Commentary

iMedPub Journals
www.imedpub.com

Journal of Preventive Medicine
ISSN 2572-5483

2021
Vol.6 No.1:72

DOI: 10.36648/2572-5483.6.1.72

Clinical Characteristics and Diagnostic Challenges of COVID-19

Sushmitha Sen *

Department of Health and Preventive Measures, Osmania University, India

Abstract

Molecular diagnosing of COVID-19 primarily depends on the detection of RNA of the SARS-CoV-2 virus, the contributory infective agent of the pandemic. Reverse transcription enzyme chain reaction (RT-PCR) permits sensitive detection of specific sequences of genes that cypher the RNA dependent RNA enzyme (RdRP), nucleocapsid (N), envelope (E), and spike (S) proteins of the virus. Though RT-PCR tests are wide used and plenty of different assays are developed, the present testing capability and handiness cannot meet the unprecedented international demands for fast, reliable, and wide accessible molecular diagnosing. Challenges stay throughout the complete analytical method, from the gathering and treatment of specimens to the amplification and detection of infective agent RNA and also the validation of clinical sensitivity and specificity. We have a tendency to highlight the most problems encompassing molecular diagnosing of COVID-19, as well as false negatives from the detection of infective agent RNA. We have a tendency to discuss vital analysis like enhancements in RT-PCR, development of different macromolecule amplification techniques, incorporating CRISPR technology for point-of-care (POC) applications, validation of POC tests, and sequencing of infective agent RNA and its mutations. Improved assays are required for environmental based work or waste material-based epidemiology which gauges infection on the community level through analyses of infective agent elements within the community wastewater.

Keywords: RNA enzyme, Nucleocapsid, Envelope and spike proteins, Systema respiratorium

Received: January 08, 2021, **Accepted:** January 19, 2021, **Published:** January 28, 2021

***Corresponding author:**
Sushmitha Sen

Department of Health and Preventive Measures, Osmania University, India

sensush567@gmail.com

Citation: Sen S. Clinical Characteristics and Diagnostic Challenges of COVID-19. J Prev Med Vol. 6 Iss No.1: 72

Introduction

Public health policy work edges from large-scale analyses of antibodies in body fluid, though the present serologic tests don't quantify neutralizing antibodies. Additional advances in analytical technology and analysis through multidisciplinary collaboration can contribute to the event of mitigation ways, medical specialty, and vaccines. Lessons learned from molecular diagnosing of COVID-19 area unit are valuable for higher preparation in response to different infectious diseases. Molecular diagnostic tools and assays area unit crucial for clinical diagnosing, public health policy work, and mitigation ways to contain the unfolding of COVID-19. SARS-CoV-2 virus, the contributory infective agent of this pandemic, has infected several individuals around the world, and also the variety of COVID-19 cases continues to rise. There are a unit vital wants and tremendous opportunities for analytical chemists to collaborate with multidisciplinary scientists, clinicians, public health practitioners, and engineers in an exceedingly collective effort to realize fast and correct diagnosing of COVID-19, improve our understanding of SARS-CoV-2 at the molecular level, and contribute to the event of preventive measures, medical specialty, and vaccines.

Clinical characteristics are also essential for the right diagnosing of diseases. Implementing quick and widespread diagnostic tests is dominant to contain COVID-19, given the present lack of an efficient therapeutic or vaccine. It is discussed about the description of presently obtainable diagnostic tests to notice either the virus (SARS-CoV-2) or virus-induced immune responses. We have a tendency to specifically justify the operating mechanisms of those tests and compared to their analytical performance. These analyses can assist in choosing handiest tests for a given application, for instance, medical specialty or international pandemic analysis, population screening, hospital-based testing, home-based and point-of-care testing, and therapeutic trials.

Finally, we have a tendency to lay out the shortcomings of sure tests and future wants. Molecular diagnosing of COVID-19 primarily depends on the detection of RNA of the SARS-CoV-2 virus, the contributory infective agent of the pandemic. Public health policy work edges from large-scale analyses of antibodies in body fluid, though the present serologic tests don't quantify neutralizing antibodies. However, the present capability of testing cannot meet unprecedented international demand for fast molecular diagnosing. False negative results of actual COVID-19 patients may lead to prejudicial effects, like delayed look after severely unwell patients and inflated risk of transmission. The World Health Organization elaborates many specific reasons that cause false negative results. Normally, each of the analysis of a patient's sample and therefore the sample itself is the supply of a false negative result.

Although SARS-CoV-2 tends to initiate infection and infective agent entry within the oral or nasal cavities, throughout active infection the virus spreads to the lower systema respiratorium wherever it establishes and replicates. The infective agent load in a very specimen varies with the time of infection and therefore the website from that the specimen is collected. For instance, infective agent load varies between nasal and oral swabs betting on assortment date once onset of symptoms. Higher metabolic process infective agent titers square measure according to be higher earlier in infection however amendment over time. The dynamic infective agents hundreds in several sites throughout the progression of the malady complicate the specimen assortment, tributary to false negative results.

A number of things with reference to sample handling and treatment may also contribute to false negative results. These could embrace improper assortment of specimens, loss or degradation of the target ribonucleic acid throughout shipping and storage of specimens, inefficient extraction of ribonucleic acid from the specimens (e.g., nasal swabs), inadequate purification of ribonucleic acid, and inefficient removal of sample matrix and impurities. Collection, storage, handling, and treatment of samples square measure is essential for correct and important diagnosing of COVID-19.

The happening of Corona Virus Disease-19 (COVID-19), caused by Severe Acute metabolic process Syndrome Corona Virus - two (SARS-CoV-2), a world pandemic, has a major impact on health care, particularly the clinical biological science laboratories all round the world. There square measure several reports that counsel that the malady will lead to canal symptoms like nausea, vomiting, diarrhea, and loss of appetency, that the gastroenterologists could ought to touch upon.

Conclusion

Hence, data regarding the diagnosing of COVID-19 is very important to gastroenterologists similarly. The present review thus covers the challenges long-faced whereas selecting acceptable sample assortment, transport, and tests for SARS-CoV-2 infection. The correct sample at the correct time from the correct anatomical website with the right precautions is crucial in prompt and correct diagnosing of COVID-19. The test is divided into direct, indirect, and complementary tests. Within the direct take a look at, period of time enzyme chain reaction (RT-PCR) assays square measure the molecular tests of alternative for the diagnosing of COVID-19. Alternative direct tests embrace GeneXpert and TrueNAT. In indirect testing, antigen-antibody-based techniques square measure suggested for police investigation for the malady, which can facilitate to formulate the management measures. Finally, the extra tests facilitate in assessing the malady severity and evaluating the prognosis. All the on top of tests square measure necessary not just for diagnosing however conjointly for management strategy and prognosis..