



NEW CORONAVIRUS INFECTION COVID-19

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Annotation

The article provides a brief analytical review of the prevention and diagnosis of the new coronavirus infection COVID-19.

Keywords: COVID-19, coronavirus, clinic, diagnostics, prevention.

Introduction

Due to the environmental changes, global warming, increasing population density, high migration activity of the inhabitants, and some factors, infections spread to the whole world. The emergence of diseases caused by a new coronavirus ("coronavirus disease 2019") had already gone down in history as an emergency of international importance in December 2019. The most common clinical manifestation of new infection in a significant proportion of patients is pneumonia, as well as respiratory distress syndrome.

In the new millennium, humanity has faced infectious diseases which were unknown to people. Plague and typhus are replaced by perilous viruses. Changes in the surrounding environment, climate warming, an increasing population density, and other factors provoke their appearance, and the high migration activity of the inhabitants also contribute to their ration for spreading throughout the world. According to the UN forecast, by 2050 the world's population is going to reach almost 10 billion people. It means that the processes of migration and urbanization will strengthen even more and more. Nowadays, medical science knows the mechanism of the emergence of new viruses and inquires the features of clinical and epidemiological of the "bird" influenza H5N1 (2007), "swine" influenza A H1N1pdm (2009), severe acute respiratory syndrome (SARS-nCoV, 2002), Middle East coronavirus syndrome (MERS-CoV, 2015), the largest Ebola outbreak in West Africa (2014-2015), Zika outbreak (2016). The creation of a model of the Ebola virus epidemic, outbreaks of coronavirus infections identification of the factors contributing to the spread of infections, made it possible to identify the most significant measures to prevent the spread of dangerous infections. Anti-epidemic measures, including isolation and disinfection measures, to be informed for public the ways to protect against infection, etc. – these measures are widely used in the fight of resistance to the epidemic around the world. The COVID-19 epidemic ("coronavirus disease 2019") has already gone





down in history as an international emergency. And we still need to study and take research the features of this epidemic, learn from it, and analyze the shortcomings in ensuring the biological safety of the inhabitants. One thing is clear: new viruses are emerging, which are an integral part of our world. Humanity must learn to resist threats. At the end of 2019, a new coronavirus infection epicenter in the People's Republic of China (PRC) appeared in Wuhan (Hubei Province). On 11th February 2020, the World Health Organization (WHO) identified the official name of the infection caused by the new coronavirus – COVID-19

("CORONAVIRUS DISEASE 2019").

The advent of COVID-19 has made some difficulties for medical staff to quickly diagnose and treat patients. Currently, intensive study of the clinical and epidemiological features of the disease, the development of new means of its prevention and treatment is underway. The most common clinical manifestation of a new variant of coronavirus infection is bilateral pneumonia (viral diffuse alveolar injury with microangiopathy); acute respiratory distress syndrome (ARDS) was reported in 3-4% of. In some patients, along with thrombosis and thromboembolism, hypercoagulable syndrome develops, other organs and systems are also affected (central nervous system, myocardium, kidneys, liver, gastrointestinal tract, endocrine, and immune systems), sepsis and septic shock may develop... Coronavirus infection is an acute viral disease with a predominant upper respiratory tract infection caused by an RNA-containing virus of the genus Betacoronavirus of the Coronaviridae family.

Coronaviruses (lat. Coronaviridae) are a family of 40 types of RNA-containing complexly organized viruses with super capsid as of January 2020. Combined into two subfamilies that affect humans and animals.

The incubation period for COVID-19: from 2 to 14 days, an average of 5 days. In comparison, the incubation period for seasonal flu is about 2 days.

Among the first symptoms of COVID-19, an increase in body temperature was recorded in 90% of cases; cough (dry or with a small amount of phlegm) in 80% of cases; a feeling of tightness in the chest in 20% of cases; shortness of breath in 55% of cases; myalgia and fatigue (44%); sputum production (28%); as well as headaches (8%), hemoptysis (5%), diarrhea (3%), nausea. These symptoms at the onset of infection can be observed in the absence of an increase in body temperature.

Clinical variants and manifestations of COVID-19:

1. Acute respiratory viral infection of the lung.
2. Pneumonia without respiratory distress.
3. Pneumonia with ONE.





4. ARDS.

5. Sepsis.

6. Septic (infectious toxic) shock.

Hypoxemia develops in more than 30% of patients. There are mild, moderate, and severe forms of COVID-19.

Most patients with severe COVID-19 develop pneumonia in the first week of illness. In the lungs, moist crepitating, fine-bubbling rales are heard on both sides. With percussion, the dullness of the pulmonary sound is determined. At the height of inspiration, wheezing becomes more intense, after coughing, they do not disappear, do not change depending on the position of the patient's body (sitting, standing, lying). X-ray shows infiltration in the peripheral parts of the pulmonary fields. With the progression of the process, infiltration increases, the affected areas increase, ARDS joins. Sepsis and infectious toxic shock are observed as the infection progresses. Health care workers are at the highest risk of infection due to prolonged exposure to aerosol in the course of their professional duties. The risk of the implementation of airborne and contact transmission routes of the pathogen increases in conditions of non-compliance with the requirements of the sanitary and epidemiological regime, including the rules of infectious safety (use of personal protective equipment).

Features of clinical manifestations in elderly and senile patients In elderly patients, an atypical picture of the disease can be observed without fever, cough, shortness of breath. Symptoms of COVID-19 may be mild and not consistent with the severity of the disease and the severity of the prognosis.

Atypical symptoms of COVID-19 in elderly and senile patients include delirium, falls, functional decline, conjunctivitis. Delirium, tachycardia, or decreased blood pressure may occur.

The pathogenesis of the new coronavirus infection is not well understood. There are currently no data on the duration and intensity of immunity for SARS-CoV-2. Immunity for infections caused by other members of the coronavirus family is not persistent and re-infection is possible.

The biological threats associated with infectious disease epidemics are global. The COVID-19 epidemic is not the last threat in the 21st century. Environmental change, climate warming, an increase in population density, the development of biotechnology, and other factors provoke their emergence, and the ever-increasing migration flows and processes of economic globalization contribute to the spread of infections.

All countries must be ready for coordinated actions to prevent the emergence and spread of infections, to timely diagnose them, to develop methods of treatment and





prevention, and to create vaccines. The COVID-19 epidemic has highlighted important links in the global biosafety framework. Humanity must learn to resist these threats.

Literature

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