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VITAL AND IN-PERSON CARE DURING THE COVID-19 PANDEMIC LED TO EQUIVALENT PATIENT SATISFACTION FOR REPRODUCTIVE ENDOCRINOLOGY & INFERTILITY: THE RELEVANCE (EVIDENCE-BASED MEDICINE) STUDY (RELI)

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OBJECTIVE: To evaluate whether a shift to virtual care during the COVID-19 pandemic negatively impacted patient satisfaction among REI patients.

MATERIALS AND METHODS: A modified version of a validated multiple-choice survey assessing satisfaction with care was sent to current patients who agreed to participate in research at a tertiary medical center. The survey evaluated satisfaction with multiple aspects of care. Respondents were categorized by visit type: in-person only (n=23), virtual-only (n=12), and a mix of both settings (n=52). Responses were dichotomized into “Agree” or “Disagree”, with neutral grouped with “agree”. Chi-squared tests of independence to assess differences between groups were conducted in R (Version 3.4.4). P<0.05 was interpreted as statistically significant. The study was approved by the University of California San Francisco Institutional Review Board.

RESULTS: Out of 1282 patients who received an invitation to participate, 526 patients (41.0%) completed our survey. Eighty-seven of these were seen by the Division of REI and included in this study. Median participant age was 36.5 (range: 21-76). There were no significant differences in respondents’ satisfaction with the virtual care received vs. virtual mixed vs. in-person care (p=0.43). There were no statistically significant differences in respondents’ ability to develop a relationship with their provider (p=0.25), provider’s friendliness (p=0.50), skills or knowledge (p=0.71), and concern (p=0.80) as rated by respondents. The frequency of visits starting on time (p=0.50), convenience of the visit date and time (p=0.78), and the amount of time spent with the provider (p=0.89) were also similar across all three groups. Although 56% of respondents who had mixed care reported that virtual visits may have compromised their health, this was not shown in either the virtual-only or in-person only groups, introducing the possibility of a confounder. Sixty-eight percent of respondents seen virtually were likely to recommend virtual visits to others. When asked about preferences for primary visit type after the COVID-19 pandemic, at least 50% of participants in all groups preferred in-person visits, with a minority choosing virtual visits (22%), alternating between virtual and in-person (16%), or expressing no preference (5%).

CONCLUSIONS: A shift to virtual care during the COVID-19 pandemic did not appear to impact patient satisfaction with the care received as patients were highly satisfied regardless of the setting in which they received care. A majority of patients seen virtually were likely to recommend virtual visits to others. Nonetheless, a plurality of patients in all three groups preferred their primary visit type to be in-person.

IMPACT STATEMENT: This study shows no significant differences in patient satisfaction regardless of visit type. Further research is needed to understand how to optimize virtual care delivery after the COVID-19 pandemic.

EFFECT OF COVID-19 INFECTION ON TESTICULAR FUNCTION

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OBJECTIVE: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) enter different body tissues via the angiotensin-converting enzyme 2 (ACE2) receptor. This enzyme is highly expressed in testicular tissue making testicular hormone function & spermatogenesis vulnerable to such infection. This study aims to evaluate the effect of SARS COV-2 infection on the testicular function in proven fertile males on short & long term basis

MATERIALS AND METHODS: This prospective cohort study enrolled patients infected with SARS COV-2 virus. Patients with normal semen analysis or evidence of fertility in the past 2 years were included. Patients with history of infertility or those receiving treatment & had abnormal semen parameters prior to infection were excluded.

Patients were divided into asymptomatic & symptomatic group requiring hospitalization. Medical history & physical exam were performed during the initial visit and blood hormones were withdrawn. Patients underwent conventional semen analysis, advanced sperm function tests & hormone tests at 3 & 6 months following infection. Variables were reported as mean ± SE & compared using Kruskal Wallis Test. Spearman correlation was performed to assess relationship between CtPCR value & numerical variables

RESULTS: A total of 60 patients infected with SARS COV-2 virus were included & 48 patients completed the study. The mean age was 35±5±6 years. The mean Ct value was 23.8±5±2. There was no significant correlation between the Ct value, the hormonal profile & patient age at time of recruitment. The semen parameters & hormonal profile at 3 & 6 months follow up were in normal range (Table 1). There was significant difference in the testosterone levels between asymptomatic group (mean 11.35 ± 4.8) & symptomatic hospitalized group (mean 7.48 ± 3.49) upon initial enrollment (P value=0.005). Decreased testosterone levels during infection turned back to normal on 6 months follow up (mean 12.78±4.98)

CONCLUSIONS: SARS COV-2 infection does not affect semen parameters nor hormonal profile for previously fertile patients on short & long term basis. Testosterone levels in symptomatized hospitalized patients is significantly decreased compared to asymptomatic non-hospitalized group at the time of SARS COV-2 infection

IMPACT STATEMENT: Long term reproductive health of men is not affected by SARS COV-2 infection
CONCLUSIONS: This extensive proteome 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

OBJECTIVE: To describe the telemedicine experiences of patients seeking infertility care, with a focus on short-term outcomes.

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% indicated the ability to stay at work. All respondents felt a sense of privacy and 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.

CONCLUSIONS: Most 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.

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EFFECT OF COVID-19 mRNA VACCINES ON SPERM QUALITY. Daniel Gonzalez, B.S., 1 Daniel E. Nassau, MD, Kajal Khodamoradi, PhD, 1 Emad Ibrahim, MD, HCLD(ABB), 1 Ruben Blachman-Braun, M.D., M.S.c., 1 Justin M. Dubin, MD, 1 Jesse Ory, MD, 1 Ranjith Ramasamy, M.D 1 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 (#20201451). 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 samples were 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
2. Baden LR, El Sahly HM, Essink B, et al. Efficacy and Safety of the mRNA-1273 SARS-CoV-2 Vaccine. N Engl J Med. 2021;384(5):403-416. doi:10.1056/NEJMoa2035389

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 |

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THE EFFECT OF TELEREDICEME DURING THE COVID-19 PANDEMIC ON IVF TREATMENT. Einav kadour-Peero, MD, 1 Ido Feferkorn, MD, Ranit Hizkityahu, MD, Ezgi Demirartas, MD McGill University Health Center, Montreal QC, Canada.

OBJECTIVE: To assess the effect of telemedicine 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.