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Corona virus, most important symptoms, signs and prevention

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Abstract
Our current research includes a study of the most common symptoms, and signs of corona virus disease, which appear in the form of fever, cough and shortness of breath. As for muscle pain, sputum, and sore throat, it is not considered a common symptom. One of the most important preventive means includes washing hands, covering the mouth and nose when coughing, maintaining sufficient distance between individuals, emphasizing the wearing of protective medical masks for the face (masks) in public and private places, and parting people that suspected of being infected with the corona virus apart of healthy people and transferred them to viral diseases section in the nearest hospital.

Keywords: corona virus, symptoms, signs and prevention

Introduction

Corona virus belongs to a subfamily of (single-stranded, positive-chain enveloped RNA viruses) that infect birds and mammals, and it is a coronavirus. The first sample of the Corona virus was identified in 1920, it is an infectious virus that causes bronchitis that affects animals, including chickens, and then corona viruses that infect humans were discovered causing colds in the year 1960. The Corona virus is so named because of its appearance, which is seen under an electron microscope, which looks like a halo or a crown (proteins like spines on its outer surface) [1, 2, 3]. The genome of corona viruses ranges between (26 – 32) thousand nucleotides, and it is considered one of the longest genomes among the types of RNA viruses. It encodes four structural proteins; are spike (Glycoprotein) (S), envelope (E), membrane (M), nucleocapsid (N) and, in some viruses, a fifth protein, hemagglutinin esterase (HE) as well as the replicate gene and several accessory proteins. In addition to maintaining its structure, the virus possesses these proteins to perform multiple functions, including promoting infection and resisting host immune responses. The spike protein works by binding to the receptors on the surface of the host cell and works to integrate the viral envelope with the cell membrane of the host cell in order to enter the cell interior, and it reaches the cytoplasm and works with some non-structural proteins to reorganize the inner membrane and thus create replication organelles that Both transcription and replication occur [4, 5]. A large number of people who were exposed to Covid-19 disease suffered from accumulated health problems, such as high blood pressure and diabetes, in addition to cardiovascular disease, and other diseases from which some of the patients still suffered, while the other section suffered from the patient until after recovering. And this is one of the reasons for deaths among patients who recovered from the disease, but complications remained, as they affected the events of weakness in the immune system and its failure to respond to treatment, or affected the occurrence of physiological or tissue problems within the body of the patient who recovered.

Terms Related to Corona Virus

In February 2020, the World Health Organization (WHO) announced that COVID-19 is the official name for the disease Corona Virus. The Director of the World Health Organization indicated that the syllable (CO) refers to Corona, the syllable (VI) refers to virus and the syllable (D) means disease, while the number 19 refers to the year, and the outbreak of this was announced the new serious disease was officially announced at the end of December 2019. The Director of the World Health Organization stated that the purpose of choosing the name was to avoid linking the disease to any geographical region, especially China, as well as not to link it to any type of animal or group of people, in line with international recommendations aimed at naming diseases in a way that prevents the creation of incitement socially [6, 7]. On the other hand, the infection with Covid-19 disease, according to what the World Health Organization claimed, is that the virus responsible for the disease is called the Corona virus 2, associated with severe acute respiratory syndrome (SARS-Cove 2). The virus was previously called the 2019 novel coronavirus, while the World Health Organization also uses the designation COVID-19, or the virus responsible for COVID-19, in public speeches or conversations [8].

Symptoms and signs

A recent study found that the symptoms and signs associated with infection with corona virus come in groups, not individuals. Accordingly, and because there are 6 types of Covid-19 disease caused by infection with the corona virus, those infected with the two diseases may develop symptoms similar to the flu such as fever, cough, shortness of breath and other symptoms and signs associated with infection with the corona virus [9, 10]. Diarrhea and the rest of the upper respiratory symptoms represented by sneezing and runny nose are among the least common symptoms and signs [11], but these cases can develop into pneumonia or multiple organic disorder in risk groups, in which case the patient is out of control, and exposed to death at any moment. Fever and suffocation are the most common symptoms, although some elderly people and those with other health problems develop fever and low blood oxygen later in the course of the illness. In some studies, 44% of people developed a fever while 89% developed a fever at some point during hospitalization as shown in (table no.1). The absence of fever during the examination does not prove that the person is free of the disease.

Table 1: Represents the percentages of the most important symptoms that patients with corona virus may suffer, according to the statistics of the World Health Organization (WHO) (12).

Symptoms	Percentage
fever	87.9%
dry cough	67.7%
general fatigue	38.1%
sputum production	33.4%
hard breathing	18.6%
Muscle or joint pain	14.8%
Sore throat	13.9%
headache	13.6%
lugs	11.4%
Nausea and vomiting	5.0%
diarrhea	3.7%
Hemoptysis	0.9%
conjunctival hyperemia	0.8%

Other common symptoms that Corona patients experienced include fatigue, coughing, shortness of breath, loss of appetite, muscle and joint pain, in addition to the discharge of phlegm. Other symptoms, such as nausea, diarrhea, and vomiting, were also recorded in varying degrees. Less common symptoms include sneezing or a runny nose, as well as a sore throat. There are cases in China that initially appeared as chest tightness and palpitations, and there are cases that led to poor sense of smell and taste. While 30% of confirmed cases experienced a loss of sense of smell, specifically in South Korea. The incubation period for coronavirus is usually (5-6 days), and it may be (2-14 days). According to the statistics of the World Health Organization, the approximate time from the onset of symptoms until the clinical improvement of mild cases of the disease has been estimated to be about two weeks completely, and may reach approximately (3-6 weeks) in most severe or critical cases. Preliminary evidence has indicated that the time between the onset of symptoms and the observed development of the disease, which includes lack of oxygen, is only one week. While the time period from the onset of symptoms to death in victims of the disease ranges from (2-8 weeks) [12].

Prevention

Since it is not possible to provide the appropriate vaccine for the Corona virus of all kinds and strains that are associated with severe respiratory syndrome before so far, so it must be based on attention to the necessary measures to reduce the peak of the pandemic, this is called “flattening the pandemic curve.” These measures are similar to the preventive measures recommended in order to reduce the possibility of transmission of the disease and the spread of infection between people. Staying at home, avoiding travel and engaging in social activities were among the most important preventive and successful measures to reduce infection with the Corona virus, washing hands frequently with soap and hot water, applying good respiratory hygiene conditions, and avoiding touching the eyes, nose or mouth with unwashed hands. It is one of the most important preventive measures to avoid infection with the Corona virus [13].Slowing down the spread of infection with the Corona virus helps reduce the possibility of stressing medical personnel and thus providing the necessary health services, and this allows the infected to obtain better health care, It frees up more time for an appropriate vaccine or specific treatment to be developed. The use of a medical mask was one of the most important means of prevention and limiting the spread of the disease, especially if a person coughs or sneezes, or when this person serves and takes care of another infected person or someone suspected of being infected. It is very important to throw masks in the appropriate places (biological waste containers) after using them during the prevention period [14, 15, 16, 17]. There are important treatment recommendations published by both the World Health Organization (WHO) and the Chinese National Health Commission for the treatment of people with Covid-19, including avoiding the use of methylprednisolone unless the disease is mixed with the occurrence of acute respiratory distress syndrome [18, 19, 20].

Personal protective equipment

The necessary measures must be taken in the event of confirmation of infection with the virus after conducting a clinical examination, and the most necessary precautions should be taken when providing a therapeutic service, especially when this service includes a group of interventions such as intubation of the patient, and other measures that lead to the volatilization of respiratory droplets. The Epidemic Control Center has identified the equipment needed for personal protective equipment and is emphasizing that health care providers must wear them when dealing with a person infected with COVID-19 [18, 19]:

1. gown.
2. medical mask or respirator.
3. goggles or face shield.
4. Gloves.

Automatic ventilation

Some cases of COVID-19 may need to use mechanical ventilation (which is artificial assistance that supports the patient's breathing), but there are a percentage of cases that do not need it. But the need for mechanical ventilation is common to everyone, especially elderly patients (people over the age of 60, especially those over the age of 80). The need for mechanical ventilation is considered among the most necessary means of treatment within the health sector, since the virus, when it infects the lungs, works to disrupt the process of oxygen taking by the epithelial lining of the pulmonary alveoli, which is the place to which the virus attaches and enters the cells through it. for doubling [21, 22, 23].

Experimental treatments

Some antiviral treatments have been tried in people with severe disease. The World Health Organization (WHO) recommended that the largest number of volunteer patients participate in clinical trials that study the efficacy and safety of the proposed treatments. There is a number of empirical (unconfirmed) evidence for the efficacy of (Remdesivir) drug, which has been trialed as of March 2020. China has also studied the possibility of using another drug that included (Lopinavir/Ritonavir) and also recommended the use of (Nitazoxanide) in larger trials on Some organisms after showing inhibition of SARS-CoV-2 virus after it was used in low concentrations for this purpose [24, 25].

Conclusions

It is concluded from our current research that studies related to infection with the Corona virus gave important results through which researchers were able to reach an end to infection with the Corona virus, and this matter came by highlighting the most important characteristics that this virus possesses. In addition, the study of the most important symptoms and signs associated with infection with the Corona virus leads to knowing how to deal with infection with the disease and monitoring cases by specialized doctors, and the most important means of preventing the disease must be considered before the situation worsens and multiplies, that this study provides the opportunity for the Researchers believe that there is a global possibility to develop the appropriate treatment that eliminates the Corona virus.

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