

CHANGES IN THE CIRCULATORY SYSTEM AFTER COVID-19

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For half a year now, scientists and doctors around the world have been trying to assess the damage caused by Covid-19 to the human body, but despite more than 400,000 deaths, millions of patients and thousands of studies and reports, a complete conclusion has not been reached. Data obtained by British researchers show that the first symptoms of the disease can appear, disappear and be observed again in 30 days or more, which is significantly longer than the official two-week period set by WHO experts. . For some, the disease may be the beginning of a long and painful fight against the virus, and it is possible that it will turn into a new "postcoronavirus syndrome". According to the authoritative journal Science, this type of coronavirus "does things that no disease known to mankind has ever done."

As the authorities take measures to stop the spread of the infection, and doctors search (in vain) for a drug or vaccine to defeat the disease, we learn new things about the coronavirus, and our perceptions about it change.

At first it seemed to be a common respiratory disease like SARS or bird flu, but later it became clear that the coronavirus (its official name is SARS-CoV-2) affects the lungs, brain, nasopharynx, eyes, heart, blood vessels. , it turned out that it can affect the liver, kidneys and intestines, that is, literally all vital organs. According to research so far, Covid-19 has a variety of symptoms, and for those with severe disease, the long-term consequences can be serious, ranging from blocked lung tissue and kidney failure to inflammation of the heart muscle. , arrhythmia, liver damage, cognitive impairment, psychosis with sudden mood swings, etc.

The effects of the disease on humans have yet to be determined, but the effects of the disease continue to be felt even by those with a mild form. Another important question arises: can the SARS-CoV-2 virus remain dormant in the human body and not manifest itself in one form or another for several years? This is not surprising, doctors say, because viruses of this nature are known to science. For example, after a person contracts chicken pox, the herpes virus that causes it does not go away, it can hide quietly for decades and at the right time it can cause a painful rash. The virus that causes hepatitis B can cause liver cancer many years later.





Even months after recovery, the Ebola virus found in the eye fluid of former patients causes blindness in 40 percent of those infected.

Therefore, taking into account that SARS-CoV-2 damages the lungs more, doctors assumed that the virus causes irreversible changes in the respiratory system.

Lungs

As early as March, experts from Wuhan University of Technology reported that 66 of 70 patients with pneumonia caused by Covid-19 showed lung damage in CT scans.


These injuries range from blockage of blood vessels in the alveoli to scarring of the lung tissue. This scarring or thickening of the tissue is called pulmonary fibrosis and causes shortness of breath. There is currently no way to stop or reverse this process. "Fibrosis can stabilize and not change over time, that's a fact. In some patients, lung function does not fully recover, but the consequences are not serious. But there are also cases of progressive fibrosis, and these are very dangerous and eventually lead to death," explains Louise Wayne, a professor at the University of Leicester. In addition, before strict quarantine was introduced in the UK, the Faculty of Intensive Care Medicine (FICM), a professional medical organization specializing in the training of intensive care doctors in the UK, said that patients experiencing a severe form of Covid-19 could take up to 15 years for their lungs to recover. they warned that he might get seriously injured.

According to the FICM, the majority of patients admitted to the intensive care unit have acute respiratory distress syndrome (ARDS) - the most severe inflammation of the lungs, in which fluid from the blood enters the alveoli, resulting in breathing without special equipment. becomes impossible to obtain. Given the history of lung tissue damage in patients with SARS and MERS, a medical team led by University of California, Los Angeles radiologist Melina Hussaini began monitoring Covid-19 patients and assessing whether their lungs had "long-term or permanent damage, including to assess fibrosis" is strongly recommended.

Heart and blood vessels

Doctors are facing a much-anticipated problem as they try to assess the damage to various organs of Covid-19 patients: people with lung, heart, kidney or blood diseases are usually the first victims of the coronavirus, and the disease often progresses seriously. did Therefore, it is not always possible to determine what caused the virus and what was the situation before it. However, one thing is certain: when the symptoms of infection begin to appear, the functioning of many organs is disrupted, and the failure of one leads to the failure of others.





The acute inflammatory process leading to stroke and infarction also plays its role. According to a March report published in the specialized medical journal *Cardiology*, almost 20 percent of 416 patients examined at Wuhan hospitals had heart muscle damage.

Arrhythmia was recorded in 44% of 36 patients in intensive care units of the same place.

Doctors attribute this to hypercytokinemia, or a cytokine storm, which is a lethal reaction of the body that causes uncontrolled activation of immune cells, which leads to the destruction of tissues in the center of inflammation. The reaction has been observed in some patients infected with the coronavirus.

In particular, inflammation of the heart muscle (myocarditis) occurs, which interferes with electrical impulses, leads to arrhythmia, disrupts blood circulation, and causes shortness of breath.

Complications of the cardiovascular system are not unique to Covid-19: many viral diseases can cause myocarditis. Although most patients recover, some cases of heart muscle damage do not recover.

In addition, Covid-19 has a negative effect on the blood itself. In the Netherlands, 38 percent of 184 intensive care patients were found to have increased blood clotting, and almost a third of them developed clots.

