

significantly higher among those who had CD NR FHRT (RR 4.65, 95% CI 3.16, 6.85).

CONCLUSION: CD NRFS occurs in 1 of 5 SGA infants and is associated with an increase in neonatal morbidity.

Small-for-gestational age and route of delivery

	CD NR FHRT (N =160)	Vaginal birth (N =571)	Odds Ratio (95% CI)
Nulliparous	65% (104)	51% (291)	2.1 (1.3,2.1)
Body mass index at delivery	33.2 ± 8.9	29.0 ± 6.6	0.01
Gestational age at delivery	36.6 ± 3.4	38.0 ± 2.2	0.03
Suspected IUGR	38% (61)	20% (112)	1.6 (1.05-2.6)
Composite neonatal morbidity	46% (74)	15% (86)	4.65 (3.16,6.85)

344 The effect of loop electrosurgical excision procedure (LEEP) on post-term labor induction

Jeanine Carbone¹, Jennifer McNamara¹, David Stamilio¹, Anthony Odibo¹, Alison Cahill¹, Kimberly Roehl¹, George Macones¹

¹Washington University in St. Louis, Department of Obstetrics and Gynecology, St. Louis, MO

OBJECTIVE: Studies suggest that prior loop electrosurgical excisional procedure (LEEP) is associated with cervical stenosis. Cervical stenosis may interfere with physiologic cervical ripening, thus preventing spontaneous onset of labor. Our objective is to estimate if LEEP increases the risk of a post-term labor induction.

STUDY DESIGN: A retrospective cohort study of women who did or did not have a LEEP (1996-2001) in 12 centers and had a subsequent pregnancy with delivery >20 weeks gestation. Women with a LEEP were compared to women with no cervical surgery prior to delivery. Control subjects were identified by matching age +/- 5 years, hospital, and year of recorded pap smear based on pathology records. Women with a subsequent preterm delivery or no pregnancies beyond 20 weeks post-LEEP were excluded. The primary outcome was post-term labor induction. For this study, post-term was defined as ≥40 weeks. Other reasons for labor induction and cesarean delivery were assessed as secondary outcomes. Multivariable logistic regression analysis was used to control for confounders.

RESULTS: Among 1520 women meeting the inclusion criteria, 496(32.6%) had a history of LEEP and 1024(67.4%) did not have a LEEP prior to their compared pregnancy. Women with a LEEP were more likely to be older, Caucasian, and smoke tobacco. Women who had a LEEP did not have an increased risk for a post-term labor induction (8.5 vs. 7.3%, p-value=0.99; adjusted odds ratio[aOR] 1.47 95% CI 0.62-3.59). There was a nearly significant increase in the rate of labor induction for any indication (36.5% vs. 31.2%, p=0.06; [aOR]1.09, 95% CI 0.82-1.46) and in the rate of cesarean delivery (28.9% vs. 24.5%, p-value=0.08;[aOR] 1.17 95% CI 0.86-1.59) in women with a history of LEEP.

CONCLUSION: LEEP is not associated with an increased risk for post-term labor induction in the subsequent pregnancy.

	LEEP n=496(%)	Control n=1024(%)	Odds Ratio [95%CI]	p-value	aOR
Post-Date Induction	42 (8.5)	75 (7.3)	1.00[0.64-1.57]	0.99	1.47 [0.62-3.59] ^a
Non-reassuring status	0	2(0.2)	--	--	--
Oligohydramnios	11(2.2)	30(2.9)	0.63[0.30-1.29]	0.21	0.90[0.39-2.07] ^b
Maternal Indication	48(9.7)	107(10.4)	0.70[0.46-1.08]	0.10	0.73[0.42-1.24] ^b
Fetal Indication	22(4.4)	33(3.2)	1.23[0.69-2.20]	0.49	0.95[0.50-1.81] ^a
Total Inductions	142(36.5)	254(31.2)	1.27[0.99-1.65]	0.06	1.09[0.82-1.46] ^a
Cesarean Delivery	129 (28.9)	226 (24.5)	1.25 [0.97-1.61]	0.08	1.17 [0.86-1.59] ^a

^a Adjusted for age, parity, race, preeclampsia, smoking, gestational age at delivery, and prior cesarean delivery
^b Adjusted for age, parity, race, smoking, gestational age at delivery, and prior cesarean delivery

345 Does fetal MRI impact clinical decision making of ultrasound-diagnosed fetal lesions? A center's 10 year experience

Jeanine Carbone¹, Per Amundson², Anthony Shanks¹, Joshua Shimony², Robert McKinstry², David Stamilio¹, Anthony Odibo¹

¹Washington University in St. Louis, Department of Obstetrics and Gynecology, St. Louis, MO, ²Washington University in St. Louis, Department of Radiology, St. Louis, MO

OBJECTIVE: To evaluate whether fetal magnetic resonance imaging (MRI) provides additional information to that obtained from prenatal ultrasound and does the additional information alter clinical management.

STUDY DESIGN: This is a retrospective review of patients presenting for fetal MRI after being referred for an anomaly diagnosed at our prenatal ultrasound unit (2001-2011) between 18-37 weeks gestation. Data was abstracted to compare the ultrasound (US) diagnosis to the MRI diagnosis. We then evaluated if the MRI changed clinical management by chart review and physician survey. There was considered to be a change in management if the MRI diagnosis changed counseling, initiated discussion of comfort care or pregnancy termination, prompted a surgical referral, stopped further imaging, or changed mode of delivery. Statistical analysis included chi-square or Fisher's exact test where appropriate.

RESULTS: Three hundred and twenty-eight patients had both a fetal US and MRI at our institution. The most frequent indication for MRI was for abnormalities of the central nervous system (53%) 174/328. In 109 cases (33.2%), MRI confirmed the US diagnosis, and in 106 cases (32.3%) MRI confirmed the diagnosis but made additional findings. MRI changed the US diagnosis to a different diagnosis in 74 cases (22.6%) and changed the diagnosis to normal in 39 cases (11.9%). Overall MRI provided additional diagnostic information or changed the diagnosis in 65.5% of cases, which lead to a change in clinical management in 203(61.9%) of cases. In 139(68.4%) women, the MRI changed the diagnosis and resulted in a change in counseling, compared to 54(43.2%) where MRI did not change the diagnosis nor counseling(p=0.03).

CONCLUSION: Ultrasound is the screening method of choice for evaluation of the fetus. MRI can be a useful adjuvant and can provide useful information that results in a change in clinical management. The most common change in clinical management was a change in parental counseling.

Change in Clinical Management	MRI changed Diagnosis or Made Additional Findings n = 203	
	n	%
Counseling	139	68.4
Comfort Care	9	4.4
Pregnancy Termination	8	3.9
Surgical Referral	30	14.8
No further Imaging	4	2.0
Change Mode Delivery	13	6.4

Marker	Preeclampsia AUC[95%CI]	SGA AUC[95%CI]	GHTN AUC[95%CI]
PP13	0.75[0.66-0.83]	0.65[0.53-0.77]	0.70[0.50-0.73]
PV	0.77[0.69-0.85]	0.68[0.57-0.79]	0.74[0.51-0.71]
PQ	0.77[0.70-0.85]	0.69[0.59-0.80]	0.73[0.51-0.72]
VI	0.79[0.72-0.86]	0.69[0.58-0.79]	0.72[0.48-0.70]
FI	0.77[0.70-0.84]	0.67[0.55-0.79]	0.72[0.48-0.70]
VFI	0.79[0.72-0.86]	0.68[0.57-0.79]	0.72[0.48-0.70]
PP13+VFI	0.76[0.68-0.84]	0.66[0.55-0.78]	0.68[0.51-0.74]
PP13+VI+PV	0.77[0.69-0.85]	0.69[0.58-0.80]	0.69[0.52-0.75]
PP13+VI+PQ	0.77[0.69-0.85]	0.71[0.60-0.81]	0.69[0.52-0.75]

346 Combination of first-trimester placental protein 13(PP13), 3D placental volume, vascular indices and maternal characteristics for prediction of adverse pregnancy outcomes

Jeanine Carbone¹, Katherine Goetzinger¹, Julie Liebsch¹, Roxane Rampersad¹, George Macones¹, Anthony Odibo¹

¹Washington University in St. Louis, Department of Obstetrics and Gynecology, St. Louis, MO

OBJECTIVE: PP13 and placental parameters may be valuable early predictors of adverse pregnancy outcomes. We tested the hypothesis that a combination of first-trimester PP13, 3D placental volume, and vascular indices would improve the prediction of adverse pregnancy outcomes.

STUDY DESIGN: We performed a prospective cohort study of 422 singleton pregnancies presenting to our prenatal ultrasound unit between 11 and 14 weeks gestation. Placental volume (PV) was obtained by 3D ultrasound using the VOCAL technique. Placental quotient (PQ) was determined by taking the ratio of PV to fetal crown-rump length. Vascularization index (VI), flow index (FI), and vascularization flow index (VFI) were obtained from 3D power Doppler histograms. PP13 levels were measured, and the values were converted to multiples of the median (MoM) for gestational age. Adverse outcomes evaluated included preeclampsia (PE), gestational hypertension (GHTN) and small for gestational age (SGA=birthweight, <10th percentile). Comparisons of PP13, 3D PV, PQ, vascular indices, and maternal characteristics between women who developed any of the adverse pregnancy outcomes and those with normal outcomes were performed using the Wilcoxon rank sum test. Logistic regression analysis was used to identify the final prediction model and receiver-operating characteristics (ROC) curves used to evaluate the predictive ability of each or combination of variables, using area under the curve (AUC).

RESULTS: PE was diagnosed in 42(10%), GHTN in 39 (9.2%), and SGA in 32(7.6%) of the women included. PP13 MoM was significantly lower in women diagnosed with preeclampsia (0.67;p<0.001) and PQ was significantly lower in pregnancies complicated by SGA (0.61; p=0.1). The area under the ROC curve for the prediction of SGA with the combination of PP13 with VI and PQ was 0.71. However, combination of these first-trimester parameters did not improve the prediction of preeclampsia or GHTN. Results summary in the table.

CONCLUSION: PP13, VI, and PQ have modest ability to predict SGA individually. Combination of these parameters do not further improve the prediction of preeclampsia or GHTN nor SGA.

347 Hydramnios in twin gestations

Jennifer S. Hernandez¹, Diane M. Twickler², Donald D. McIntire¹, Jodi S. Dashe¹

¹The University of Texas Southwestern Medical Center, Obstetrics and Gynecology, Dallas, TX, ²The University of Texas Southwestern Medical Center, Radiology, Dallas, TX

OBJECTIVE: To evaluate the effect of hydramnios on pregnancy outcomes in dichorionic (DC) and monoamniotic (MC) twins.

STUDY DESIGN: This is a retrospective cohort study of all twin pregnancies that received prenatal ultrasound evaluation between August 1997 and December 2010 and delivered live-born infants >24 weeks of gestation. Chorionicity was assessed sonographically. Sonography was routinely performed every 4 to 6 weeks. Hydramnios was defined as a single deepest pocket of amniotic fluid >8 cm, and further qualified as mild (8-9.9 cm), moderate (10-11.9 cm), and severe (>12 cm). The greatest degree of hydramnios identified during pregnancy was used for analysis. Monoamniotic pregnancies and pregnancies complicated by twin-twin transfusion syndrome were excluded. Infants with major structural anomalies were analyzed separately.

RESULTS: There were 1919 twin pregnancies meeting inclusion criteria, of which 1301 (68%) were DC and 618 (32%) MC. Hydramnios was identified in 323 pregnancies (17%), with no differences in prevalence or severity according to chorionicity. Outcomes are presented in the table below. The prevalence of major structural anomalies increased significantly with the degree of hydramnios in both DC and MC pregnancies. The remainder of the analyses excluded anomalous infants. In DC pregnancies, there was a significant association between degree of hydramnios and infant birthweight; however, this relationship was not present in MC pregnancies. Hydramnios was not associated with preterm birth, birthweight discordance, or neonatal death.

CONCLUSION: Hydramnios is common in twin gestations and is associated with an increased risk for fetal anomalies. In the absence of malformations, we did not identify an increased risk for adverse pregnancy outcomes.