

Comparison of Semen Parameters in the Same Patients Before and After Diagnosis of COVID-19

C. Cakir¹, G. Kuspinar¹, G. Kurt¹, M. Berber¹, K. Aslan¹, I. Kasapoglu¹, G. Uncu¹, and B. Avci¹

¹Uludag University School of Medicine

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Abstract

Clinical and histopathological evidence suggest that the male reproductive system may be negatively impacted in patients with coronavirus disease (COVID-19). The objective of this study is to investigate the effect of severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) on semen parameters by comparing semen analyses before and after COVID-19 diagnosis in the same patient. We retrospectively analyzed 342 semen analyses by reviewing medical records. The study included two groups of patients: (i) those who underwent two consecutive semen analyses within 6 months, one before (n=114) and one after (n=114) COVID-19 diagnosis, and (ii) a control group (n=114) that was age-matched and did not receive a diagnosis of COVID-19. The study results indicated a significant decrease in semen volume, total sperm count per ejaculate, progressive motile sperm count, total motile sperm count, and normal sperm morphology after SARS-CoV-2 infection in comparison to their respective values before the infection. Subgroup analyses showed that the duration of COVID-19 diagnosis (short-term vs long-term) did not impact the changes in semen parameters. However, fever during the COVID-19 process had a negative effect on semen parameters, particularly sperm concentration, unlike in patients without fever. In conclusion, our findings suggest that SARS-CoV-2 infection is associated with a decline in semen quality, which may potentially impact male fertility. Furthermore, it's important to note that the negative effects on semen parameters may persist in the long-term. Our results also indicate that fever during active infection could be a significant risk factor that negatively affects spermatogenesis.

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