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mail-in testing may increase access to SA testing and allow a reproductive specialist to address any identified abnormalities in a timely manner.

P-949 3:30 PM Wednesday, October 21, 2020

ABSENCE OF COVID-19 VIRUS WITHIN AN ACTIVE IVF LABORATORY USING STRICT PATIENT SCREENING AND SAFETY CRITERIA. Sandeep K. Rajput, PhD,1 Shaibha A. Khan, PhD,1 Benjamin B. Gobeen, BS,1 Heidi J. Engellhorn, MS,1 Deidre M. Logsdon, M.S.,1 Courtney K. Grimm, MS,1 Rebecca Kile, MS,1 Rachel C. West, PhD,1 Ye Yuan, PhD,1 William B. Schoolcraft, MD,2 Rebecca L. Krisher, PhD,1 Jason E. Swain, PhD, HCLD,1 1CCRM Colorado, Lone Tree, CO; 2CCRM Fertility Network, metrium.

OBJECTIVE: In the early stages of the COVID-19 pandemic, most IVF clinics stopped the majority of patient treatment cycles to minimize the risk of disease transmission. When ASRM and other professional societies recommended resumption of treatments, procedures were put in place to ensure patient and staff safety. However, the risk of SARS-CoV-2 viral exposure and potential cross contamination within the IVF laboratory remains largely unclear. The objective of this study was to assess the true risk of exposure to SARS-CoV-2 in an active IVF laboratory when strict patient screening procedures are in place.

DESIGN: Prospective analysis.

MATERIALS AND METHODS: Prior to restarting IVF treatments, a COVID-19 safety protocol was implemented. Patients and staff were required to wear masks, fill out a symptom-based questionnaire daily, have their temperature taken, and practice social distancing in patient waiting areas. Each female partner provided a negative SARS-CoV-2 RNA test 3-4 days prior to the procedure. Male partners were not tested. All cases examined utilized ICSI. The first tube of follicular fluid aspirated during TVOR (FF), culture media drops following removal of embryos on day 5 (M), and vitrification solution (VS) after blastocyst cryopreservation were not tested. All cases examined utilized ICSI. The first tube of follicular fluid aspirated during TVOR (FF), culture media drops following removal of embryos on day 5 (M), and vitrification solution (VS) after blastocyst cryopreservation were analyzed. Self-inactivating replication incompetent lentivirus particles containing the single stranded viral RNA genome were immediately inoculated into each sample after collection as a positive control for viral RNA stability, prior to direct RNA isolation (M, VS) or sample concentration (FF). For FF, cell debris was removed by centrifugation and filtration (0.22 um) prior to concentration of virus particles with an Amicon filter. RNA was isolated using the optimized QIAamp viral RNA minikit, RNA quantity and quality determined, and cDNA synthesized using SuperScript IV VILO master mix. A multiplex TaqMan-based qPCR assay was developed for SARS-CoV-2 and lentivirus RNA (detection limit 5 SARS-CoV-2 copies/qPCR reaction and 50 viral copies/2 mL sample), and used to test all diagnostic samples. SARS-CoV2 synthetic RNA and lentivirus RNA were used as an RT-qPCR positive control. Samples with no amplification of lentivirus genome were removed from the analysis (false negative).

RESULTS: In total, culture medium from 30 patients, vitrification solution from 98 patients, and follicular fluid from 156 patients were analyzed. All samples were negative for the presence of SARS-CoV-2 viral RNA.

CONCLUSIONS: In an active IVF laboratory when strict patient screening procedures are in place, including patient testing and use of ICSI, the presence of SARS-CoV-2 RNA can be avoided in the IVF laboratory. Importantly, this study does not indicate that virus from an actively infected patient cannot be found in follicular fluid or make its way into the IVF lab. However, it does provide reassurance that with proper patient testing and safety measures, cross-contamination of the virus between gametes and embryos (including within liquid nitrogen storage dewars), as well as exposure of embryologists, is minimal.

P-950 3:30 PM Wednesday, October 21, 2020

PERFLUORINATED COMPOUND (PFC) EXPOSURE IN OVARIAN GRANULOSA CELLS ALTERS GAP JUNCTION GENE EXPRESSION. Henry P. Mishek, Medical Student, Kendra L. Clark, PhD, John S. Davis, PhD. University of Nebraska Medical Center, Omaha, NE.

OBJECTIVE: Perfluorinated compounds (PFCs) are synthetic chemicals that are persistent in the environment and bioaccumulate in humans and animals. These substances are ubiquitous in drinking water, cookware, stain repellents, food storage, packing materials, and cosmetics. Perfluorooctanoic acid (PFOA) is the most commonly detected PFC and has been associated with reduced fecundity and infertility. Ovarian gap junctions facilitate the transfer of various nutrients, ions, metabolites, and nucleotides between follicular cells and the oocyte. It is possible that PFOA mediates its effects by disrupting gap junction intracellular communication (GJIC) between granulosa cells or altering expression of gap junction-related genes. In this experiment, we aim to determine the effects of perfluorooctanoic acid (PFOA) exposure on connexin-43 (CXM) gene expression and GJIC in granulosa cells.

MATERIALS AND METHODS: Women with history of subfertility were recruited from the Royal Women’s Hospital and Melbourne IVF in Australia. Clinical outcomes were followed up for at least 3.5 years. Participant were recruited from the Royal Women’s Hospital and Melbourne IVF in Australia.

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