Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

Feb;111(2):302-317. https://doi.org/10.1016/j.fertnstert.2018.10.025. PMID: 30691632.

P-139 6:30 AM Tuesday, October 19, 2021

REDUCING IVF CYCLE MONITORING TO MAINTAIN SOCIAL DISTANCING PRACTISES DURING THE COVID-19 PANDEMIC. Salina Kanji, MD, Clinical Fellow,[1] Heather Shapiro, MD, FRCSC,[1] Crystal Chan, MD, MSc, FRCSC,[2] Victoria O'Driscoll, BSc,[3] Claire Jones, MD, FRCSC[1] [1]Mount Sinai Fertility, Sinai Health System, Toronto, ON, Canada; [2]Lunenfeld- Tanenbaum Research Institute, Mount Sinai Hospital, Toronto, ON, Canada; [3]University of Toronto.

OBJECTIVE: To significantly reduce the number of in person visits during an IVF cycle without compromising cycle outcomes, patient safety, or patient satisfaction.

MATERIALS AND METHODS: This was a multi-modal QI initiative at an academic fertility centre. After the temporary closure of many fertility services across IVF clinics in North America in March 2020, we identified that new policies and procedures were necessary in order to safely resume patient care during a pandemic. The primary intervention of this study was a change in our IVF monitoring protocol. Our default settings in our electronic medical record order sets were changed, and education sessions were held for clinic staff. Baseline data was collected from 2019 for comparison. A patient satisfaction survey using a 5-point likert scale was created and sent to every patient undergoing IVF on the day of their oocyte retrieval.

The number of in person visits during an IVF cycle were counted for each patient undergoing treatment from June 2020 to August 2020. This was compared to the number of in person visits during the same time frame in 2019. Balancing measures included patient satisfaction, pregnancy rates, risk and incidence of ovarian hyperstimulation syndrome (OHSS), incidence of cycle cancellation, and number of eggs retrieved per cycle. Pre- and post-intervention data was compared using univariate and multivariate poisson models to control for patient characteristics such as age, AMH, and BMI.

RESULTS: A significant reduction in the number of in person visits (8 vs 4, $p<0.001$) during an IVF treatment cycle was observed post-intervention compared with the previous year. There was no significant difference in pregnancy rates, risk or incidence of OHSS, cycle cancellation, or number of eggs retrieved per cycle. Patient surveys were reassuring that the intervention did not change patient experience or satisfaction.

CONCLUSIONS: IVF Monitoring Protocol changes aimed at reducing the number of in person visits allowed our team to continue to provide ongoing care for patients during the Covid-19 pandemic without compromising IVF outcomes or patient satisfaction.

IMPACT STATEMENT: This study allows for safer and socially distanced care for patients undergoing IVF cycles during a pandemic, and will also shape our future practise of cycle monitoring during IVF stimulation as we have shown that a reduction in bloodwork and ultrasound does not negatively impact patient outcomes.

References

Kwan I, et al. Monitoring of stimulated cycles in assited reproduction (IVF and ICSI). Cochrane Database Syst Rev. 2014 Aug 24;(8):CD005289

Hurst BS, et al. A minimally monitored assisted reproduction stimulation protocol reduces cost without compromising success. Fertility and Sterility. 2002 Jan;77(1):98-100.

P-140 6:30 AM Tuesday, October 19, 2021

PROLONGED EXPOSURE OF HUMAN BLASTOCYSTS TO HYALURONAN-ENRICHED TRANSFER MEDIA HAS NO EFFECT ON PERI-IMPLANTATION STAGE EMBRYO DEVELOPMENT DURING IN VITRO CULTURE. Deirdre Logsdon, MS, Jennifer M. Hamm, BS, MS, Laura Reed, BS, William B. Schoolcraft, MD, Ye Yuan, PhD Colorado Center for Reproductive Medicine, Lone Tree, CO.

OBJECTIVE: Our objective was to determine whether the prolonged exposure of human blastocysts to EmbryoGlue (EG) is beneficial for human peri-implantation stage development in vitro. Additionally, we investigated whether the addition of a cocktail of estradiol (8nM), progesterone (200 ng/mL), pyruvate (1mM), and lactic acid (0.22% v/v) to EG would benefit human embryo development during the peri-implantation stage in vitro.

MATERIALS AND METHODS: Vitrified human blastocysts donated for research (WIRB study no. 1179872) were warmed and recovered in EG or EG with additives (EGA) for either 10 min or 3 h (EG10m, EGA10m, EG3h, and EGA3h). Embryos from each group were then fixed with 4% paraformaldehyde and stained for DAPI and antibodies against cleaved caspase-3 to examine apoptotic stress. Separate blastocysts were also treated (EG10m, EGA10m, EG3h, and EGA3h) and then introduced to an extended embryo culture (EEC) system (Deglincerti et al., Nature 2016) and cultured in vitro until EEC day 5. Embryo attachment, morphology, and trophectoderm outgrowth areas were assessed on each day during EEC. Finally, we performed surgical ET in mice to assess implantation and fetal developmental potential of in vitro produced CF1 embryonic day 3.5 mouse blastocysts exposed to EG or EGA for 3 h. Implantation and fetal development were assessed at day 17.5 post fertilization.

RESULTS: No differences in total (EG10m: 5.71 ± 0.98 n=24; EGA10m: 6.62 ± 0.92 n=21; EG3h: 9.50 ± 2.59 n= 24; EGA3h: 8.14 ± 1.29 n= 21) or % apoptotic cells (EG10m: 7.99% ± 1.52%; EGA10m: 11.13% ± 1.53%; EG3h: 13.22% ± 4.04%; EGA3h: 12.63% ± 1.93%) were noted amongst treatments. There were also no differences in attachment, percent of normal development, or outgrowth areas during EEC. Finally, there were no differences in fetal development following surgical ET in mice (Fetus/Implantation: EG3h 21%, n=51; EGA3h 33% n=50).

CONCLUSIONS: Prolonged exposure of human blastocysts to EG has no effect on peri-implantation stage embryo development during in vitro culture.

IMPACT STATEMENT: The benefit of treating embryos with EG has been of much debate and various studies note no differences with EG treatments. Our results show that prolonged exposure to EG up to 3 h has no effect on blastocyst cell apoptosis, peri-implantation development, or fetal development. Additives to the EG also do not seem to provide any benefit in promoting peri-implantation stage human embryo development in vitro, therefore, the likelihood of providing any benefit in a clinical IVF setting is slim.

References

Deglincerti, A., Croft, G., Pietila, L. *et al.* Self-organization of the *in vitro* attached human embryo. *Nature* **533,** 251–254 (2016). https://doi.org/10.1038/nature17948

P-141 6:30 AM Tuesday, October 19, 2021

THE ADDITION OF ANTIOXIDANTS EVERY 12 HOUR TO THE CULTURE MEDIUM SIGNIFICANTLY INCREASES THE RATE OF TOTAL USABLE AND EXPANDED BLASTOCYSTS IN PATIENTS WITH ADVANCED MATERNAL AGE: A PROSPECTIVE STUDY OF 1520 SIBLING HUMAN OOCYTES. Israel Maldonado Rosas, MS,[1] Ashok Agarwal, PhD,[2] Israel Jiménez Medina, MS,[1] Liliana Ramírez Domínguez, MS,[1] Mariana Izquierdo Martínez, MS,[3] Samantha Moreno Fernández, MS,[1] Liliana Almaguer Fernández, MS,[4] Emma Marsal Martínez, MD,[3] René Liera Carranza, MS,[1] Cinthia Botello Mendoza, MD,[3] Lina G. Villar Muñoz, MD,[1] Hassan Sallam, MD, PhD (London), FRCOG,[5] Paraskevi Vogiatzi, PhD,[6] Ralf Henkel, PhD[7] [1]Citmer, Reproductive Medicine, Mexico city, DF, Mexico; [2]Cleveland Clinic, Cleveland, OH; [3]Citmer, Reproductive Medicine, Puebla, PU, Mexico; [4]Citmer Reproductive Medicine, Monterrey, NL, Mexico; [5]Alexandria University, Alexandria, Egypt; [6]IVF Athens Reproduction Center, Athens, Greece; [7]University of the Western Cape, Bellville, South Africa.

OBJECTIVE: To explore whether the adjustment of the culture medium redox potential every 12 hours by the supplementation with antioxidants to a similar value found in follicular fluid of oocyte donors may improve the cumulative rates of usable and expanded blastocysts as assessed at day 5 and 6 of development.

MATERIALS AND METHODS: This prospective study of sibling oocytes was conducted in Citmer, Reproductive Medicine, Mexico City, Mexico from October 2020 to April 2021 and included a total of 83 patients above 36 years of age undergoing IVF (IVF/ICSI) treatment. A total of 1520 sibling oocytes were randomly allocated in two 2 groups. Group 1: comprised of 736 oocytes that were inseminated and cultured until blastocyst stage. The oxidation-reduction potential (ORP) of the culture medium for this group was adjusted by adding a combination of antioxidants (EmbryORP®) every 12 hour to modulate the higher levels of ORP in the culture medium to the overall ORP levels of follicular fluid from oocyte donors (86.0±14.8mV). Group 2: comprised of 737 oocytes that were inseminated and cultured in commercial culture medium without any ORP adjustment. The mean of the patient's age was 39.3±1.8 years.