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Is Covid 19 A Deadly Disease?

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Abstract

In the last of 2019, A new World health trouble and that is COVID-19('CO' corona, 'VI' virus, 'D' disease). Coronavirus is a communicable disease and caused by the severe acute respiratory syndrome coronavirus-2 (SARS-CoV-2) and most rapidly spread from the Human seafood market at Wuhan (South China). In March 2020, WHO declared that COVID-19 is global pandemic disease due to virus outbreak on the international level, but zoonotic source of virus is unknown, this is also a big trouble.

Keywords

Corona, Covid 19, Virus, Pneumonia, Transmission, Disease

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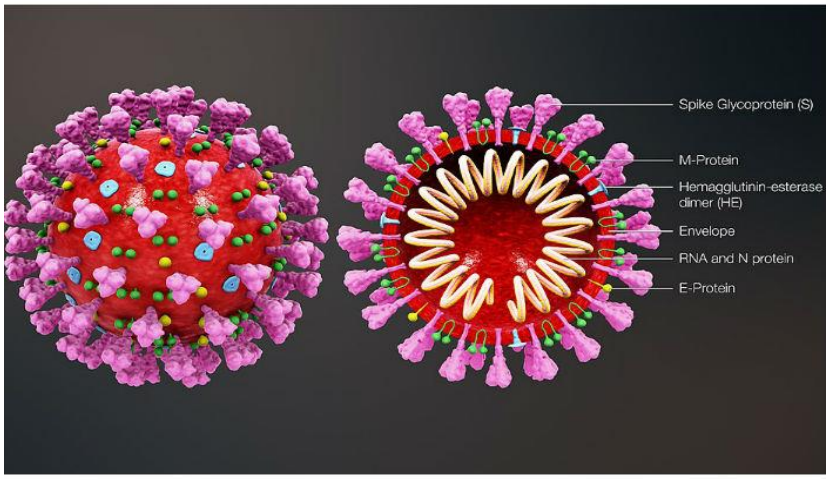
INTRODUCTION



Structure of coronavirus

In the last of 2019, a series of pneumonia cases of unknown cause was finding in Wuhan [Hubei, China]. After some weeks, in January 2020, deep sequencing analysis of lower respiratory tract samples recognized a novel virus severe acute respiratory syndrome coronavirus 2 (SARS-cov-2) as causative agent for that observed pneumonia cluster, on 11th February 2020, the World Health Organization (WHO) Director-general, Dr. T. A. Ghebreyesus, named the disease caused by SARS-cov-2 as "COVID-19' , and 11th March 2020 when the number of countries involved was 114, with more than 118,000 cases and over 4000 deaths. After that WHO declared the pandemic status about SARS-cov-2[1].

Coronaviruses are the large number of viruses which may cause diseases in animals and humans. This is a zoonotic virus or disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-cov-2)[2]. When did the study of corona virus under electron microscope, found that coronavirus is an RNA virus with a typical crown-like appearance due to glycoprotein spikes on its envelope[1]?

Types of corona virus: -

Coronaviruses belong to the subfamily **"coronavirinae"** in the family **"coronaviridae"**[3]Seven types of corona viruses can produce infection in human beings, given below: -

S.No.	Types of corona virus
1.	229E (alpha-coronavirus)
2.	NL63 (alpha coronavirus)
3.	OC43 (beta coronavirus)
4.	HKU1 (beta coronavirus
5.	MERS-CoV (the beta coronavirus that causes Middle East Respiratory Syndrome, or MERS)
6.	SARS-CoV (the beta coronavirus that causes severe acute respiratory syndrome, or SARS)
7.	SARS-CoV-2 (the novel coronavirus that causes coronavirus disease 2019, or COVID-19).

But peoples get infected four common types of coronaviruses.

- 229E (alpha-coronavirus)
- NL63 (alpha coronavirus)
- OC43 (beta coronavirus)
- HKU1 (beta coronavirus)[4]

Origin and transmission of COVID-19: -The first two cases of coronaviruses were found in 1965 through Tyrrell and Byone. They felt that they could passage from a virus that named was B814. It was observed in human embryonic tracheal organ culture obtained from the respiratory tract of an adult with such as common cold symptoms. In the end of 2019, first cases of coronavirus were seen in Wuhan city of Hubei province china in December 2019 and they have been linked with the Hunan seafood market (south china). Now, this virus has been spread in all around the world. Zoonotic source of this virus is not confirmed[5]. Many human coronaviruses have their origin in bats[6]. It is a droplet infection and highly transmitted and pathogenic viral infection. Mainly transmitted through contact of each other. A single cough can circulate approximately 3000 droplets[5].Limited research is available on how HCoV spreads from one person to another person. However, but research believes that the viruses transmit via fluids in respiratory system, such as mucus[7]the possibility of SARS-cov-2 transmission via sewage, waste contaminated water, air condition system and aerosols can't be underestimated because particularly in cases such as the Diamond princess cruise ship with 3,700 people among whom at least 742 have been confirmed to be infected with SARS-cov-2 plausibly as the result of a super spreading event[8].

Coronaviruses can spread in the following ways: -

Coronavirus can spread by the close contact with small droplets released from infected Individuals upper respiratory tract secretions[5]e.g coughing and sneezing without covering spread droplets in air. Hand shanking and touching with a person who has a virus can spread virus between individuals[9]. Therefore, stay away minimum 1 meter from that person who is sick. When, these droplets land on any object and surface around the person. They can also be transmitted to persons. When, person and other individual touches these objects or surface and further touching their mouth, nose and eyes then coronavirus catch or infected to the people[5]The National Institute of Health (NHI) told that several age groups of people have the highest risk of developing of infections due to coronavirus.

These age groups include: -

- Children below that 15 year
- People aged 65 years or older
- Women who are pregnant.
- Coronavirus will infect most people at some time during their lifetime[9]

Diagnosis of COVID-19: -Diagnosis allow suspected people to understand that they are infected or not. If they are infected so diagnosis can help them the care or treatment, they need, and diagnosis also help to cut back the probability of infecting others. If any person infected and develops the symptoms like coronavirus or of coronavirus they have been exposed to the virus. In this condition, he should consult to the doctor[10].For patients with suspected infection, the following diagnosis techniques are utilized; performing real-time fluorescence (RT-PCR) to detect the positive nucleic acid of SARS-cov-2 in sputum, throat swabs, and secretions of the lower respiratory tract samples[11].In most cases of self-limited infection, diagnosis of coronaviruses is not essential because mostly it is natural disease[12]. ELISA kits for detection of Igm and igg antibodies against N and other SARS-cov-2 proteins have also been available more recently. ELISA reagents for detection of SARS-cov-2 antigens such as S and N are still in urgent need and would provide another test highly complementary to viral RNA detection[8].

Symptoms of COVID-19:-Maximum 80%, infected with the virus will experience common cold and flu and they are showing mild symptoms of the disease. Study of Zhongnan Hospital of Wuhan University on 140 patients. They identified different types of symptoms which lead to a disease known as COVID-19. 99% of the patients developed the fever with the high temperature, while more than half experienced fatigue and a dry cough. Research from the Chinese CDC observes that around 80% cases of coronavirus are mild, 15% cases are severe and 5% have become critically ill.

- Day 1 patient suffer from fever with the fatigue, muscle pain and dry cough. Few of them suffer from the nausea and diarrhea
- Day 5 patient may suffer from the breathing problem
- Day 7 according to Wuhan University study, these symptoms of coronavirus leads the patient to be admitted in hospital
- Day 8 patients (15% according to the Chinese CDC) develop acute respiratory distress syndrome (ARDS), a condition in which the fluid fills up in lungs. This is usually in severe cases.
- Day 10 progression of this disease leads to worsening of the symptom and at this point the patient is shifted in ICU
- Day 17 on average, after two-and-a-half weeks patients who recover are discharged from the hospital[13].
- In many patients, COVID-19 was present, but they didn't have any symptoms of coronavirus. Because antibody was found against coronavirus in patients body. This term is show that corona is not highly effective disease which is make by media or international media[14].

Other symptoms are less but affect some people: - Nasal congestion, conjunctivitis, different types of skin rash, loss of appetite, confusion, anxiety, depression, sleep disorder,

More severe and rare neurological complications such as strokes and brain inflammation[15].

Treatment of COVID-19: - There is not any specific vaccine or antiviral drug recommended for COVID-1[16].But an anti-Ebola drug, Remdesivir, may hold the promise[8]. There are major treatments of coronavirus given below:

General treatment: - infected patient of COVID-19 needs complete bed rest, water intake in proper amount to reduce the risk of dehydration, water electrolytes should be balanced, homeostasis need to maintain, regularly monitor the vital signs such as oxygen saturation, blood pressure, inhaling of oxygen should be continue in severe cases, proper diet and measure blood count, liver and kidney function.

Symptomatic treatment: - Antipyretic drug treatment should be performed in case of high fever (when, temperature exceeds 38.5C) such as acetaminophen orally, 10-15 mg/kg BID or TID and antipyretic patches also preferred to low the temperature. Non-steroidal anti-inflammatory (NSAIDs) also used with antipyretic drugs because both enhance the effect of each other. Aceclofenac orally, taken 100mg of tablet BID. It also has mild antipyretic property.

Oxygen therapy: - Lack of oxygen or hypoxia can increase because COVID targets the lungs. In this condition, oxygen mask should be immediately provided to the patients[19]. Mechanical ventilation may be essential in cases of respiratory failure refractory to oxygen therapy[17].

Antiviral drugs: - groups of antiviral drugs including interferon alpha (INF-alpha), Lopinavir/ritonavir, Chloroquine phosphate, Ribavirin and Arbidol are therapeutically used for the prevention and treatment of coronavirus.

- INF-alpha is administered in the form of vapour inhalation at a dose of 5 million U for adults, 2 times/day.
- Chloroquine phosphate is orally administered at a dose of 500mg (300mg for Chloroquine) for adults, 2 times/day.
- Favipiravir is a new drug that is under clinical trial for treating COVID-19. On February 15, 2020 china approved it to be a useful drug for treating influenza. At least 16 different trials for SARS-cov-2 already registered in the Chinese

clinical trial registry (ChiCTR) propose to use Chloroquine of Hydroxychloroquine in the treatment of COVID-19[17].

Prevention for covid-19: -

People should be aware about the latest information of COVID-19 provided by the WHO and that directions which are provided by local health authority and Doctors. We should follow these steps:

- Before clinical care, identify as soon as possible and isolate them who confirmed cases of COVID-19
- Always use face mask change after some time period, when, we are infected use tissue paper during sneeze & cough.
- In home, office and working area use detergent before disinfection apply after that apply disinfectant regularly on the touches surface include mobile, laptop, bench, desk, floor, restroom, bathroom, car, bike and handles etc.
- To Wash hand regularly and avoid contact with infected people, maintain appropriate distance through them.
- Avoid travelling, when did you suffering from infection because another person can infected by you.
- Stay home for a duration and follow advice given by your healthcare provided[18].

"Regularly take sunbath in early morning for some time and vitamin D supplement because vitamin D is very helpful to increase immunity and vitamin d have major role to prevent from common, cold, flu and acute respiratory tract infection[19].

1	Confirmed cases: - 64,845,560
2	Recovered cases: - 44,942,114
3	Deaths: - 1,499,355.
4	Active cases: - 18,404,091

Death rate and recovery of COVID-19:

Worldwide data of death and recovery of COVID-19 given below: -

According to 3 December 2020, there are 64,845,560 confirmed cases, in all these cases 44,942,114 have been recovered. From in recovered cases, 44,942,114(97%) is recovered/discharged and 1,499,355(3%) is dead. Now, 18,404,091 currently infected patients are remaining in which, 18,297,432(99.4%) is in mild condition and 106,659(0.6%) is in serious or critical condition[20].

CONCLUSION:

This review provides the information about COVID-19 current situation and it also represent the picture all about the COVID-19, provide the information about diagnosis, treatment and prevent from COVID-19. Coronavirus directly affect to the throat and lungs. If our immunity level in maintain, we can easily suffer or fight from corona virus. If our immunity level is low, so corona virus can cause death. If we will follow proper guidelines provide by WHO and local health adviser so we can easily protect our self from COVID-19. We should be able to learn lesson especially in terms of public and global health for any future similar pandemics.

REFERENCES: -

1. Lee S, Damiano P, Mario A and et.al, "Coronavirus Disease (COVID-19) Current Status and Future Perspectives: A Nature Review" published by International Journal of Environmental Research and Public Health, 1(14): 2020.
2. Hafeez Abdul, Ahmad Mumtaz, Mishra Shruti and other, "A Review Of COVID-19 (Coronavirus Disease-2019) Diagnosis Treatment And Peention" publish by EJMO,4(2):116-125,2020.
3. Ansar Bilal Quazi, Bairagi Rohit, Thakhre Suraj and others, "A REVIEW ON CORONA VIRUS (COVID-19)" published by World Journal of Pharmaceutical and Life Science, (3):109,22, 2020.
4. CDC (centres for disease control and prevention) Human coronavirus Types" 2,15,2020.
5. Ansar Bilal Quazi, Bairagi Rohit, Thakhre Suraj and others, "A REVIEW ON CORONA VIRUS (COVID-19)" published by World Journal of Pharmaceutical and Life Science, (3):109,22, 2020.
6. Wikipedia Coronavirus (origin) Available online.
7. Ansar Bilal Quazi, Bairagi Rohit, Thakhre Suraj and others, "A REVIEW ON CORONA VIRUS (COVID-19)" published by World Journal of Pharmaceutical and Life Science, 110(3):22, 2020.
8. Yuen Kit-San, Fung Sin-Yee and others, "SARS-CoV-2 and COVID-19: The most important research questions" published by Yuen et al. Cell Biosci (Cell & Bioscience), (10):40, 2-3, 2020.
9. Ansar Bilal Quazi, Bairagi Rohit, Thakhre Suraj and others, "A REVIEW ON CORONA VIRUS (COVID-19)" published by World Journal of Pharmaceutical and Life Science, page no., from "Coronaviruses can spread in following ways", (3):22, 110, 2020.
10. Hafeez Abdul, Ahmad Mumtaz, Mishra Shruti and other, "A Review of COVID-19 (Coronavirus Disease-2019) Diagnosis Treatment and Peention,4(2):116-125, 2020.
11. Smith lee, Pizzol Damiano, Antunes Mario and other, "Coronavirus Disease (COVID-19) Current Status and Future Perspectives: A Nature Review" published by International Journal of Environmental Research and Public Health,14(4): 4,2020.
12. Ansar Bilal Quazi, Bairagi Rohit, Thakhre Suraj and others, "A REVIEW ON CORONA VIRUS (COVID-19)"

published by World Journal of Pharmaceutical and Life Science, 3, 22, 112,2020.
13. Hafeez Abdul, Ahmad Mumtaz, Mishra Shruti and other, "A Review Of COVID-19 (Coronavirus Disease-2019) Diagnosis Treatment and Peention,4(2):116-125, 2020.
14. COVID-19 Transmission: Here's How Someone with No Symptoms May Spread Coronavirus Available online.
15. World Health Organization Coronavirus disease COVID-19 Available online.
16. Smith lee, Pizzol Damiano, Antunes Mario and other, "Coronavirus Disease (COVID-19) Current Status and Future Perspectives: A Nature Review" published by International Journal of Environmental Research and Public Health,14(4): 5, 2020.
17. Hafeez Abdul, Ahmad Mumtaz, Mishra Shruti and other, "A Review of COVID-19 (Coronavirus Disease-2019) Diagnosis Treatment and Prevention,4(2):121-122,2020.
18. Smith lee, Pizzol Damiano, Antunes Mario and other, "Coronavirus Disease (COVID-19) Current Status and Future Perspectives: A Nature Review" published by International Journal of Environmental Research and Public Health,14(4): 7,2020.
19. Dr. Campbell Jhon's video about Vitamin D and Immunity, Available online on YouTube: 9(3): 2020.
20. Corona viruses update Available online: https://www.worldometers.info/coronavirus/last update December 05(59):3, 2020.