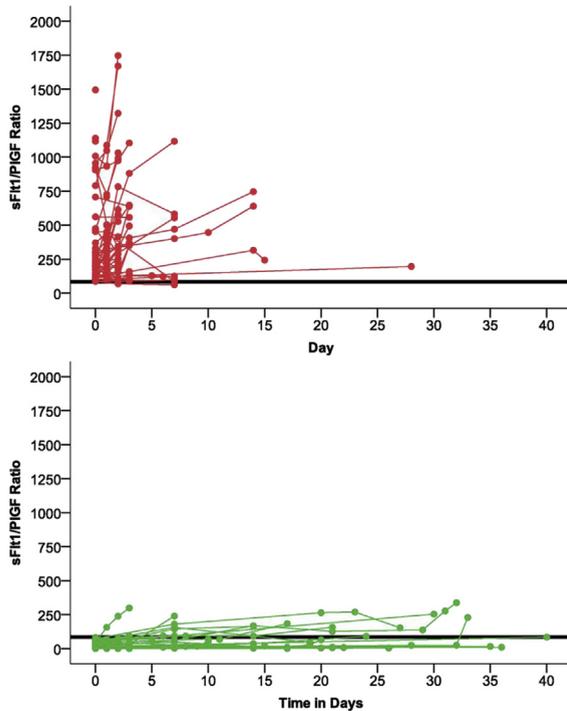


(range) days from admission to delivery was 6 (0-35) among subjects below sFlt1/PlGF ratio of 85 and 14 (0-39) above ratio of 85 ( $P < 0.001$ ).

**CONCLUSION:** In this single center observational study of women admitted for evaluation of preeclampsia, we showed that women at risk for adverse outcomes have higher sFlt1/PlGF on admission that continued to rise till delivery. Women with high sFlt1/PlGF ratios delivered sooner than women with low sFlt1/PlGF levels. This supports the hypothesis that lowering the levels of sFlt1 may be associated with pregnancy prolongation.

**Figure: Sequential circulating sFlt1/PlGF levels and duration of pregnancy with normal and abnormal angiogenic profile at admission**



**187 Timing of delivery for chronic hypertension: a population-based cohort study in the United States**

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**OBJECTIVE:** The objective of this analysis was to determine gestational age-specific labor induction trends in the United States for pregnancies complicated by chronic hypertension.

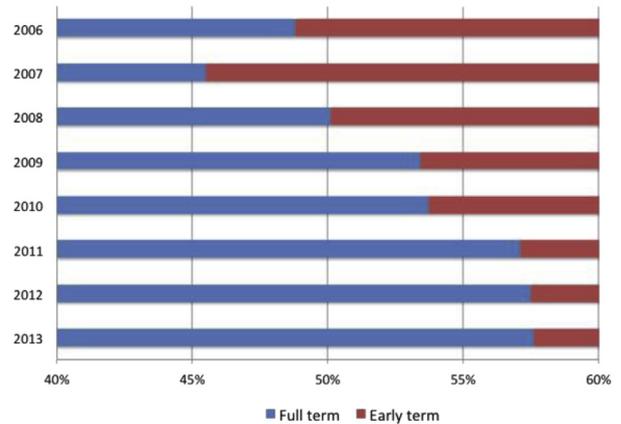
**STUDY DESIGN:** This population-based study of U.S. natality records from 2006-2013 evaluated early term ( $\geq 37$  to  $< 39$  weeks gestational age) versus full term inductions ( $\geq 39$  to 40 weeks gestational age) amongst primiparous women with chronic hypertension. Obstetrical, medical, and demographic characteristics were evaluated. Multivariable log-linear regression models were developed to determine factors associated with induction. Neonatal outcomes including low Apgar score and neonatal intensive care unit (NICU) admission were also compared based on gestational age of induction.

**RESULTS:** 15,446 pregnancies were included in the analysis. The proportion of full-term relative to early-term inductions increased significantly over the study period. For chronic hypertension the

proportion of full-term inductions increased from 53.3% to 64.8% (FIGURE). These increases retained significance in the adjusted log linear regression models. Full-term delivery was associated with significantly decreased risk for low Apgar scores and NICU admission compared to early term delivery.

**CONCLUSION:** Induction at full term is becoming increasingly prevalent for women with chronic hypertension. Given that delivery timing includes balancing benefits of neonatal delivery at full term versus risk of stillbirth the last few weeks of pregnancy, future comparative effectiveness research to identify delivery-timing strategies is urgently needed.

**FIGURE. Proportion of full versus early term inductions for chronic hypertension**



**188 Factors associated with successful trial of labor after cesarean delivery**

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**OBJECTIVE:** The objective of this study was to analyze factors and temporal trends associated with successful vaginal delivery for women undergoing trial of labor after cesarean delivery (TOLAC).

**STUDY DESIGN:** This population-based study of U.S. natality records from 2005-2013 evaluated whether women undergoing TOLAC for live-born, non-anomalous, cephalic, singleton gestations from  $> 37$  to  $< 42$  weeks gestational age had a successful vaginal delivery or underwent repeat cesarean. Women with more than one prior cesarean delivery were excluded. The primary outcome was successful vaginal delivery. Obstetrical, medical, and demographic characteristics associated with vaginal delivery were analyzed. Multivariable log linear regression models were developed to determine factors associated with vaginal delivery.

**RESULTS:** Of 323,904 women attempting TOLAC included in the analysis, 229,479 (70.8%) successfully achieved vaginal delivery. White women were more likely to be successful than black women (73.8% vs 66.1%,  $p < 0.01$ ), as were women with prior vaginal delivery (84.0% compared to 60.4% in women without a prior vaginal delivery,  $p < 0.01$ ). Preexisting diabetes, chronic hypertension, and gestational hypertension/preeclampsia were associated with significantly lower rates of success (55.9%, 62.4%, and 63.1%, respectively). These factors retained significance in the adjusted model. Women undergoing labor induction had a similar rate of success compared to women with spontaneous labor (71.5% versus 70.7%, respectively). No significant temporal trends were noted.

**CONCLUSION:** This contemporary data supports that TOLAC success is associated with specific medical, obstetric, and demographic factors. These findings support the use of TOLAC success prediction algorithms in provider counseling and patient decision making in balancing risks and benefits of undergoing TOLAC versus scheduled repeat cesarean delivery.

### 189 Midtrimester cervicovaginal microbiota: identification of a potential biomarker for puerperal infection at term

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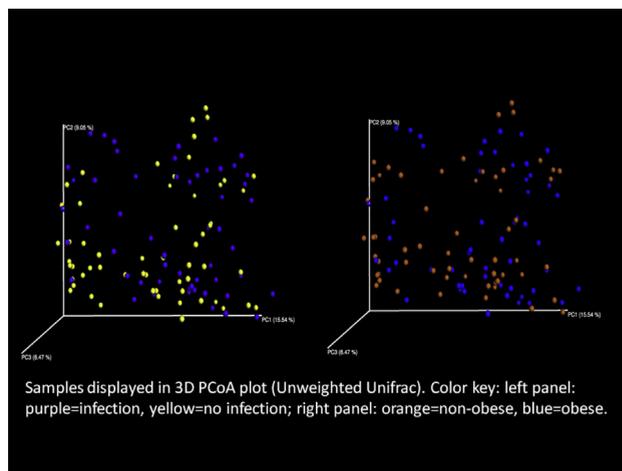
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**OBJECTIVE:** Obesity is a risk factor for polymicrobial puerperal infections. It is unknown whether obesity-related microbial differences explain this fact. We evaluated midtrimester cervicovaginal microbiota in women stratified by maternal body mass index (BMI) and presence or absence of puerperal infection.

**STUDY DESIGN:** Cervicovaginal swabs were collected at 21-25 weeks' gestation and stored at -80°C. In a blinded fashion, 120 samples were identified from black women with normal vaginal flora (Gram stain Nugent score 0-3) who ultimately delivered singletons at term. Samples were stratified by obesity and puerperal infection (chorioamnionitis or endometritis) into four groups (30 per group). Samples were thawed, DNA extracted, PCR with primers targeting the 16S rDNA V4 region were used to prepare an amplicon library which was sequenced and analyzed using QIIME. Taxonomy was assigned using RDP Classifier (threshold 0.8) against the modified Greengenes database. Microbiota differences were assessed using permutation-based analysis over all three beta-diversity measures: Bray-Curtis, weighted UniFrac, and unweighted UniFrac. Kruskal-Wallis was used for taxa level analysis.

**RESULTS:** After quality control and exclusion of four outliers with Gardnerella, Mycoplasma, or Prevotella as the predominant taxon, 113 samples (predominantly composed of Lactobacillus species, as expected) were analyzed. There was no significant clustering by obesity ( $p > .10$ ) or by puerperal infection ( $p > .25$ ) (Figure). Though no individual taxa were different in obese compared to non-obese women, there was approximately 75% less Proteobacteria phylum (Orders Caulobacteriales and Burkholderiales) observed in women who had puerperal infections (false discovery rate corrected  $p = .02$ ).

**CONCLUSION:** Obesity is not associated with the cervicovaginal microbiota. However, women who develop puerperal infections at term have less abundance of two orders of Proteobacteria in their cervicovaginal microbiota in the second trimester. This finding may represent a potential method to identify women at increased risk of puerperal infection.



### 190 The association of BMI and wound infection after cesarean delivery

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**OBJECTIVE:** Limited scientific data exist to support the commonly held belief that obese women have higher rates of post-cesarean wound infection. We sought to evaluate the association between body mass index (BMI) and post-cesarean wound infection.

**STUDY DESIGN:** Secondary analysis of a prospective multi-center study. Data on women with a singleton gestation who underwent cesarean were abstracted by trained, certified research personnel. BMI at delivery was stratified by category and obesity class: normal (18.5-24.9 kg/m<sup>2</sup>), overweight (25-29.9 kg/m<sup>2</sup>), Class 1 (30-34.9 kg/m<sup>2</sup>), Class 2 (35-39.9 kg/m<sup>2</sup>) and Class 3 (40-49.9 kg/m<sup>2</sup>), and BMI  $\geq 50$  kg/m<sup>2</sup>. The primary outcome was wound infection: erythema of the incision with purulent drainage requiring wound care. The secondary outcome was endometritis. Multivariable logistic regression was performed to control for potential confounders.

**RESULTS:** 51,407 women were included from 13 centers. Age, ethnicity, payer status, medical co-morbidities (e.g., preexisting diabetes mellitus, chronic hypertension), smoking, intrapartum antibiotic use, duration of membrane rupture, and chorioamnionitis varied by BMI ( $p < 0.001$ ). The most clinically important differences were in rates of medical co-morbidities, ranging from 11% in the normal group to 32% in the BMI  $\geq 50$  kg/m<sup>2</sup> group, and African American ethnicity, ranging from 26% to 57%, respectively. Rates of wound infection by BMI were 0.8% (normal), 1.0% (overweight), 0.9% (Class 1), 1.4% (Class 2), 2.1% (Class 3), and 4.9% (BMI  $\geq 50$  kg/m<sup>2</sup>) ( $p < 0.001$ ). After adjusting for potential confounders, rates of wound infection were significantly higher in women with greater than Class 1 obesity (Figure). 36.5% of wound infections (population attributable fraction) could be prevented if overweight/obese women had a normal BMI. Rates of endometritis did not differ.

**CONCLUSION:** The risk of post-cesarean wound infection is positively correlated with BMI, and is highest when BMI  $\geq 50$  kg/m<sup>2</sup>. Interventions to reduce the rate of post-cesarean infection in obese women are needed.