and hospital admission > 4 days remained higher for women with ≥4 prior CD among women with vertical skin incision (Table). There were no differences in neonatal outcomes based on skin incision type (Table).

CONCLUSION: In women with multiple prior CD, vertical skin incision shortened the interval to delivery slightly, but was not associated with improvement in neonatal outcome and was associated with prolonged maternal hospital stay.

Multivariable analysis of maternal and neonatal outcomes by skin incision type

	2 Prior CD	3 Prior CD	≥4 Prior CD
	aHR (95% CI)	aHR (95% CI)	aHR (95% CI)
Incision-to-delivery interval	**1.41 (1.30-1.52)**	**1.20 (1.02 - 1.40)**	1.14 (0.82-1.59)
	aOR (95% CI)	aOR (95% CI)	aOR (95% CI)
Hospitalization >4 days	1.01 (0.99 - 1.03)	1.04 (1.00 - 1.08)	**1.34 (1.02 -1.76)**
Composite neonatal morbidity	0.88 (0.70 -1.12)	0.79 (0.51 - 1.23)	1.55 (0.65-3.64)

*Adjusted for BMI, maternal age, race, history of smoking, GDM/DM, presence of classical uterine incision, gestational age, male gender.

HR = hazard ratio; OR = odds ratio.

770 Pharmacokinetics and tolerability of oral 17-hydroxyprogesterone caproate (HPC) relative to intramuscular (IM) HPC

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OBJECTIVE: To determine the pharmacokinetic profile and assess tolerability of an oral HPC capsule (LPCN 1107) relative to an IM control in healthy non-pregnant women.

STUDY DESIGN: This was an open-label, 3-period, active controlled study in ten healthy non-pregnant women 18-30 years of age. In Periods 1 and 2 volunteers were administered in a randomized, cross-over fashion, either one dose of LPCN 1107 400 mg (QD) or two doses of LPCN 1107 400 mg given 12 hours apart (Q12) with a standard meal. In Period 3 all subjects received a single dose of HPC 250 mg IM. There was a washout of one week between treatment Periods. Blood samples were collected over 24 hours following QD dosing, 36 hours following Q12 hour dosing and over 30 days following the IM dosing. HPC concentrations in plasma were analyzed using a validated LC-MS/MS method. Steady state simulations (SS) were modeled from single dose pharmacokinetic parameters using WinNonlin.

RESULTS: Following administration of HPC the maximum concentration (Cmax, ng/mL) of HPC was 13.5, 23.1, 7.3 and area under the curve (AUC0-t, ng*h/mL) was 69, 173, 2101 for the QD, Q12 and IM treatments respectively. Given the intrinsic difference in dosing regimen between the oral and IM forms, SS was simulated based on single dose pharmacokinetic parameters for the 400 mg Q12 and 250 mg weekly IM doses. The simulated steady state pharmacokinetic parameters showed that 400 mg Q12 exposure was about 55% of weekly 250 mg IM product. LPCN 1107 was well tolerated with no SAEs.

CONCLUSION: This study is the first to report significant oral absorption of HPC. Based on the steady state simulation, LPCN 1107 could provide serum exposures comparable to weekly IM injection at an appropriate dose and the oral treatments demonstrate good dose response. LPCN 1107 is currently in clinical development and if approved, has the potential to become the first oral HPC therapy for the prevention of recurrent preterm birth.

771 Short-term surgical and clinical outcomes with a novel method for open fetal surgery of myelomeningocele

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OBJECTIVE: This is a short-term evaluation of surgical and clinical outcomes with a novel method for open fetal surgery for myelomeningocele.

STUDY DESIGN: Ninety-four fetal surgeries for myelomeningocele repair using a different surgical approach developed in our Institution during the last three years. The surgeries were undertaken at two centers with the same team with expertise in open fetal surgical and facilities to handle maternal and fetal complications. Inclusion criteria included singleton; less than complete 26 weeks' gestation, upper MMC boundary at T1-S1; evidence of hindbrain herniation; normal karyotype and no others malformations; BMI < 35 and low risk for preterm birth. The variables analyzed were maternal demographics, gestational age at the time of surgery, hindbrain herniation, maternal complication, fetal and neonatal variables.

RESULTS: Maternal age 31.1 ± 4.9 years; White 87.2%; Married 92.5%; Years of schooling 14.0 ± 1.9; Nullipara 58.3%; Fetal gender female 52.1%; Hindbrain herniation 98.9%; Gestational age at surgery 25.9 ± 0.6 wks; Pulmonary edema 4.4%; Spontaneous rupture of membrane 31.8% Oligohydramnios 23.1%; Placental abruption 1.1%; Chorioamnionitis 4.4%; Blood transfusion at delivery 3.3%. Hysterotomy well-healed 63.7%; Very thin 30.8%; Area of dehiscence 3.3%; Complete dehiscence 2.2%; Perinatal death 3 (3.2%); Gestational age at birth 33.8 ± 2.4 wks; < 30 wks 8.8%; Birth weight 2233 ± 571g; Interval between fetal surgery and delivery 54.6 days; Dehiscence at repair site 4.2%; complete reversal of hindbrain herniation at birth 62.6%.

CONCLUSION: This early experience using a novel surgical technique showed similar results with MOMS trial results without using the stapler device and can be useful when the costs and availability of medical supplies limit their application. However, further long-term follow-up is necessary to evaluate maternal and fetal outcomes.

772 Isolated abnormal glucose value on the 3-hour glucose tolerance test (OGTT) and subsequent adverse maternal and neonatal outcomes

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OBJECTIVE: To evaluate the association between large for gestational age neonates weighing > 4000gms (LGA), hyperbilirubinemia, and cesarean delivery rates (CD) in pregnancies with a single abnormal value on the 3-hour OGTT (fasting, 1-hour, 2-hour, 3-hour).

STUDY DESIGN: We performed a retrospective cohort study evaluating singleton pregnancies screened for gestational diabetes mellitus (GDM) and delivered between 01/2009- 12/2013 at our institution. A 50g glucose challenge test (GCT) was done between 24-0 and 30-0 weeks gestation with a value of 135 mg/dL used as the cutoff for administering the 3-hr oral glucose tolerance test (OGTT).GDM was diagnosed when two or more plasma values were elevated according to the Carpenter-Coustan criteria). LGA, hyperbilirubinemia, and CD rates were examined in comparison to those who passed the GCT using modified Poisson regression.

RESULTS: Of the 3664 total pregnancies reviewed, 1107 singleton pregnancies failed the GCT. Of those who failed the initial GCT and completed an OGTT, 500 passed. A subset of 151 patients failed only one value on the OGTT (42 failed the fasting value and a 109 failed a

non-fasting value). An isolated elevated fasting plasma value was not linked with the outcomes of interest. Isolated elevation in any of the non-fasting values was associated with a 2.24 fold risk for LGA (95% CI:1.03-4.91,p=0.04). A BMI≥30 was associated with a 2.42 elevated LGA risk (95%CI:1.43-4.09,p=0.001). A 4% increase risk of LGA and CD was observed for each added year in maternal age. There were no significant associations between isolated glucose values and CD or hyperbilirubinemia.

CONCLUSION: Isolated elevations of OGTT non-fasting plasma glucose values demonstrated an increased risk of LGA. Older mothers with a BMI≥30 also demonstrated an increased risk for LGA infants. Consideration for third trimester growth scans in this population should be given.

Primary outcomes according to isolated plasma glucose value on OGTT*

Outcome	Level	AR	Lower 95%CI	Upper 95%CI	p-value	RR	Lower 95%CI	Upper 95%CI	p-value
LGA	failed fasting	2.05	0.53	7.87	0.30	1.68	0.41	6.95	0.47
	failed non-fasting	2.79	1.26	6.11	0.01	2.24	1.03	4.91	0.04
Cesarean Delivery	failed fasting	1.52	0.98	2.36	0.06	1.18	0.79	1.71	0.21
	failed non-fasting	1.41	1.03	1.94	0.03	1.23	0.89	1.71	0.21
Hyperbilirubinemia	failed fasting	0.56	0.08	3.87	0.56	0.60	0.09	4.01	0.60
	failed non-fasting	1.76	0.86	2.58	0.12	1.95	0.88	4.27	0.10

*3-hour 100g Glucose Tolerance Test.

773 The association of isolated single umbilical artery with birthweight and preterm birth

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OBJECTIVE: In the current literature, there is controversy regarding the association between small for gestational age (SGA) and the presence of isolated single umbilical artery (iSUA). The objective of this study was to assess the association of iSUA with SGA newborns and with preterm birth.

STUDY DESIGN: In this cohort study, 169 consecutive women with pregnancies complicated by iSUA were compared with 338 women with a 3-vessel cord. Pregnancies with fetal anomalies or aneuploidy were excluded from the analysis. Univariable comparisons of patients' characteristics and pregnancy outcomes were conducted using chi-square test or Fischer exact test for categorical data, and student t-test for continuous measures. Multivariable logistic regression was performed to adjust for potential confounding factors.

RESULTS: In univariable analysis, the presence of iSUA was significantly associated with lower birthweight and with SGA (p<0.001 for each outcome). Earlier gestational age at delivery as well as delivery < 34 weeks also were more common in pregnancies with iSUA (p=0.02 and p=0.04, respectively). However, no significant difference was noted between estimated fetal weights in the iSUA group compared to the control group, as measured on growth ultrasound at either 28-32 weeks (58.9%ile vs 62.2%ile, p=0.51) or 34-38 weeks (61.7%ile vs 68.3%ile, p=0.30). In multivariable analysis, iSUA remained associated with SGA and preterm birth (Table).

CONCLUSION: Pregnancies complicated by iSUA are at increased risk for SGA and preterm birth. However, it appears that antenatal ultrasounds were not able to reliably detect growth restriction in those fetuses. Multivariable regressions for the relationship between birthweight, small for gestational age, gestational age at delivery and presence of iSUA.

Single umbilical artery	Linear regression Coefficient	95% Confidence Interval	P
Birthweight	-92.7*	-168.9 - -16.5	0.02
Gestational age at delivery	-0.5**	-0.8 - -0.2	<.01
	Logistic regression Odds Ratio		
Small for gestational age	4.0*	1.6 - 10.1	<.01
Preterm delivery < 34 weeks	8.1**	1.2 - 53.3	0.03
Preterm delivery < 37 weeks <!--37--> <!--37--> <!--37--> <!--37--> <!--37--> <!--37--> <!--37-->	2.0**	1.0 - 4.0	0.045

*Adjusted for maternal age, BMI, gestational age at the time of delivery, male gender, presence of GDM/DM, presence of CHTN.

**Adjusted for maternal age, BMI, male gender, presence of GDM/DM, presence of CHTN, prior preterm birth.

774 Placental visfatin/NAMPT and sirtuin-1 expression in pre-eclampsia

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OBJECTIVE: The human placenta expresses Sirtuin-1 (SIRT1) and visfatin/NAMPT (VSF). VSF catalyzes the rate-limiting step in the NAD salvage pathway and regulates the expression of SIRT1. The sirtuin proteins control cell metabolism, proliferation and stress-response. SIRT1 is a nicotinamide adenine dinucleotide (NAD)-dependent deacetylase, associated with inflammation resolution. VSF and SIRT1 are regulators of angiogenesis, especially in ischemic stress. Given that alterations in extravillous trophoblast invasion and endothelial cell changes in maternal spiral arteries contribute to the early pathogenesis of pre-eclampsia (PE), changes in VSF and SIRT1 may have roles in this process. The study objective was to quantitate placental VSF and SIRT1 in PE compared to controls.

STUDY DESIGN: Fresh placental biopsies were collected at delivery with Institutional Review Board approval. Samples were collected from preterm PE (PTPE; n= 18), term PE (TPE; n=11), preterm controls (PTC; n=6), and term controls (TC; n=8). There were 5 preterm HELLP (PTHELLP) and 3 term (THELLP). Patients were both with and without labor. Tissue samples were formalin-fixed, paraffin-embedded and sectioned. Immunohistochemistry used rabbit antibodies to VSF (ABCAM) or SIRT-1 (Sigma-Aldrich). Controls were normal rabbit IgG. Quantitation was performed with a Nuance spectral analyzer (Perkin-Elmer). Average signal intensity per pixel from five separate fields were averaged for each sample. Significance was set at $p \leq 0.05$.

RESULTS: Labor had no significant effect on VSF or SIRT1 expression. SIRT1 decreased in TPE compared to TC ($p = 0.04$), although there was no effect on VSF. However, there was a trend for decreased VSF in PT HELLP compared to THELLP ($p = 0.07$) and increased SIRT1 in PT HELLP compared to THELLP ($p = 0.07$).

CONCLUSION: SIRT1 showed more changes with PE at term than VSF, while in HELLP, their expression unexpectedly diverged. Sample sizes are small, but this study is ongoing which may further clarify these effects.

775 To reduce or not to reduce? Perinatal outcome of pregnancies after twin-to-singleton reduction

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OBJECTIVE: Determine whether reduction of twins gestation to singleton pregnancy is associated with improved perinatal outcome.

STUDY DESIGN: A retrospective cohort study of 63 pregnant women with bi-chorionic bi-amniotic twins who underwent elective fetal reduction to singleton at 11-14 weeks of gestation at a single tertiary center. The study group was matched by age to a control group of 62 women with dichorionic diamniotic twins who received prenatal