regarding LMWH, as assessed by an adapted Beliefs about Medication Questionnaire.

RESULTS: Overall, 250 women completed the questionnaire. The median recommended duration of post-discharge LMWH was 7 [5-8] days. Suboptimal adherence was reported by 82 (32.8%); 45 (18.0%) women did not administer any LMWH dose following discharge and only 147 (58.8%) completed the full LMWH course. In multivariate analysis, optimal adherence was positively associated with patients' perceptions of the necessity of LMWH (odds ratio [95% CI]: 3.50 (2.12, 9.53), P=0.002) and of the adequacy of explanation given prior to discharge regarding LMWH technical administration (odds ratio [95% CI]: 5.0 (2.33, 11.11), P< 0.001).

CONCLUSION: Nearly one-third of women prescribed postpartum LMWH thromboprophylaxis reported suboptimal adherence. Patients' perceptions of the necessity of the treatment and their opinion of the adequacy of explanation regarding LMWH technical administration were identified as predictors of treatment compliance, and thus represent potential areas for improvement.

228 Automated segmentation of the human placenta and uterus with MR imaging using artificial intelligence (AI)

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OBJECTIVE: MR imaging of the placenta affords improved resolution and large fields of view, but is currently limited by subjective, qualitative clinical impressions. Our objective was to develop artificial neural networks (a deep learning AI method) to automate MR volume and 3-dimensional display of placental segmentation as the first step in quantification of placental pathology.

STUDY DESIGN: We selected 100 MR cases performed between 20 and 38 weeks' gestation from 2012-19 for suspected fetal abnormalities but in which no major abnormality was identified. An expert, serving as ground truth, and learner segmented the uterus and placenta from axial 7-mm single shot fast spin echo sequences. A customized version of U-Net was developed for automated segmentation, using a high performance computer workstation, with 5 points manually selected to identify boundaries of the uterus and placenta, as well as the approximate center of the placenta. The neural network trained with 70 MR cases and validated on 10,

followed by independent testing of 20 cases. The performance of the algorithm was evaluated by Dice similarity coefficient (DSC).

RESULTS: The learner achieved a DSC of 0.92±0.07 for placenta (N=40) and 0.95±0.02 for uterus (N=25), compared to deep learning-based algorithm DSC of 0.82±0.06 for placenta and 0.92±0.04 for uterus (Table 1). The processing time was 22 seconds, compared to an average of 30 minutes for the learner. Figure 1 is a 3-D rendered automated segmentation of the placenta and uterus.

CONCLUSION: We developed a deep learning AI method of automatic segmentation of the uterus and placenta with MR rendered in 3-D. This first step allows for future MR parametric analysis within that segmentation and quantitative assessment of placental pathology, such as placenta accreta spectrum.
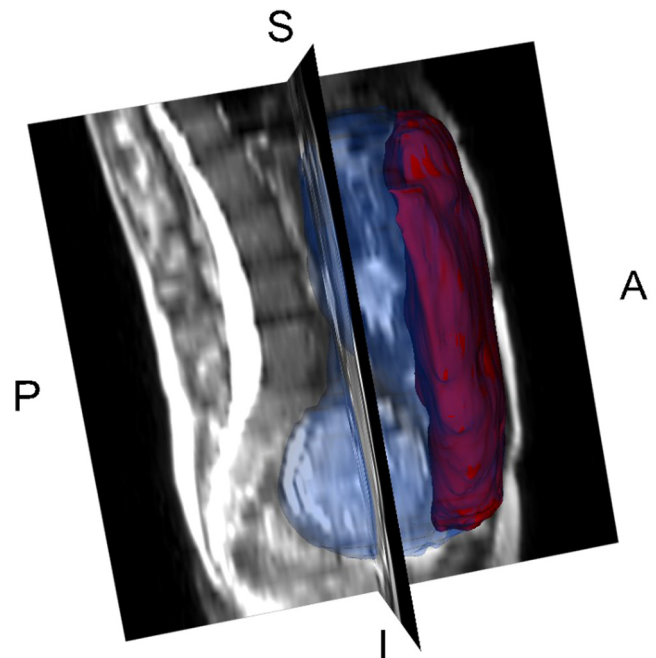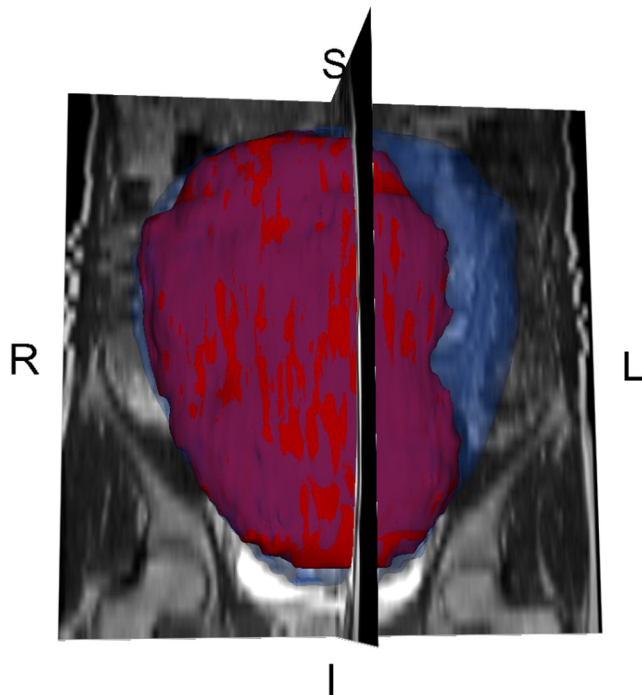

Table 1		Uterus			Placenta		
Deep Learning	**N**	**DSC (%)**	**V (cm³)**	**ΔV (%)**	**DSC (%)**	**V (cm³)**	**ΔV (%)**
Training	70	95.9 ± 1.9	2485 ± 850	0 ± 8	90.1 ± 4.6	737 ± 268	7 ± 9
Validation	10	92.3 ± 5.1	2071 ± 652	2 ± 8	80.9 ± 8.3	539 ± 211	6 ± 28
Test	20	92.1 ± 4.0	2411 ± 815	1 ± 9	82.0 ± 5.9	589 ± 263	-6 ± 17

hypoglycemia compared to T2DM, (68% vs. 41%, p=0.048, Table 2).

CONCLUSION: Normal pre-delivery maternal glucose did not reduce the incidence of neonatal hypoglycemia compared to elevated glucose in women with pregestational diabetes. T1DM was associated with higher neonatal hypoglycemia rates regardless of pre-delivery maternal glucose control. Our results add to growing evidence that intrapartum glucose control may not be associated with a lower risk of neonatal hypoglycemia or NICU admissions. This supports the need to identify other interventions to reduce morbidity for infants of mothers with diabetes.

229 Maternal intrapartum glucose control and risk of neonatal hypoglycemia in women with pregestational diabetes

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OBJECTIVE: Tight intrapartum maternal glucose control in pregestational diabetes is recommended to reduce the risk of neonatal hypoglycemia and neonatal intensive care unit (NICU) admission. Minimal evidence supports the relationship between intrapartum maternal glycemic control and neonatal hypoglycemia. The objective of the study is to compare the incidence of neonatal hypoglycemia with well-controlled blood glucose versus elevated glucose immediately prior to delivery in mothers with pregestational diabetes.

STUDY DESIGN: This is a single-site, retrospective cohort study of singleton births with maternal pregestational diabetes from 1/2017-6/2019. Pre-delivery maternal glucose was defined as elevated if >110 mg/dL. The primary outcome was neonatal hypoglycemia (defined as < 45 mg/dL) within one hour of life. Secondary neonatal outcomes included neonatal hypoglycemia within 24 hours of birth, lowest neonatal glucose within 24 hours, and NICU admission.

RESULTS: 164 deliveries were included; 59% had Type I diabetes (T1DM) and 42% had Type II diabetes (T2DM). Maternal pre-delivery glucose was elevated in 34% of all deliveries and similar by diabetes type. Incidence of neonatal hypoglycemia within 1 hr of birth in those with elevated glucose was similar to those with normal glucose (Table 1). NICU admissions were more frequent in the elevated maternal glucose group, but this was not statistically significant. Among those with elevated pre-delivery glucose, T1DM was associated with higher rates of neonatal

Table 1. Neonatal outcomes amongst women with elevated vs. well-controlled pre-delivery maternal glucose

	Elevated pre-delivery maternal glucose >110 mg/dL n=56	Pre-delivery maternal glucose ≤110 mg/dL n=108	p
Neonatal hypoglycemia (1h from birth)	32 (57)	60 (56)	0.90
Neonatal hypoglycemia (2-24h)	32 (57)	67 (62)	0.78
Lowest neonatal glucose (24h)	36 (27-43)	38 (29-44)	0.28
NICU admission	15 (27)	22 (20)	0.35

Data presented as median (interquartile range) or n (%)