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.

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CONCLUSIONS: This extensive proteomic study sheds light on the possible effects of SARS-CoV2 infection on reproductive functions and subsequently on male fertility even after apparent recovery from viral infection.

IMPACT STATEMENT: The semen proteomic analysis of the COVID-19 recovered patients portrays a clear scenario of alteration of reproductive function in response to viral infection after clinical recovery, thus corroborating a possibility of virus-mediated impact on male infertility. A similar kind of study on large cohort will also direct the way to combat the viral effect on male reproductive function. This study would guide clinicians in counseling couples affected by COVID-19 as to the possible short term and long term effects on male reproductive potential.

P-452 6:30 AM Wednesday, October 20, 2021

TELEHEALTH DURING THE COVID-19 PANDEMIC: WHAT YOUR PATIENTS ARE REALLY THINKING. Melissa A. Mathes, MD, 1 Valentina A. Bertrand, BS, 2 Stephanie Gustin, MD 1 1The University of Nebraska Medical Center, Omaha, NE; 2Heartland Center for Reproductive Medicine, Omaha, NE.

OBJECTIVE: Prior to the COVID-19 pandemic, most telemedicine visits were used to provide subspecialty care to patients in rural settings. In general, it is known that telemedicine appointments facilitate care in eliminating patients’ waiting time, travel time, and travel expenses. With the current pandemic, many institutions and clinics are turning to virtual care to limit exposures. 46% of consumers are using telemedicine now, compared to 11% in 2019 (1). Overall, patients are satisfied with their care during telemedicine visits. However, patient satisfaction within the infertility population has not specifically been addressed. Our objective is to quantitatively patient satisfaction in telemedicine visits during infertility care.

MATERIALS AND METHODS: After IRB approval, electronic surveys were sent to all patients who received care through a telemedicine appointment at an academic affiliated private practice infertility clinic. Collection date of surveys occurred from August 5, 2020 to January 9, 2021.

RESULTS: 112 surveys were completed, both in English and Spanish. 38% of respondents were new patients to the practice. 57% of respondents completed the telemedicine appointment with a partner. When asked which of the following ways did the telemedicine appointment aid you, 73% indicated a reduction in travel time, 68.8% indicate the ability to stay home and 36.6% the ability to stay at work. All respondents felt a sense of privacy and/or security during the appointment. Additionally, all respondents felt there was sufficient time for discussion with the provider and they all felt they could ask questions. 95.5% felt extremely satisfied or satisfied with their care. Of the patients who previously had an in-person visit, 16% would prefer telemedicine for all visits, 62.5% would like telemedicine for some appointments and 21.4% prefer in-person visits but would use telemedicine if necessary. All respondents stated they would recommend telemedicine to other women seeking infertility care.

CONCLUSIONS: Almost all patients were satisfied or extremely satisfied with their care they received during their telemedicine appointments. While many continue to prefer in-person visits, providers should continue to offer telemedicine options for patients despite relaxation of restrictions from the COVID-19 pandemic. It is imperative that we continue to modify practice patterns to allow for smooth integration of telemedicine within our practice while maximizing patient satisfaction.

IMPACT STATEMENT: With the COVID-19 pandemic, telemedicine is being used at record numbers. The infertility community needs to continue to provide telemedicine as an option for patients despite relaxation of COVID-19 restrictions.

References: 1. McKinsey and Company. Telehealth: a quarter-trillion-dollar post COVID-19 reality? May 29, 2020. Available at: https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/telehealth-a-quarter-trillion-dollar-post-covid-19-reality

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EFFECT OF COVID-19 mRNA VACCINES ON SPERM QUALITY. Daniel Gonzalez, B.S., 1 Daniel E. Nassau, MD, Kajol Khodamoradi, PhD, 1 Emad Ibrahim, MD, HCLD(ABB), 1 Ruben Blachman-Braun, M.D., M.Sc., 1 Justin M. Dubin, MD, 2 Jesse Ory, MD, 3 Ranjith Ramasamy, M.D 4 University of Miami Miller School of Medicine, Miami, FL; 2Northwestern University Feinberg School of Medicine, Chicago, IL; 3University of Miami, Miami, FL.

OBJECTIVE: Fertility related safety data was neither reported in the clinical trials nor evaluated in animal models prior to emergency use authorization (EUA) for two novel mRNA vaccines, BNT162b2 and mRNA-1273.2 Despite excellent safety profiles for both vaccines, 44% of Americans are hesitant in receiving the vaccine. Although the specific reasons for COVID-19 vaccine hesitancy are unknown, concerns over fertility has previously decreased other vaccine uptake. As COVID-19 vaccination in the United States opens to children and adolescents, evaluating any potential impact of the vaccine on male reproduction is imperative for public reassurance. We hypothesized that since both vaccines only contain mRNA encoding the SARS-CoV-2 spike protein without biologic ability to replicate live virus, the vaccines would not decrease semen parameters.

MATERIALS AND METHODS: We conducted a single-center prospective cohort study after IRB approval from the University of Miami (#20210451). Healthy men aged 18-50 scheduled for mRNA COVID-19 vaccination in Miami, Florida were recruited. Participants provided a semen sample after 2-7 days of abstinence, prior to receiving the first dose of either vaccine and about 72 days after the second dose. Semen was self-collected into a wide-mouth sterile container and semen analysis (SA) performed by HCLD trained andrology clinicians examined semen volume, concentration, motility, and total motile sperm count (TMSC).

RESULTS: 45 men provided a semen sample. Neither median sperm concentration nor total motile sperm count (TMSC) declined post vaccination (Figure 1). There was no clinically significant change in TMSC. Only 12 (26.6%) men had a marginal decrease in TMSC. In fact, the remaining 33 (73.3%) men demonstrated normal sperm parameters. Importantly, 8 (17%) men with oligospermia prior to vaccination did not experience a decrease in sperm motility. Only one subject had an abnormal TMSC (TMSC < 9) after vaccination.

CONCLUSIONS: After receiving the two doses of the vaccines, we did not observe a clinically significant sperm parameter decline within the cohort, suggesting the vaccines do not negatively impact male fertility potential.

IMPACT STATEMENT: This is the first male fertility evaluation of the COVID-19 mRNA vaccines, in which we found that the vaccines do not negatively impact semen parameters.

References: 1. Polack FP, Thomas SJ, Kitchin N, et al. Safety and Efficacy of the BNT162b2 mRNA Covid-19 Vaccine. N Engl J Med. 2020;383(27):2603-2615. doi:10.1056/NEJMoa2034577

P-454 6:30 AM Wednesday, October 20, 2021

THE EFFECT OF TELEMEDICINE DURING THE COVID-19 PANDEMIC ON IVF TREATMENT. Einav kadour-Peero, MD, Ido Feferkorn, MD. Ranit Hizkiyahu, MD, Ezgi Demirtas, MD McGill University Health Center, Montreal QC, Canada.

OBJECTIVE: To assess the effect of teledemcine during the COVID-19 pandemic year on the treatment decision of new patient for IVF (in-vitro fertilization) protocols, medication doses and clinical outcomes compared to new patients seen in-person during the previous year, in an academic fertility practice.

TABLE 1. Semen analysis parameters change before and after COVID-19 vaccine.

| Parameter                        | Baseline (n = 45) | Follow-up (n = 45) | p-value |
|---------------------------------|------------------|--------------------|---------|
| Volume (mL)                     | 2.2 [1.5 - 2.8]  | 2.7 [1.8 - 3.6]    | 0.012   |
| Sperm concentration (million/mL) | 26 [19.5 - 34]   | 30 [21.5 - 40.5]   | 0.017   |
| Total motility (%)              | 58 [52.5 - 65]   | 65 [58 - 70]       | 0.001   |
| TMSC (million)                  | 36 [18 - 51]     | 44 [27.5 - 98]     | 0.001   |

CONCLUSIONS: After the two doses of the vaccines, there were no significant changes in sperm parameters when comparing in-person and telemedicine visits.
MATERIALS AND METHODS: This is a retrospective cohort study, in a university-based fertility clinic. All new patients seen via telemedicine between March 11, 2020, and March 10, 2021, were compared with all new patients seen in person between March 11, 2019, and March 10, 2020. Statistical analysis included the pandemic exact test and Pearson chi square. The primary outcome was clinical pregnancy rate. Secondary outcomes included protocol type, dosage of Gonadotropins, duration of stimulation, type of trigger medication (HCG vs. GnRH- agonist; number of oocytes retrieved, fresh embryo transfer rate, “freeze all” rate due to OHSS reduction and implantation rate.

RESULTS: The study included 715 new patient in the fertility clinic; 365 patients seen in person (March 11, 2019 - March 10, 2020), and 350 patients seen via telemedicine (March 11, 2020 - March 10, 2021). The following were similar between the Covid year and the previous year: Female age (35.9 ± 5.06 vs. 36.4 ± 4.49, P = 0.21), number of oocytes retrieved at the first IVF cycle (12.8 ± 9.0 vs. 12.7 ± 8.5, P = 0.92), and stage of embryo transfer (cleavage stage 66 (41.3%) vs. 86 (47.3%) and Blastocysts 94 (58.7%) vs. 96 (52.7%) P = 0.27). There were more cases of male factor infertility and less cases of unexplained infertility in Covid year compared to the previous year (29% vs. 19%, P = 0.001 and 9% vs. 16%, P = 0.003 respectively), however, there was no difference in other diagnoses made at new-patient visit. There were no differences between the groups in the following outcomes: type of protocol (P = 0.41), FSH dosage (P = 0.25), number of days of stimulation (P = 0.10), maximal estradiol value (P = 0.97) type of trigger medication (HCG 227 (72.8%) vs. 266 (74.9%), P = 0.38 Agonist 86 (27.2%) vs. 89 (25.1%), P = 0.33, and fresh embryo transfer rate (47.7% vs. 51.2%, P = 0.36). There were less cases of “freeze all” to reduce OHSS risk in the Covid year (3.1% vs. 13.4%, P = 0.0001).

There was no difference between the groups in the clinical pregnancy rates (35.3% vs. 36.3%, P = 0.91) and implantation rates (29.2% vs. 32.7%, P = 0.42). CONCLUSIONS: New patients seen in person and those evaluated via telemedicine are likely to receive similar treatment protocols, medication doses and are likely to have similar duration of stimulation. IVF outcomes are not affected by telemedicine consultation, either.

IMPACT STATEMENT: Telemedicine consultation for new-patient visits is feasible in an academic fertility practice for IVF treatment and may be particularly useful during the pandemic.

P-455 6:30 AM Wednesday, October 20, 2021

READY (OR NOT): CHANGES IN CONCEPTION ATTEMPTS DURING THE COVID-19 PANDEMIC. Shannon M. Malloy, BS, 1 Danielle E. Bradley, MS, MPH 2 Research & Data Associate, Boston, MA; 3Director of Clinical Services & Evidence, Boston, MA.

OBJECTIVE: Over the course of the first 12 months of the COVID-19 pandemic in the United States and around the globe, reproductive and obstetrician research began to reveal the potentially detrimental impacts of COVID-19 on pregnant people and fetuses, and more importantly how society and healthcare facilities can protect these vulnerable individuals. However, for millions of people planning to start or grow their families during 2020, these effects and steps to minimize risk to both parent and child were still largely unknown. This investigation captures changes in attitudes and behavior surrounding conception efforts during the height of the COVID-19 pandemic.

MATERIALS AND METHODS: A survey was administered to users of Ovia Health’s Fertility mobile application in the United States from March 2020 to April 2021 to assess conception effort behavior and geographic location. A Chi-squared test was performed to determine if geographical region impacted conception efforts. A p-value of < 0.05 was considered statistically significant.

RESULTS: A total of 20,046 respondents qualified for inclusion in analyses. Of the 16,527 respondents actively trying to get pregnant or attempted pregnancy in the last six months, one in ten reported altering their conception plans during the last year. Most respondents decided to temporarily pause TTC efforts specifically due to the pandemic (70%), and 6% delayed conception attempts indefinitely until the conclusion of the pandemic. Main contributors to these decisions included the potential impact of COVID-19 on pregnant people or fetuses (39%), lack of support people during pregnancy and labor (25%), and concern about finances or job security (23%). Rates of temporary TTC pause were comparable across the United States, ranging from a high of 31% in the Northeast and a low of 21% in the Southeast (p > 0.05). People of any age were equally likely to temporarily pause or abandon conception efforts indefinitely (p > 0.05).

CONCLUSIONS: Instability, isolation, and insufficient information fostered by the COVID-19 pandemic contributed to individuals’ decisions to either temporarily pause or abandon their conception attempts indefinitely. Changes in TTC behavior were comparable across all U.S. geographic regions and ages, demonstrating the pandemic’s indiscriminate impact on family building behavior in this sample. As individuals revisit or resume their family building journeys, especially those whose fertility opportunities may be narrowing, reproductive medicine specialists should support patients who altered or continue to alter their conception plans during the pandemic.

IMPACT STATEMENT: Reproductive medicine specialists and ancillary clinical team members should be aware of the impact COVID-19 had on family building behavior and prepare to support patients as they revisit their family building plans, particularly those who may struggle with infertility and whose fertility opportunities are becoming increasingly limited.

SUPPORT: None.

P-456 6:30 AM Wednesday, October 20, 2021

OVERALL POSITIVE POSTS AFTER INTRODUCTION OF COVID-19 VACCINE ON FERTILITY-RELATED SOCIAL MEDIA. Nicole D. Yoder, MD, 1 Jillian Pecorillo, BA, 2 Meghan B. Smith, MD, 3 Jennifer K. Blakemore, MD, 3 MSc 1 NYU School of Medicine, New York, NY; 2Nashville Fertility Center, Nashville, TN; 3NYU Langone Health, New York, NY.

OBJECTIVE: Social media is a popular way to disseminate new information and opinions, perhaps furthered by the COVID-19 pandemic and quarantine. Our objective was to analyze information and sentiments posted regarding the COVID-19 vaccine (VAX) on fertility-related social media.

MATERIALS AND METHODS: The search function of Instagram (IG) and Twitter (TW) was used to identify the first fifty accounts with the following terms: fertility doctor, fertility, OB/GYN, infertility, TTC, and IVF. Accounts not in English, private, no posts in >1 year, or content unrelated to search terms were excluded. Accounts were evaluated for author type and categorized as physician (PH), individual (ID), or fertility center/fertility-related organization (FCO). Account demographics including number of followers and prior baseline post activity (number of likes/number of followers) were recorded. The VAX was approved on 12/11/2020 and posts dated 12/1/2020 - 2/28/2021 were reviewed. Posts mentioning the VAX were analyzed for content: sentiment (positive, negative, or neutral), mention of research studies (RS), national guidelines (NG), personal experience (PE), side effects (SE), reproductive related (RR) content and post activity. Statistical analysis included Chi-Squared and Fisher’s exact tests, with significance set to < 0.05 (*).

RESULTS: 536 accounts were identified and included (133 IG and 143 TW). There were 104 PH accounts (45 IG, 59 TW), 91 ID accounts (62 IG, 29 TW), and 81 FCO accounts (26 IG, 55 TW). PH accounts were most associated with mention of COVID (83.7%*) and VAX (68.5%*), followed by FCO (37% COVID*, 30.9% VAX*), and ID (8.8% COVID*, 6.6% VAX*). PH was most associated with >1 VAX posts compared to FCO or ID (51.0% v 11.1% v 1.0%), and less with THV posts compared to FCO or ID (2.5% v 8.5% v 6.3%). RR posts were most associated with FCO accounts (80%*). Account demographics including number of followers and prior baseline post activity were similar on both IG and TW platforms. PH cited NG (24.6%*) and RS (17.5%) more than ID and FCO, with most cited guidelines from ACOG, ASRM, and SMFM. ID posts were mostly PE (87.5%*) and SE (57.1%). RR posts were most associated with FCO accounts (80%) with increased pregnancy, infertility, and breastfeeding. Sub-group analysis of IG accounts showed an increase in activity on VAX posts compared to baseline by likes (PH 4.86% v 3.76%, ID 7.5% v 6.37%, FCO 2.49% v 0.52%) as well as comments (PH 0.35% v 0.28%, ID 0.90% v 0.69%, FCO 0.10% v 0.02%).

CONCLUSIONS: Overall, the majority of posts expressed positive sentiments toward the VAX with no negative posts identified. PH were most likely to post about COVID-19, the VAX and guidelines. Few ID accounts posted but when present were about personal experiences or side effects and remained positive.

IMPACT STATEMENT: There is an active conversation regarding COVID-19 and VAX information on social media, with the majority of posts expressing positive sentiment. Physicians play a large role in circulating information regarding the VAX on social media platforms, and can be influential in discussions of VAX guidelines and dispelling fertility myths.

SUPPORT: None.