



## Coronavirus: Genetic Organisation, Infestation, Pathophysiological Impacts, Diagnostics and Therapeutics in Covid-19

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### Abstract

SARS-CoV-2 is the causative agent of potentially fatal COVID-19 disorder i.e. highly transmittable and pathogenic viral infection that leads to severe respiratory disorders and has become a great global public health concern due to its increased globalization and adaptation of the virus in environment. The genomic sequence of SARS-CoV-2 have shown greater similarity around 89-96.3% with bats viruses phylogenetically which revealed that bats could be primary reservoir of causing COVID-19 infection. Hence, there is an urgency to produce therapeutic agents against SARS-COV-2. In present review, we have discussed about the protein structure, genetic sequence, symptoms of SARS, MERS and COVID-19, replication and pathophysiology, diagnostic tests along with current treatment regimen used clinically. Reverse Transcription-Polymerase Chain Reaction (RT-PCR) is the diagnostic technique that can amplify the genetic material in the sample with the help of primers and probes which led to identification of SARS-CoV-2 virus. Serological testing plays an integral role in vaccine development and determination of epidemiology of SARS-CoV-2. Plasma and antibodies obtained from the convalescent patients have been proposed for use in treatment. There are various drugs that are being evaluated against COVID-19 in clinical trials but till no antiviral drug or vaccine proven to be efficacious clinically against COVID-19. However, some suggestive approaches are taken to minimize the spread of COVID-19 infection that will significantly reduce the strain on health care workers. The aim of this review is to throw light on the corona viruses in detail as it is need of an hour. The Global Initiative on Sharing All Influenza Data (GISAD) shared the entire genomic sequence of SARS-CoV-2 on a single platform for the development of vaccination against COVID-19 thereby prompting international efforts to accelerate development of novel vaccine.

**Keywords :** COVID-19, Diagnostic Kits, Genome, Remdesivir

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