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donor from the same stimulation cycle, we found that increasing paternal age had a negative effect on implantation, positive pregnancy, and live birth rates.

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POST-MORTEM EXAMINATION OF THE EFFECTS OF SEVERE ACUTE RESPIRATORY SYNDROME (SARS) ASSOCIATED CORONA VIRUS (SARS-CoV) ON TESTES. Justin K. Achua, MS, Kevin Y. Chu, MD, Himanshu Arora, PhD, Oleksii Lakymenko, MD, Oleksandr N. Kryvenko, MD, Ranjith Ramasamy, M.D. University of Miami Miller School of Medicine, Miami, FL.

OBJECTIVE: The coronavirus disease 2019 (COVID-19) caused by the SARS-CoV-2 quickly grew into a global pandemic. The virus has been known to impact the respiratory system; however, the extent of impact on testicular tissue remains unknown. It has been found that COVID-19 binds to angiotensin converting enzyme (ACE) 2 receptors, and since ACE2 expression is high in the testes we believe COVID-19 may be prevalent in testes tissue.

DESIGN: In the present study, we analyzed the pathological changes within the testes of three patients who died of COVID-19 pneumonia and sepsis.

MATERIALS AND METHODS: In the present study, autopsy collection was done according to the University of Miami protocol. Testes tissue was collected from COVID-19 positive men (n=3) as well as COVID-19 negative men (n=3) to be used as controls. Tissue was formalin fixed and paraffin embedded. Samples were sectioned to 5-micron sections and stained with hematoxylin and eosin (H&E) as well as subjected to various fluorescently labeled antibody staining for COVID RNA with results pending.

RESULTS: Within the testes tissue of COVID-19 positive men, one case demonstrated increased inflammation and leukocyte infiltration, as well as occasional seminiferous tubules comprised of only Sertoli cells. The other 2 showed no abnormal change. These 2 cases had no leukocyte or macrophage infiltration, no inflammation, no abnormal basement membrane thickening, or changes to spermatogenesis. There was little to no difference between the two COVID-19 positive cases and COVID-19 negative controls. Sectioned slides from both COVID-19 positive as well as COVID-19 negative men are currently undergoing fluorescent labeled antibody staining for COVID RNA with results pending.

CONCLUSIONS: This study suggests that, despite the increase in ACE2 receptor presence in testes tissue and the SARS-CoV-2 virus’ propensity to bind to said receptor, the male reproductive tract may not be targets of COVID-19 infection in all men. Whether COVID-19 RNA is detected in testes tissue remains to be evaluated.

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TOP TEN PRIORITIES FOR MALE INFERTILITY RESEARCH. James M. N. Duffy, DPhil MRes PG HCL MBChB BSc (Hons),1 Cindy Farquhar, FRANZCOG FRCOG MD MPH,2 Priority Setting Partnership for Infertility, 1Institute for Women’s Health, University College London, Greater London, United Kingdom; 2University of Auckland, Auckland, New Zealand.

OBJECTIVE: To develop the top 10 research priorities for male infertility. Design: International consensus development study. Healthcare professionals, men with fertility problems, and others were brought together in an open and transparent process using formal consensus methods advocated by the James Lind Alliance.

MATERIALS AND METHODS: Potential research questions were collated from an initial international survey, a systematic review of male infertility guidelines, and Cochrane systematic reviews. A rationalized list of confirmed research uncertainties were prioritized in an international survey. Prioritized research uncertainties were discussed during a face-to-face consensus development meeting.

RESULTS: The initial survey was completed by 388 participants, from 40 countries, and 107 potential research questions were submitted. By reviewing five clinical practice guidelines and four Cochrane systematic reviews a further 18 potential research questions were identified. A rationalized list of 34 confirmed research uncertainties were entered into an interim prioritization survey completed by 317 respondents from 43 countries. The top 10 research priorities for male infertility were identified during a consensus development meeting involving 41 participants from 11 countries (Table 1).

| Priority | Research Question |
|----------|------------------|
| 1 | Are sperm tests better than other parameters useful in evaluating male infertility? If so, which? |
| 2 | What is the emotional and psychological impact of male infertility? |
| 3 | Can addressing modifiable risk factors improve outcomes? |
| 4 | What modifiable risk factors cause male infertility? |
| 5 | What are the modifiable risk factors that improve outcomes? |
| 6 | What co-morbidities are associated with infertility? |
| 7 | Do environmental factors cause male infertility? If so, which? |
| 8 | What are the modifiable risk factors that improve outcomes? |
| 9 | What are the modifiable risk factors that improve outcomes? |
| 10 | Are nutraceuticals useful in improving male reproductive potential? If so, which? |

CONCLUSIONS: We anticipate the top 10 research priorities for male infertility will help research funding organizations and researchers to develop their future research agenda. Healthcare professionals, professional organisations and patient advocacy groups should champion the research priorities to highlight the many unanswered questions which need to be addressed in order to improve the outcomes of men with fertility problems.

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THRESHOLDS FOR TESTICULAR SIZE DISCREPANCY IN FERTILE MEN WITH AND WITHOUT VARICOCELE. William T. Berg, MD,1 Gabriella J. Avellino, MA, MD,1 Kathleen Hwang, MD,2 Mark Sigman, MD1 1Brown University, Providence, RI; 2University of Pittsburgh, Urology, Pittsburgh, PA.

OBJECTIVE: The difference in testicular sizes between right and left testes is often utilized to determine the effect of pathology such as varicoceles on testicular growth. Furthermore, the normal testicular size differential in adult fertile men is currently unknown. We sought to characterize the testicular size distribution in fertile men with and without clinical varicoceles.

DESIGN: Cross-sectional retrospective cohort study.

MATERIALS AND METHODS: Records from men presenting for varicocelectomy consultation were evaluated. Men with a history of varicocele, testicular torsion, or infertility were excluded. Only those men who fathered children were included. Testicular volume was measured using a modified Takihara orchidometer. The modified orchidometers were created using an ellipse formula and 3-D printing to make larger rings up to 60 cc to allow for measurements of testes beyond the original orchidometer ring size, which went up to only 34 cc. Testicular size measurement and the presence or absence of varicocele was determined by clinical exam by three fellowship trained male infertility specialists. Testicular size distribution and differential means were calculated. Reference ranges and differences in testicular size were calculated to include 95% of the patients. Comparisons were then made between those with and without varicoceles. Parametric statistics were used for normally distributed data (testicular sizes) while non parametric tests of significance were used for non-normally distributed data (difference s in mean size).

RESULTS: Out of 3,235 men, 618 met inclusion criteria. In fertile men without a varicocele, the mean left testis volume was 31.4 cc (95% population range 17.5 – 48.6 cc) and the mean right testis volume was 32.5 cc (95% population range 17.5 – 55.0 cc). Testicular size was greater on the right than on the left in 88% of men. A varicocele was present in 17.7% of patients. The presence of a varicocele was associated with decreased testicular size on both the left (31.4 cc vs 27.9 cc, p<0.01) and the right (32.5 cc vs 30.5 cc, p<0.03). In patients whose right testicle was larger than or equal to