Conclusions: When fetal status is unknown, any US abnormality can only predict a symptomatic congenital infection in 41.3% of cases. The classification of US semiology as major and minor infectious criteria leads to increase US prediction performance of symptomatic congenital infection when major or multiple minor criteria are found.

OC21.08
The role of MRI in primary fetal CMV infection
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Objectives: The aim of this study is to assess the additional benefit of fetal MRI in cases with proven fetal primary CMV infection.

Methods: Fetal CMV infection was confirmed in all patients. Prenatal evaluation included monthly detailed US scans and third trimester fetal MRI scan at 30-34 weeks of gestation. Pregnancy outcome and long-term outcome were assessed using the Vineland II adaptive behaviour scales (VBAS). Results: 206 patients were included in the study. Of these, 73 patients had either abnormal MRI or US findings. 18 patients had termination of pregnancy (12 after abnormal US confirmed by MRI and six after new findings on MR). Of the 183 cases for which we had postnatal follow-up, 27.8% had abnormal postnatal brain US, 14.4% had hearing loss and 11.1% had other neurological impairment.

Abnormal postnatal US was associated with first trimester infection (OR 2.4, p=0.044), abnormal fetal US (OR=6.8, p=0.009), fetal sonographic cerebral findings (OR=17, p<0.001) and abnormal fetal MRI (OR=15, p<0.001). On multiple regression analysis only fetal sonographic cerebral findings were associated with postnatal cerebral findings (p=0.025). Hearing loss was associated only with first trimester infection (OR=1.9, p=0.039) while other neurological impairment was associated with first trimester infection (OR=3.9, p=0.049) and abnormal MRI (OR=4.28, p=0.005). On multiple regression analysis only first trimester infection was associated with postnatal neurological impairment (p=0.049).

VBAS score was significantly associated to first trimester infections (p=0.05) but not to fetal sonographic or MR findings.

Conclusions: MRI is a useful diagnostic tool in the evaluation of women with proven fetal CMV infection. Abnormal fetal MRI is significantly associated with abnormal postnatal US findings and neurological impairment. However, we did not find it to be associated with hearing loss. In the data analysed in this study, only first trimester infection showed such an association.

OC22: ULTRASOUNDOGRAPHY AND REPRODUCTIVE MEDICINE

OC22.01
Who is at risk of endometrial cavity breach at laparoscopic myomectomy?
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Objectives: The aim of the study was to identify preoperative ultrasound features of uterine fibroids which best predict endometrial cavity breach at laparoscopic myomectomy.
Methods: A retrospective cohort study of women who underwent a laparoscopic myomectomy at University College London Hospital between December 2014 and November 2017 was carried out. Ultrasound images and operation notes were reviewed. The size and minimum distance of the fibroid from the endometrial cavity in a 2-dimensional longitudinal plane were determined from ultrasound images (negative distance was scored when the fibroid protruded into the cavity).

Endometrial cavity breaches at the time of surgery were identified from the operation notes. Women who did not have a preoperative ultrasound and those who had more than two fibroids removed were excluded.

Results: 74 women who had laparoscopic myomectomy and a preoperative ultrasound were identified. The median age was 36.0 (IQR 33 – 39.8) and the median fibroid diameter was 68.2mm (IQR 47.7 – 80.6).

10/74 (13.5%, 95% CI 5.7 – 21.3) had a breach of the endometrial cavity. Women who suffered a breach had a fibroid that was close to or within the endometrial cavity (distance from cavity -9.9 vs. 8.9mm, p=0.001, degree of protrusion 17% vs. 0.0% and intracavitary surface area 146.3mm2 vs. 0.0).

A logistic regression model with cavity breach as independent variable and ultrasonic variables as predictors selected minimum distance from cavity as the best predictor of cavity breach (OR 0.79, 95% CI 0.73 – 0.92).

Conclusions: We found a prevalence of all CUCA much lower than previously reported in an unselected population. Major CUCA is an independent risk factor for PTB. In order to confirm any other clinical significance of minor and major CUCA, other studies in unselected populations are required.

OC22.03
Can ovarian reserve predict the chances of live birth after one complete cycle of IVF and transfer of all frozen embryos?

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Objectives: IVF success rate is reported as live birth per embryo transferred but cumulative live birth rate (CLBR) is increasingly being adopted. Many have modelled the chance of clinical pregnancy after a single cycle of stimulation but there are no models using pre-treatment variables to predict CLBR. We aimed to examine whether ovarian reserve tests can be used to calculate the cumulative chance of live birth after one stimulated cycle of IVF and transfer of all frozen embryos.

Methods: This was a retrospective cohort study of patients who underwent their first ovarian stimulation between January 2014 and December 2015 in a tertiary referral hospital in central London. 551 cycles were reviewed of which 335 complete cycles of IVF were included in the study.

Results: The CLBR was 80% (95% CI 76.0-84.0). Women with a live birth had a significantly lower median age (34 [IQR 6] vs 36 [IQR 5], p=0.005) and FSH 6.6 [IQR 2] vs 7.7 [IQR 2], p = 0.001). The median AMH and AFC were also significantly higher in the live birth group (AMH of 22.0 [IQR 19] vs 9.9 [IQR 6], p = 0.001 and AFC of 18 [IQR 12] vs 11 [IQR 8], p = 0.001). There were no significant differences in BMI, cause of infertility, previous pregnancy, duration of infertility, insemination method, ovulation stimulation protocol and number of days of ovarian stimulation.

Multivariate logistic regression model retained AMH (OR 1.07 95% CI 1.04 – 1.1) and FSH (OR 0.87 95% CI 0.76 – 0.99) as significant independent predictors of cumulative live birth. Area under the curve (AUC) for the model was 0.74 (95% CI 0.71 – 0.83).

The model was internally validated on 72 couples and was able to correctly predict 96% of couples who had a live birth.

Conclusions: We present a logistic regression model based on ORT variables to calculate patients’ personalised cumulative probability of live birth. Our model is a useful tool for clinicians and couples to make decisions about their care over a period of time.

OC22.04
Ultrasound-based strain mapping for contraction frequency in the non-pregnant uterus

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Objectives: It has been postulated that increased uterine peristalsis (UP) negatively influences in vitro fertilisation outcome due to endometrial hyper-contractility after embryo transfer. An objective and non-invasive characterisation of UP can therefore provide an important contribution to many clinical procedures. In this study, strain mapping based on optical flow is applied on two-dimensional (2D) transvaginal ultrasound (TVUS) videos to quantify UP outside pregnancy.