

CHIPS *REGIMEN*

COVID -19 OUTBREAK

Coronaviruses are a large family of viruses which may cause disease in animals or humans. Seven coronaviruses can produce infection in people around the world but commonly people get infected with these four human coronaviruses: 229E, NL63, OC43, and HKU1. They usually cause a respiratory infection ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome (SARS) and the most recently discovered coronavirus (COVID-19) cause's infectious disease. This zoonotic disease caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The WHO originally called this infectious disease Novel Coronavirus-Infected Pneumonia (NCIP) and the virus had been named 2019 novel coronavirus (2019-nCoV). An outbreak of COVID-19 caused by the 2019 novel coronavirus (SARS-CoV-2) began in Wuhan, Hubei Province, China in December 2019, the current outbreak is officially a pandemic.

The virus is typically rapidly spread from one person to another via respiratory droplets produced during coughing and sneezing. It is considered most contagious when people are symptomatic, although transmission may be possible before symptoms show in patients. Time from exposure and symptom onset is generally between two and 14 days, with an average of five days. Common symptoms include fever, cough, sneezing and shortness of breath. Complications may include pneumonia, throat pain and acute respiratory distress syndrome. Currently, there is no specific antiviral treatment or vaccine; efforts consist of symptomatic supportive



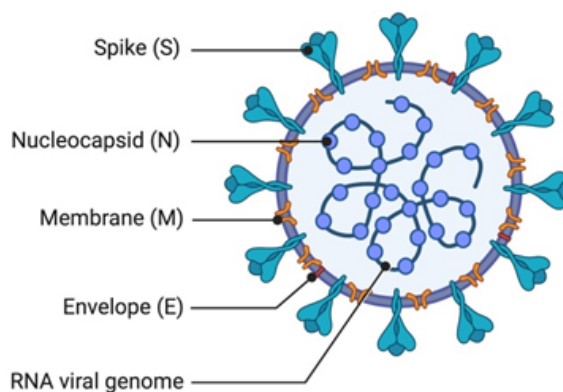
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therapy. Recommended preventive measures include washing your hands with soap, covering the mouth when coughing, maintaining 1-meter distance from other people and monitoring and self-isolation for fourteen days for people who suspect they are infected.

Origin and Transmission of COVID-19

The first cases of coronaviruses in human found in 1965 by Tyrrell and Bynoe. They observed that they could passage a virus named B814. It was observed in human embryonic tracheal organ cultures obtained from the respiratory tract of an adult with a common cold symptom. The first cases were seen in Wuhan City of Hubei Province China in December 2019, and have been linked to the Huanan Seafood Market (South China) and the infection has spread to several countries around the world. The novel coronavirus originated from the Hunan seafood market at Wuhan, South China where raccoon dogs, bats, snakes, palm civets, and other animals are sold, and rapidly spread up to 109 countries.

Coronavirus Structure



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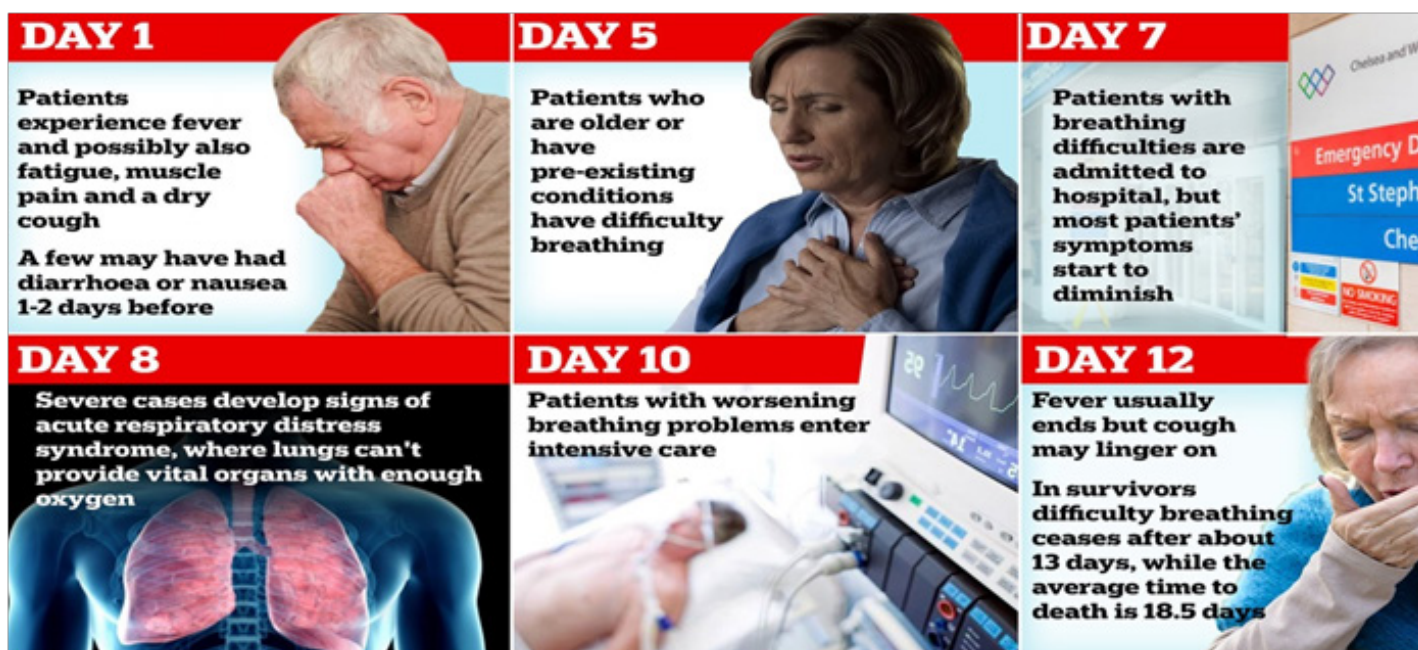
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The recombination of DNA was found to be involved at spike glycoprotein which assorted SARS-CoV (CoVZXC21 or CoVZC45) with the RBD of another Beta CoV, thus could be the reason for cross-species transmission and rapid infection. A single cough can circulate up to 3,000 droplets. These droplets can land on other people, and covering surfaces around them, however, several smaller particles will stay within the air. The virus is also shed for extended in faecal matter, thus anyone who not washing their hands thoroughly after visiting the toilet, bathroom could contaminate anything they touch like many respiratory viruses, including flu, Covid-19 can be spread by close contact with small droplets released from infected individuals' upper respiratory tract secretions e.g. sneezing, common cold or coughing from the nose and mouth. That is why to stay more than 1 meter (3 feet) away from a person who is sick. The virus can

also be transmitted through surface contamination when these droplets land on objects and surfaces around the person and other individual touches these objects or surfaces and further touching their eyes, nose or mouth then these people catch COVID-19.

Symptoms of COVID-19

Maximum of the patients infected with the virus will experience common cold and flu, while few of them remain asymptomatic. 80% of patient will show mild symptoms of the disease. Adults have the best immunity to fight against the infection but the demerit is that they are more likely to spread the infection. A day by day breakdown of coronavirus symptoms shows how symptoms progress among typical patients, how the disease, COVID-19, goes from bad to worse.



COVID-19 needs medical attention immediately, continuous pain or pressure in the chest, include trouble in breathing, confusion and bluish lips or face. The progressed condition leads to Pneumonia and the incubation period is five days.

Diagnosis of COVID-19

To test for COVID-19, doctor or health practitioner may take samples, including a sample of saliva (sputum), a nasal swab and a throat swab, to send to a lab for testing or follow the directions of your local health authority. Currently, there are only two primary types of Covid-19 diagnostics method are available. First one is that test screens patient blood samples for antibodies against the virus. The drawback is that antibodies are often not detectable until a few days after symptoms begin. The second type of test looks for viral DNA in a sputum sample. It can detect the virus earlier in the infection, but they require polymerase chain reaction (PCR), to perform this method take more times (several hours) than screens patient blood test method.

Treatment Strategy of COVID 19

A confirmed patient of COVID 19 needs complete bed rest and supportive treatment, ensuring adequate calorie and water intake to reduce the risk of dehydration. Water electrolyte balance and homeostasis need to maintain along with the of monitoring vital signs and oxygen saturation; keeping respiratory tract unobstructed and inhaling oxygen in more severe cases; measuring blood count, C-reactive protein, urine test, and other blood biochemical indexes including liver and kidney function, myocardial enzyme spectrum, and coagulation function according to patient's conditions. Chest imaging should be continuously re-examined and blood gas analysis should be performed when required. Symptomatic Treatment Control measures are needed for patients with a high fever. Antipyretic drug treatment should be performed in case the temperature exceeds 38.5°C. Warm water bath and antipyretic patches are preferred as a preventive measure to lower the temperature. Common drugs include ibuprofen orally, 5–10 mg/kg every time; acetaminophen orally, 10–15 mg/kg every time. Need to administer sedative arises in case the child suffers from convulsions or seizure. The chances of

hypoxia are increased as the virus targets the lungs. Nasal catheter, mask oxygen should be immediately provided to the patient. In emergency conditions, Non-invasive or invasive mechanical ventilation should be provided to the patient.

Antiviral Drugs Group of antiviral drugs including interferon α (IFN- α), lopinavir/ritonavir, chloroquine phosphate, ribavirin, and arbidol are therapeutically useful for the Prevention, Diagnosis, and Treatment of COVID-19. IFN- α is administered in the form of vapour inhalation at a dose of 5 million U (and 2 mL of sterile water for injection) for adults, 2 times/day. The dosage of lopinavir/ritonavir is 400 mg/100 mg for adults, 2 times/day. Ribavirin should be administered via intravenous infusion at a dose of 500 mg for adults, 2 to 3 times/day in combination with IFN- α or lopinavir/ritonavir. Chloroquine phosphate is orally administered at a dose of 500 mg (300 mg for chloroquine) for adults, 2 times/day. Arbidol is orally administered at a dose of 200 mg for adults, 3 times/day. The duration of treatment is no more than 10 days. Favipiravir is a new drug that is under clinical trial for treating COVID-19. Favipiravir may have potential antiviral action on SARS-CoV-2, which is an RNA virus. Remdesivir is another investigational drug under clinical trial for the treatment of COVID-19. Remdesivir is a nucleoside analogue and a broad-spectrum antiviral. Animal experiments indicated that remdesivir can effectively reduce the viral load in lung tissue of mice infected with MERS-CoV, improve lung function, and alleviate pathological damage to lung tissue. Chloroquine Phosphate is more effective in control treatment in inhibiting the progression of pneumonia, improving lung imaging findings, promoting a virus-negative conversion, and shortening the disease course". Boost Your Immune System On top of basic illness prevention and real defense against disease is a strong immune system. People body is better able to fight off disease when the immune system is humming and people should put to get their perfect body shape. During this critical situation, get adequate sleep and some fresh air and sunlight daily. People also, stay hydrated, minimize overly processed foods and make sure to eat enough micronutrients when they can try their best with what they can find at grocery stores right now.

Prevention & Precaution of COVID-19

People should stay aware of the latest information on the COVID-19 outbreak and follow the directions to prevent secondary infections, interrupt human-to-human transmission to your close contacts, health care workers and prevent further international spread. Most of the people who infected, experience mild illness and recover it, but its infection can be more severe for other individuals.

Conclusion

COVID-19 is dynamic and continues to rapidly evolve. A more thorough analysis about the existence of any potential benefit on clinical outcomes needs to be addressed against the known financial costs. SARS had a mortality rate of 9.5%, whilst the current novel coronavirus appears to have a mortality rate around 2%, based on the number of confirmed cases and deaths. COVID 19 has a vast effect on society, where proper medication, sanitization and social distancing will help us.

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STAFF PUBLICATIONS

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