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Review Article

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Coronavirus Infection Covid-2019-Globalization of the Process

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Abstract The paper presents data on the coronavirus disease COVID-2019 caused by the SARS-CoV-2 coronavirus, which was temporarily named 2019-nCoV (2019 novel coronavirus) until 11 February 2020. An outbreak of pneumonia of unknown etiology in Wuhan (Hubei province of China) which was first described in an official publication of the Chinese Office of the World Health Organization on December 31, 2019, attracted attention of both dedicated experts and the entire international community. On January 30, 2020 it was recognised as a public health emergency of international concern. The first cases were reported on December 12, 2019 in China. It had not been detected before, and was first identified by Chinese researchers on January 7, 2020 under the temporary name 2019-nCoV.

Keywords coronavirus; coronavirus infection; COVID-2019; SARS-CoV-2; 2019-nCoV; pneumonia; treatment; safety

Introduction

Official information about an outbreak of pneumonia of unknown etiology in Wuhan City, the capital of Hubei Province of China, appeared for the first time on December 31, 2019 from the Center of the World Health Organization (WHO) in China (WHO China Country Office)On January 3, 2020, this new disease was confirmed in 44 patients. They are all adult residents of Wuhan City, associated with the local Huanan Animal and Seafood Market.

Symptoms of the disease in these patients occurred between December 12 and 29, 2019. The incubation period lasted from 2 to 14 days, the febrile period - from 10 to 14 days. On January 7, 2020, scientists from the Shanghai Clinical Center for Public Health and the School of Public Health established the complete genomic sequence of the causative agent of this pneumonia — a new strain of coronavirus, temporarily named 2019 Novel coronavirus (2019-nCoV), which, according to WHO experts, has not been previously identified.

On February 11, 2020, the new coronavirus infection was named COVID-2019 (corona virus Disease 2019, coronavirus disease 2019), and the virus causing it was renamed SARS-CoV-2 (Severe acute respiratory syndrome coronavirus 2, the second coronavirus of severe acute respiratory syndrome).

Starting from January 21, 2020, WHO publishes daily reports on the current situation (Situation reports) of the Emergency Committee under the International Health Regulations on Pneumonia Caused by the New Coronavirus 019-nCoV (hereinafter-CHK IHR), containing information on the number of confirmed cases, deaths, risk level, as well as recommendations for infection control and other relevant information.

On 22 and 23 January 2020, WHO Director-General TedrosAdanomGhebreyesus held the first emergency meeting of the IHR cheka on pneumonia caused by the new coronavirus 2019-nCoV. According to the results of the first

meeting, the outbreak of pneumonia was not declared an emergency of a sanitary and epidemiological nature of international importance, since most of the cases were localized in China.

On January 30, 2020, at the second meeting of the WHO IHR CHEKA, the epidemic caused by the coronavirus 2019-nCoV was declared a "public health emergency of international importance".

The epidemic has attracted the attention of health professionals and the population around the world, as previously coronavirus infections in humans did not go beyond the permissible level of biological risk. However, the consequences of the mutations of these viruses indicate that the transformation of the latter can lead to emergencies.

Thus, during the epidemic outbreak of coronavirus pneumonia in 2002-2003, which came from the Chinese province of Guangdong and covered more than 30 countries, more than 8,000 people were infected (the largest number of cases were registered in China, Singapore and Canada), of which about 800 people died. Since September 2012, cases of a new coronavirus infection have been reported in the Middle East, with a mortality rate of about 35%, according to WHO.

Coronaviruses were first isolated in 1975, currently they are divided into 4 subfamilies (alpha, beta, delta and gamma) and more than 30 species, the list of which is constantly updated. The reason for the emergence of new coronaviruses that cause severe and rapidly spreading diseases is spontaneous mutations. Therefore, all types of coronaviruses can potentially be dangerous for humans. Coronaviruses can account for 10 to 30% of annual cases of acute respiratory viral infections. Coronaviruses can cause diseases of various degrees of severity in people: from common colds (the first description of a case of acute rhinitis appeared in 1975) to more severe conditions, such as:

1) middle East respiratory syndrome (Middle East Respiratory Syndrome) caused by middle East respiratory syndrome coronavirus (MERS-Cov, MERS-CoV) that was first identified in Saudi Arabia in 2012;

2) Severe acute respiratory syndrome (SARS, also "the purple disease", "atypical pneumonia", in English literature — Severe Acute Respiratory Syndrome, SARS) caused by coronaviruses SARS-CoV (the first time was diagnosed in 2002 in the Chinese province of Guangdong, the only case of infection in the form of light was confirmed in 2003) and SARS-CoV-2

Pathogenesis of coronavirus infection: colonization and destruction of upper respiratory tract epithelial cells by coronaviruses. With insufficient immunity, the process passes to the alveoli and is accompanied by the destruction of the surfactant, excessive exudation and a sharp decrease in gas exchange. In patients who have been ill, a persistent type-specific immunity develops and the affected areas of the alveolar walls are replaced by connective tissue.

Clinical symptoms of COVID-19: fever (in 87.9% of those seeking medical help), usually subfebrile (up to 37.5°C in 56.2%); respiratory symptoms: cough (67.7%); in severe cases — shortness of breath (18.6%) and symptoms of intoxication: fatigue and weakness (38.1%), headache (13.6%), dyspepsia (5%) and diarrhea (3.7%). The most frequent manifestations of severe cases are pneumonia (76%) and hypoxia (38%).

Clinical forms of COVID-19: asymptomatic (in 1-3%); mild (with only the upper respiratory tract); moderate (pneumonia without respiratory failure); severe (pneumonia with the development of respiratory failure, respiratory rate (BPD) ≥30 per minute, saturation ≤93%, oxygenation index pao 2/fio 2 <300, or the appearance of infiltrates in the lungs in the form of "frosted glass", occupying more than 50% of the lungs for 24-48 hours); very severe (critical) form (pneumonia, sepsis, septic shock, multiple organ failure).

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English: Mortality in COVID-2019 is proportional to the age of patients: from 0% in children under 9 years of age to 14.8% in people over 80 years of age. Pregnant women suffer from COVID-19 more easily than the flu. Approximately 10-15% of mild and moderate cases (81-82% of all infected) go to severe. About 15-20% of severe cases become very severe. The category of high risk of mortality from COVID-2019 should include elderly patients with concomitant diseases, especially with damage to the cardiovascular system.

The emergence of COVID-19 has set health professionals challenges related to rapid diagnosis and provision of medical care to patients. Currently, an intensive study of the clinical and epidemiological features of the disease, the development of new means of its prevention and treatment continues.

The national recommendations of Uzbekistan are largely based on materials on the diagnosis, prevention and treatment of COVID-19, published by experts from WHO, the Chinese, American and European Centers for Disease Control, analysis of domestic and foreign scientific publications, regulatory documents of the Government of the Republic of Uzbekistan, the Ministry of Health of the Republic of Uzbekistan.

The epidemiological situation in the world continues to be alarming. The total number of infected people exceeded 20 million, increasing by 1 million in the last 3.5 days alone. The main centers of infection are still the United States, Brazil and India.

North America accounts for more than 6.1 million cases (30.5% of the total). In Asia, this figure is almost 5.1 million (25.1%), and in South America – more than 4.75 million (23.4%).

The European region accounts for 16% of the world's COVID-19 cases and 25% of deaths. The countries of Central Asia (Afghanistan, Kazakhstan, Kyrgyzstan, Tajikistan and Uzbekistan) account for a total of 213.7 thousand patients, that is, 1.06% of cases of coronavirus infection from their total number.

As of 19.09.2020, there are 50,872 confirmed cases in Uzbekistan, of which 47,121 (92.7%) recovered, 425 (0.8%) died. 3326 (6.5%) cases remain under treatment.

The epidemiology of coronavirus infection in Uzbekistan has its own characteristics. Due to the ongoing anti-epidemic (quarantine) measures, the epidemiological curve has a wave-like character and differs from that both in the European region and in the global aspect as a whole.

The first case of coronavirus infection was recorded on March 15 in a woman who arrived from France, at the same time quarantine measures were introduced for those arriving from abroad. This led to the fact that all subsequent positive cases, up to mid-May, were recorded only in quarantine zones. Since mid-May, the spread of infection among the general population has begun.

While there has been a sharp increase in the number of new cases in the European region, this increase has been gradual in Uzbekistan. Although the measures introduced avoided a sharp increase in the number of cases at the beginning of the epidemic process, these measures ensured that a large number of susceptible populations remained. This led to the fact that, against the background of a general decrease in the daily number of new cases in the European Region in Uzbekistan since the beginning of July, after the weakening of quarantine measures, there was a sharp increase in the number of infected people, which could lead to the collapse of the health system, as a result, it was decided to re-strengthen quarantine measures. With the introduction of repeated measures, there is a sharp decline in new cases. After achieving some well-being and another easing of restrictive measures, since mid-September there has been a repeated increase in the number of new cases in Uzbekistan, but this trend is also observed in the European region and globally. The repeated increase is predicted by all forecasts and is described in the literature as a" second wave " of morbidity.

Mobile teams at the country's polyclinics are being set up to monitor patients with COVID-19 symptoms and pneumonia, as well as patients discharged after hospital treatment, to ensure maximum availability of medical care and prevent complications after hospital treatment. In addition, mobile teams will serve patients with chronic diseases at home, patronage of pregnant women and children according to indications.

Recommendations for the use of various antiviral agents for the treatment of COVID-2019 are still off-label. Antiviral agents can be used for sick patients with other major diseases (AIDS, viral hepatitis, etc.).

Conclusion

Systematic data on coronaviruses, the infections they cause, the features of their spread, pathogenesis and clinical symptoms can help in making rational decisions when choosing the treatment of infectious diseases caused by coronaviruses, including the new coronavirus SARS-CoV-2.

As of October 2020, it is recommended to follow the interim guidelines for the prevention, diagnosis, treatment and rehabilitation of coronavirus infection (COVID-19), version 8 (20.09.20), based on WHO recommendations and approved by the Ministry of Health of the Republic of Uzbekistan.

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