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PUBLIC HEALTH AND EPIDEMIOLOGICAL INSIGHTS INTO THE COVID-19 PANDEMIC

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Annotation. Environmental change, climate warming, population density increase, high migration activity of the population and other factors provoke the emergence and spread of new infections around the world. The emergence in December 2019 of diseases caused by the new coronavirus («coronavirus disease 2019») has already gone down in history as an emergency of international importance. It is known that the most common clinical manifestation of a new infection is pneumonia, and also in a significant part of patients — respiratory distress syndrome.

Key words: COVID-19, coronavirus, clinic, diagnosis, prevention

Annotatsiya. Atrof-muhit o‘zgarishi, iqlim isishi, aholi zichligining oshishi, aholining yuqori migratsion faolligi va boshqa omillar dunyo bo‘ylab yangi yuqumli kasalliklarning paydo bo‘lishi va tarqalishiga sabab bo‘lmoqda. 2019 yil dekabr oyida yangi koronavirus ("koronavirus kasalligi 2019") keltirib chiqaradigan kasalliklarning paydo bo‘lishi allaqachon tarixga xalqaro ahamiyatga ega favqulodda holat sifatida kirgan. Ma’lumki, yangi infeksiyaning eng keng tarqalgan klinik ko‘rinishi bu pnevmoniya, shuningdek bemorlarning asosiy qismida respirator distress-sindromi.

Kalit so‘zlar: COVID-19, koronavirus, klinikasi, diagnostikasi, profilaktikasi.

Аннотация. Изменение окружающей среды, потепление климата, увеличение плотности населения высокая миграционная активность населения и другие факторы провоцируют появление и распространение новых инфекций по всему миру. Появление в декабре 2019 года заболеваний, вызванных новым коронавирусом («coronavirus disease 2019»), уже вошло в историю как чрезвычайная ситуация международного значения. Известно, что наиболее распространенным клиническим проявлением новой инфекции является пневмония, а также у значительной части пациентов — респираторный дистресс-синдром.

Ключевые слова: COVID-19, коронавирус, клиника, диагностика, профилактика.

Introduction: In the new millennium, mankind is faced with infectious diseases that no one knew about. Plague and typhus have been replaced by dangerous viruses. Environmental changes, climate warming, an increase in population density and other factors provoke their appearance, and high migration activity of the population contributes to their spread throughout the world. Truly, infections know no boundaries (2).

The aim of the study was to study the epidemiological aspects of coronavirus infection.

Test methods and materials.

Coronavirus infection is an acute viral disease with a predominant lesion of the upper respiratory tract, caused by an RNA-containing virus of the genus Betacoronavirus of the Coronaviridae family. Coronaviruses (lat.Coronaviridae) are a family of 40 species of RNA-containing complexly organized viruses with supercapsid as of January 2020 (1). They are grouped into two subfamilies that affect humans and animals. The name is associated with the structure of the virus: from the supercapsid, large spine-like processes in the form of a club, which resemble a crown, protrude. Virions are 80-220 nm in size. The nucleocapsid is a flexible helix composed of a genomic RNA plus strand and a large number of N nucleoprotein molecules. Has the largest genome among

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the RNA genomic viruses. Bats are the natural reservoir of the SARS-CoV-2 virus. Mammals eating bats can serve as an additional reservoir, with further distribution among humans. Phylogenetic studies of the isolated strains have shown that the genomic sequences of viruses found in bats are 99 percent identical to those isolated from patients with COVID-19. Currently, the main source of infection is an infected person, including those at the end of the incubation, prodromal period (the beginning of virus isolation from target cells) and during clinical manifestations. The transmission mechanism is aspiration (5). Routes of transmission: airborne (virus release when coughing, sneezing, talking) upon contact at close range. The contact-household route is realized through transmission factors: water, food products and objects (door handles, smartphone screens) contaminated with the pathogen. The risk of transmission of the virus from the hands to the mucous membranes of the eyes, nose and mouth and the disease has been proven. It is possible to implement the fecal-oral mechanism (the pathogen was found in fecal samples from patients infected with SARS-CoV-2). The fact of implementation of the artifactual transmission mechanism of SARS-CoV-2 has been established. In the PRC, more than 1,700 confirmed cases of the disease of medical workers who provided assistance to patients with COVID-19 have been registered (6). Susceptibility to the pathogen is high among all population groups. The risk groups for a severe course of the disease and the risk of death include people over 60 years of age, patients with chronic diseases (diseases of the respiratory system, cardiovascular system, diabetes mellitus, cancer). Mortality varies from 2 to 4%. The SARS-CoV-2 virus is characterized by low resistance in the environment. Dies under the influence of ultraviolet irradiation, disinfectants, when heated to 40 ° C for 1 hour, up to 56 ° C in 30 minutes. On the surface of objects at 18-25 ° C remains viable from 2 to 48 hours.

The incubation period for COVID-19: from 2 to 14 days, on average 5-7 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 (90%), cough - dry or with a small amount of sputum (80%), shortness of breath (55%), myalgia and fatigue (44%), a feeling of tightness in the chest (20%)), as well as headaches (8%), hemoptysis (5%), diarrhea and nausea (3%). These symptoms at the onset of infection can be observed in the absence of an increase in body temperature (3). Most patients with severe COVID-19 develop pneumonia in the first week of illness. With percussion, the dullness of the pulmonary sound is determined. In the lungs, moist crepitating, fine-bubbling rales are heard on both sides. 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) (9). X-ray shows infiltration in the peripheral regions of the pulmonary fields. With the progression of the process, infiltration increases, the affected areas increase, ARDS joins (10). Sepsis and infectious toxic shock develop as the infection progresses. The diagnosis is established on the basis of data from the epidemiological history, clinical examination and laboratory results. When collecting an epidemiological anamnesis, it is necessary to take into account the patient's visit during the previous 14 days to countries and regions unfavorable for COVID-19, the presence of close contacts during this time with persons who arrived from endemic areas, as well as contacts with persons whose diagnosis was confirmed by laboratory.

To date, there is no evidence of the effectiveness of the use of any drugs for COVID-19. As part of the delivery of medical care, patient monitoring is necessary to detect signs of clinical deterioration, such as rapidly progressive ARF and sepsis, and the appointment of therapy in accordance with the patient's condition. Patients infected with SARS-CoV-2 should receive supportive symptomatic therapy. Analysis of the literature data on the clinical experience of

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managing patients with SARS associated with the SARS-CoV and MERS-CoV coronaviruses makes it possible to identify several etiological drugs that are usually used in combination.

Patients with clinical and laboratory signs of coronavirus pneumonia are shown the appointment of antimicrobial drugs (respiratory fluoroquinolones, cephalosporins of the 3rd and 4th generations, carbapenems, linezolid, etc.) due to the high risk of bacterial superinfection. The choice of antibiotic and the route of administration is based on the severity of the patient's condition, the presence of concomitant diseases and the results of microbiological diagnostics. The development of ARF is one of the most common complications of severe viral pneumonia. The algorithm for assisting in the development of ODN is based on the general principles of respiratory therapy. The optimal level of oxygen therapy efficiency is an increase in oxygen saturation above 90%, or the presence of a persistent increase in this indicator. In the absence of the effect of primary respiratory therapy - oxygen therapy through a mask or nasal catheters, it is advisable to decide on the use of mechanical ventilation (8).

However, the results of the use of these drugs do not allow an unambiguous conclusion about their effectiveness / ineffectiveness, and therefore their use is permissible by the decision of the medical commission in the prescribed manner in the event that the possible benefit to the patient outweighs the risk (9). The use of etiotropic drugs is justified in the case of moderate and severe infection, when the intended benefit outweighs the potential risk of developing adverse events.

Conclusion: Changes in the environment, climate warming, an increase in population density, the development of biotechnology and other factors provoke the emergence, and the ever-increasing migration flows and processes of economic globalization contribute to the spread of new infections. The biological threats associated with epidemics of infectious diseases are global in nature. The COVID-19 epidemic is not the last threat in the 21st century. All countries should 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.

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