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investigate the effects of hyperinsulinemia and BMI on IVF outcomes in patients undergoing the GnRH-antagonist protocol to determine their impact on HA.

Wider implications of the findings: Economic benefits were achieved in HA-PCOS patients with less cost and more available embryos. Due to the high abortion rate and low live birth rate, a freeze-all approach might be a preferable option for HA-PCOS patients so as to create a buffer for reducing androgen levels before transferring freeze-thawed embryos.

Trial registration number: None.

P-386 Excessive intrauterine interventions negatively affect in vitro fertilization (IVF) outcomes in women with repeated IVF failure

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Study question: Does the number of performed intrauterine interventions have an impact on IVF outcomes in women with repeated IVF failure?

Summary answer: The previous history of an excessive number of intrauterine interventions appears to have an adverse effect on IVF outcomes in women with repeated IVF failure.

What is known already: The necessity for comprehensive assessment of endometrial morphology and function in women with repeated IVF failure along with the lack of the non-invasive assessment methods oblige us to perform an invasive intraretine procedure to get endometrial samples. However, even the minimally invasive intraretine procedures carry a slight risk of infection and can cause destruction of the endometrium right through to its basal layer. The damaged endometrial basal layer can be responsible for residual fertility impairing changes. However, there is still a lack of systematic analysis to assess the number of intraretine interventions as a risk factor for IVF outcomes.

Study design, size, duration: A retrospective observational cohort study includes 131 women with previously repeated IVF failure undergoing fresh IVF or cryo cycle in a single University-affiliated infertility clinic. The study was conducted from September 2011 to February 2014.

Participants/materials, setting, methods: The female patients with repeated implantation failure (after at least two previous attempts of embryo transfer) under the age of 40 years with two or more high-quality embryos were enrolled for the study. The history of previously performed intraretine interventions (both diagnostic and curative, not only a uterine curettage but also minimally invasive procedures) was taken into account.

Main results and the role of chance: On average each woman included in the study had 5.32 ± 0.23 intraretine interventions (1.85 ± 0.10 uterine curettage procedures and 4.29 ± 0.21 minimally invasive procedures). The number of performed uterine curettage procedures didn’t correlate to the IVF outcome (R = 0.031, p = 0.76), while there was a moderate, but significant negative correlation between the number of minimally invasive intraretine procedures and the implantation rate (R = 0.21, p = 0.013). A logistic regression analysis demonstrated that more than three previously performed intraretine procedures in women with repeated IVF failure were associated with subsequent implantation failure (OR 2.20; 95%CI 1.06-4.56).

Limitations, reasons for caution: In the retrospective study not all pertinent risk factors could be identified and subsequently recorded. So only association, and not causation, can be inferred from the results. These data for the risk factor analysis were received just from one center. It should be validated using the dataset from other centers.

Wider implications of the findings: These data may provide information for the development of an effective strategy of preconceiving care in women with repeated implantation failure with reasonable rejection of excessive uninformative ineffective intraretine procedures. The data also could be considered for explanatory and prognostic purposes.

Trial registration number: Not applicable.

P-387 The correlation between oocyte diameter and blastocyst quality

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Study question: Is there an association between the diameter of the oocyte and the quality of its corresponding blastocyst?

Summary answer: When comparing the ratios of oocyte diameters, the lower the ratio the higher the chance of developing to better quality blastocyst.

What is known already: The reproductive capacity of females decreases significantly in the fourth decade which is directly correlated to an age-related decrease in oocyte quality and quantity. The fact that the live birth rates from oocyte donation in older women is consistent suggests that oocyte quality is the major factor responsible for infertility. Decreased substrate for ATP production and increased mitochondrial deoxyribonucleic acid (mtDNA) mutations might be involved in increased loss and decreased quality of ovarian follicles in older women. An association between low mitochondrial DNA copy and the ability of the oocyte to become fertilized has been described.

Study design, size, duration: It is a retrospective study conducted at Tiro Fertility Center in Toronto, Ontario, Canada affiliated with University of Toronto. We collected all the data from the IVF cycles conducted in 2015 in which an embryo scope was used to visualize the progression of the embryos.

Participants/materials, setting, methods: We retrospectively analyzed the cycles of 470 women where the embryo scope was used which gave us a total of 1914 embryos. The embryo scope’s diameter function was used to measure the mature oocytes’ (M1)o diameter at the stage where the first polar body is visible. Two measurements were taken for each oocyte and the average diameter as well as the ratio were calculated.

Main results and the role of chance: We didn’t find any correlation between the diameter of the oocyte and the development to a top quality embryo. The diameter of oocytes that developed to a top quality blastocyst compared to the diameter of the oocytes that did not develop to the blastocyst stage was similar (112.3 vs. 112.5 micro).

We did find a correlation between the ratio of the oocytes’ two diameters and the development to a top quality blastocyst. The oocytes with a ratio below 1.1 had higher probability to develop to a top quality blastocyst compared to oocytes with ratio above 1.2 (15% vs 5% p < 0.001). The probability of oocytes to arrest prior to the blastocyst stage was increased in the group of oocytes with a ratio above 1.2 compared to the oocytes with the ratio below 1.1 (80% vs. 66% p < 0.01)

Limitations, reasons for caution: None.

Wider implications of the findings: The study shows that as the ratio of the oocyte diameters increases, the chances of it developing to a good quality embryo decreases. In other words, the lower the ratio, meaning the more spherical the shape of the oocyte the more likely it will develop to a good quality blast.

Trial registration number: Not applicable.

P-388 Age stratified Anti-Müllerian Hormone (AMH) reference range evaluation in polycystic ovary syndrome women at reproductive age using an automated AMH assay

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Study question: Do AMH levels differ significantly between age groups in PCOS women?
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