whom 58.1% were nulliparous. There were multiple differences among women in the different cervical length quartiles (Table). The frequency of cesarean delivery among the cohort was 18.9%. As cervical length increased, the chance of cesarean delivery increased as well (14.7%, 19.5%, 19.1%, and 22.4% from the 1st through 4th quartiles, respectively). After controlling for potential confounding factors, cervical length quartile remained significantly associated with an increased odds of cesarean for the second (aOR 1.49, 95% CI 1.18-1.88), third (aOR 1.47, 95% CI 1.16-1.85) and fourth (aOR 1.89, 95% CI 1.50-2.38) quartiles, compared to the first quartile. This relationship held true for nulliparous as well as multiparous women.

CONCLUSION: Increasing mid-trimester cervical length is associated with increasing frequency of cesarean delivery in both nulliparas and multiparas. Preparatory uterine changes that enable successful labor may be initiated as early as the mid-trimester.

Population characteristics and cervical length per quartile

	1st quartile n=1479	2nd quartile n=1456	3rd quartile n=1479	4th quartile n=1392	p value
Cervical length	3.6 (3.3-3.8)	4.2 (4.1-4.3)	4.7 (4.6-4.9)	5.5 (5.2-5.9)	<0.001
Maternal age	30.8 ± 5.6	31.2 ± 5.4	31.4 ± 5.3	31.6 ± 5.2	<0.001
Smoker					0.015
Never	1255 (87.9%)	1277 (91.2%)	1297 (90.6%)	1193 (89.4%)	
Former	151 (10.6%)	109 (7.8%)	127 (8.9%)	132 (9.9%)	
Current	32 (2.5%)	47 (3.4%)	47 (3.4%)	62 (4.8%)	
Mode of conception					0.067
Spontaneous	1342 (96.6%)	1334 (96.0%)	1322 (95.9%)	1227 (94.3%)	
IUI	13 (0.9%)	8 (0.6%)	10 (0.7%)	12 (0.9%)	
IVF	35 (2.5%)	47 (3.4%)	47 (3.4%)	62 (4.8%)	
Race/ethnicity					<0.001
White	671 (55.0%)	732 (60.2%)	772 (61.8%)	651 (56.0%)	
Black	181 (14.8%)	113 (9.3%)	117 (9.3%)	115 (9.9%)	
Latina	264 (21.6%)	269 (22.1%)	281 (22.5%)	309 (26.6%)	
Other	104 (8.5%)	103 (8.5%)	80 (6.4%)	87 (7.5%)	
Nulliparous	871 (58.9%)	821 (56.4%)	787 (53.2%)	686 (49.3%)	<0.001

Median (IQR), mean ± SD, or n (%).

110 Evidence to support the safety and efficacy of vaginal delivery of twins gestation complicated by very low birthweight of second twin

Eran Barzilay¹, Hila de Castro¹, Jigal Haas¹, Eyal Sivan¹, Eyal Schiff¹, Shali Mazaki-Tovi¹, Yoav Yinson¹

¹Sheba Medical Center, Tel-Aviv University, Obstetrics and Gynecology, Tel-Hashomer, Israel

OBJECTIVE: To determine whether neonatal outcome is associated with the mode of delivery in very low birthweight twins.

STUDY DESIGN: This was a retrospective cohort study. Inclusion criteria included: 1) twin gestation; 2) second twin birthweight of ≤1500 grams. Exclusion criteria included: 1) gestational age at delivery of less than 24 gestational weeks 2) fetal demise of one or both twins. A total of 206 twin gestations met the criteria and patients were classified into 2 groups according to the planned mode of delivery: 1. Cesarean delivery (n=152) and 2. Vaginal delivery (n=54). In the vaginal delivery group 24 pairs were cephalic-cephalic, 28 pairs were cephalic-non cephalic, and 2 pairs were non cephalic- non cephalic. The rates of Apgar score <7 at 5 minutes and cord blood PH<7.1 in either twin A or B were determined in the two groups.

RESULTS: The mean gestational age at delivery was 31 weeks in the cesarean delivery group compared to 30 weeks of gestation in the vaginal delivery group (p=0.01). However, the mean birthweight of both twins was similar among the two groups (Twin A: 1452 grams vs. 1358 grams, p=0.18 and Twin B: 1186 grams vs. 1182 grams, p=0.9 respectively). There were no significant differences between the cesarean and vaginal delivery groups in the rates of low Apgar score (Twin A: 4.0% vs. 1.9%, p=0.5 and Twin B: 9.7% vs. 3.7%, p=0.2) and cord PH < 7.1 (Twin A: 2.4% vs. 0%, p=0.3 and Twin B: 1.7% vs. 0%, p=0.4). A sub-group analysis of the vaginal delivery group revealed comparable rates of cesarean section (8.3% Vs 3.3%, p=0.4) as well as neonatal Apgar score < 7 among the cephalic-cephalic and cephalic-non cephalic groups (Twin A: 4.2% vs. 0%, p=0.3 and Twin B: 0 vs. 6.7%, p=0.2).

CONCLUSION: Vaginal delivery of very low birthweight twins is a safe regardless of second twin presentation. This information should provide reassurance for pregnant women and clinicians alike.

111 Decreased sleep duration in the third-trimester is not associated with excessive gestational weight gain

Kristin Knight¹, Eva Pressman¹, Lorelei Thornburg¹

¹University of Rochester, OB/GYN, Division of Maternal-Fetal Medicine, Rochester, NY

OBJECTIVE: Obesity and excessive gestational weight gain (GWG) are significant public health problems that lead to an increased incidence of adverse perinatal outcomes. Decreased sleep duration is associated with increased rates of obesity in non-pregnant populations as well as with prolonged weight retention in postpartum women. We sought to determine if there is an association between decreased sleep duration and excessive GWG.

STUDY DESIGN: We conducted a prospective cohort study of non-diabetic women with singleton gestations from Feb 2011–Mar 2012. Maternal weight gain, 3rd-trimester sleep habits (collected over 7 days), and fetal/neonatal biometry were collected. Cohorts were defined as sleeping <7 and ≥7 hours/night on average. Student's T-test, Mann-Whitney U, and Chi-square analysis were used to compare groups.

RESULTS: 35 women sleeping <7 hours/night were compared with 124 women sleeping ≥7 hours/night in the 3rd trimester. The average nightly sleep duration was 6.2 hours and 8.7 hours, respectively (p<0.001). Demographic characteristics were similar in both groups. There were no significant differences in overall weight change (38 vs. 32 lbs, p=0.15) or incidence of weight gain exceeding that recommended by the IOM (65.7% vs. 61.3%, p=0.63). Those sleeping <7 hours/night had a higher percentage of total weight gain in the 1st trimester (23.6% vs. 14.2%, p=0.03), however the percentages of total weight gained in the 2nd and 3rd trimesters were similar. There were