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Routine late trimester ultrasound for the detection of small-for-gestational-age and growth-restricted fetus in low-risk pregnancy: a randomised controlled trial

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more effective. The fetus can be discovered in time before birth to avoid a series of irreversible pathophysiological changes.

Methods: A total of 148 pregnant women who underwent prenatal ultrasound screening in our hospital from December 2016 to May 2018 were selected. 58 patients with fetal thyroid abnormalities were selected in the experimental group, and 90 patients with normal fetal thyroid gland were selected as the control group. Univariate analysis was used to screen out the factors which can enter the model. Statistically significant factors of univariate analysis were included in the regression model for analysis. Logistic regression models were established based on the (above analysis) results and the ultrasound image characteristics of the two groups were compared.

Results: Univariate regression analysis showed that there were five factors in the final model, including maternal thyroid dysfunction and thyroid surgery history, goiter, thyroid autoantibodies, history of head and neck radiation, abortion and premature birth history. Logistic regression analysis showed that the mother who with above-mentioned five high-risk factors are the main causes of fetal thyroid dysplasia.

Conclusions: The results of the logistic regression analysis showed that the proportion of maternal thyroid dysfunction and thyroid surgery, goiter, thyroid autoantibodies, head and neck radioactivity, abortion and premature birth risk was significantly higher in the experimental group than in the observation group ($P < 0.05$). Logistic regression analysis showed that the mother who with above-mentioned five high-risk factors lead to fetal thyroid dysplasia.

P05.07

Fetal thymus size in pregnancies after assisted reproductive technologies

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Objectives: The aim of our study was to compare thymus sizes in fetuses conceived using assisted reproductive technologies (ART) to those conceived naturally (control group).

Methods: Sonographic fetal thymus size was assessed retrospectively in 162 pregnancies conceived using ART and in 774 pregnancies conceived naturally. The anteroposterior thymic and the intrathoracic mediastinal diameter were measured to calculate the thymic–thoracic ratio (TT-ratio). The ART cases were subdivided into two groups: (1) intracytoplasmic sperm injection (ICSI; $n = 109$) and (2) *in vitro* fertilisation (IVF; $n = 53$).

Results: The TT-ratio was smaller in pregnancies conceived using ART ($p < 0.001$). In both ART subgroups (ICSI and IVF), the TT-ratio was lower compared to the control group ($p < 0.001$). However, no difference between the two subgroups could be detected ($p = 0.203$).

Conclusions: Our data show reduced thymus size in fetuses conceived using ART compared to controls. These findings indicate that the use of ART may lead to certain deviations in organogenesis.

P05.08

Antenatal diagnosis of Diamond-Blackfan anemia

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We report a case of a 31-year-old women G2P1 referred to our high-risk centre because of her husband was known for Diamond-Blackfan anemia. He was followed and treated for this condition until this age of 14 months of age and has been in remission since. His father was also affected. He had a genetic evaluation in 2014 and no molecular diagnosis had been made.

The patient's prenatal screening was normal. No prenatal diagnosis was offered because of the absence of a known mutation. The couple met hemato-oncology and started weekly middle cerebral artery (MCA) Doppler at 16 weeks.

At 33 2/7 weeks, the fetus was found to have MCA peak systolic of 75 cm/s (1,61 MoM). Signs of hydrops were not reported. We performed an intrauterine transfusion the next day. The foetus had a pre-transfusion hematocrit of 27% and 48ml of blood was transfused. All the subsequent evaluation were normal and the patient delivered a baby girl of 2600g, apgar 2-9-9 by Caesarean section because of breech presentation at 36 4/7 weeks of pregnancy.

Evaluation of the newborn revealed a heterozygote mutation of the RPS19 gene consistent with a diagnosis of Diamond-Blackfan anemia. This mutation was also confirmed for the father.

Diamond-Blackfan anemia is a disorder that primarily affects the bone marrow causing it to malfunction and fail to produce enough red blood cells. It is a rare autosomal dominant pathology with variable penetrance that affects both genders equally. Over half of all Diamond-Blackfan anemia patients present with short stature and congenital anomalies, the most frequent being craniofacial, thumb and urogenital anomalies. Few cases of in utero Diamond-Blackfan anemia have been reported.

P06: FETAL GROWTH: PREDICTING OUTCOMES

P06.01

Routine late trimester ultrasound for the detection of small-for-gestational-age and growth-restricted fetus in low-risk pregnancy: a randomised controlled trial

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Objectives: To compare the proportion of small-for-gestational-age and fetal growth-restricted fetuses detected in women offered a routine growth ultrasound to those either offered selective or no ultrasound in the third trimester.

Methods: An open-label randomised control trial was conducted at the Aga Khan University Hospital, Nairobi. Eligible women were randomised into either the intervention or control group. Women in the intervention arm had a mandatory third trimester ultrasound for fetal growth performed between 36 weeks 0 days to 37 weeks 6 days. Those in the control group had a selective growth scan done if the clinician suspected abnormal fetal growth. The women were then followed up for delivery outcomes. Analysis was on an intention to treat basis.

Results: A total of 278 women were recruited into the study with an overall completion rate of 88%. A majority of the women (67.8%) were primiparous. The overall detection rate of small-for-gestational-age and fetal growth-restricted fetus in the intervention groups was 10.9% (95%CI 4.9-16.9) with numbers needed to treat (NNT) of 9. The detection rate for fetal growth restriction was 3.6 (95%CI -0.28-7.5) and for small for gestational age was 4.5 (95% CI 0.29-8.8). The perinatal outcomes were similar between the two study groups.

Conclusions: Compared to selective third-trimester ultrasound, routine growth ultrasound for all low-risk women increased the detection rate of small-for-gestational-age and growth-restricted fetuses.

P06.02

Third trimester ultrasound screening in IVF pregnancies

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Objectives: Pregnancies achieved through in vitro fertilisation (IVF) are associated with increased perinatal morbidity. The benefits of antenatal testing in this group are unknown. Our objective was to determine the incidence of abnormal ultrasound (US) findings in a cohort of women with IVF pregnancies.

Methods: We conducted a prospective observational study evaluating our US protocol for IVF pregnancies which includes weekly BPPs starting at 36 weeks and growth US at 32 and 36 weeks. Records were reviewed from April 2017 – March 2019. Singleton gestations conceived with IVF were included. Women with an isolated IVF pregnancy were compared to those with an IVF pregnancy and a medical comorbidity*. Outcomes included detection of fetal growth restriction (FGR), large for gestational age (LGA), oligohydramnios, polyhydramnios or abnormal BPP (< 8/8).

Results: A total of 272 women with IVF pregnancies received an US ≥ 32 weeks. Among women with an isolated IVF pregnancy (n = 205), 8 had FGR (3.9%), 9 had LGA (4.4%), 4 had oligohydramnios (2.0%), 14 had polyhydramnios (6.8%), and 10 had an abnormal BPP (4.9%). LGA was more common in IVF pregnancies with additional comorbidities (4.4% vs 16.4%; p = 0.003).

Conclusions: In singleton IVF pregnancies, the detection rates of FGR, fluid abnormalities, and abnormal BPPs were similar between those with and without additional comorbidities. Perinatal outcome data is needed to determine possible benefit of antenatal testing in this cohort of women.

P06.02: Table 1. Pregnancy complications detected by US in IVF pregnancies

Characteristic	Isolated IVF (n = 205)	IVF with comorbidities* (n = 67)	p-value
FGR < 10%	8 (3.9)	0 (0)	0.21
LGA > 90%	9 (4.4)	11 (16.4)	0.003
Oligohydramnios	4 (2)	0 (0)	0.58
Polyhydramnios	14 (6.8)	7 (10.4)	0.34
Abnormal BPP	10 (4.9)	7 (10.4)	0.10

Data presented as n (%); *Hypertensive disease and diabetes (all types)

P06.03

Third trimester ultrasound screening in class 3 obesity

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Objectives: Obesity is associated with an increased risk of perinatal complications including stillbirth. The benefits of antenatal testing in this group are unknown. Our objective was to determine the incidence of abnormal ultrasound (US) findings in a cohort of women with class 3 obesity.

Methods: We conducted a prospective observational study evaluating our US protocol for class 3 obesity (BMI ≥ 40) which includes weekly BPPs starting at 36 weeks and growth US at 32 and 36 weeks. Records were reviewed from April 2017–March 2019. Singleton gestations with class 3 obesity were included. Women with isolated obesity were compared to those with obesity and a medical comorbidity*. Outcomes included detection of fetal growth restriction (FGR), large for gestational age (LGA), oligohydramnios, polyhydramnios, or abnormal BPP (< 8/8).

Results: A total of 1,096 women with class 3 obesity received an US ≥ 32 weeks. Among women with isolated class 3 obesity (n = 658), 18 had FGR (2.7%), 42 had LGA (6.4%), 12 had oligohydramnios (1.8%), 64 had polyhydramnios (9.7%), and 34 had an abnormal BPP (5.2%). LGA was more common in obese women with additional comorbidities (6.4% vs 12.3%; p < 0.001).

Conclusions: In class 3 obese women, the detection rates of FGR, fluid abnormalities, and abnormal BPPs were similar between those with and without additional comorbidities. Perinatal outcome data is needed to determine possible benefits of antenatal testing in this cohort of women.

P06.03: Table 1. Pregnancy complications detected by US in class 3 obesity

Characteristic	Isolated obesity (n = 658)	Obesity with comorbidities* (n = 438)	p-value
FGR < 10%	18 (2.7)	9 (2.1)	0.47
LGA > 90%	42 (6.4)	54 (12.3)	< 0.001
Oligohydramnios	12 (1.8)	8 (1.8)	1.00
Polyhydramnios	64 (9.7)	51 (11.6)	0.32
Abnormal BPP	34 (5.2)	32 (7.3)	0.15

Data presented as n (%); *Hypertensive disease and diabetes (all types)

P06.04

Prognostic factors of vaginal delivery after labour induction of late-onset fetal growth restriction

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Objectives: To identify independent risk factors for vaginal delivery in cases of labour induction for late-onset fetal growth restriction (FGR) and to elaborate a multivariate predictive model.

Methods: Retrospective cohort study in 201 singleton pregnancies diagnosed of late-onset stage I FGR that required labour induction with cervical ripening. Dinoprostone was used between 2014-2015, while Foley balloon was the method of choice from 2016. We applied a non-linear transformation to each variable to elaborate a prediction model. An optimism-corrected estimate of the area under the curve (AUC) was derived using 1000 bootstrap resamples for internal validation.

Results: The Caesarean rate was 25.4%. Perinatal results were better in the vaginal delivery group (table 1). Independent factors associated to an increase in vaginal delivery were: labour induction method (Foley balloon), higher cerebro-placental ratio (CPR), lower pre-gestational BMI and absence of pre-eclampsia. The AUC was of 0.75(CI95% 0.70–0.79). Illustrative examples are shown in figure 1.