

AN ANALYSIS – STRUCTURAL DESIGN AND DIVERSITY OF CORONA VIRUS (COV-19)

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ABSTRACT

During the past six months, new major coronavirus disease 2019 (CoV-19), some without traceable origin have been identified and are rapidly spreading and expanding across the world [3].By March 16, 2020, the number of cases of COVID-19 outside China had increased drastically and the number of affected countries, states, or territories reporting infections to WHO was 143. In this paper, my findings help us to know unique insights about the structural and diversity of CoV -19.

Keywords: diversity, corona virus, disease, lethal respiratory, global.

1. INTRODUCTION

Corona viruses belong to the largest group of viruses called the Nidovirales order. Members of this order include the Coronaviridae, Arteriviridae, and Roniviridae families. The Coronavirinae are one of two subfamilies in the Coronaviridae family. Coronavirinae are further subdivided into four groups, the alpha, beta, gamma, and delta corona viruses.[4] Nowadays, these viruses are divided using phylogenetic clustering. These virus families have animal and

human hosts. The Middle Eastern Respiratory Syndrome Corona virus (Mers- CoV) and Severe Acute Respiratory Coronavirus(SARS –CoV) are examples.

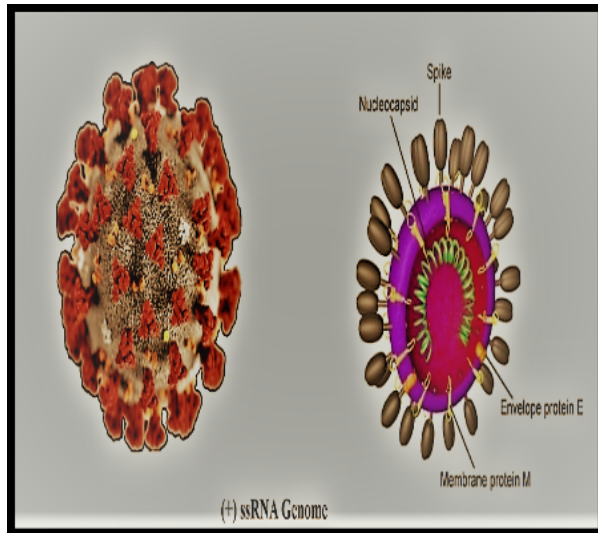
2. STRUCTURE OF COVID-19

Corona viruses are enveloped viruses. It is a positive sensed RNA virus. The crown like spikes projecting from their surface is the reason for the arise of this name. Coronaviruses possess an unusual large RNA genome as well as a unique replication strategy. Corona viruses cause a variety of diseases in animals especially from cows, pigs to chicken, and other birds. In humans, coronaviruses can cause lethal respiratory infections. [4]

Nidoviruses contain an infectious, linear, positive- sense RNA genome that is capped and polyadenylated. Based on their genome size, nidoviruses are divided into two groups large and small nidoviruses.

All Nidovirales viruses are enveloped, non- segmented positive-sense RNA viruses containing very huge genomes.

3. DIAGRAMIC REPRESENTATION OF CORONA VIRUS



3.1. Structure of CoV-19

4. SYMPTOMS & TREATMENT OF COVID-19

Common symptoms of CoV-19 are fever, tiredness and dry cough. These symptoms may appear 2-14 days after exposure and vary in severity. People with CoV-19 should receive supportive care to relieve symptoms. This disease can spread from person to person through small droplets from the nose or mouth when a person with CoV-19 coughs or exhales. People can also catch CoV-19 by touching objects or surfaces, then touching their eyes, nose or mouth. There is no specific treatment for corona virus (CoV-19). Currently there is no vaccine to prevent the

disease. Simple measures like washing your hands often with soap and water can help stop viruses like corona virus (CoV-19) spreading. Vaccines to treat covid-19 are already being trialed in animals and humans and one treatment shows positive in a US trial. INO-4700 MERS-CoV is a DNA plasmid vaccine that expresses the MERS CoV spike (S) glycoprotein. GLS-5300 MERS-CoV Vaccine and some other vaccines from other clinical test laboratories are still evolving but waiting for the test results. So currently, it is mandatory for us to keep ourselves hygiene and boosts immunity.

5. COMMON FEATURES OF CORONA VIRUS

1. A highly conserved genomic organization with a large replicase gene preceding structural and accessory genes [1].
2. Expression of many non- structural genes by ribosomal frame shifting
3. Several unique of unusual enzymatic activities encoded within the large replicase- transcriptase polyprotein
4. Expression of downstream genes by synthesis of 3- nested sub- genomic mRNAs.

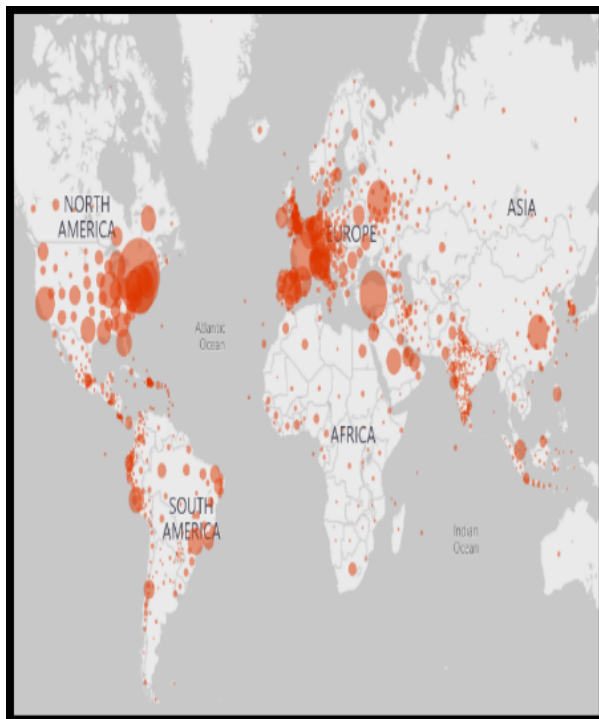
6. DIVERSITY OF CORONA VIRUS CoV-19

The outbreak of a novel corona virus, severe acute respiratory syndrome (SARS) - corona virus (CoV), in Wuhan, China. This virus spread to > 212 countries, resulting in > 39,35,828 cases and > 2,74,655 deaths (until 9 May, 2020)

) [5]. The basic reproduction number was increasing at the early stage, making it a severe threat to public health. Recent studies have identified bats as the possible origin of SARS CoV-19. These findings have advanced the understanding of SARS CoV-19. However, our knowledge of this virus is still limited.

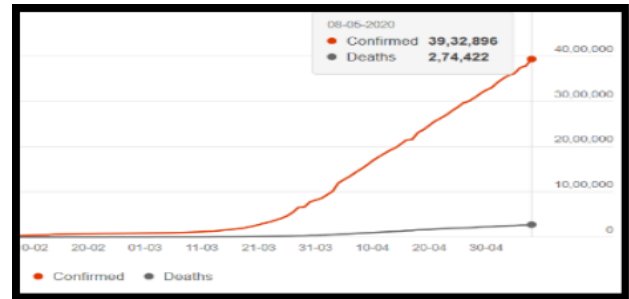
7. GEOGRAPHICAL REPRESENTATION OF ACTIVE CASES OF CoV-19

The following map showing the geographical representation of active cases:



7.1. Map showing the affected areas world wide

8. GRAPHICAL REPRESENTATION OF CORONA VIRUS CASES



8.1. Graphical representation of active cases

9. CONCLUSION

Yet now, there is no treatment for the cause of Corona virus (CoV-19). Through this findings we came to know about the structural design of Corona virus and how it get diversitified across the world within a short span of time. Eventually, this paper gives you a clear idea about the structural design, its features and diversity of grievous Corona virus (CoV-19) which is currently spreading Worldwide.

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