



## A Review Of Literature On Pendemic COVID-19 Coronavirus Disease

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**Abstract :-** There is a new public health crises threatening the globe with the emergence and unfold of 2019 novel coronavirus (2019-nCoV) or the severe acute metabolism syndrome coronavirus (SARS-CoV-2). The virus originated in loco and was transmitted to humans through however unknown intercessor animals in wuhan, Hubei province, China in December 2019. Coronaviruses are a group of swallowed viruses with nonsegmented, fibre, and positive-sense RNA genomes. aside from infecting a spread of economically vital vertebrates (such as pigs and chickens), six coronaviruses are known to infect human hosts and cause metabolism diseases. The symptoms are typically fever, cough, pharyngitis, SOB, fatigue, malaise among others. The malady is mild in most people; in some (usually the aged and people with comorbidities), it should reach respiratory disease, acute metabolism distress syndrome (ARDS) and multi organ disfunction. . Human coronavirus (HCoV) infection causes metabolism diseases with delicate to severe outcomes. in the last fifteen years, we've witnessed the emergence of 2 animal disease, extremely infective HCoVs: severe acute metabolism syndrome coronavirus (SARS-CoV) and Middle East metabolism syndrome coronavirus (MERS-CoV). The case morbidity is calculable to vary from a pair of to 3. Identification is by demonstration of the virus in metabolism secretions by special molecular tests. Common laboratory findings include normal/ low white blood cell counts with elevated C-reactive protein (CRP). The computerized tomographic chest scan is sometimes abnormal even in those with no symptoms or gentle malady. Treatment is essentially supportive; role of antiviral agents is nevertheless to be established. . prevention entails home isolation of suspected cases and those with mild illnesses and strict infection management measures at hospitals that embrace contact and drop precautions. In this review all (as about possible) info concerning Corona viruses square measure given.

**Key Word :-** Corona, SARS-CoV-2, MERS-CoV, ARCD, CRP.

### I. INTRODUCTION

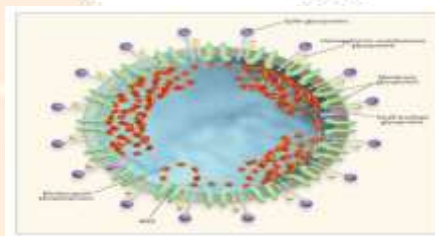
The name corona virus comes from the Latin corona, which means "crown" or "halo", that refers to the characteristic look like a crown or a solar corona around the virions (virus particles) once viewed underneath two-dimensional transmission microscopy [1]. A novel corona virus, designated as 2019-nCoV, emerged in city, China, at the tip of 2019. As of 17 May 2020, 08:00 IST there were 53,946 Active cases, 34,109 Recovered / Discharge / migrated and 2872 Deaths in India. Although several details of the emergence of this virus — like its origin and its ability to unfold among humans — stay unknown, associate increasing variety of cases seem to own resulted from human-to-human transmission. Given the severe acute metabolism syndrome coronavirus (SARS- CoV) outbreak in 2002 and also the middle east metabolism syndrome coronavirus (MERS-CoV) irruption in 2012, 2019-nCoV is that the third coronavirus to emerge within the human population within the past 20 years — associate emergence that has place international public health institutions on high alert. China responded quickly by informing the world Health Organization (WHO) of the irruption and sharing sequence data with the international community once discovery of the activating agent. The World Health Organization responded speedily by coordinative diagnostics development; issue guidance on patient watching, specimen collection, and treatment; and providing up-to- date data on the outbreak. Coronaviruses make up an outsized family of viruses that may infect birds and mammals, as well as humans, per world health organisation (WHO). These viruses are responsible for many outbreaks around the world, as well as the severe acute metabolism syndrome (SARS) pandemic of 2002-2003 and also the middle east metabolism syndrome (MERS) irruption in Asian country in 2015. last, a novel coronavirus (SARS-CoV-2, also called COVID-19) triggered an outbreak in China in December 2019, sparking international concern.[26]

## II.ORIGIN AND DISCOVER

The most related bat coronavirus and SARS-CoV diverged in 1986. A path of evolution of the sars virus and keen relationship with bats are proposed. The authors recommend that the coronaviruses are coevolved with bats for a long time and the ancestors of SARS-CoV initial infected the species of the genus mammal family, later on unfold to species of the family Rhinolophidae and then to civets and at last to humans.[5] Alpaca coronavirus and human coronavirus 229E diverged before 1960.[5] Human coronaviruses were initial discovered within the late 1960s. The earliest ones discovered were an infectious respiratory disease virus in chickens and two in human patients with the common cold (later named human coronavirus 229E and human coronavirus OC43). other members of this family have since been known, together with SARS-CoV in 2003, HCoV NL63 in 2004, HKU1 in 2005, MERS-CoV in 2012 and SARS-CoV-2 (formerly known as 2019-nCoV) in 2019. Most of those have concerned serious tract infections [6,7].

## III.CLASSIFICATION OF HUMAN CORONAVIRUSES STRAINS [7]

- Human coronavirus OC43 (HCoV-OC43).
- Human coronavirus HKU1.
- Human coronavirus NL63 (HCoV-NL63, New Haven coronavirus).
- Human coronavirus 229E (HCoV-229E).
- Middle East respiratory syndrome-related coronavirus (MERS-CoV), previously known as novel coronavirus 2012 and HCoV-EMC.
- Severe acute respiratory syndrome coronavirus (SARS-CoV or "SARS-classic").
- Severe acute respiratory syndrome coronavirus 2 (SARS- CoV-2), previously known as 2019-nCoV or "novel coronavirus 2019".



**Fig.1: Coronavirus structure**

Below I am going to discuss about novel coronavirus 2019.

Coronavirus disease 2019 is an infectious disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The disease was first identified in 2019 in Wuhan, China, and has since spread globally, resulting in the 2019-20 coronavirus pandemic [8]. World Health Organization (WHO) declared the 2019-20 coronavirus outbreak a pandemic and a Public Health Emergency of International Concern (PHEIC).

## IV.CORONAVIRUSES CAN SPREAD IN THE FOLLOWING WAYS:

Coughing and sneeze without covering the mouth can disperse droplets into the air. Touching or shaking hands with a person World Health Organization has the virus will pass the virus between people. Making contact with a surface or object that has the virus so touching the nose, eyes, or mouth. Some animal coronaviruses, like feline coronavirus (FCoV), might spread through contact with dejection. However, it's unclear whether this also applies to human coronaviruses. The National Institutes of Health (NIH) counsel that many groups of individuals have the highest risk of developing complications because of COVID-19.

### 4.1 These teams include:

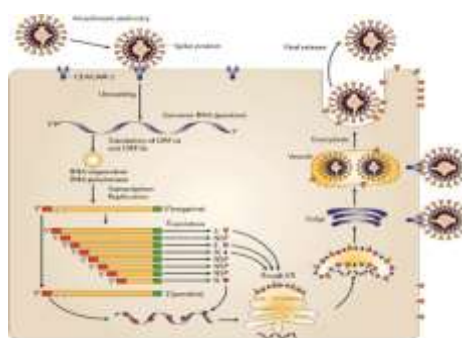
1. Young children
2. People aged 65 years or older
3. Women who are pregnant

Coronaviruses can infect the majority at some time throughout their lifetime. CoronavirusesCoronaviruses will change effectively, which makes them so contagious. to prevent transmission, people should reside home and rest while symptoms are active. they must also avoid shut contact with other people. Covering the mouth and nose with a tissue or piece of material while coughing or sneezing can also facilitate stop transmission. it's important to get rid of any tissues after use and maintain hygiene around the home.[26]

### 4.2 Corona virus life cycle steps

1. Attachment and entry

2. Replicas protein expression
3. Replication and transcription
4. Assembly and release.



**Fig.2: Life cycle of corona virus**

### 4.3 Symptoms

Signs and symptoms of COVID-19 may appear two to 14 days after exposure and include:

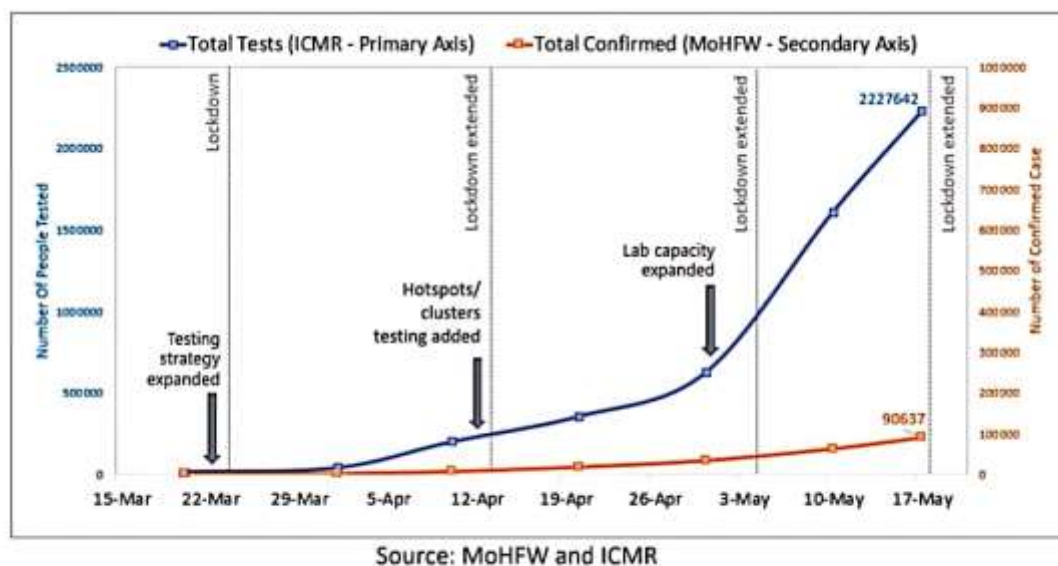
- Fever
- Cough
- Shortness of breath or difficulty breathing
- Tiredness
- Aches
- Runny nose
- Sore throat.

The severity of COVID-19 symptoms can range from very mild to severe. Some people have no symptoms. People who are older or have existing chronic medical conditions, such as heart or lung disease or diabetes, may be at higher risk of serious illness [9].

## V. EPIDEMIOLOGY

In December 2019, many pneumonia cases that were clustered in Wuhan city were reported and searches for the source have shown Huainan Seafood Market as the origin. The first case of the COVID-19 epidemic was discovered with unexplained pneumonia on December 12, 2019, and 27 viral pneumonia cases with seven being severe, were officially announced on December 31, 2019.[10,11] Etiologic investigations have been performed in patients who applied to the hospital due to similar viral pneumonia findings. The common history of high-risk animal contact in the medical histories of these patients has strengthened the likelihood of an infection transmitted from animals to humans. [4, 11] On January 22, 2020, novel CoV has been declared to be originated from wild bats and belonged to Group 2 of beta-coronavirus that contains Severe Acute Respiratory Syndrome Associated Coronavirus (SARS-CoV). Although COVID-19 and SARS-CoV belong to the same beta coronavirus subgroup, similarity at genome level is only 70%, and the novel group has been found to show genetic differences from SARS-CoV[13]. Similar to the SARS epidemic, this outbreak has occurred during the Spring Festival in China, which is the most famous traditional festival in China, during which nearly 3 billion people travel countrywide. These conditions caused favourable conditions for the transmission of this highly contagious disease and severe difficulties in prevention and control of the epidemic. The period of the Spring Festival of China was between January 17 and February 23 in 2003, when the SARS epidemic peaked, while the period of the festival was between January 10 and February 18 in 2020. Similarly, there was a rapid increase in COVID-19 cases between January 10-22. Wuhan, the centre of the epidemic with 10 million populations, is also an important centre in the spring festival transportation network. The estimated number of travellers during the 2020 spring festival has raised 1.7 folds when compared with the number travelled in 2003 and reached to 3.11 billion from 1.82 billion. This large-scale travel traffic has also created favourable conditions for the spread of this difficult-to-control disease[14].





**Fig 3 : The number of Cases & number of people Tested of COVID – 19 outbreak according to WHO situation reports 16 on May 17,2020.**

## VI. DIAGNOSIS

A suspect case is defined as one with fever, pharyngitis and cough who has history of jaunt China or alternative areas of persistent local transmission or contact with patients with similar travel history or those with confirmed COVID-19 infection. But cases are also asymptomatic or maybe while not fever. A confirmed case may be a suspect case with a positive molecular check [15]. The standard technique of testing is period reverse transcription enzyme chain reaction (rRT-PCR). The check will be done on metabolic process samples obtained by various strategies, together with a cavity swab or humour sample [16]. Results are usually out there inside some hours to 2 days. Blood tests will be used, but these require two blood samples taken two weeks apart and the result have little immediate value. Chinese scientists were able to isolate a strain of the coronavirus and publish the genetic sequence so laboratories across the globe could severally develop polymerase chain reaction (PCR) tests to observe infection by the virus [17]. The chest X-ray (CXR) sometimes shows bilateral infiltrates however is also normal in early malady. The CT is a lot of sensitive and specific. CT imaging usually shows infiltrates, ground glass opacities and sub segmental consolidation. it's also abnormal in symptomless patients/ patients with no clinical proof of lower tract involvement. In fact, abnormal CT scans are used to diagnose COVID-19 in suspect cases with negative molecular diagnosis; many of these patients had positive molecular tests on repeat testing [18]

## VII. TREATMENT [15 , 19]

Treatment is actually supportive and symptomatic. The primary step is to confirm adequate isolation (discussed later) to prevent transmission to different contacts, patients and tending employees. Gentle un-wellness ought to be managed reception with guidance regarding danger signs. The standard principles are maintaining hydration and nutrition and controlling fever and cough. Routine use of antibiotics and antiviral like oseltamivir ought to be avoided in confirmed cases. In hypoxic patients, provision of oxygen through nasal prongs, face mask, high flow nasal tubing (HFNC) or non-invasive ventilation is indicated. Mechanical ventilation and even additional corporeal membrane chemical element support could also be required. Nephritic replacement therapy could also be required in some. Antibiotics and antifungal are required if co-infections are suspected or well-tried. The role of corticosteroids is unproven; while current international consensus and World Health Organization advocate against their use, Chinese pointers do advocate short term medical aid with low-to-moderate dose corticosteroids in COVID-19 adds [20,21]. Elaborate pointers for crucial care management for COVID-19 are revealed by the World Health Organization [22]. There is, as of now, no approved treatment for COVID-19. Antiviral medication like antiviral drug, lopinavir-ritonavir are used supported the expertise with sars and MERS. in a historical management study in patients with sars, patients treated with lopinavir-ritonavir with antiviral drug had higher outcomes as compared to those given antiviral drug alone [23].

### 7.1 Prevention

- Wash your hands frequently for at least 20 seconds at a time with warm water and soap [25].
- Don't touch your face, eyes, nose, or mouth when your hands are dirty [25].
- Don't go out if you're feeling sick or have any cold or flu symptoms [25]
- Stay at least 3 feet from Source away from anyone who is coughing or sneezing [25].

- Cover your mouth with the inside of your elbow whenever you sneeze or cough. Throw away any tissues you use right away [25].
- Clean any objects you touch a lot. Use disinfectants on objects like phones, computers, utensils, dishware and doorknobs [25].

## VIII. CONCLUSION

Over the past 50 years the emergence of many totally different coronaviruses that cause a good sort of human and veterinary diseases has occurred. It's possible that these viruses will still emerge and to evolve and cause each human and veterinary outbreaks due to their ability to recombine, mutate, and infect multiple species and cell varieties. Future analysis on coronaviruses can still investigate several aspects of viral replication and pathological process. First, understanding the propensity of these viruses to leap between species, to establish infection during a new host, and to spot significant reservoirs of coronaviruses can dramatically aid in our ability to predict once and wherever potential epidemics might occur. The majority of cases end in gentle symptoms, some get to severe pneumonia and multi-organ failure. At this time it's currently an excellent concern.

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