obtained in the SC, 70 patients were needed to reach a statistical power of 80% and a 95% confidence level in a single-tailed test where the upper limit of the CI excludes a 10% difference (80 patients considering a 15% loss rate). After an interim analysis, the study was discontinued after a stochastic curtailment analysis.

RESULTS: From 54 recruited patients, 40 obtained MII oocytes in both cycles. Intra-patient comparison showed a similar proportion of euploid embryos per MII oocyte (16.1% in MNC and 18.6% in SC; p>0.05). The number of oocytes needed to obtain one euploid blastocyst was 6.2 MII in MNC and 5.4 MII in SC (p=0.68). Aneuploidy rates were 64.7% vs 52.4%, respectively (p=0.30).

No differences were observed in the morphological classification (p=0.89), whereas morphokinetic evaluation showed that tPNf, t3, t5, t6, t7, t8, t9+,tSC, and t5-t2 were significantly faster in the SC (p<0.05).

The mean number of euploid embryos was significantly higher in the SC (2.4 vs 0.2; p=0.000). A linear relation was found between the number of oocytes and the number of euploid blastocysts obtained (R=0.659; 0=0.00).

CONCLUSIONS: Ovarian stimulation has no negative effect on oocyte and embryo quality. Aneuploidy rate, the number of MII needed to obtain an euploid blastocyst, and embryo quality are comparable between the natural and the stimulated cycle. The implication of the faster division times observed in the SC is yet to be determined.

Ovarian stimulation offers a significantly higher number of euploid embryos without diminishing embryo quality.

SUPPORT: Research grant award from FINOX (Forward initiative 2016)

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REDUCTION OF BACTERIAL COLONY FORMING UNITS IN AN OBSTETRICS OPERATION THEATRE USING COLD-PLASMA BASED DIELECTRIC BARRIER DISCHARGE AIR PURIFICATION SYSTEM. Milind RAMCHANDRA. Ubale, M.D.,[1] Rajvi H. Mehta, Ph.D.[2] [1]Rajiv Gandhi Medical College & Chatrapati Shivaji Maharaj Hospital, Thane, India; [2]Trivector Boimed LLP, Mumbai, India.

OBJECTIVE: To evaluate the effectiveness of the cold-plasma based dielectric barrier discharge (CP-DBD) based air purification system on the number of bacterial colony forming units in an obstetrics operation theatre (OBOT).

DESIGN: Air samples were taken to determine the bacterial load before and 7, 14 and 21 days after the installation of the CP-DBD based air purification system in the OBOT; the unit was switched off on Day 21 and air samples were taken on Day 28. The number of bacterial colony forming units were compared on different days to determine the effect of the CP-DBD air purification system on the bacterial load.

MATERIALS AND METHODS: This study was carried out in the OBOT of a municipal public hospital. Air samples were taken from the OBOT (Pre, Day 0) at 0, 1, 2, and 4 hours. The CP-DBD based air purification system Novaerus-1050 was installed in the OBOT and air samples were taken at 0, 1, 2 and 4 hours on Day 7, 14, 21 days (Post). The Novaerus unit was switched off after taking the samples on Day 21 and 4 air samples at 0, 1, 2 and 4 were taken on Day 28. The number of individuals present in the OBOT on that particular day was also noted. The air samples were cultures on Blood agar and Sabouraud's Dextrose agar plates and incubated at at 37^0 C for 48 hours and 30 days respectively. The number of bacterial colony forming units for each air sample were determined in the Blood agar as well as Sabourauds Dextrose Agar plates. The data for Day 0, 7, 14, 21 and 30 was tabulated and and compared.

RESULTS: There was significant reduction in bacterial colony count /ml in post- I compared to pre-I air sampling. Fluctuation in post- I colony count at 0 ,1, 2, 4 hours was observed during each intervention day that is on 0, 7, 14, 21 days. However in all intervention days the 4 hours CFU showed reduction in bacterial colony counts as compared to 0 hour colony count. At day 28, there was increase in colony counts at every reading (0, 1, 2, 4 hours) as compared readings taken on day 0, 7, 14, 21 days when air purifier was operational. The mean CFU decreased from 21 on Day 0 to 10, 7, 5 on Day 7, 14 and 21 respectively. After switching off the CP-DBD air purification system, the mean CFU increased to 18 on Day 28.

CONCLUSIONS: The results indicate that continuous usage of cold plasma based air purifier system can decrease and consistently maintain low microbial load in the operation theaters. This system would be very useful in OBOTs of public hospitals which work 24 x 7 and therefore are higher risk of microbial contamination.

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INCREASED AVERAGE OF SPERM HEAD AREA (ASHA) IS A NOVEL SPERM PARAMETER ASSOCIATED WITH HIGHER INCIDENCE OF SPERM ANEUPLOIDY. Miguel Ruiz-Jorro, MD, MSc, PhD,[1] Minerva Ferrer-Buitrago, BSc, PhD,[1] Juan Jesús Bataller-Sánchez, BSc, MSc,[1] Antonio Barberá-Alberola, MSc,[1] Xavier Vendrell-Montón, BSc, PhD,[2] Carmen Calatayud-Lliso, MD, MSc, PhD.[1] [1]CREA. Medicina de la Reproducción S.L., Valencia, Spain; [2]Ascires Sistemas Genómicos, Paterna-Valencia, Spain.

OBJECTIVE: To evaluate the association between the average sperm head area (ASHA) and altered sperm aneuploidy rate in male infertility.

DESIGN: A total of 147 patients who showed normal sperm aneuploidy rates were used as a control to determine the cut-off value for ASHA. A retrospective study was further performed to calculate the incidence of sperm aneuploidy in infertile patients with a suspected risk of sperm aneuploidy: Recurrent implantation failure or pregnancy loss (RIF; RPL), or testicular failure (Study Group 1; n=250). The intra-patient variability of ASHA was compared to other sperm parameters: concentration, motility and morphology. Moreover, the sperm aneuploidy rate was prospectively assessed in a total of 22 patients with increased ASHA values, who showed normal testicular function, normal FSH values (4,81±2,83 mUI/ml), and absence of RIF or RPL. Sample size was adjusted to detect at least 30 % difference in sperm aneuploidy rate compared to published data in reference population of infertile men (15.0 %), and for a power calculation of 95.

MATERIALS AND METHODS: All participants signed an informed consent form. ASHA cut-off value was established according to the value at percentile 95. Chi-squared statistic was used to asses frequency distribution. Two semen samples were analyzed per patient according to WHO-V-manual. Sperm concentration, motility, morphology and ASHA were evaluated using the CASMA software ISAS. Samples were stained using the Diff-quick kit. Sperm aneuploidy was determined by FISH analysis (5 chromosomes) using Metafer-4 software.

RESULTS: ASHA cut-off value was established as $\geq$14,8 μm2 in the control group. Group 1 revealed an increased incidence of altered FISH (41.2%) compared to the reference value (15.0%). The mean ASHA value in group 1 was 12.9 $\pm$ 1.3 μm2, whereas the mean ASHA value in the subgroup of patients with altered FISH was 13.2 $\pm$ 1.4 μm2. ASHA values showed lower intra-patient variability (p<0.002) and higher positive predictive value to detect altered FISH (73.9%) than other sperm parameters such as concentration (56.5%), total sperm count (58.8%) and morphology (46.7%). The predictive value of ASHA to detect sperm aneuploidy was further validated in a prospective analysis (Group 2). Sperm parameters in group 2 were: concentration (20.8 $\pm$ 26.5 million sperm/ ml), % total motility (45.0 $\pm$14.6) and % normal morphology (1.6 $\pm$0.7). The mean ASHA value in group 2 was 15.2 $\pm$ 0.6 μm2, and the incidence of sperm aneuploidy was significantly increased compared to the reference value of 15.0% (p<0.05).

CONCLUSIONS: Our study describes ASHA as a sperm parameter with low intra-patient variability. Prospective data revealed that patients presenting with idiopathic infertility, who show ASHA values > 14,8 μm^2 have a high risk to carry chromosomal aberrations in sperm. Our results indicate that altered ASHA is an indicator to request a FISH analysis from the first sperm evaluation.

These findings provide new insights in the field of androgenetics and male infertility, since ASHA might contribute to reduce the time to advise PGT-A, and consequently, the time to conceive in some infertile couples.

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PREGNANCY LOSS RATES AFTER SINGLE, EUPLOID FROZEN-THAWED EMBRYO TRANSFER IN THE COVID-19 ERA. Eric Flisser, MD,[1] Devora Aharon, MD,[2] Dmitry Gounko, MA,[1] Alan B. Copperman, MD.[2] [1]Reproductive Medicine Associates of New York, New York, NY; [2]Icahn School of Medicine at Mount Sinai, New York, NY.

OBJECTIVE: Data on the impact of COVID-19 on early pregnancy is extremely limited, and patients and practitioners remain cautious about initiating pregnancy in areas of high SARS-CoV-2 transmission.[1-4] In April 2020,

during the peak of the pandemic, the prevalence of COVID-19 among New York State residents was estimated to be 22.7%, consisting largely of asymptomatic infection.[5] If SARS-CoV-2 is pathogenic to early pregnancy, an increase in loss might be expected given this high transmission. The objective of this study is to determine if an increase in early pregnancy loss occurred in patients undergoing single euploid frozen embryo transfer (FET) during the height of the COVID-19 pandemic.

DESIGN: Retrospective cohort study.

MATERIALS AND METHODS: The study took place at an academic tertiary care center with offices throughout New York City. All single euploid FET cycles performed from January-May of 2017-2020 were included. Cycles with FET in 2017-2019 were compared to those with FET performed in the corresponding time period in 2020. Baseline characteristics included age, oocyte age, AMH, BMI, and endometrial thickness. Pregnancy loss rate (PLR), or loss after the presence of serum βhCG $\geq$2.5 mIU/mL, and clinical pregnancy loss rate (CLR), loss after a gestational sac was seen on ultrasound, were compared between January-May, 2017-2019 and January-May, 2020, in aggregate as well as for each corresponding month individually. Comparative statistics and multivariable logistic regression were used.

RESULTS: 2629 single euploid FET cycles were included in the study: 2070 from Jan-May, 2017-2019 and 559 from Jan-May, 2020. Positive pregnancy rates were 73.7% in January-May, 2017-2019 and 77.6% in January-May, 2020. Baseline characteristics were similar. No differences were seen in PLR or CLR when comparing FET from January-May, 2017-2019 to FET from January-May, 2020. No differences were seen in PLR or CLR when comparing individual months in 2017-2019 to 2020. On multivariable logistic regression, when controlling for oocyte age, AMH, BMI, and endometrial thickness, FET in January-May 2017-2019 was associated with a higher odds of pregnancy loss compared to January-May 2020 (OR 1.32, 95% CI 1.02-1.73, p=.039). No difference was seen in CLR between these groups (OR 1.34, 95% CI 0.92-1.97, p=.13). No differences were seen in PLR or CLR comparing each month individually in the two time periods.

CONCLUSIONS: This data is reassuring that early pregnancy loss rates were not increased during widespread SARS-CoV-2 transmission. A decrease in PLR in January-May 2020 compared to prior years might be attributable to selection against treatment of patients with known risk factors for severe infection. While in the absence of universal screening for SARS-CoV-2, which at the time was neither available nor recommended, this data does not exclude a possible impact of infection on pregnancy loss, it suggests that screening patients for elevated temperature, symptoms, and exposure may be effective in maintaining established early pregnancy success rates. This data may help guide clinics in regions experiencing a surge in virus transmission.

SUPPORT: None

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P-1019 3:30 PM Wednesday, October 21, 2020

IS COH /IUI AN EFFECTIVE TREATMENT IN OLDER WOMEN AND MALE PARTNERS WITH DECREASED TOTAL MOTILE SPERM COUNTS?

Einav kadour-Peero, MD,[1] Namaa Steiner, MD,[1] Russell Frank, M.D.,[2] Maryam al Shatti, MD,[1] Jacob Ruiter, MD,[1] Michael H. Dahan, M.D.[1] [1]Division of Reproductive Endocrinology and Infertility, McGill University Health Care Center, Montreal, QC, Canada; [2]McGill University Health Centre, Montreal, QC, Canada.

OBJECTIVE: To assess the effect of the total motile sperm count (TMSC) on the success of controlled ovarian stimulation (COH) and intra uterine insemination (IUI) in women 38-42 years-of-age. Current literature suggests women 35-40 years of age have no pregnancies when TMSC $\leq$5mil at COH/IUI [1, 2].

DESIGN: Retrospective cohort study, included women who underwent IUI with stimulation at a University Reproductive Centre between 2009-2018.

MATERIALS AND METHODS: A database from all women aged 38-42 years old who underwent IUI with stimulation at a University Reproductive Centre between 2009-2018. Including stimulation with clomiphene citrate, letrozole or gonadotropins and divided into TMSC 5.01-10.0 mil and $\leq$5.00 mil. The main outcome was clinical pregnancy rate, defined as fetal heart beat by ultrasound, per stimulation cycle. Statistics were compared with multivariate logistic regression, t-tests or chi-squared tests.

RESULTS: A total of 397 cycles of IUI were included, of which, 190 cycles with TMSC 5.01-10.0 and two hundred and seven cycles with TMSC $\leq$5.00. There were no statistical differences in the basic characteristics between the two groups including: age (P=0.2), gravidity (P=0.7), parity (P=0.6), basal FSH (P=0.2), basal E2 (P=0.4), antral follicular count (P=0.5) and the number of mature follicles stimulated (P=0.2). As designed, TMSC was 7.6$\pm$1.5 mil in the first group and 2.4$\pm$1.6 mil in the second group (P<0.0001). The clinical pregnancy rate per cycle in the 5.01-10.00 TMSC group was 9.5 % vs. 3.4% when TMSC $\leq$5.00 (P=0.01). When evaluating only women 40-42 years of age (99 women in the 5.01-10.00 TMSC group and 95 in the group of TMSC $\leq$5.00); the pregnancy rates were not statistically different between the two groups (7% vs. 7.3%, P= 0.082), nor was the clinical pregnancy rate (5% VS. 5.2%, P=0.7).

CONCLUSIONS: Women 38-39 years-of-age have poorer outcomes at COH/IUI when TMSC $\leq$5 million than if it is greater. Once a woman is 40 years of age this effect is lost. With mild male factor infertility, women 38-39 years of age have respectable outcomes at COH/IUI. Clinical pregnancy rates are just 5% irrelevant of sperm quality in women 40-42 years of age performing COH/IUI with male factor infertility.

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GNRH ANTAGONIST PROTOCOL WAS SUPERIOR TO MILD STIMULATION PROTOCOL IN CONTROLLED OVARIAN STIMULATION IN PATIENTS WITH DISCORDANCE BETWEEN ANTI-MÜLLERIAN HORMONE CONCENTRATION AND ANTRAL FOLLICLE COUNT.

Meng Rao, MD., Shuhua Zhao, Ph.D, Li Tang, MD. The First Affiliated Hospital of Kunming Medical University, Kunming, China.

OBJECTIVE: To evaluate the laboratory and clinical outcomes between GnRH antagonist and mild stimulation protocols in patients with discordance between anti-Müllerian hormone (AMH) concentration and antral follicle count (AFC).

DESIGN: Retrospective cohort.

MATERIALS AND METHODS: This study was conducted in the Reproductive Medical Center of the First Affiliated Hospital of Kunming Medical University during Jan 2016 to Dec 2019. This study included 130 infertile couples with female AMH<1.1 ng/mL and AFC$\geq$7 , 65 couples received GnRH antagonist protocol and another 65 age and BMI-matched couples received mild stimulation protocol treatment.Laboratory and clinical outcomes were compared between GnRH antagonist cycles and mild stimulation cycles. The primary outcomes included the no. of aspirated oocytes and cumulative clinical pregnancy rate. The secondary outcomes included the cycle cancellation rate and the no. of good-quality embryos.

RESULTS: During the study period, a total of 220 patients received 303 GnRH antagonist and mild stimulation cycles in our reproductive center. 130 cycles (65 in each group) were enrolled by using propensity score matching with age and BMI. Mean female age in GnRH antagonist and mild stimulation groups were 36.2 and 36.4 years, respectively (p=0.84). Mean male age (37.0 vs. 38.0 years), female BMI (23.5 vs. 23.3 kg/m2), AMH (0.76 vs. 0.74 ng/mL) and AFC (8.8 vs. 8.4) were all similar between these two groups (p=0.37, 0.73, 0.58 and 0.25, respectively). After adjusting for a series of