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.

Elsevier hereby grants permission to make all its COVID-19-related research that is available on the COVID-19 resource centre - including this research content - immediately available in PubMed Central and other publicly funded repositories, such as the WHO COVID database with rights for unrestricted research re-use and analyses in any form or by any means with acknowledgement of the original source. These permissions are granted for free by Elsevier for as long as the COVID-19 resource centre remains active.

VIRTUAL AND IN-PERSON CARE DURING THE COVID-19 PANDEMIC LED TO EQUIVALENT PATIENT SATISFACTION FOR REPRODUCTIVE ENDOCRINOLOGY AND INFERTILITY (REI)

PATIENTS. Miriam Andrusier, MPH,¹ Demetra H. Hufnagel, B.S.,² Simon Kleiner, B.A.,³ Katie E. Aliaga, B.S.,⁴ Maya Inez Davis, B.A.,⁵ Maura Jones, MD,³ Molly Siegel, B.A.,³ Jerrine R. Morris, MD, MPH,⁶ Melissa Rosenstein, B.A.,³ Nazaneen Homairfar, MD, MBA,³ Eduardo Hariton, MD, MBA,⁷ ¹SUNY Downstate Health Sciences University, Brooklyn, NY; ²Vanderbilt University School of Medicine; ³University of California, San Francisco; ⁴Saint James School of Medicine; ⁵Dana Farber Cancer Institute, Boston, MA; ⁶University of California, San Francisco School of Medicine, San Francisco, CA; ⁷Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

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 type of care received (in-person vs. virtual vs. mixed, 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.

P-450 6:30 AM Wednesday, October 20, 2021

EFFECT OF COVID-19 INFECTION ON TESTICULAR FUNCTION.

Kareim Khalafalla, MD, Ahmad Majzoub, MD, Mohamed Arafa, MD, Haitham Elbardsi, MD, Khalid Al-Rumaihi, MD, Sami Alsaied, MD Hamad Medical Corporation, Doha, Qatar.

OBJECTIVE: Severe acute respiratory syndrome corona virus 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 $\pm$ SE & compared using Kruskal Wallis Test. Spearman correlation was performed to assess relationship between Ct PCR 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 35.1 $\pm$ 5.6 years. The mean Ct value was 23.38 $\pm$ 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 $\pm$ 4.8) & symptomatic hospitalized group (mean 7.48 $\pm$ 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 $\pm$ 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 symptomatic 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

Semen Parameters	3 months follow up	6 months follow up	P value
Volume (mL)	3 $\pm$ 1.5	2.5 $\pm$ 1.6	0.155
Total count (million)	48.8 $\pm$ 23	47.5 $\pm$ 21.8	0.773
Total Motility (%)	54 $\pm$ 6.7	54.8 $\pm$ 5.2	0.582
Progressive motility (%)	19 $\pm$ 8.3	18.8 $\pm$ 9.1	0.883
Abnormal Morphology (%)	91.1 $\pm$ 4.4	91.6 $\pm$ 3.8	0.558
Sperm DNA Fragmentation (%)	16.9 $\pm$ 7.8	16.3 $\pm$ 6	0.586
Oxidation Reduction Potential (mV/106 sperm/mL)	63.9 $\pm$ 39.3	63.6 $\pm$ 32.9	0.958

P-451 6:30 AM Wednesday, October 20, 2021

VIRAL FALLOUT: SEMEN PROTEOME REVEALS THAT COVID-19 DYSREGULATES SEVERAL BIOLOGICAL PROCESSES LINKED TO MALE REPRODUCTIVE FUNCTION.

Swapnil Parikh, DNB,¹ Susmita Ghosh, MSc,² Mehru Un Nissa, MSc,² Arup Acharjee, PhD,² Prashant Makwana, M.Sc.,¹ Arundhati Athalye, PhD,¹ Sanjeeva Srivastava, PhD,² Firuza Parikh, MD DNB PhD¹ ¹Jaslok Hospital and Research Centre, Mumbai, India; ²Indian Institute of Technology, Bombay, Mumbai, India.

OBJECTIVE: The current COVID-19 pandemic, caused by Severe Acute Respiratory Syndrome Corona Virus-2 (SARS-CoV-2), poses several catastrophic threats globally including those on economy, lifestyle and health. Although the respiratory tract is the primary proliferation site of the virus, its effects on other organs and organ systems is devastating. One of the potential targets for SARS-CoV-2 invasion is the male reproductive system owing to the presence of viral receptors i.e., ACE2 and TMPRSS2 in the testis. Currently there are differing views in literature on whether SARS-CoV-2 infection has any short term and long term effects on male fertility. This pilot study was aimed to assess the impact of viral infection on crucial reproductive processes at the molecular level even after recovery.

MATERIALS AND METHODS: We performed a label free quantitative proteomic analysis of semen procured from 17 COVID-19 recovered and 10 healthy fertile individuals using high resolution mass spectrometry.

RESULTS: Our proteomic analysis resulted in the identification of 48 differentially expressed proteins of which 27 were upregulated and 21 were downregulated in recovered individuals. Further bio-informatic analysis revealed the dysregulation of several biological processes linked to male reproductive functions. Pathways like regulation of cell motility, regulation of adhesion, sperm-egg recognition, response to testosterone, extracellular matrix adhesion and endopeptidase activity were found to be downregulated in the recovered group. Moreover, the down regulation of two candidate proteins; Semenogelin 1 and Prosaposin which are related to male fertility were also validated using targeted proteomic approach.