

Abstract:

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) is the cause of the coronavirus disease 2019 (COVID-19), which has spread rapidly worldwide since the end of 2019. The virus causes serious health problems and damage to human organs, especially the lungs, kidneys, brain, heart and testicles, which can be fatal. This work deals with the entry of SARS-CoV-2 virus into the testicles and sperm damage due to infection. Receptors are described in more detail, specifically the membrane receptor ACE2, which mediates the entry of the virus into germ cells (spermatogonia) and somatic testicular cells (Sertoli and Leydig), which express this receptor. In this work, the mechanisms causing infection are described and attention is focused to changes in the signaling pathways due to SARS-CoV-2 and ACE2 binding. Consequently, the presence of the virus leads to hormonal imbalances, local oxidative stress and inflammation, which affect the course of spermatogenesis and can cause pathological conditions of spermatozoa such as motility disorders or DNA fragmentation and thus adversely affect male fertility.

Key words: COVID-19, SARS-CoV-2, male infertility, sperm, ACE2