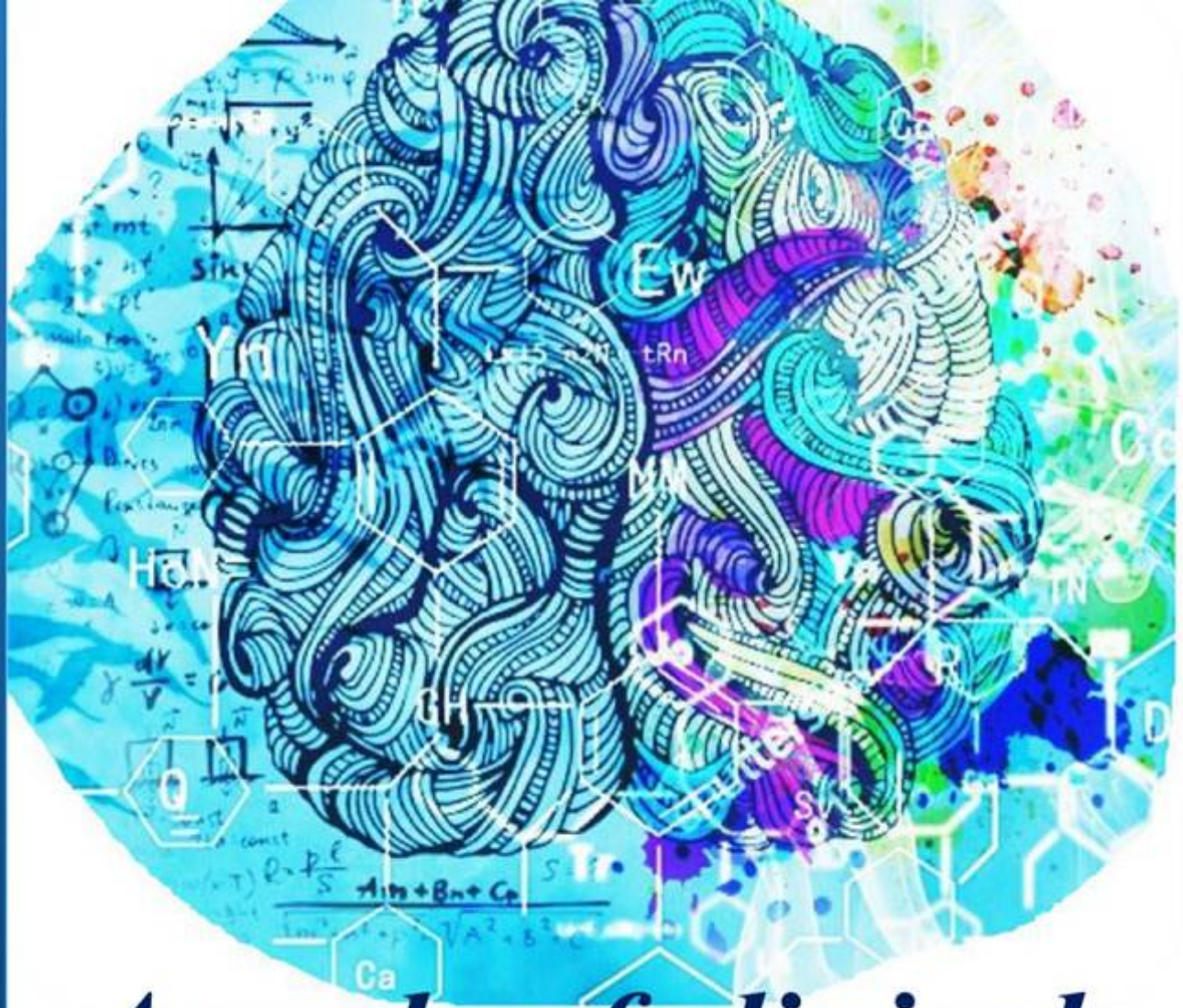

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THE SPREAD OF CORONAVIRUS INFECTION AROUND THE WORLD

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ANNOTATION

On January 30, 2020, the World Health Organization (WHO) recognized the outbreak of coronavirus infection in China as a public health emergency of international importance. WHO Director General Tedros Adhanom Ghebreyesus said after a meeting of the emergency committee in Geneva, "I declare an international public health emergency due to the global outbreak of coronavirus." The article presents the current epidemiological indicators of COVID-19 for the territory of Primorsky Krai. The levels of morbidity and incidence of COVID-19 for the period from April 14, 2020 to May 14, 2020 have been determined. The etiology and pathogenesis of coronavirus infection are described. Clinical manifestations and risk factors of this infection have been noted. A review of the literature on the current situation in the world has been conducted.

Keywords: incidence of COVID-19; incidence of SARSCoV-2; Etiology of COVID-19; Pathogenesis of COVID-19; coronavirus pandemic; clinical manifestations of coronavirus infection; the situation in the world.

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РАСПРОСТРАНЕНИЕ КОРОНАВИРУСНОЙ ИНФЕКЦИИ ПО ВСЕМУ МИРУ

АННОТАЦИЯ

30 января 2020 года Всемирная организация здравоохранения (ВОЗ) признала вспышку коронавирусной инфекции в Китае чрезвычайной ситуацией в области общественного здравоохранения международного значения. Генеральный директор ВОЗ Тедрос Адханом Гебрейесус заявил после заседания комитета по чрезвычайным ситуациям в Женеве: "Я объявляю международную чрезвычайную ситуацию в области общественного здравоохранения в связи с глобальной вспышкой коронавируса". В статье представлены текущие эпидемиологические показатели COVID-19 на территории Приморского края. Определены уровни заболеваемости и падежа COVID-19 за период с 14 апреля 2020 года по 14 мая 2020 года. Описаны этиология и патогенез коронавирусной инфекции. Были отмечены клинические проявления и факторы риска этой инфекции. Был проведен обзор литературы о текущей ситуации в мире.

Ключевые слова: заболеваемость COVID-19; заболеваемость SARSCoV-2; Этиология COVID-19; патогенез COVID-19; пандемия коронавируса; клинические проявления коронавирусной инфекции; ситуация в мире.

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DUNYO BO'YLAB KORONAVIRUS INFEKSIYASINING TARQALISHI

ANNOTATSIYA

2020-yil 30- yanvarda Jahon Sog'liqni saqlash tashkiloti (JSST) Xitoyda koronavirus infeksiyasining tarqalishini xalqaro ahamiyatga ega bo'lgan sog'liqni saqlash favqulodda holati deb tan oldi. JSST Bosh direktori Tedros Adhanom Gebreyses Jenevadagi favqulodda vaziyatlar qo'mitasi yig'ilishidan so'ng "men koronavirusning global tarqalishi sababli xalqaro sog'liqni saqlash favqulodda holatini e'lon qilaman." Maqolada Primorsk o'lkasi hududi uchun COVID-19 ning hozirgi epidemiologik ko'rsatkichlari keltirilgan. 2019-yil 14-apreldan 2020-yil 14-maygacha bo'lgan davrda COVID-2020 kasalligi va kasallanish darajasi aniqlandi. Koronavirus infeksiyasining etiologiyasi va patogenezi tasvirlangan. Ushbu infeksiyaning klinik ko'rinishlari va xavf omillari qayd etilgan. Dunyodagi mavjud vaziyatga oid adabiyotlar sharhi o'tkazildi.

Kalit so'zlar: COVID-19 bilan kasallanish; SARSCoV-2 bilan kasallanish; COVID-19 etiologiyasi; COVID-19 patogenezi; koronavirus pandemiyasi; koronavirus infektsiyasining klinik ko'rinishlari; dunyodagi vaziyat.

Introduction. Coronaviruses are a family of viruses that include 40 different types, as of January 2020. They can infect humans and some animals, and can cause various diseases, ranging from mild acute respiratory infections to more severe conditions such as severe acute respiratory syndrome [1].

In humans, coronaviruses such as HCoV-229E, HCoV-OC43, and HCoV-NL63 can cause symptoms similar to those of the common cold. These viruses are known as ARVI (acute respiratory viral infections) [2].

Other coronaviruses, such as SARS-CoV (severe acute respiratory syndrome) and MERS-CoV (Middle East respiratory syndrome), can cause more serious illnesses. These are the pathogens behind SARS and MERS, respectively.

At the end of December 2019, a new coronavirus, 2019-nCoV, was discovered in China. This virus has since spread quickly outside of China and has infected millions of people worldwide. As of May 14, according to the World Health Organization (WHO), there have been 4.4 million confirmed cases, 1.6 million recoveries, and 297 thousand deaths. Daily new cases continue to rise, with an average of 5,193 new cases per day.As of May 14th, 252,000 cases of infection have been registered in Russia. 53,000 people have recovered, an increase of 5,527 per day. 2,305 people have died, an increase of 93 per day [3].

The leading region in terms of confirmed cases of COVID-19 infection is the Bukhara region, specifically the city of Bukhara, with 130,588 cases. On May 14th, 1057 new cases were registered in the Primorsky Krai (+49 per day), representing 0.41% of all cases in Russia. Of those, 307 individuals recovered (+27 per day), while 12 people died (+0 per day). The first two cases were reported on March 24th [6].

According to Hopkins University statistics, the US remains the country with the highest number of confirmed cases (over 1.42 million), followed by Russia in second place, and the UK in third place with around 230,000 cases. Spain ranks fourth with 230 thousand cases, and Italy fifth with 222 thousand.According to her, these conclusions were made after the start of immunity studies among medical workers in Moscow. The number of people who were examined by the domestic testing system amounted to more than 3.2 thousand. SARS-CoV-2 coronavirus infection

was found in 271 employees of the Federal Penitentiary Service (FSIN), and among accused and convicted people, the disease was confirmed in 40 cases.

As reported by the Federal Penitentiary Service, none of the patients have a severe form of the disease. The disease is transmitted through coughing, sneezing, airborne droplets, or inhaling drops of saliva or nasal secretions from an infected person [4].

Coronavirus infection is caused by RNA-based genomic viruses belonging to the genus Coronavirus. These viruses are surrounded by a protein shell, called the supercapsid, which has sparsely spaced spikes on its surface. The spikes have a unique structure, resembling a crown, with thin necks and spherical heads. Respiratory and intestinal coronaviruses can cause disease in humans. Common symptoms of infection include respiratory problems, such as coughing and difficulty breathing. Some animals, including monkeys, birds, and snakes, can also carry the coronavirus. Bats are believed to be the source of a new type of coronavirus, 2019-nCoV. While there is no evidence that pets, such as dogs or cats, can carry this virus, people are highly susceptible to it. People of all ages can get infected, and the antigenic diversity of coronaviruses leads to frequent re-infections with different serological types of the virus.Viruses are not stable in the external environment and die instantly at temperatures above 56 degrees. They are also destroyed by chloroform, formalin, ethyl alcohol, or ether. The new coronavirus tolerates freezing well, but it can be especially dangerous for the elderly and people with concomitant diseases, such as diabetes, cardiovascular disease, lung disease, kidney disease, liver disease, hypertension, or cancer. People with weakened immune systems also have a higher risk of contracting the virus. The pathogenesis of the virus has not been fully understood yet.The main route of infection is through the mucous membranes of the respiratory system, causing damage to the alveoli [5].

Viral pneumonia develops when the virus causes the permeability of cell membranes to increase, leading to an increase in transport of albumin-rich fluid into the interstitial lung tissue and alveoli. This results in interstitial and alveolar edema, as well as the destruction of surfactant, which can lead to the collapse of alveoli and a sharp violation of gas exchange. These conditions can cause acute respiratory distress syndrome, with a 40% mortality rate [7].

The disease can be transmitted through the fecal-oral route, causing lesions of the gastrointestinal tract and multiplication of the virus in intestinal enterocytes. Despite the production of antibodies, these do not provide protection against reinfection, due to the rapid mutation of the virus.

For most coronavirus infections, the incubation period is usually limited to 2-3 days. However, the 2019-nCoV coronavirus has an incubation period that can range from 1 to 14 days, with an average of about 10 days. During this time, a person with the virus can infect others.

The disease often presents as a common cold, parainfluenza, or any other type of acute respiratory infection, with all the typical symptoms. According to an article published in the National Science Review, there have been about 150 cases of the disease in China since its outbreak [1,2].

Scientists have analyzed 103 publicly available genomes of the SARS-CoV-2 virus and have found 149 differences between strains. Most of these differences have occurred recently, and the study showed that the virus has divided into two main subtypes: L and S. Subtype L is the most common, accounting for about 70% of all cases, while S accounts for 30%.

According to scientists, subtype L was more prevalent in the early stages of the outbreak in Wuhan, but its frequency has decreased since early January. This suggests that human intervention has exerted a strong selective pressure on this subtype, making it more aggressive and spreading faster. In contrast, subtype S, which is older and less aggressive, may have increased due to weaker selective pressure [7].

Our analysis suggests that subtype S is the original version of SARS-CoV-2 as it is less likely to have undergone significant genetic changes. The results of our research also support the idea that subtype L is more aggressive than S.Additionally, the article suggests that human intervention has influenced the relative prevalence of these subtypes soon after the outbreak.

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