

OC19.06

A prospective observational study to validate the reliability of the early pregnancy viability scoring systemO. Wan², S.S. Chan¹, G. Kong²¹Department of Obstetrics and Gynecology, Chinese University of Hong Kong, Hong Kong; ²Department of Obstetrics and Gynecology, Prince of Wales Hospital, Chinese University of Hong Kong, Hong Kong

Objectives: Miscarriage has a significant social and psychological impact on pregnant women. A common question asked by a woman is how likely their pregnancy will be viable especially when with bleeding. A prediction model on the chance of an early pregnancy being viable or not may help. Bottomley et al. designed a prediction model based on women's age, symptoms of bleeding and ultrasound parameters to determine the likelihood of a viable pregnancy at the end of first trimester. Yet, further study is required to show its validity and practicability.

Methods: All Chinese women attending early pregnancy assessment clinic were invited, excluding those diagnosed to have miscarriage on first visit, having termination of pregnancy and ectopic pregnancy. Women's age and bleeding score were assessed to calculate the combined scoring to predict the pregnancy outcome. Ultrasound was performed to assess mean gestational sac size, presence of fetal heart beat and mean yolk sac diameter. Pregnancy outcome was assessed at 13–16 weeks of gestation by either phone contact or reviewing medical record system. Receiver operating characteristic (ROC) curve was used to calculate the accuracy of this model.

Results: A total of 1086 subjects were recruited in the study with 30 of them excluded from the analysis (ectopic pregnancy, failed pregnancy of unknown location, having termination of pregnancy with 2 lost to follow-up). Mean maternal age was 31.2 years old (range 18–47). Among 1056 women, 915 (86.6%) had ongoing pregnancy after first trimester and 141 (13.4%) had miscarriage. The viability score was calculated according to the combined scoring system. Receiver operating characteristic curve was constructed according to the relationship between the viability score and actual pregnancy outcome. The area under curve was found to be 0.91.

Conclusions: The early pregnancy viability scoring system combining women's age, bleeding score and ultrasound parameters could predict the pregnancy outcome after first trimester accurately.

OC19.07

Variations in the quality of ultrasound scanning among early pregnancy unitsM. Memtsa¹, D. Jurkovic³, J.A. Ross²¹EGA Institute for Women's Health, UCL and UCLH NHS Foundation Trust, London, United Kingdom; ²Early Pregnancy and Gynecology Assessment Unit, King's College Hospital, London, United Kingdom; ³EGA Institute for Women's Health, UCL and UCLH NHS Foundation Trust, London, United Kingdom

Objectives: To assess the rates of non-diagnostic ultrasound scans in different early pregnancy units.

Methods: This was a prospective multicentre observational study which included seven early pregnancy units in Greater London (UK). 4048 pregnant women were seen in the participating units over a period of two months and were included in the study. The outcomes of interest were the proportion of non-diagnostic scans, follow-up attendances and attendances including blood tests.

Results: The rate of non-diagnostic ultrasound scans varied between 6% and 30% among different early pregnancy units. There was a positive correlation between the rate of non-diagnostic scans and proportion of follow-up attendances and attendances including blood tests ($P < 0.001$).

Conclusions: Our study has shown significant variations in the quality of early pregnancy ultrasound scanning using the rate of non-diagnostic scans as the quality indicator. Higher rates of non-diagnostic scans result in higher number of blood tests and follow up visits.

OC19.08

Does fetal growth in the first trimester correlate with the amount and duration of vaginal bleeding or abdominal pain? A preliminary studyS. Saso¹, M. Al-Memar², L. Ismail¹, S. Bobdiwala², P. Roelants³, G. Nikolic³, D. Popovic³, C. Stalder², B. De Moor³, T. Bourne³¹Department of Obstetrics and Gynecology, Imperial College London, London, United Kingdom; ²Early Pregnancy and Acute Gynecology Unit, Queen Charlotte's and Chelsea Hospital, Imperial College London, London, United Kingdom; ³Department of Electrical Engineering, STADIUS Center for Dynamical Systems, Signal Processing and Data Analytics, KU Leuven, Leuven, Belgium

Objectives: Explore the relationship between the rate of crown-rump length (CRL) growth in the first trimester from the initial presenting scan to the level I (12 week) scan and amount and duration of vaginal bleeding and abdominal pain between these two time points.

Methods: The patients that were included in this study all presented to our unit between 10/2010 and 08/2013. They were grouped according to the initial presenting complaint (PC): group I, vaginal bleeding; group II, abdominal pain; and group III, vaginal bleeding and abdominal pain. All patients underwent a transvaginal ultrasound scan at each presentation. The variable of interest was CRL.

Results: Data was recorded for 221 patients. 160 patients were included in the study. They all had a viable pregnancy recorded at the level I scan. A pairwise plot shows correlations between the different variables: (CRL vs. vaginal bleeding; CRL vs. abdominal pain; CRL vs. vaginal bleeding and abdominal pain). The samples are coloured by PC group.

The overall results demonstrate no correlation between the amount and duration of vaginal bleeding and abdominal pain and CRL growth in the first trimester. Interestingly, a statistically significant correlation was found between a lower CRL and a higher bleeding score of those patients that presented at least three times to the unit during the first trimester ($n = 13$). Also, certain correlation coefficients are high and thus of potential interest.

Conclusions: The sub-group finding that those patients who present more frequently with vaginal bleeding may have a reduced CRL is of huge interest and calls for a repeat study with a much increased sample size. The overall finding of no correlation is important when it comes to reassuring women who present with the above two symptoms in the first trimester.

OC19.09

Do pregnancy outcomes correlate with the amount and duration of vaginal bleeding or abdominal pain in the first trimester? A preliminary studyS. Saso¹, M. Al-Memar³, L. Ismail¹, S. Bobdiwala³, P. Roelants², G. Nikolic², D. Popovic², C. Stalder³, B. De Moor², T. Bourne⁴¹Department of Obstetrics and Gynecology, Imperial College London, London, United Kingdom; ²STADIUS, KU Leuven, Leuven, Belgium; ³Early Pregnancy and Acute Gynecology Unit, Queen Charlotte's and Chelsea Hospital, Imperial College London, London, United Kingdom; ⁴Women's Ultrasound Centre, London, United Kingdom

Objectives: Explore the relationship between the amount and duration of vaginal bleeding and abdominal pain in the first trimester with pregnancy outcomes.

Methods: The patients that were included in this study all presented to our unit between 10/2010 and 08/2013. They were grouped according to the initial presenting complaint (PC): group I, vaginal bleeding; group II, abdominal pain; and group III, vaginal bleeding and abdominal pain. All patients underwent a transvaginal ultrasound scan at each presentation. The pregnancy outcomes of interest were: fetal outcome, mode of delivery, gestational age, baby weight, Apgar scores at 1 and 5 minutes, cord gas pH, blood loss, prelabour term (PSROM) and premature rupture of membranes (PPROM) and antenatal medical complications (e.g. hypertension).

Results: Data was recorded for 221 patients. 160 patients were included in the study. All those included had a viable pregnancy recorded at the level I scan. To calculate the correlations between the three PCs and the above pregnancy outcomes of interest, Spearman's rank correlation coefficient and Kruskal–Wallis tests were used.

The overall results demonstrate no correlation between group III patients and any of the above pregnancy outcomes of interest. A statistically significant correlation was found between the vaginal bleeding and Apgar scores at 5 minutes, PSROM and medical complications. Duration of bleeding statistically affected the mode of delivery and PSROM incidence. Pain score statistically affected the Apgar score at 1 minute.

Conclusions: The findings of statistical significance related to the amount and duration of vaginal bleeding are of huge interest and call for a repeat study with a much increased sample size. The overall finding of no correlation in women who present with both bleeding and pain is important when it comes to reassuring women who present with those symptoms in the first trimester.

OC20: CLINICAL DILEMMAS IN SECOND AND THIRD TRIMESTER ULTRASOUND

OC20.01

Does scheduling of the fetal anatomic assessment by maternal BMI reduce the need for repeat examinations?

G. Davies², K. Fernandes¹, S. Munawar²

¹Department of Obstetrics and Gynecology, Queen's University, Cobourg, ON, Canada; ²Department of Obstetrics and Gynecology, Queen's University, Kingston, ON, Canada

Objectives: The 2010 SOGC guideline on Obesity in Pregnancy recommends that the fetal anatomic assessment be delayed until 20–22 weeks in women with a high BMI to increase the likelihood of a complete exam at a single visit. However, there is no prospective data to support this recommendation. We hypothesise that using maternal BMI to determine the gestational age at which to perform the fetal anatomic assessment would decrease the number of visits required to complete the examination.

Methods: Between July 1, 2012 and June 30, 2014, (time period 1) all fetal anatomic assessments between 18 and 25 weeks gestation at the Kingston General Hospital Fetal Assessment Unit were retrospectively evaluated to determine the rate of repeated examinations due to inadequate visualisation. From July 1, 2014 to February 28, 2015, (time period 2) patients were scheduled for the fetal anatomic assessment based on their BMI at the time of nuchal translucency assessment or exam booking using the following schedule: BMI < 25 (18–19 weeks), 25–29 (19–20 weeks), 30–34 (20–21 weeks), 35–39 (21–22 weeks), 40 or higher (22–23 weeks). The rate of repeated examinations due to inadequate visualisation was assessed prospectively during this time period and compared to time period 1. In both time periods, repeated examinations to

reassess identified fetal anomalies were excluded. The determination that the fetal anatomic assessment had been completed was at the discretion of the reporting physician. The rates of repeat examinations were compared using the Fisher's Exact test with significance at $p < 0.05$.

Results: In time period 1, 744/3,850 (19.3%) women required repeat examinations to complete the fetal anatomic assessment. In contrast, significantly more women required repeat examinations in time period 2, 359/1409 (25.5%), $p < 0.0001$.

Conclusions: Scheduling patients for fetal anatomic assessment based on BMI requires extra resources without reducing repeat examinations. The mechanism for this increase in examinations remains unclear.

OC20.02

Prospective assessment of the intergrowth biometric charts in an unselected French nationwide population

J. Stirnemann¹, N. Fries², M. Fontanges³, R. Mangione³, L.J. Salomon¹

¹Department of Obstetrics, University Paris Descartes, Hôpital Necker Enfants Malades, Paris, France; ²CFEF, Montpellier, France; ³CFEF, Bordeaux, France

Objectives: The purpose of this study was to test the adequacy of the intergrowth reference charts in the setting of standard ultrasound biometry in a large nationwide unselected population.

Methods: Routine ultrasound biometric measurements were prospectively recorded by the French College of Fetal Ultrasound over a one-month period. Only pregnancies with the following criteria were included: singleton, dating by CRL in the first trimester and gestational age >17 and <40 weeks. Biometric measurements included biparietal diameter (BPD), head circumference (HC), abdominal circumference (AC) and femur length (FL). Z-scores were computed according to the French national reference and according to the intergrowth equations.

Results: 8457 pregnancies were included. The distribution of Z-scores over the 17–40 weeks period obtained using the national equations were compared to those obtained using the intergrowth equations. For both references, the mean Z-score for each parameter was within 0 ± 0.5 except for the BPD which was $+0.57$ using the intergrowth norms, pertaining to caliper position differences between countries. However, the Z-scores using the intergrowth equations showed a SD of 1 ± 0.05 for all parameters, much closer to the expected nominal value of 1 than the Z-score obtained using the local equations (0.92, 0.75, 0.75 and 0.81 for BPD, HC, AC and FL respectively).

Conclusions: The equations of the intergrowth study yield consistent results in a nationwide French sample of pregnancies, with significant improvement compared to local equations, although adjustments regarding the measurement of BPD are required. Our results added to the optimal methodology used for the construction of the intergrowth charts could warrant their implementation in routine screening in France.

OC20.03

How do we handle pregnant couple's expectations of non-medical fetal sex determination? A Danish study on practice, quality and patient perspectives

G. Størup¹, A. Dalsgaard², M. Grønkjær³

¹Department of Obstetrics and Gynecology, Sygehus Vendsyssel, Hjoerring, Denmark; ²University College Nordjylland, Hjoerring, Denmark; ³Forskningsenhed for Klinisk Sygepleje, Aalborg, Denmark

Objectives: Ultrasound has enabled sex determination of the fetus for 30 years. Sex determination is important to pregnant couples but