

A Review on New Researches on COVID-19, Its Cases in the World and how to Prevent and Treat the Disease

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ABSTRACT

On 31 December 2019, in Wuhan City, Hubei Province, China, a new type of coronavirus was identified for the first time with a human epidemic after people got pneumonia for no apparent reason and vaccines and treatments were not effective. A survey of the infected persons with the virus found that two-thirds of them were linked to the wholesale seafood market in Huanan, where live animals are also sold. Novel Coronavirous causes severe respiratory illness that has infected more than 80,000 people and killed at least 3,000 in China up to now. Currently, more than 100,000 people have been diagnosed with the disease in eighty countries, including Thailand, South Korea, Japan, Taiwan, Australia, Singapore, Nepal, Vietnam, Indonesia, Germany, Russia, Fiji, France, Iran, and United States.

Human-to-human transmission of the virus has also been confirmed. Coronaviruses are spread primarily by close contact, especially through respiratory droplets caused by coughing and sneezing, up to 6 ft. RNA virus has also been found in stool samples from infected patients. Studies have shown that the virus can transmit at least four people in a chain and can even become infectious during the incubation period. Symptoms include fever, dry cough and sometimes respiratory problems such as shortness of breath, and sore throat and runny nose. However, according to the WHO, the transmission from asymptomatic people is more likely. Coronavirus can infect the environment and even hospitals by contacting door handles, beds, buttons, desks, bed edges, and other metal and plastic surfaces that are in direct contact with the patient. The results also showed that high humidity increases the lifespan of the coronavirus. These studies indicated that coronaviruses can persist on different surfaces for an average of 4 to 5 days. Some of them can survive outside the body for up to 9 days at room temperature.

KEYWORDS

Coronavirus, COVID-19, Research Papers, Prevention and Treatment.

Introduction

In Wuhan City, Hubei Province, China a group of severe respiratory infections was reported on 31 December 2019. At first it was supposed that the main source of this virus was from a wholesale market for seafood and fish. After that all the marked was closed immediately on the first day of January and environmental disinfection and sanitation measures were taken. The new detected virus was not similar to previous viruses of SARS coronavirus, seasonal flu, adenovirus, MERS coronavirus, and avian influenza. In this regard at the beginning of the second week of Jan, detection of a novel virus was announced as a causative agent in about 25% of hospitalized patients. It was reported that the novel coronavirus is a subtype of Sarbecovirus and has a 70% genetic association with SARS. Nowadays, this virus is known as 2019-nCoV. The first death from the novel virus was reported on January 11 in China. Then by January 20, further positive cases were reported from other countries such as United States, South Korea, Thailand, and Japan. One of the most challenging facts about this virus is that its human-to-human transmission is more complicated than similar viruses. The result of this large epidemic: hospital beds were filled, excessive fatigue of medical teams, severe shortages of personal protective equipment, affection in hospital staff, a shortage of staff, and the spread of disease and concern in various cities in China and around the world. To properly manage this epidemic and provide safe and effective services, it is essential that hospitals are adequately prepared to manage clinical services, and that all staff comply with this guideline. Obviously, many of the diagnostic and infection control measures recommended for this disease are currently somewhat similar to the MERS coronavirus guidelines, thus facilitating its implementation. The new disease is an animal-to-human-transmitted disease, though the ways of transmission, animal reservoirs, prevention, and its precise clinical manifestations have not been identified and

require further studies. There is not any decisive treatment and vaccine for nCoV yet. Consequently, being cautious about the history of travel and the possibility of having contact with feverish patients and particularly those with severe respiratory symptoms has a determinant role in the prevention and control of this virus.

New Research Papers on COVID-19

The novel coronavirus disease (COVID-19) was known as 2019-nCoV formerly. The outbreak of 2019-nCoV happened originally from Wuhan, Hubei Province, China, and was publicly announced at the end of 2019 and confirmed on January 30, 2020 by WHO as a public health emergency of international concern.

COVID-19, like an infectious disease with new manifestations, has received extensive studies.

As reported by the Nature journal, up to January 30, 2020, at least 54 academic papers have published about COVID-19 in English-language. The main Chinese databases such as Wan Fang and China National Knowledge Infrastructure were searched by the authors.

Conducted surveys showed that only 23 Chinese-language papers have been published about COVID-19 up to February 3, 2020. The main focus of nearly all publications was on epidemiology, clinical characteristics of COVID-19, and the genetics and structure of severe acute respiratory syndrome coronaviruses (SARS-CoV-2).

Chinese researchers have published many articles in international journals on COVID-19 which increases the global concern about this disease. Because of the difficulty of the Chinese language, these findings cannot be directly in favour of health professionals in the frontline and policy makers. Also, to facilitate journalistic communication, global coordination, and timely response to the epidemic, it is important for health sciences that these papers to be published in English language journals.

Anyway, some Chinese media worried that Chinese researchers mainly focus on publishing papers about COVID-19 in international journals instead of paying attention to prevent the epidemic of this disease. Chinese Ministry of Science and Technology has encouraged researchers to publish their researches about COVID-19 in Chinese and focus on the prevention of epidemic.

Moreover, for facilitating a continuous exchange of knowledge between scientists from China and other countries in the world it has been emphasized to publishing clinical trials in English. The main desire of authors is to publish all the articles about COVID-19 in Chinese in addition to publishing in the English media.

For instance, clinical trials on SARS-CoV-2 and COVID-19 were translated into Chinese in every Lancet journal, and these translated papers were quickly made available in China for free.

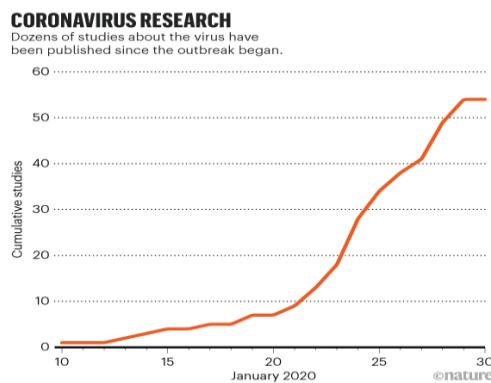
Publishing the articles extensively in both Chinese and English while distributing this information to frontline healthcare workers who require to investigate clinical and epidemiological properties of COVID-19, facilitates timely and important communication in the international scientific community.

By this strategy improves the available strategies of control coronavirus and eventually protects public health.

The Number of Articles that have been Published about the Novel Coronavirus

In response to the outbreak, every day a lot of printouts and research papers are registered in various medical journals around the world.

With regard to the publication of more than 50 research papers about the novel coronavirus in the past 20 days, scientists will be provided with the best comprehension of its pathogenicity and spread. Based on the most recent official reports, this virus could cause serious respiratory diseases that are deadly. Up to this time, the novel coronavirus has spread to 15 other countries and infected more than 7700 individuals in China which at least 170 of them have died.



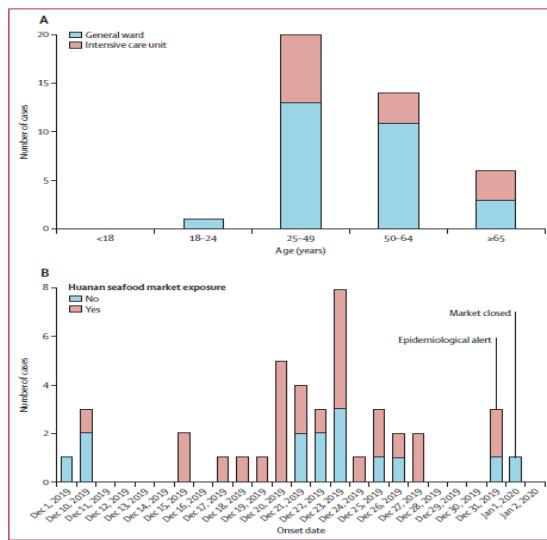
After the widespread of this virus in December, the rate of research activities on it has increased significantly because it was a new case in science. The terms 2019-nCoV or coronavirus have been used to search all available published articles on various medical databases of medRxiv, ChemRxiv servers, bioRxiv, Google Scholar, virological.org, Altmetric, scholarly-activity tracker, and related websites of the research.

From January 30, at least 54 paper about the novel coronavirus has been published in English.

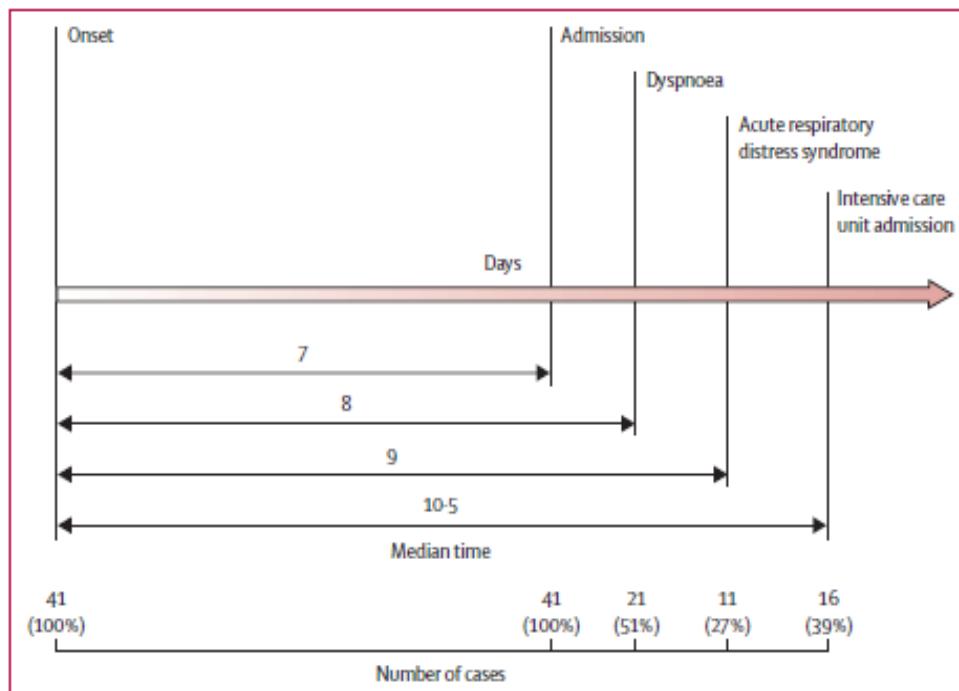
More than 30 people are in critical condition and a few are reviewed in various journals such as the Journal of Medical Virology and The Lancet, but Chinese-language journals not included. Several papers estimate how fast the virus will spread, how long the latency period or the incubation period is, and how long the symptoms will start after infection.

For the identification of pharmaceutical purposes and the development of an appropriate vaccine, some other studies have focused on the genetic structure of this virus. Moreover, the genomic data of this virus has been published by some researchers on some online database such as GenBank and GISAID.

COVID-19 in China by January 24, 2020



The disease onset and age distribution of patients with COVID-19 in China



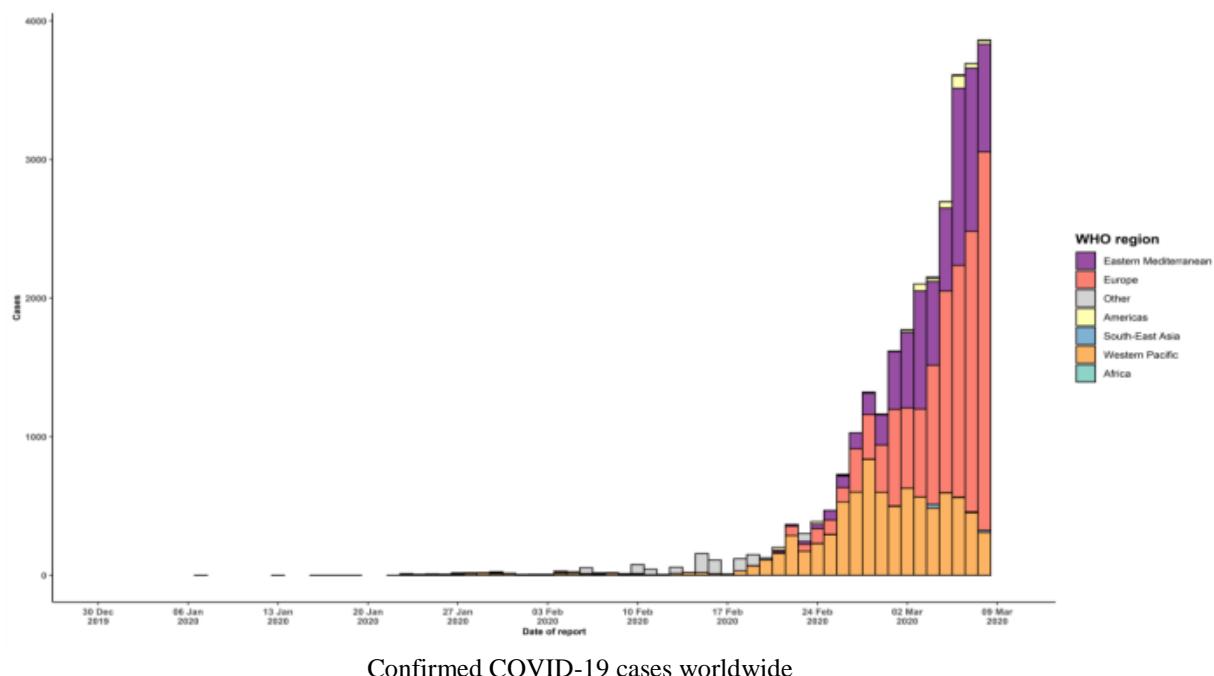
Time course of COVID-19 cases after diseases onset in China

COVID-19 in 104 Countries Since March 9, 2020 based on WHO's Latest Report (No. 49)

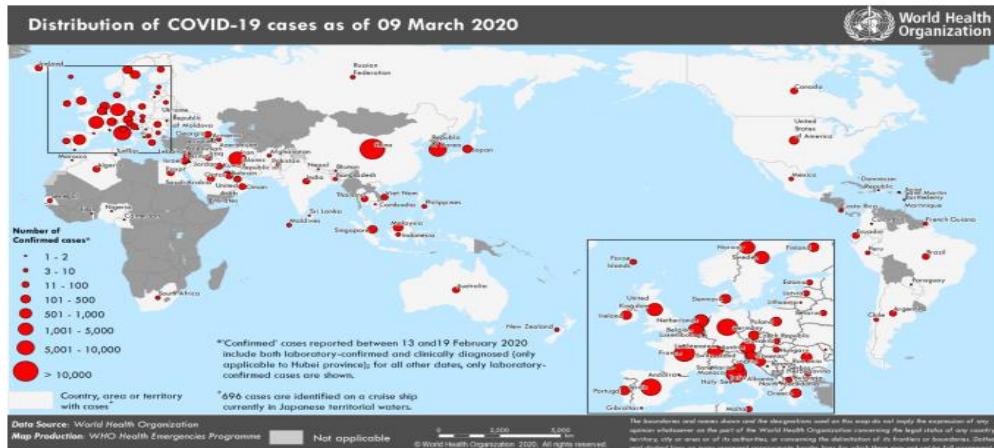
Worldwide: 109577 confirmed (3993 new), 3809 dead (225 new)

China: 80904 verified (45 new), 3123 dead (23 new)

Outside China: 28673 confirmed (3948 new), 686 dead (202 new)



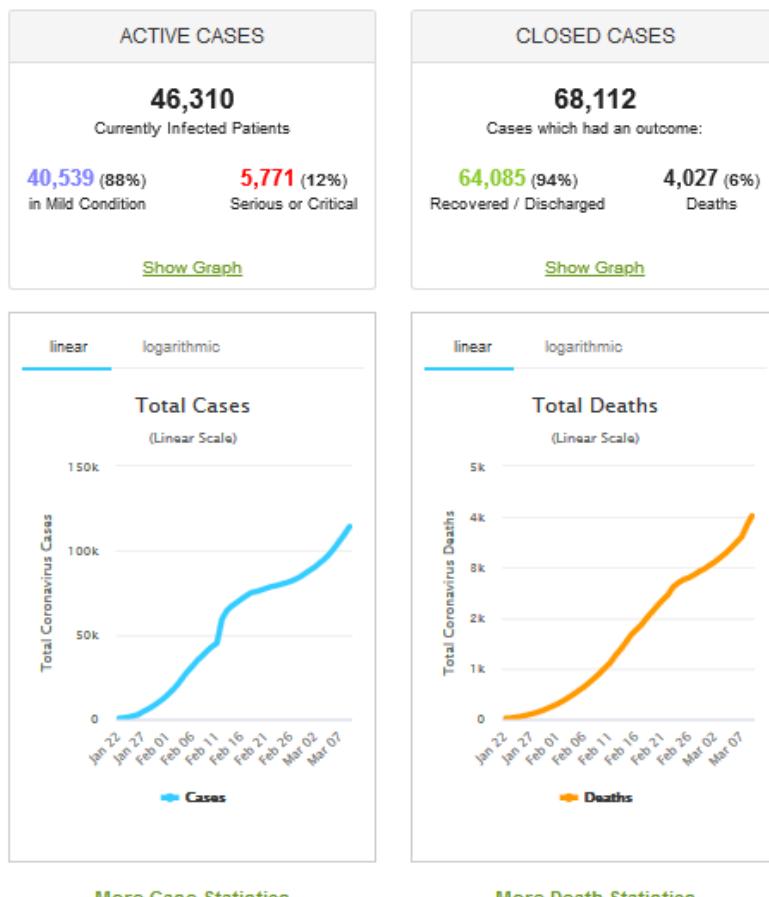
Confirmed COVID-19 cases worldwide



Map of confirmed COVID-19 cases outside China

COVID-19 Worldwide as of March 10, 2020 based on Worldometers Reports

Worldwide: 114422 confirmed, 4027 died, 64085 improved



Racist Labelling and False Information about the Epidemic of 2019-nCoV

It's clear that the worldwide spread of 2019-nCoV has had considerable adverse effects on global health. Due to the neighbourhood of Japan with China, this country has faced the destructive extension of 2019-nCoV. From February 10, 2020, 161 individuals have been infected with 2019-nCoV in Japan, in which 135 cases were the crew and passengers of a cruise ship which all put in quarantine in Yokohama, Japan. This was the second-largest reported infection after China. The emergence of racism and fake news about Chinese patients and visitors has reached a serious stage. On January 29, 2020, a Japanese social media source quoting a paper in the *Süddeutsche Zeitung*, questioned whether the Tokyo 2020 Olympics would be suspended?

Anyway, the paper just focused on the ongoing relationship between the WHO and International Olympic Committee without mentioning anything about the possibility of suspending the Olympic Games in Tokyo in 2020. Moreover, one of the most serious concerns among people is their excessive demand for surgical masks. Due to excessive demands of people to buy care equipment against this virus, medical facilities of intensive and urgent care centres have diminished. On the other hand, the emergence of false information led to the xenophobia of Chinese visitors and patients. The spread of fake news about that the main source of the novel coronavirus was from Chinese passengers from Wuhan with a fever who escaped from the quarantine of the Kansai International Airport was published on some social media channels. However, Kansai International Airport quickly denied the reality. Discrimination against the Chinese people is widespread in Japan. On Twitter, some labels were circulated that include Chinese visitors are filthy or even bioterrorist, and 'Chinese, Don't Come to Japan! The epidemiological dimension of 2019-nCoV is still unknown. Estimates of the number of replication and the dynamics of transmission are important to measure the effectiveness of the virus.

Among asymptomatic Japanese individuals who were returning from Wuhan, some cases were identified. There is a dominant demand for the investigation of the risk of the spread of this virus during the pre-symptomatic period.

Source and Spread of the Virus

A large family of coronaviruses is available among various species of animals such as bats, cows, cats, and camels. Unlike, MERS-CoV, SARS-CoV, animal coronaviruses can rarely infect human. This new virus spreading among human is known as SARS-CoV-2.

Like MERS-CoV and SARS-CoV, SARS-CoV-2 virus is a betacoronavirus. The main origin of all three of these viruses is bats. Recorded sequences from both US patients and those originally sent from China are similar, which could be considered as proof of the fact that the emergence of this virus is originally from the animal reservoir. At the initial stage of the outbreaks, many researchers believed that the main origin of this virus is linked to living animal markets and large seafood, indicating the transmission of the virus from animal to human. Later on, an increasing number of patients who were not exposed to the animal market indicated the animal-to-human transmission. Outside of China, in the United States, the spread of the disease through human-to-human transmission has been reported.

Sustained human-to-human transmission of the virus has been reported by Chinese officials. In addition, another target of the apparent spread of the disease is the whole community. This means that some people are infected who are not sure how or where they are infected.

Spread of COVID-19 has also been observed among passengers through human-to-human transmission as well as in close contact with deported passengers from Wuhan in the United States.

Severity of the Disease

MERS-CoV and SARS-CoV have both been recognized as severe diseases. The complete clinical picture regarding COVID-19 is not fully understood. Reported diseases varied from mild to severe, including those that resulted in death.

Further research is being done to find out more. As a crucial situation, it could be spread rapidly and with access to <http://annalsofrscb.ro>

new information, information is being updated.

Risk Assessment

One of the main concerns of public health organizations is to prevent the prevalence of new virus infections in society. However, the characteristics of the virus could affect the risk of its outbreak. These risk factors include how prevalent it is, how severe it is, and the medical or other measures available to control the impact of the virus (e.g. vaccines and medications).

The potential public health threat posed by COVID-19 is enormous globally. The novel coronavirus could easily cause illness, leads to death and could be easily transmitted from human-to-human. All the mentioned risk factors have marked this virus very dangerous that meet two criteria for an epidemic. It is not yet clear how the situation will unfold, but the risk depends on exposure. Currently, some people increase the risk of infection, for example health care workers who care for patients with COVID-19. For the American public, who are unlikely to be exposed to the virus, the immediate health risk of COVID-19 is currently low.

How COVID-19 Spreads?

Our comprehension of the outbreak of the novel coronavirus is mainly based on previous knowledge about similar coronaviruses.

Human-to-human

The novel coronavirus spreads, particularly from human-to-human:

- When the distance between people is less than 6 feet.
- Through respiratory droplets that an infected person sneezes or coughs.
- The droplets could be inhaled in the lungs or land in the mouth or nose of people nearby.

By Touching Contaminated Objects or Surfaces

- The infection could be transmitted to the body when the person touches a contaminated object or surface and then touching their eyes, nose, or mouth. Anyway, this way of transmission is not supposed to be the main way.

When COVID-19 Spreads?

- People think the risk of contagion is high when they have the most symptoms.
- It may be before the symptoms occur. There have been reports of this new virus, but this is not thought to be the main way.

COVID-19 Spreadability

The expansion way of this virus varies from person to person. Some viruses are less contagious, while some others like measles are highly contagious. One other risk factor is the possibility of the spread of this virus over human generations. The novel coronavirus is capable of spreading steadily and easily to other areas of China.

Symptoms

For confirmed cases of Coronavirus 2019 (COVID-19), reported diseases ranged from mild symptoms to severe illness, and death. Symptoms include:

- Fever

- Cough
- Shortness of breath

The CDC believes that after exposure to the novel coronavirus, the symptoms of COVID-19 may appear between 2-14 days. This period of time has been determined based on the replication period of MERS-CoV viruses.

Prevention and Treatment

Prevention

Unfortunately, there is not any vaccine for the prevention of COVID-19 yet. So, the prevention of exposure of individuals to the virus is the best way to prevent disease. Anyway, there are a set of recommendations prepared by the CDC that are suitable for daily prevention purposes to prevent the spread of respiratory diseases, that include:

- Keep distance from individuals who seem to be ill.
- Do not touch your mouth, nose, and eyes.
- Do not leave home when you are ill.
- Have a napkin with you to cover your sneeze or cough (Do not throw it in the environment).
- Clean and disinfect the surfaces and objects with disinfectants.
- Wear face mask based on the CDC's recommendations.
- Based on the CDC recommendations healthy people should not wear a face mask for prevention against respiratory diseases such as COVID-19.
- COVID-19 patients should use face masks to prevent from spreading the disease. Wearing face masks is also important for health care workers and for people who care for someone in a nearby location (at home or in a health center).
- Wash your hands with soap and water for at least 20 seconds, especially before eating; and after blowing your nose, coughing, sneezing, and going to the bathroom. If soap and water are not readily available, use an alcohol sanitizer that contains at least 60% alcohol. If your hands are clearly dirty, wash your hands with soap and water.
- Wash your hands based on the recommendation of CDC handwashing protocols.
- For gaining particular information about health care, review the CDC Guideline for Hand Hygiene in healthcare settings.
- This is a daily habit that can help prevent the spread of several viruses. The CDC has specific guidelines for travelers.

Treatment

- People with COVID-19 should seek supportive care to help relieve symptoms. In severe cases, treatment should support vital organ function.
- People who think they may be exposed to COVID-19 should contact their health care provider immediately.

In Acute Respiratory Failure Situations, Minimize the Transfer of 2019-nCoV Patients to the Hospital

Three twentieth-century influenzas, in 1918, 1957, and 1968, killed millions of people, mostly from acute respiratory failure. More recently, the prevalence of severe acute respiratory syndrome coronavirus in 2002 and the Middle Easter respiratory syndrome coronavirus in 2012 has been characterized by human-to-human transmission and high incidence of acute respiratory failure. An alarm for the new Coronavirus (2019-nCoV) raised from China brings out the rapidly-spreading epidemic of the past.

One of the most common and effective treatments for patients with mild to moderate respiratory failure is non-invasive ventilation (NIV). In comparison with mechanical ventilation by the endotracheal tube or spontaneous breathing, the NIV method decreases the mortality rate which is supported by different randomized trials. The NIV

method is used increasingly by intensive and urgent care units.

In the situation of using the NIV method for treatment of acute respiratory failure cases, this method applied to the patients by a helmet or face mask.

Because coronavirus is transmitted via droplets, aerobic activities during hospital procedures such as intubation or bronchoscopy may be of great concern and put other patients and health care workers at risk like influenza pandemics.

As shown in various simulation studies, at the time of applying the NIV method aerosols, amplified by infectious disease, can potentially occur around the face mask. Therefore, the safety and effectiveness of applying the NIV method during virus epidemic infection is still controversial.

Anyway, during epidemics, the number of beds in the intensive care units for applying mechanical ventilation by endotracheal intubation would not be adequate, while non-invasive ventilation can also be provided outside the intensive care unit.

To increase safety during non-invasive ventilation, a helmet as a non-invasive ventilation interface can be used to prevent aeration when connecting the helmet without air-dispersion through spring-valves. Unfortunately, the cost of a helmet is more than a face mask. Correspondingly, during epidemics of major viruses, when dealing with patients with acute respiratory failure, as an NIV method it is recommended to use a face mask or a helmet. In addition, the authors recommend that manufacturers should increase the production of safe and inexpensive NIV equipment for viral disease situations.

Frequently Asked Questions and Answers about Coronavirus Disease 2019 (COVID-19)

1. What is a novel coronavirus?

It a new coronavirus that has not been identified before. The virus that causes Coronavirus 2019 (COVID-19) is not as common as coronaviruses that circulate among humans and cause colds.

Diagnosis with coronavirus 229E, NL63, OC43 or HKU1 is not the same as COVID-19. Patients with COVID-19 are evaluated and cared for differently than patients with a common coronavirus diagnosis.

2. Why it is called Coronavirus 2019, COVID-19?

On February 11, 2020, the World Health Organization announced the official name of the disease, first identified in Wuhan, China. The new name for the disease is Coronavirus Disease 2019, abbreviated COVID-19. This disease formerly referred to as 2019-nCoV or novel coronavirus 2019.

There are several types of viruses causing mild upper respiratory tract infection. COVID-19 is a new disease that has never been seen in humans before.

3. What is the virus name of the disease?

On February 11, 2020, the International Committee on Taxonomy of Viruses, named the novel coronavirus, first identified in Wuhan, China, Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2).

As the name suggests, it is related to SARS-dependent coronavirus (SARS-CoV), which caused the Severe Acute Respiratory Syndrome (SARS) in 2002-2003, though the virus is not the same.

4. What is the source of the virus?

Health officials are working to identify the major source of the COVID-19 animal-associated virus. Coronaviruses are a large family of viruses that are common in many different species of animals including camels, cows, cats, and

bats. Genetic analysis of the virus indicates that it originated in bats, but whether the virus came directly from the bats or that there was a host of intermediate animals remains still unclear. SARS-CoV is another bat-born coronavirus which spreads through cats, while MERS-CoV is transmitted through camels.

5. How does the virus spread?

The new coronavirus appears to be spreading from human-to-human. Learn what is known about the COVID-19 spread.

6. What to do if you are a patient with Coronavirus 2019 (COVID-19)?

If you have been ill with fever, cough or difficulty breathing for the past 14 days, you should:

- Seek medical advice before going to the doctor's office or emergency room. Tell them about your recent trip and your symptoms.
- Avoid contact with others.
- Do not travel while you are ill.
- When coughing or sneezing, cover your mouth and nose with your napkin or sleeve (not your hands).
- Wash your hands with soap and water immediately after coughing, sneezing or blowing your nose. If soap and water are not readily available, you can use an alcohol sanitizer that contains at least 60 percent alcohol. If your hands are clearly dirty, wash your hands with soap and water.

7. What measures you should take to prevent COVID-19 from spreading?

If you are infected with COVID-19 or suspected to infection, follow these steps to prevent the disease from spreading:

- Stay at home (do not leave home except for medical care). Except for receiving medical services, any outside activities should be limited. Avoid using taxis or public transport, do not go to work, public areas, and school.
- Keep distance from animals at home and other people in him and society.
- Before visiting your doctor contact him/her.
- If you have a medical appointment, call your health care provider and tell them you have COVID-19 or you may be infected.
- Wear a face mask.
- Before entering the health care provider's office, cover your face. If you are unable to wear a face mask (for example, if it causes breathing problems), people who live with you should not stay in the same room with you, or have to cover their face if they enter your room.
- Cover your cough and sneeze. When coughing or sneezing, cover your mouth and nose with a napkin. Throw the used napkins into the trash bin. Immediately clean your hands with an alcohol-based hand sanitizer which contains 60 to 95 percent alcohol or wash your hands with soap and water for at least 20 seconds. If your hands are clearly dirty, soap and water should be used preferably.
- Regularly clean your hands with an alcohol-based hand sanitizer which contains 60 to 95 percent alcohol or wash your hands with soap and water for at least 20 seconds. If your hands are clearly dirty, soap and water should be used preferably. Don't touch your mouth, nose, and eyes with unwashed hands.
- At home do not share your personal household items with other family members. Do not share your cups, mugs, drinks, and foods, bedding, and towels with others in your home. After using any kitchen utensils, wash them immediately with soap and water.
- All surfaces that are high-touch should be cleaned daily. These surfaces are such as desk, worktop, bedside table, toilet, bathroom accessories, phone, tablet, and keyboard. Clean all the surfaces that contain body fluids, stool, and blood. Following the label instructions clean the household with wipe or spray. For safe and effective application of the cleaning products use their instructions labels. For instance wear protecting gloves and install appropriate ventilation while using the products.
- You should always monitor the health symptoms. If the illness is worsening, immediately seek medical

attention. Contact your healthcare provider and tell them about your COVID-19 disease. Before leaving home and going to medical centre put a face mask. Providing health care recommendations for healthcare provider's office keep all the referees from getting infected or exposed to the novel coronavirus. Ask your healthcare provider to call the local or state health department. All the patients who affected with the novel coronavirus and placed under active monitoring or facilitated self-monitoring must follow instructions provided by their occupational health professionals or their local health department. Before going under the instructions provided your local health department check the department working hours.

- When you called the medical emergency centre, notify the dispatch personnel that you have been affected with COVID-19 and you should be evaluated about that. Before the arrival of emergency medical services, put on a face mask.
- Keep home isolation; patients who detected with the novel coronavirus shouldn't leave their home until the risk of transmission of infection to other decreases. Making decisions about discontinuing precautions of home isolation should be made just under consultation with state and local health departments and healthcare providers.

COVID-19 Stigma

Some people are worried about the disease. Fear and anxiety can lead to social stigma against Chinese or other Asian Americans. Stigma and discrimination can arise when people link an infectious disease such as COVID-19 to a population or nationality, even if not everyone in that population or territory is specifically at risk. Stigma occurs by causing more fear or anger toward normal people instead of the diseased. We can fight stigma and stigmatization, and we will help hurt people by providing social support. We can relate the fact that being Chinese or Asian American does not increase your chance of getting or spreading COVID-19.

- The confidentiality and privacy of individuals who are a participant of an investigation organization or those seeking health care should be protected well.
- Communicate with people, places, and products that are risky at the right time.
- Society's awareness about COVID-19 should be increased without causing fear.
- All detailed information about the way that virus spreads should be shared publicly.
- Increase the awareness of individuals about the risks of public activities during the COVID-19 pandemic and any other negative behaviours and negative social media statements.
- Make sure that shared information does not reinforce stereotypes.
- Keep appropriate contact with destigmatizing groups.
- Provide adequate social support for people who just returned from China or are concerned about themselves, relatives, or their friends. People, including Asian-Americans, who have not recently travelled to China or contacted someone who have not confirmed or suspected COVID-19 are at lesser risk than other Americans for spreading COVID- 19.
- Viruses cannot target people from particular populations, ethnicities, or racial backgrounds. Providing social support during the COVID-19 outbreak could be very helpful to them.
- Be sure that individuals who have returned from China for more than two weeks and are without any symptoms have not been infected.
- People who have travelled to areas where COVID-19 outbreaks occurred can be of great help by helping to prevent the disease from spreading.
- Helping to fight the outbreak can be a spiritual and emotional challenge. The infected need social support upon return.

8. Can anyone with COVID-9 transmit the disease to others?

The novel coronavirus could easily spread from human-to-human. For this reason, the CDC recommends that patients with COVID-19 be separated, whether in the hospital or at home (depending on the extent of the illness), to prevent the virus from spreading.

9. How long the patient is seriously ill?

Depending on various factors, it differs. Accordingly, decision to release the person from isolation should be made by consulting with physicians, infection prevention and control specialists, and public health officials, taking into account the characteristics of each condition, including severity of disease, symptoms, and the laboratory results of the patient.

10. The CDC's current guidelines of release from isolation are provided on a case-by-case basis and include

- The patient is fever-free without the use of fever-reducing drugs.
- The patient no longer shows symptoms such as cough.
- The patient is negative in at least two consecutive respiratory tests conducted in at least 24 hours interval.
- It seems that one who is discharged from isolation may not endanger others.

11. Can anyone who has been quarantined transmit the virus to others?

Quarantine means separating a person or group of people who have been exposed to a contagious disease but have not yet showed the symptoms to prevent from its possible spreading. During the transmission period of contagious diseases, quarantine restriction is considered, in which people become ill after being exposed to the disease. From the last exposure to COVID-19, the quarantine period is 14 days, that estimated to be the longest period of virus transmission in comparison with other similar coronaviruses.

12. Is SARS-CoV-2 same as the MERS-CoV or SARS-CoV?

Coronaviruses are a large family of viruses that are common in many different species of animals including camels, cows, cats, and bats. Unlike, MERS-CoV, SARS-CoV, animal coronaviruses can rarely infect human. The SARS-CoV-2 that has recently emerged is not like coronavirus that caused Middle East Respiratory Syndrome (MERS) or Severe Acute Respiratory Syndrome (SARS). Genetic analysis indicated that SARS-CoV-2 is associated with SARS-CoV prevalence.

13. Does the CDC recommend the use of a face mask to prevent COVID-19?

The CDC does not recommend use of face masks for normal people, except healthcare providers. The face mask should be used by people who have COVID-19. Wearing face masks is important for health care providers and others who care for someone with COVID-19.

14. What are the complications and symptoms of COVID-19?

The most recent reported symptoms for COVID-19 patients are such as fever, cough, difficulty breathing, and severe respiratory illness.

15. Should I be tested for COVID-19?

If you have travelled to China within the last 14 days, and have a cough, shortness of breath, or any other respiratory symptoms, you should contact a health expert.

16. What does positive and negative COVID-19 mean?

The negative result in a diagnostic test of CDC means that the person is not affected with COVID-19. However, in the early stages of infection, the possibility of detection of this virus is low. In a person who has symptoms while whose CDC test result is negative, it could be suggested that the person's symptoms are because of the novel coronavirus.

17. What should health experts do?

For accessing appropriate guidelines and recommendations about infection control, investigating this virus, guidelines about how to use personal protective equipment, isolation, and home care, see published information by healthcare experts. Refer to Lab Information for sample collection and shipping. To access the available data about the issue of public health experts on COVID-19, check the available data published by public health specialists.

18. Will warm weather prevent the outbreak of COVID-19?

Currently, it is unclear. Some other viruses, such as the common cold and the flu, spread mostly in the colder months, though it does not mean that you may not get these viruses in other months. The transmission, intensity, and other features associated with COVID-19 is still under investigation.

COVID-19 and Animals

19. What about animals or animal products imported from China?

The CDC has no evidence to suggest that animals or animal products imported from China increase the spread of COVID-19 in the United States. The available situation is rapidly evolving, new information is added and is updated daily. The United States Fish and Wildlife Service (FWS) and the United States Centres for Disease Control and Prevention (CDC, USDA) have critical and complementary key roles in regulating imported goods, live animals, and the production of animals.

20. Do I have to worry about pets or other animals and COVID-19?

While the virus appears to have originated from an animal source, it is now spreading from human-to-human. There is no reason to think that any animals or pets could be a cause of infection with coronavirus.

21. Should I avoid contacting with pets or other animals if I get the disease?

Do not take care of pets or other animals during illness. Although it has not been reported that pets or other animals are infected with COVID-19, various types of coronaviruses can cause disease in animals. Avoid contacting with animals and use a face mask if you need to be around animals or care for your pet.

Conclusion

The prevalence of COVID-19 has become a clinical threat to the general population and health care personnel worldwide. However, knowledge about this new virus is limited. An effective antiviral treatment and vaccination option is currently under investigation and development. What we can do now is to take infection control measures to prevent the spread of the virus through human-to-human transmission. Public health authorities should also monitor the situation. The more knowledge about this new virus and its prevalence, the better the countermeasures will be. It is hoped that with the discovery of vaccines, drugs and treatments affect the new coronavirus in the near future.

Final Recommendation

Given the origin of the COVID-19 disease mentioned earlier, it seems that the nutrition and hygienic recommendations of Islam, especially halal food, should be taken into serious consideration. Not to create stress and anxiety among the people, while advising and educating people to abide by all the principles of health, is also important to maintain peace of mind to fight against the disease.

In the end, although Internet, including social networks has greatly increased the availability and dissemination of knowledge, it has also the potential to develop and disseminate false information and fake news. Governments have the task of providing accurate knowledge to help people deal with this new infection. Because rumorizing, scaring people and increasing stress and anxiety among patients could disrupt the process of health care services.

References

- [1] Khan, Z.H., Samadi, S., Makarem, J., & Mireskandari, S.M. (2020). Tests with proven value in diagnosis of COVID-19. *Iranian journal of microbiology*, 12(3), 261-262.
- [2] Hui, D.S., Azhar, E.I., Madani, T.A., Ntoumi, F., Kock, R., Dar, O., & Petersen, E. (2020). The continuing 2019-nCoV epidemic threat of novel coronaviruses to global health—The latest 2019 novel coronavirus outbreak in Wuhan, China. *International journal of infectious diseases*, 91, 264-266.
- [3] Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., & Cao, B. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. *The lancet*, 395(10223), 497-506. [https://doi.org/10.1016/S0140-6736\(20\)30183-5](https://doi.org/10.1016/S0140-6736(20)30183-5)
- [4] <https://www.worldometers.info/coronavirus>
- [5] <https://www.nature.com/papers/d41586-020-00253-8-NEWS> 30 January 2020
- [6] Xiang, Y.T., Li, W., Zhang, Q., Jin, Y., Rao, W.W., Zeng, L.N., & Hall, B. J. (2020). Timely research papers about COVID-19 in China. *Lancet*, 395(10225), 684-685. [https://doi.org/10.1016/S0140-6736\(20\)30375-5](https://doi.org/10.1016/S0140-6736(20)30375-5)
- [7] Hui, D.S., Azhar, E.I., Kim, Y.J., Memish, Z.A., Oh, M.D., & Zumla, A. (2018). Middle East respiratory syndrome coronavirus: risk factors and determinants of primary, household, and nosocomial transmission. *The Lancet Infectious Diseases*, 18(8), e217-e227. [http://dx.doi.org/10.1016/S1473-3099\(18\)30127-0](http://dx.doi.org/10.1016/S1473-3099(18)30127-0)
- [8] Chen, Y., Liu, Q., & Guo, D. (2020). Emerging coronaviruses: genome structure, replication, and pathogenesis. *Journal of medical virology*, 92(4), 418-423. <http://dx.doi.org/10.1002/jmv.25681>
- [9] Van Der Hoek, L. (2007). Human coronaviruses: what do they cause?. *Antiviral therapy*, 12(4 Pt B), 651-658.
- [10] Van Der Hoek, L., Pyrc, K., Jebbink, M.F., Vermeulen-Oost, W., Berkhout, R.J., Wolthers, K.C., & Berkhout, B. (2004). Identification of a new human coronavirus. *Nature medicine*, 10(4), 368-373. <http://dx.doi.org/10.1038/nm1024>