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Review Article

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OVERVIEW ON COVID 19: A REVIEW

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ABSTRACT

Corona viruses (CoV) were family of viruses that cause a wide range of illness to various infections. Corona viruses had the spikes that protrude from their membranes, like the sun's corona. According to the WHO, common signs include respiratory difficulties in breathing, fever and cough. Serious cases could lead to kidney failure and even death. Social distancing and other methods specified by WHO was being hampered to stop spreading of virus. Novel corona virus (nCoV) was a different strain and newly discovered in humans which means that they spread between animals and then to humans. The 4C's by WHO were no cases, first cases, first clusters, and community transmission and spread.

KEYWORDS: Pneumonia, Zoonotic, Corona, WHO.

INTRODUCTION

Corona viruses[1-2] was first isolated in 1937 from an infectious bronchitis virus in birds. Human corona viruses (HCoV) were first identified in the 1960s in the noses of patients with the common cold. The term 'corona virus' was first coined in 1968, from showing crown-like morphology when observed in an electron microscope. "Corona" in Latin means "halo" or "crown." Over the last 70 years corona virus likely originated from bats.[3-5] Corona virus infects both humans and animals which turn into new virus that may be more lethal forms of corona virus since they can lead to life-threatening pneumonia. Early detection of infection following proper preventive measures was the only way to prevent transmission. The risk of environmental contamination from patient with SARS-CoV-19 was considered to be possible. The aim of this article was to update about COVID-19 infection, existing methods of detection and their mechanism, such as current approved methods were RT-PCR tests.[6-7] Structure was as shown in **Fig.1.**

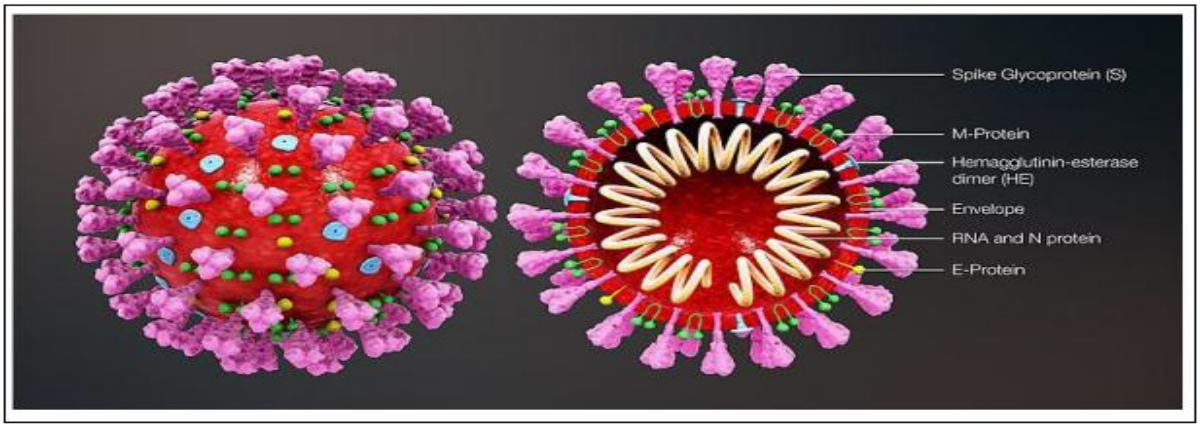

Fig. 1: Structure of Novel Corona Virus.

SPREADING OF COVID – 19[8-9]

Corona virus could spread between the interaction between person to person, animal to people and also in contact between the infected person when they were coughing and sneezing. It also spread from the infected person to touch the surface or object. COVID-19 threat was higher for infants, children and people over the age of 60 and with diabetes, cancer and cardiovascular disease since they have low immunity as compare with young.

PROTECTION FROM COVID – 19[10-11]

- Cover your nose and mouth when you cough or sneeze.
- Throw the tissue away after we use it and then wash your hands.
- Wash your hands often with an alcohol-based hand cleaner.
- Stay away as much as you can from people who are sick.
- If you get influenza, stay home from work or school for at least 24 hours.
- If you were sick, don't go near other people to avoid infection.
- Try not to touch your eyes, nose, or mouth.
- Always wear a face mask in public places.
- Don't share any personal items such as drinking cups, eating plates, towels with anybody.

SYMPTOMS OF COVID – 19[12]

Human corona viruses could cause lower-respiratory tract illnesses, such as pneumonia or bronchitis, runny nose, headache, cough, sore throat, fever. According to WHO 60% people do not shown symptoms even though infected with corona virus such people termed as 'silent carrier' of corona virus. The onset and severity of disease determine respiratory failure due to alveolar damage and even death. The condition was named viral-induced pneumonia by physicians according to the manifestation of clinical symptoms such as increasing body temperature (fever), decreasing lymphocytes and white blood cells, new pulmonary infiltrates and no common improvement upon antibiotics treatment. Most national response strategies include self-isolation or quarantine; promotion of public health measures and social distancing prevent spreading.

INCUBATION PERIOD OF COVID - 19

- The incubation period of the virus was between 2 and 14 days.
- WHO reported an incubation period for COVID-19 to be between 2 and 10 days.
- China's National Health Commission (NHC) to be from 10 to 14 days.
- The United States' CDC to be between 2 and 14 days.
- The incubation period ranges from 2.1 to 11.1 days with mean incubation to be 6.4 days**.**

DIAGNOSTIC METHODS

rRT - PCR METHOD

rRT - PCR was the reference technique for the diagnosis of SARS-CoV-19 infection. In this test, technician extracts viral genetic material called RNA from the sample and uses it to produce a complementary strand of DNA and the rRT-PCR technique amplifies, or makes thousands of copies of, to get a measurable result. Enzymes were then added and next, this DNA was put into RT-PCR machine along with another set of chemicals. If any viral genetic material was present, these fragments will bind to it. It's these flashes of fluorescence that scientists use to determine whether the virus was present in a sample.

SPECIMEN REJECTION CRITERIA OF COVID - 19

- Specimens which were not kept at 2-8 ºC (<4 days) or frozen at -70 ºC or below.
- Incomplete specimen labelling or documentation.
- Inappropriate specimen type.
- Insufficient specimen volume.
- Repeated freezing and thawing of specimens.

LIMITATIONS OF rRT-PCR

- rRT - PCR tests takes few hours to complete.
- Transporting samples to central labs takes time.
- People had to wait a week or more for test results.
- rRT - PCR was that it detects only active infections.
- If someone had contracted the corona virus and had recovered, rRT-PCR won't detect it.
- If the viral loads the level of detection for the test a false negative occurs with a PCR.
- Detection of small sequence of gene belonging corona may leads to false positive result.
- Virus shedding patterns were not well understood and further investigations were needed.

FACTORS EFFECTING RESULT

- Poor quality of the specimen.
- The specimen was collected late or very early in the infection.
- The specimen was not handled and shipped appropriately.
- Technical reasons like virus mutation inherent in the test.

RAPID DETECTION TEST

Several academic laboratories and medical companies were working on RDT. 5 out of 17 antigen detection and 27 out 53 antibodies had been selected for preparation of test. Sure Screen Diagnostics, for example had developed a testing strip to detect antibodies to the corona virus in the blood; it works similarly as home pregnancy test, with paper readout and a colored line to indicate infection. Such tests were relatively inexpensive and simple, usually using blood from a finger prick. Some could produce results in 10 to 15 min as in **Fig. 2.**

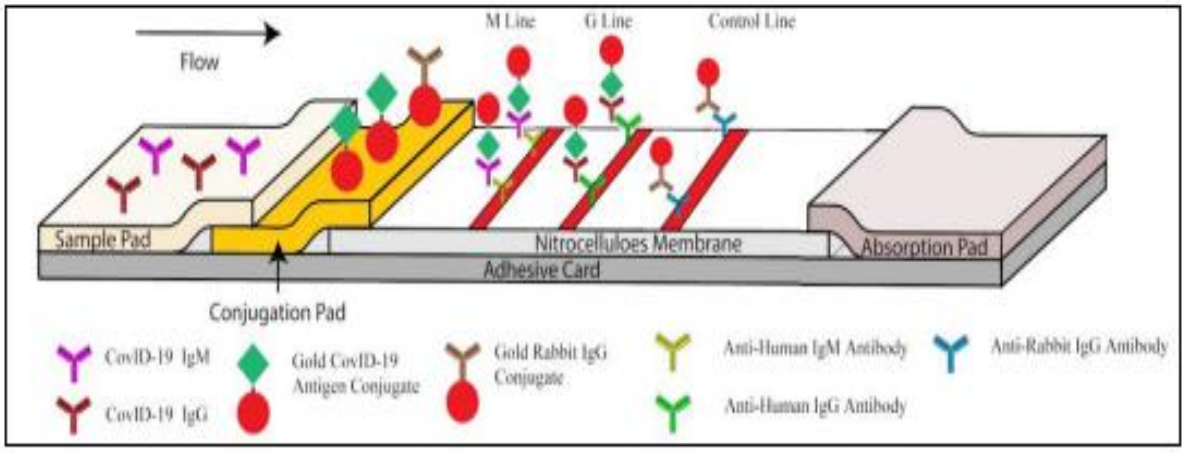

Fig. 2: Typical Rapid Diagnostic Test Strip.

FUTURE STUDIES OF COVID - 19

- Distribution of 2019-nCoV among the age range.
- How the human body response for the 2019-nCoV.
- How the 2019-nCoV effect on the pregnant women.
- There may be health risk for transmission of virus to fetus.
- How the virus effect on the people with cancer diseases.
- Does the transmission induce the activity of others virus infections such as HIV.
- More information was required to detect the animal source of the virus.
- Pathogenicity of 2019-nCoV and occurrence the mutation among different patient.
- Incubation period, Transmission route, Pathogenesis and Treatment response.

CONCLUSION

Early detection of infection was only way for minimizing the spread and prevent to become epidemic. Many biotechnology and pharmaceutical companies rolling out molecular and serological test for COVID-19 but yet not have reach up to the mark. The existing tests methods had many limitations. The government must invest to encourage the scientist to make much sophisticated test method which will be more trustworthy, simple and in lower cost. This review will help out in understanding, origin, and epidemiology with the transmission of novel corona virus worldwide. As there was not any specific vaccine or treatment strategy to terminate its pathogenesis, so it encourages fellow researchers to focus on insights of designing a novel vaccine or treatment for eradicating it from the planet.

REFERENCES

1. Weiss Susan R., Sonia Navas Martin. Corona virus pathogenesis and the Emerging Pathogen Severe Acute Respiratory Syndrome Corona virus. Microbiology and Molecular Biology Reviews, 2005; 1(1): 635-664.
2. Wong Antonio C P et al. Global Epidemiology of Bat Corona virus. Viruses, 2019; 11(174): 1-17.
3. Banerjee Arinjay et al. Bats and Corona viruses. Viruses, 2019; 11(41): 1-15.
4. Cui Jie, Fang Li, Zheng-Li Shi. Origin and evolution of pathogenic corona viruses. Nature Reviews, 2019; 1(2): 181-192.
5. Isaacs D et al. Epidemiology of corona virus respiratory infections. Archives of Disease in Childhood, 1983; 58: 500-503.
6. Chan Jasper Fuk-Woo, Susanna Kar-Pui Lau, Patrick Chiu-Yat Woo. The emerging novel Middle East respiratory syndrome corona virus: The "known" and "unknown". Journal of Formosan Medical Association, 2013; 112: 372-381.
7. Vijay Krishna D. et al. Evolutionary Insights into the Ecology of Corona viruses. Journal of Virology, 2017; 81(8): Pg: 4012-4020.
8. Zhou Peng et al. A pneumonia outbreak associated with a new corona virus of probable bat origin. Nature Research, 2020; 1-23.
9. Wang Lin-Fa et al. Review of Bats and SARS. Emerging Infectious Diseases, 2016; 12(12): 1-7.
10. Syed Ashikujaman. Corona virus: A Mini-Review. International Journal of Current Research in Medical Sciences, 2020; 6(1): 8-10.
11. Gralinski, L. E., Baric, R. S. Molecular pathology of emerging corona virus infections. The Journal of Pathology, 2015; 235(2): 185–195.
12. Li, F. Structure of SARS Corona virus Spike Receptor-Binding Domain Complexed with Receptor. Science, 2005; 309(5742): 1864–1868.