



Does COVID-19 Affect Male Fertility?



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The coronavirus disease 2019 (COVID -19) pandemic affects all the world and threat the public health. Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) causes various health problems like pneumonia, acute respiratory distress syndrome (ARDS), cardiomyopathy, and gastrointestinal diseases (1). Additionally, COVID -19 seems to influence the male reproductive system as well.

SARS-CoV-2 infects the tissues by binding to some receptors such as angiotensin converting enzyme 2 (ACE2), CD 147-spike protein, and the transmembrane protease serine 2 (TMPRSS2) (2). High expression of ACE2 receptor has been shown in testis, spermatogonia, Sertoli and Leydig cells, and seminiferous duct cell (3). SARS-CoV-2 may affect male fertility by increasing oxidative stress, DNA methylation and fragmentation (4). COVID-19 infection has a negative impact on sperm quality. It may decrease the sperm concentration, progressive motility and increase the seminal leucocytes, IL-6, IL-8, and TNF- α (5, 6). Recent studies have also reported some histological changes such as acute testicular injury related to oxidative stress, Sertoli cell swelling, vacuolization, significantly reduced Leydig cells, and impaired spermatogenesis in testis (7-9). In addition, SARS-CoV-2 may damage blood-testis barrier and lead to epididymo-orchitis, testicular and abdominal pain without respiratory symptoms in males (10). A change in reproductive hormones such as decrease in testosterone and increase in LH levels has also been reported in some patients diagnosed with severe COVID-19 disease or COVID-19 pneumonia (11, 12).

In conclusion, SARS-CoV-2 may have a detrimental effect on the male reproductive functions besides its primary impact on the respiratory system.

Ethical Issues

Not applicable.

Conflict of Interests

None to be declared.

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