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Based on assessment of a repeat endometrial biopsy, a single course of Doxycycline was reported to "cure" CE defined histologically in 92%, 94%, 75% and 70% of patients (4 studies). Although no randomised controlled trials were identified, non-randomised observational studies found that:

- Published comparisons of livebirth rate in women with untreated CE compared to treated CE were small OR 1.12 (0.27,4.67) N = 71
- An increase in livebirth rate in CE patients who responded to antibiotic treatment compared to those who did not. OR 12.40 (6.74, 22.81) N = 244
- A comparable livebirth rate in women with CE who were actively treated with antibiotics compared to subjects without CE OR 1.48 (0.83, 2.65) N = 540.

Limitations, reasons for caution: The incidence of CE in the normal population was not published. No randomised control trials were identified assessing the efficacy of antibiotics in the prevention of miscarriage for women with CE and RM.

Wider implications of the findings: This review has found insufficient evidence to recommend screening for and treating CE in recurrent miscarriage at the present time. However, the data do suggest that CE may be a treatable cause of recurrent miscarriage. Randomised, controlled trials are urgently needed.

Trial registration number: NA.

P-425 Lipidomic profile as a non-invasive tool to predict endometrial receptivity in freeze-all cycles

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Study question: Is the endometrial fluid lipidomic an useful approach to predict endometrial receptivity in freeze-all cycles?

Summary answer: The endometrial fluid lipidomic is a valuable tool to predict endometrial receptivity in freeze-all cycles.

What is known already: The embryo implantation depends on the proper embryo development and the acquisition of a receptive endometrium. The embryo is unable to adhere to it through most of the menstrual cycle, except during a short, self-limited period, the window of implantation (WOI). Inadequate uterine receptivity has been estimated to contribute to one third of implantation failures, whereas the embryo itself is responsible for two thirds of them. Predictors of the uterine receptive are needed to better understand the causes of endometrial-based infertility, and help women with recurrent implantation failure (RIF) due to possible dyssynchrony, between embryo and endometrium, to achieve pregnancy.

Study design, size, duration: For this prospective cohort study, endometrial fluid samples, were collected immediately before embryo transfer, using a soft catheter, attached to a 5mL-syringe, with which a slight suction was made to bring the fluid into the catheter. Samples (n = 41) collected between Jan/2015 and Dez/2016 were split into two groups depending on the pregnancy outcome: Positive-Group (n = 24) and Negative-Group (n = 17). The study included exclusively freeze-all cycles in which one or two top quality blastocysts were transferred.

Participants/materials, setting, methods: Collections were performed in university-Affiliated IVF-center. Lipid extraction was performed according with the Bligh and Dyer method and spectra were acquired in the positive mode by MALDI-TOF mass spectrometer method. The principal component analysis (PCA) and Partial Least square discriminant Analysis (PLS-DA) were applied to the dataset. A list of potential ions ratios biomarker was obtained, the values were used to build a ROC curve to predict pregnancy success, and the lipid categories were identified.

Main results and the role of chance: Patient's and cycle's characteristics did not differ among the groups. The raw data was processed and 265 ions were used for statistical analysis. Twenty ions ratios were established according with their correlations and those variables were used for the further analysis. The fold-change analysis detected 13 ratios with two-fold increased representation in the Positive and 84 in the Negative-Group. According with the t-test, 16 ratios were differentially represented among the groups (p<0.05), and the volcano plot analysis detected five ratios two-fold differentially represented among groups with statistical significance. The PCA analysis showed a tendency of separation between the studied groups, while the PLS-DA was able to clearly distinguish the groups. Fifteen ratios (13 hyper-represented in the Negative and two in the Positive-Group) were selected considering their importance for the model prediction. These ratios were used to build the ROC curve, which presented an area under the curve of 81.8% (CI 95%: 62.7–94.7%, p = 0.009). Ions identified by the lipidmaps database were: phosphoethanolamine, phosphatidic-acid, diacylglycerol, triacylglycerol, glycosyl diacylglycerol, phosphatidylcholin, neutral-sphingolipidium, lysophosphatidylglycerol. Functional enrichment analysis revealed that increased triacylglycerol and phospholipids ratio leads to low density lipoproteins remodeling, which may be associated with changed steroid syntheses, and therefore, WOI displacement.

Limitations, reasons for caution: The model was not validated because the MS/MS experiment was not yet performed.

Wider implications of the findings: Our findings demonstrated that endometrial fluid lipidomics may be a powerful approach to define the exact time of the WOI. This would be extremely important for determination of the right time for embryo transfer and, consequently, diminish the incidence of RIF, a substation challenge in assisted reproduction.

Trial registration number: None.

P-426 Endometrial thickness and oocyte quality affect perinatal outcomes in intracytoplasmic sperm injection cycles

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Study question: Which factors affect perinatal outcomes in intracytoplasmic sperm injection (ICSI) cycles?

Summary answer: Perinatal outcomes are positively affected by embryo quality and endometrium thickness and negatively affected by the presence of oocyte polar body fragmentation.

What is known already: Pregnancies derived from assisted reproduction techniques (ART) cycles have been correlated with worse perinatal outcomes, such as preterm birth, low birth weight, small size for gestational age, and perinatal mortality. Although these complications are commonly attributed to the higher rate of multiple births with ART, assisted singleton pregnancies had also worse perinatal results than natural ones. Nevertheless, the role of ART itself on poorer obstetric and perinatal outcomes has not been demonstrated convincingly and is still to be determined which aspects of ART pose greater risks of perinatal complications and how these risks can be minimized.

Study design, size, duration: This cohort study included 402 babies born to 307 patients undergoing ICSI cycles from January/2014 to December/2015. The number of gestational weeks (GW), baby weight (BW) and length (BL) at birth were correlated with: number of follicles and retrieved oocytes, mature and immature oocytes, fertilization rate, number of high-quality embryos, transference stage and endometrial thickness using linear regression models. In single embryo transfer (SET) cycles, oocyte dysmorphisms and embryo quality were also evaluated.

Participants/materials, setting, methods: The study was performed in a private university-affiliated in vitro fertilization center. After childbirth, the GW, BW, BL, baby sex, and presence of malformations at birth were recorded by the patient gynecologist and a written reported. All analysis were adjusted for