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with the incidence of membrane resistance ($B$: -8.7, CI: -16.4 - -1.0, $p=0.027$). There were no significant influences of other investigated maternal lifestyle factors on oocyte dimorphisms.

CONCLUSIONS: Cigarette smoking and the consumption of refined sugar appear to reduce oocyte quality. Therefore, it would be wise to advise female partners undergoing assisted reproduction treatments to abstain from smoking and consuming sugar to avoid decreased in vitro reproduction outcomes.

SUPPORT: None.

O-40 2:45 PM Saturday, October 17, 2020

INFERTILITY AND ENVIRONMENTAL, CHEMICAL, AND HAZARDOUS EXPOSURES AMONG UNITED STATES VETERANS. Abigail C. Mancuso, MD, Andrea Holcombe, MS, PhD,2 Michelle A. Mengeling, MS, PhD,3 Ginny L. Ryan, MD, MA,1 University of Iowa Hospitals and Clinics Iowa City, IA;1 Iowa City VA Health Care System, Iowa City, IA;1 University of Iowa Carver College of Medicine, Iowa City, IA.

OBJECTIVE: To assess the association between infertility and environmental, chemical, or hazardous material exposures among United States Veterans.

DESIGN: Cross-sectional survey study.

MATERIALS AND METHODS: A national sample of female and male US Veterans aged 20-45 completed a computer-assisted telephone interview lasting an average of 1 hour 27 minutes assessing demographics, general and reproductive health, and lifetime and military exposures.

Infertility was defined as unprotected intercourse with a member of the opposite sex, with or without trying to conceive, for >12 months without pregnancy over a lifetime. Participants reporting never having had unprotected intercourse were excluded from analysis.

Logistic regression analysis was used to compare exposures among infertile and non-infertile groups. Odds ratios (OR) with 95% confidence intervals are reported.

RESULTS: 3,018 Veterans participated in this study. After excluding participants never reporting unprotected intercourse (216 women and 201 men), 1,194 women and 1,407 men were included in this analysis with 592 (50%) women and 727 (52%) men meeting the definition of infertility.

Exposures reported to be higher among both women and men meeting the definition of infertility than among those not meeting this definition included polychlorinated biphenyl (PCBs) (4.7% vs. 2.3% exposed in the infertile and non-infertile groups respectively; OR 2.09 (1.09-4.00) for women; 9.5% vs. 6.2%; OR 1.59 (1.07-2.37) for men) and sulfur fires (2.2% vs. 0.5%; OR 4.48 (1.27-15.81) for women; 4.0% vs 2.1%; OR 1.98 (1.04-3.77) for men).

Exposures reported to be higher only among women meeting the definition of infertility than among women not meeting this definition were extreme heat (66.3% vs 59.0%; OR 1.37 (1.06-1.74)), chemical weapons (e.g., Sarin gas) (55.3% vs. 49.4%; OR 1.27 (1.03-1.56)), and asbestos (35.4% (71.4% vs 64.9%; OR 1.35 (1.08-1.69)), other chemicals (such as solvents, degreasers) (55.3% vs. 49.4%; OR 1.27 (1.03-1.56)), and anthrax vaccine (54.2% vs. 45.9%; OR 1.40 (1.11-1.75)).

Exposures reported to be higher only among men meeting the definition of infertility than among men not meeting this definition included polybrominated biphenyl (PCBs) (4.7% vs. 2.3% exposed in the infertile and non-infertile groups respectively; OR 2.09 (1.09-4.00) for women; 9.5% vs. 6.2%; OR 1.59 (1.07-2.37) for men) and sulfur fires (2.2% vs. 0.5%; OR 4.48 (1.27-15.81) for women; 4.0% vs 2.1%; OR 1.98 (1.04-3.77) for men).

Exposures reported to be higher only among men meeting the definition of infertility than among men not meeting this definition were extreme heat (66.3% vs 59.0%; OR 1.37 (1.06-1.74)), chemical weapons (e.g., Sarin gas) (55.3% vs. 49.4%; OR 1.27 (1.03-1.56)) and anthrax vaccine (54.2% vs. 45.9%; OR 1.40 (1.11-1.75)).

CONCLUSIONS: During their military service, Veterans commonly experienced exposure to chemical, physical, and environmental hazards. Findings suggest that exposure to specific contaminants may increase the risk of infertility in Veterans, especially among women. Future research is needed to further explore the relationship between specific exposures and infertility outcomes in this population.

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UNIVERSAL SEVERE ACUTE RESPIRATORY SYNDROME CORONAVIRUS 2 (SARS-COV-2) TESTING IN A NEW YORK CITY REPRODUCTIVE MEDICINE PRACTICE. Pietro Bortoletto, MD, Phillip A. Romanski, MD, Joshua Stewart, M.D., Glenn Schattman, MD, Zev Rosenwaks, M.D. The Ronald O. Perelman and Claudia Cohen Center for Reproductive Medicine, Weill Cornell Medicine, New York, NY.

OBJECTIVE: To describe our single-center experience and results of universal SARS-CoV-2 testing in asymptomatic patients undergoing controlled ovarian hyperstimulation (COH).

DESIGN: Retrospective cohort study conducted at a university-affiliated center.

MATERIALS AND METHODS: On March 21, 2020, New York-Presbyterian Hospital, where our retrieval suite is located, instituted a policy of universal SARS-CoV-2 testing prior to surgical procedures requiring anesthesia. As a result, we began testing all patients undergoing COH for SARS-CoV-2 using reverse transcription-polymerase chain reaction via nasopharyngeal swabs (Roche Cobas 6800). Tests were performed on the morning of cycle start and repeated 24 hours before oocyte retrieval. A positive test at either time point excluded patients from continuing with treatment. During the testing period, all patients and staff were required to wear surgical masks at all times when at our center and consented to symptom and temperature screening at every monitoring visit.

RESULTS: Between March 21 and May 20, 2020, 169 asymptomatic patients underwent nasopharyngeal swabs at cycle start, four of which returned positive for SARS-CoV-2 for a center prevalence of 2.4%. All four patients had negative COH at the time of cycle start and were not permitted to begin their COH cycle. One of these patients had previously had a positive PCR swab over 60 days prior and had been symptom-free during this interval. One patient with a negative PCR swab on cycle start subsequently converted to positive 15 days later on her PCR swab prior to retrieval, despite the absence of COVID-19 symptoms. Per our hospital policy, she was not allowed to proceed with oocyte retrieval and was started on a course of daily GnRH antagonist and asked to abstain from intercourse for 14 days. None of the 5 patients went on to develop COVID-19 symptoms following their positive test result. All patients were referred to follow-up with their primary care provider. Prior to returning for further COH treatment, all patients will be required to undergo repeat PCR testing with a negative result.

CONCLUSIONS: While rare, asymptomatic carriers of the SARS-CoV-2 virus were identified for a center prevalence of 2.4% in patients undergoing COH. Despite initial negative PCR testing, patients may convert to positive over the course of a COH cycle and not demonstrate symptoms. Strict personal protective equipment and social distancing use is essential to protect patients and staff alike.

O-42 3:15 PM Saturday, October 17, 2020

EFFECT OF THE EXPOSURE TO FINE INHALABLE PARTICULATE MATTER (PM2.5) ON SPERM FUNCTIONAL QUALITY OF MICE. Paula Intasqui, PhD,1 Leticia Kaory Tamashiro, BSc.,2 Victor Yuri Yarikawe, BSc.,2 Rosana Xavier Souza, BSc.,1 Camila Mathe Kanashiro, BSc.,1 Mariana Matera Veras, PhD.1 1 Sao Paulo Federal University Sao Paulo, Brazil; 2 Laboratory of Experimental Air Pollution (LIM05), Sao Paulo, Brazil.

OBJECTIVE: To evaluate the effect of exposure to pollution (fine inhalable particulate matter - PM2.5) from the city of Sao Paulo on sperm functional quality.

DESIGN: Male isogenic BALB/c mice were used, distributed in two groups, control (n=6) and polluted air (n=8). For the polluted air group, after weaning (21 days), animals were daily exposed to 600 μg/m3 of PM2.5 for 96 days in an Ambient Particle Concentrator (APC). Control group was simultaneously exposed to filtered air in the APC. On postnatal day 118, animals were sacrificed (isoflurane overdose), body was weighted and the epididymis were collected.

MATERIALS AND METHODS: Sperm obtained from the cauda epididymis were used for the evaluation of motility, mitochondrial activity (DAB staining), acrosome integrity (PNA staining), DNA fragmentation (alkaline comet assay), oxidative stress (DHE staining) and cell viability (PI staining). Groups were compared using an unpaired Student’s t test (p<0.05).

CONCLUSIONS: Exposure to fine inhalable particulate matter - PM2.5, from the city of Sao Paulo, results in decrease in sperm functional quality.