

## **COVID-19: A Pandemic Health Issue for Human's**

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### **Abstract**

The WHO has clarify the Coronavirus Infectious Disease (COVID-19) is induced by virus, Coronavirus 2 and it is related to Severe Acute Respiratory Syndrome (SARS-CoV-2). It's belonging to the family of Betacoronavirus. The spreading of this virus on human's causes infection in respiratory system like coughing, sneezing, cold and Pneumonia, and if spread in the animals its causes upper respiratory problem and diarrhoea. The virus can be transmitted by airborne droplets in animal to human or human to human. COVID-19 is RNA associated viral disease that is expanded in most of the countries. In humans it is identified the COVID has four main species which causes disease in humans. After infecting the respiratory system it is also infect the other body systems like cardiovascular, neurological, and hepatic system. The objective of this review is to explore the general awareness of this disease and to describe its clinical characteristics, risk factor, prevention and treatment among the people's during current pandemic situation.

**Keywords:** COVID-19; Clinical Feature; Treatment

### **Overview**

In 1960, Corona virus attacked first case reported named as cold. As per the study, suggested in 2001 (Canadian Study), that a flu like symptoms was shown in approximately 500 patients, in which about 18 patients were suffered from the infection of Coronavirus strain. Under the electron microscope it was observed that the strain of corona virus are associated with the RNA ranging from 60 nm to 140 nm and have crown like surface projections (Figure 1). Mainly four types of virus strains like HKU1, NL63, 229E and OC43 have been found in humans and affected the various systems of the body. As per the survey it is suggested that this virus originated from bats and transmitted in to the human in the Wuhan city of China in December 2019. As per the data, there have been around 3.85 Million affected cases of Coronavirus disease 2019 (COVID-2019) and 270 thousands case reported deaths to date (08/05/2020) [1]. It is also reported that the spreading of Human Coronavirus similar to the Rhinoviruses through infected person secretions or airborne droplets with the incubation period about 2 - 14 days. The Common signs are weakness, fatigue, cough, fever, headache etc. among them. Now a days it has been reported that many people are asymptomatic. The mortality rate is evaluated from this disease are 2 - 3%. The common laboratory tests like WBC counts, estimation of C-reactive protein, chest scan and special molecular tests are effective way to diagnose the virus infection and its severity [2].

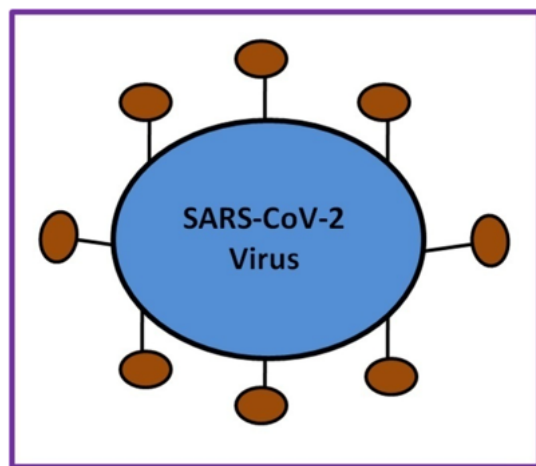


Figure 1: Structure of COVID-19 virus.

### Clinical feature

In the COVID-19 infected patients the various types of common symptoms observed like weakness, vomiting, fever, chest pain, cough, diarrhea, headache etc. in this the fever and cough were the most frequent and common initial symptoms occur in patients. As in the case of higher severity the major symptoms are shock, ischemia, hypoxaemia, arrhythmia, kidney injury etc. have reported in patients (Figure 2) [3].

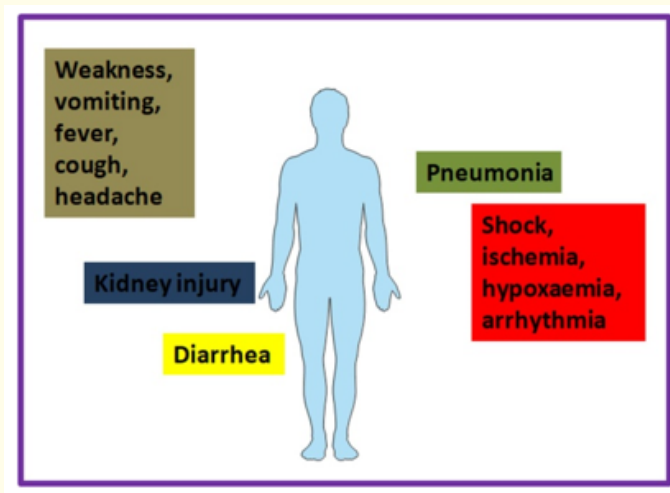


Figure 2: Clinical feature of COVID-19 virus.

### Probability of infection

The chances of infection in reported data as seen it is more often in adult male patients between 34 to 59 years. The risk of infection is more prone to the patients if they have already the associated diseases like cardiovascular disease, cerebrovascular disease and diabetic [4]. The major percentage of the severe cases is more than 60 years of aged people with the above mentioned associated diseases. The risk of infection may also relate with the co-infection of fungi and bacteria [5].

### Research findings

The research findings are suggested that the COVID infected patients have elevated level of Creatine kinase, C-reactive protein, LDH, ALT and the severe cases reported the higher levels of TNF-  $\alpha$  (tumor necrosis factor-  $\alpha$ ), MIP1A (macrophage inflammatory protein alpha), MCP1 (monocyte chemotactic protein), IP10 (interferon gamma induced protein 10), GCSF (granulocyte colony stimulating factor) and interleukin (IL-2, IL-7, IL-10). In the beginning stage the reduction in CD4 and CD8 lymphocytes are also observed. The other findings are like hepatic injuries, renal injury, myocardial injury, suppress immunity, coagulation activation was also reported. In the critical patients the common elevations in creatinine, blood urea, D-dimer, neutrophil, ferritins etc. are reported. The elevated level of procalcitonin suggested that the alternative way to diagnose bacterial pneumonia [3].

### Identification of suspect/diagnosis

The identification of suspect can be done if any people have the symptoms like cough; headache, high fever, sore throat and the person have travel history to more prone areas or contacted with the COVID confirmed patients. Also, the main thing the many people may face the challenge like COVID cases may be asymptomatic or without any above given symptoms. The suspect cases are confirmed by the specific molecular test by taking sample from patient's throat swab/sputum/nasopharyngeal swab and bronchoalveolar swab. It is also reported that the infection can also be detected by stool and blood tests [6]. In India the various testing labs were started the checking of samples. The common tests in the COVID are lymphocyte count, platelet count, ESR, CRP, ALT, AST, prothrombin time, LDH, D-dimer etc. the more specific test are RT-PCR and CT scan, it shows the suspected infection if they have negative molecular diagnosis or the patients have repeatedly positive molecular testing [7].

### Prevention

As the information reported that there are no any specific treatment approved for this COVID-19 infection, and its cure is very crucial. The changing feature of the organism may create difficulty for the prevention and treatment of the disease [8].

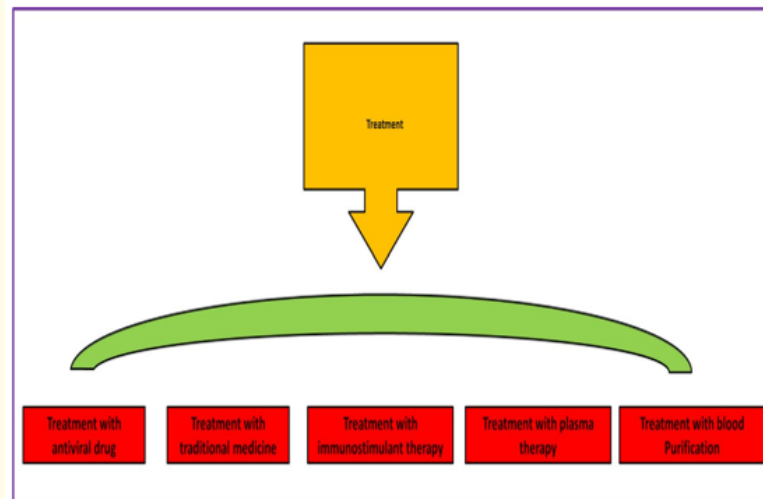
Some following points need to be considered for the prevention:

- Home quarantine is suggested if patient feel symptoms of COVID-19.
- Ventilated room is necessary at home, and it should be allow cover proper sunlight.
- Must wear mask if feels symptoms, and to ensure hygiene.
- Caretakers are also suggested to wear mask and to ensure hygiene.
- It is suggested by WHO to all the person must wear mask while going to outside from the home.
- It is suggested that the patients cover his/her mouth by sleeve/tissue while coughing.

- Frequent hand washing in every 20 - 30 minute also necessary for all.
- Avoid going in crowded areas and postponing non-essential travel.
- All the contacts should be monitored at outside.
- Isolation of suspected/confirmed case in a separate room.
- The Isolated rooms and equipments should undergo regular decontamination.
- All the health care workers must wear Personal Protection Kit while engaged with infected persons.
- Make social distancing about 1 meter between two persons.

As the information collected that, the development of vaccine/treatment pattern is under process by various research agencies. Now only way to restrict the spreading of virus is prevention.

**Treatment (Figure 3)**



**Figure 2:** Treatment of COVID-19 virus.

**Treatment with antiviral drug**

As per the current information the COVID patients are found mainly asymptomatic, and some data suggested that Remdesivir has more promising effect on RNA viruses and its achieved good response while treating the patients [9]. It was effective in control of COVID *in vitro*, it's also undergoing in clinical trials in various hospitals but the efficacy of drug is uncertain [10]. For the development of immunity chloroquine has also found effective and it is also inhibit COVID-19 *in vitro*. In cell experiments it is reported that Arbidol (indole derivative molecule) was effective in blocking of viral fusion of Influenza virus, so it may be effective in COVID-19 patients treatment. In India also one drug is under trial are favipiravir for the treatment of COVID-19 [11].

### **Treatment with traditional medicine**

The government and medical professionals have published a various traditional medicine prescriptions for the treatment of COVID-19. In India, the 4 traditional medicine is under trial are Ashwagandha, Yastimadhu, Guduchi and Aayush-64 for the treatment of COVID patients. The diagnosis and treatment plan suggested that the use of lung clearing technique is effective way to treat patients [12].

### **Treatment with immunostimulant therapy**

The COVID infection is caused by a suppress immune response, for this increasing the immunity is a potential way to treat patients. Interferon has potential effect to inhibit viral infection by inducing both adaptive and innate immune response [13].

### **Treatment with plasma therapy**

As the situation, there are vaccines/specific drugs are under trial, and then the plasma therapy has another effective way to reduce the severity of disease in infected person. It is more effective than repeated use of hormonal shock in patients; it's also reducing the hospital stays and mortality. The plasma collected from the patients who recovered from the COVID19 and prepare to globulin specific COVID infection. The safety from plasma therapy needs more investigations [14].

### **Treatment with blood purification**

At present for the treatment of severe patients another effective blood purification technology may use. As per the current study the Angiotensin Converting Enzyme-2 (ACE2) is the main receptor of target of Coronavirus, and this receptor is expressed in kidney. The Coronavirus may have the prime target on kidney. So, at early stage blood purification technique may reduce the load of kidney and improve renal function. This technique could also be used in the removal of inflammatory factors, maintain electrolytes imbalance [15].

### **Conclusion**

The present pandemic situation is a major health issue for public. In this condition there is a need of quick advancement in diagnosis, and treatment. As the transmission has increases worldwide, needs more attention for response operation, improvement on capacity of testing, specific drugs development. So until the vaccines/specific drugs are under trial need to follow the preventive instructions.

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### **Conflict of Interest**

None.

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