

The Crown and Legends of the Crowned Virus

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Annotation

The purpose of the article is to analyze the study of the history and nature of the coronavirus Covid-19, which is rapidly spreading at present on all continents of the planet. Considerable attention is paid to the origin of the virus in the incubation period and the transmission of the virus from person to person, some official data on a global scale of infected, recovered and died from coronavirus people. The structure of hemoglobin, an important transport protein of the human body, the mechanism of behavior of the Covid-19 coronavirus after it enters the human body, suppression of immunity due to damage to hemoglobin, an important transport protein of the person, is considered, which leads to increased inflammatory processes and to impaired oxygen transport through the bloodstream, the appearance of "opaque glass" in the lungs. The article also provides an analysis of the views and an objective generalization of the ideas and judgments of the famous, most prominent scientists - virologists, microbiologists, infectious disease specialists - about the artificial or natural origin of coronavirus. In conclusion, an objective assessment of the situation in which mankind unexpectedly found itself at the end of the second decade of the 21st century is given, that our planet should in the future be ready for similar, we can say, inevitable situations.

Keywords: virus, pandemic, disease, coronavirus, infection, scientists

Introduction

In the middle of the 20th century, coronaviruses were known as causative agents of acute respiratory diseases in humans and animals, but they were not among the most dangerous viral infections. Human coronavirus was first isolated in 1965 from a patient with acute respiratory disease. Coronaviruses infect a wide range of vertebrates: humans, cattle, pigs, dogs, cats, mouse rodents, bats, birds, fish. In humans, coronavirus infection occurs as a respiratory syndrome, sometimes with gastroenteritis (viruses of the genus Alphavirus). The main target cells of coronaviruses are epithelial cells and macrophages that have receptors on the surface with which the surface S-protein of the virus interacts. The main forms of the disease, etiologically associated with coronaviruses, are respiratory syndrome and gastroenteritis. [1, p. 35]. Coronavirus infection is recorded throughout the year, an increase in the incidence is observed in winter and early spring, when its epidemic significance ranges from 15 to 33.7% [1, p. 37].

Various species of the coronavirus family, including as of May 2020 43 types of RNA-containing viruses combined into two subfamilies, are widespread in nature, causing various infectious pathologies in animals and humans. Now the family of coronaviruses affecting humans includes 7 species (2 subfamilies and 5 genera) and it is constantly replenished [1, p. 36].

Purpose of work

The purpose of this article is a brief excursion into the history of the first foci of coronavirus and tracing the path of its mutation to Covid-19, as well as assumptions about the isolation of

MERS-CoV from various animals, the mechanism of transmission and damage to various human organs. The article presents readers with various statements by famous scientists about the origin of the Covid-19 coronavirus.

The history and nature of the coronavirus

Over the past 20 years, 3 outbreaks of diseases associated with the appearance of new coronaviruses affecting humans have been noted. So, in 2002, SARS-CoV coronavirus was detected - the causative agent of SARS, which caused severe acute respiratory syndrome in humans (SARS, Severe Acute Respiratory Syndrome - SARS). The first cases of human disease appeared in Saudi Arabia in September 2012, in June 2012, a citizen of Saudi Arabia was hospitalized with acute pneumonia and kidney failure in a Jeddah clinic. As a result of molecular biological studies, biosamples have isolated a new pathogen for humans, called the virus of the Middle East respiratory syndrome - MERS-CoV. The incubation period of the disease caused by this coronavirus is about 5 days. The most likely route of transmission from person to person is respiratory, which potentially determines the possibility of an outbreak with high mortality. The causative agent is genetically close to various coronaviruses isolated from bats living in Africa and Europe [2, p. 68-69].

Frightening parallels to the current situation with the coronavirus pandemic are drawn by material published in the journal Nature Medicine on November 9, 2015 on scientific research, which states that a whole scientific international took part in the development of the virus - 9 scientists from 6 research centers in the USA, China and Switzerland and other countries. In it, scientists warn of the fatal consequences of a possible leak of laboratory material created on the basis of coronavirus, which only bats could infect. In the "Russian Newspaper" on November 14, 2015, material appeared entitled "Scientists have found a new deadly flu virus." The article begins with the sentence: "American biologists have created a deadly coronavirus for humans by experimenting with bats." In the article, answering the question - why was the "chimera" of bat coronavirus created, a logical answer follows - with the goal of creating biological weapons and their varieties - genetic weapons. [3].

Since there are assumptions about the isolation of MERS-CoV from dromedary camels, a mechanism for the formation of an epidemic outbreak in which the reservoir of the pathogen is located in insectivorous bats and a synanthropic animal such as a camel, which is a source of human infection, is not excluded. This is confirmed by the fact that many registered primary cases of MERS are associated with contacts of patients with camels.

At the same time, there are a number of publications and materials indicating that the virus could circulate earlier, both in China and in the USA, where it was mistaken for ordinary flu or SARS and where there was an increased mortality from the flu or people were identified in which antibodies were detected after the illness, although they were not diagnosed with coronavirus then

because they did not know that they already had coronavirus. In this case, it is all the more impossible to understand where he came from - there is no guarantee that the zero patient from Wuhan is really a zero patient [4]. It follows that today we have the right to various options for the origin of Covid-19, but it is definitely impossible to call everything that happens "a global conspiracy".

A paper published in *Frontiers in Public Health* by Chinese scientists shows that male gender is a more serious risk factor than previously thought. According to the data obtained during the study, men and women can be infected with the Sars-Cov-2 virus with the same probability, but the former are much more likely to suffer from the severe course of the disease and die much more often - approximately 70% [4].

. A new coronavirus appeared in the Chinese province of Hubei, presumably at the end of last year. Since then, it has spread to all continents except Antarctica. The virus was called SARS-CoV-2, and the disease it causes is Covid-19. Symptoms of the disease - high fever, shortness of breath, dry cough, the disappearance of the sense of smell and taste. It became known that most infected people show only mild symptoms - temperature, muscle pain and / or cough. They recover without special treatment. But some older people, as well as those who have serious health problems (such as heart disease, diabetes, or cancer), are at high risk for developing a serious illness [5, p. 221-246].

Basically, the appearance of the virus is associated with the wholesale seafood market in the city of Wuhan in China (Hubei Province). Prior to its closure on January 1, 2020, marine mammals, bats, chickens, rabbits and snakes were sold on the market. Chinese virologists have suggested that one of these animal species could become a source of infection. Within two weeks, the virus entered the territory of other countries. The causative agent of COVID-19 can be detected 1-2 days before the onset of symptoms and within 7-14 days after the appearance of symptoms in smears from the upper respiratory tract. In severe forms, a longer isolation of the virus is possible. Data on the duration and intensity of immunity against SARSCoV-2 are currently not available.

According to official reports, on June 11, 2020, more than 7485579 people were infected in the world, 419524 died from coronavirus. The largest number of deaths from coronavirus was recorded in the United States - 115141. The UK is second in this indicator (41,128). They are followed by Brazil (39 803), Italy (34 114), France (29 319), Spain (27 136), Mexico (15 357), Belgium (9636), Germany (8845), Iran (8584) and India (8115).[6]

The first massive cases of infection with a new coronavirus were recorded at the end of December 2019. The appearance of the virus is associated with the wholesale seafood market in the city of Wuhan in China (Hubei Province). Prior to its closure on January 1, 2020, marine mammals, bats, chickens, rabbits and snakes were sold on the market. Chinese virologists have suggested that

one of these animal species could become a source of infection. Within two weeks, the virus entered the territory of other countries. According to official reports, as of June 5th, 2020, more than 6,5 million people were infected in the world, 386 thousand died from coronavirus. In many countries, all stores are closed, except for grocery stores, fitness clubs, entertainment centers, cinemas, restaurants and other public places. The crowded events were canceled: sports competitions, various championships, cultural events, etc.

As already noted, the mechanism of transmission of the pathogen is airborne, the airborne dust is not excluded, the presence of the pathogen is shown not only in saliva, but also in vomit, urine and other waste products. Particularly dangerous are medical workers in contact with the patient during the most dangerous period from the point of view of infection. Therefore, the rapid spread of the disease mainly occurred in a hospital setting. In the absence of sufficient control and prophylaxis measures, one patient on average can infect 3 contact persons. In Singapore, a situation was recorded when one patient turned out to be a source of infection not only for medical workers, but also for patients and visitors who contacted him. According to various sources, mortality is 4-10%, with 60% of all deaths occurring in medical workers [7, 1, p. 37].

Hemoglobin is a complex metal-containing protein that can reversibly bind to oxygen. At the center of each hemoglobin molecule is heme, or the porphyrin nucleus containing a divalent iron atom: it is able to bind four O₂ molecules. Collecting oxygen in the lungs, red blood cells with the help of hemoglobin transfer it to various organs and parts of the body. The causative agent of coronavirus SARS-CoV-2 with the help of non-structural proteins damages hemoglobin, an important transport protein in humans. Coronaviruses suppress the immune system, and it ceases to recognize the infection and fight it. This leads to increased inflammation and the appearance of "frosted glass" in the lungs. SARS-CoV-2 virus can attack human red blood cells by binding to hemoglobin molecules, which leads to disruption in the transport of oxygen through the bloodstream [8, p. 94-98].

Coronaviruses are enveloped viruses with single-stranded "plus" RNA, with genome sizes ranging from 25 to 32 thousand nucleotides, causing respiratory and intestinal diseases in animals and humans. They have a shell with rare spikes or villi, resembling a crown when an eclipse of the sun. CoV is short for Corona Virus, Coronavirus. The tip of each spike "mimics" the molecule of a useful substance, so that the cellular receptors gladly pull it into themselves - and the whole virus is squeezed into the cell behind the spike. This is how infection occurs. Once in a cell, the virus "seizes" control over it and forces it to endlessly produce its own copies - instead of its usual proteins. A chain reaction begins. As a result, the cell dies, but the carrier becomes contagious [9].

It is not known exactly where SARS-CoV-2 came from, but bats and pangolins carry viruses similar to it. Covid-19 and SARS-CoV-2 are not the same thing. Covid-19 is a disease (D stands for

'disease') caused by the new coronavirus. SARS-CoV-2 is the name of the virus itself. Using cryogenic electron microscopy, scientists found out the three-dimensional surface structure of the S-protein of the coronavirus SARS-CoV-2. S-proteins change their conformation: prepared for infection, they have one form, and after contacting the target, they change it.

At the very initial stage of infection, the new coronavirus actively multiplies in the throat and upper respiratory tract. Further, the infection goes down and can reach the lungs, causing inflammation. By the time the onset of symptoms, the virus is already in almost all cells of the body. As a result, the immune system gives such a strong response that pulmonary edema is formed, their vital volume is reduced to a minimum, and those who are sick cannot breathe. In severe coronavirus infection (pneumonia) SARS-CoV diffuse damage to the alveoli develops. The integrity of their walls is violated, the permeability of the alveolocapillary membrane, which regulates water-electrolyte and gas exchange, increases. Alveoli contain white blood cells, red blood cells, products of the destruction of cellular elements, which clinically corresponds to developing pulmonary edema [10].

Currently, there are no recommended medicines for the prevention or treatment of infections caused by the new coronavirus (2019-nCoV). However, infected patients should be provided with the necessary medical care to alleviate and relieve symptoms, and appropriate supportive care should be provided to persons with severe forms of the disease. Currently, work is underway to create specific drugs against the new coronavirus, and they will have to undergo clinical trials. WHO, together with a number of partners, is helping to accelerate the development of new medicines.

During outbreaks of disease, particularly in the case of the COVID-19 coronavirus, facts, not fear, will help people protect themselves and their loved ones. The International Red Cross and Red Crescent Movement disseminates information on coronavirus to the general public in order to prevent the appearance of fake news and reduce the transmission of rumors, as well as to convince communities of the need for social distance for their own safety. The World Health Organization (WHO), its partners, as well as 35 countries of the world have launched a program that will allow the exchange of scientific data from a study of a new coronavirus [11, p. 162].

Some politicians accuse scientists of not being able to predict the development of a pandemic. Scientists respond to this, that in modeling it is necessary to take into account many indicators, and all of them are constantly updated, because the new coronavirus has not been thoroughly studied. Today, scientists around the world are working hard to create a vaccine against coronavirus, and there are certain successes in this matter. From official sources it became known that scientists from the University of Cambridge found an insert in the coronavirus that is identical to part of the human protein. It is located exactly on the site of the genome, which determines the

possibility of the virus entering the human body. This means that the secret of the danger of coronavirus has been revealed: a part of the human protein has been found in the genome [12].

Thus, the emergence of a new infection caused by MERS-CoV necessitates a further in-depth study of the characteristics of the pathogen in order to select promising areas for the development of tools for identifying and identifying a new pathogen, prevention and treatment, which will allow for effective anti-epidemic measures [2]

Opinions of famous scientists about the origin and the nature of coronavirus

During any epidemiological outbreak, theories arise that claim that the emerging virus has an “artificial” origin. We do not yet have reliable information about where the new coronavirus came from, how dangerous it is and how it spreads. Despite the fact that scientists still do not have an unambiguous opinion on this issue, the version of the artificial origin of the coronavirus SARS-CoV-2 continues to grow with new assumptions and supporters. Proponents of conspiracy theory are looking for all kinds of traces of the artificial origin of the virus, virologists, doctors and other natural scientists are trying to understand the mechanisms of origin and spread of COVID-19. The wave of emerging conspiracy theories of the Covid-19 virus blames the virology laboratory of Wuhan, China. In 2015, scientists of this laboratory actually constructed a virus very close to the current one, it was not SARS-CoV-2, it was completely different [13].

Nobel laureate in medicine and physiology (2008), 87-year-old French virologist Luc Montagnier, known as one of the pioneers of the human immunodeficiency virus, which infects immune cells and causes HIV infection, expressed his opinion on the origin of SARS-CoV-2. According to him, the current coronavirus is clearly of artificial origin and was created in the Wuhan Laboratory of Special Pathogens and Biosafety, which "has specialized in coronaviruses since the 2000s and has extensive experience in this field."

Montagna suggests that Chinese researchers were probably working on an AIDS vaccine when the so-called “leak” occurred. “For what purpose this is done, it is not clear. In any case, the responsibility for creating Covid-19 rests with the Chinese government,” the virologist said, adding that certain molecular technologies are needed to insert HIV sequences into the SARS-CoV-2 genome, and this can only be done in the laboratory [14].

A virologist at the Pasteur Institute in Paris, Etienne Simon-Lorrier, said Montagnier’s assumption “is nonsense and stupid. In the new coronavirus, very small elements were found that are present in all other viruses of this family, which are found in nature, he emphasized. “These are parts of the genome that really look like many elements in the genetic material of bacteria, viruses, and plants.”

Representative of the Chinese Ministry of Foreign Affairs, Geng Shuang, at a briefing on February 20, 2020 formally appealed to the international community to fight conspiracy theories about Covid-19.

Recently, the winner of the 2015 Nobel Prize for Literature, writer Svetlana Aleksievich, said that everything happening in the world, including the Covid-19 pandemic, is to blame for the 5G network, which supposedly “affects the human immune system”. At the same time, not a single scientist, virologist or doctor confirmed or supported the version about the impact of 5G networks on a pandemic. According to the WHO, cellular communication cannot have an irreversible effect on the human immune system. It should be noted that the epidemic is present even in those countries where there is no 5G network. The conclusion suggests itself that 5G networks have nothing to do with the spread of coronavirus of a new type [14].

From the very beginning of the epidemic, opinions have circulated that Covid-19 arose as a result of genetic manipulations. despite the fact that Chinese scientists shared the genome of the virus in early January - and since then it has been freely studied by specialists around the world. In addition, at the end of March, the journal Nature Medicine published a paper confirming that SARS-CoV-2 arose as a result of natural evolution. One of the authors of the study of the comparative analysis of the sequences of the Covid-19 genome, Edward Holmes, professor of biology at the University of Sydney, also reacted to another wave of hypotheses about the origin of coronavirus. He said: “There is no evidence that SARS-CoV-2 originated in a laboratory in Wuhan” [14].

Dozens of scientists - virologists, microbiologists, infectious disease specialists - from all over the world note that there is still no evidence that the authorities of China or the United States deliberately launched SARS-CoV-2 into the people. Therefore, the theory that COVID-2019 is of natural origin and was transmitted to humans from bats seems to be the most probable. An international group of scientists and health experts from Germany, the Netherlands, the United States and other countries issued an official statement refuting worldwide rumors that the 2019 coronavirus disease virus was intentionally synthesized in the laboratory. They analyzed the genomes of the pathogen SARS-CoV-2, and overwhelmingly concluded that this coronavirus arose in the wild, like many other emerging pathogens. “Conspiracy theories only create fear, rumors and prejudices that jeopardize our global collaboration in the fight against this virus,” scientists say. “It is highly doubtful that the Covid-19 was created artificially. There are too many natural causative agents of this disease in nature, ”the expert believes. Galina Kozhevnikova, Head of the Department of Infectious Diseases with courses in epidemiology and phthisiology of RUDN University [13].

According to the doctor of medical sciences, a virologist, a professor at the National Research Center for Epidemiology and Microbiology named after N.F. Gamalei of the Ministry of

Health of Russia Anatoly Altstein, “most likely, we will live with this virus for quite some time - at least until the summer of 2021. And, of course, no one has canceled the thesis that the best way to fight a viral infection is an effective vaccine - its appearance will seriously change the development of the epidemic process.”

In conclusion, to the comments of scientists about the origin of the Covid-19 coronavirus, we can add that sooner or later, in the turbulent century - the age of genetics and genome - with modern laboratory research tools in the field of microbiology and virology and talented scientists in these fields around the world will be obvious: a person will answer all the questions of interest to us today [15].

Conclusion

The SARS-Cov-2 coronavirus, which causes the infectious disease COVID-19, is still poorly understood in many ways simply because it appeared in the human population only a few months ago. Mankind still does not know much about the peculiarities of its epidemiological "behavior" - what is the lethality of the virus, how many asymptomatic carriers it actually is, how the change of seasons will affect its spread. But this does not mean that we are completely blind: the genetic passport of the SARS-CoV-2 virus, its genome, was deciphered in the first weeks after the outbreak. Thanks to this, those who are on the scientific front of the fight against a pandemic can work: drug and vaccine developers [16].

Thus, the global epidemic COVID-19, the first epidemic in the last two hundred years, which takes place in the absence of any negative, catastrophic social factors provoking its development (the last global epidemic of “Spanish flu” unfolded against the background of the First World War) and which, even without reaching its peak, it will have serious economic and social consequences for the whole world, it returns us to the origins of our being. It brings us back to a situation where not a man, but his natural environment makes history. And in this sense, the COVID-19 epidemic can be seen as a kind of overture of the return of mankind to a real, rather than an imaginary History, in which similar phenomena and even more serious challenges await us in the future, and for which we must be prepared [15].

Predicting the development of the COVID-19 epidemic has proven to be a real challenge for science. According to many scientists, it is unlikely that it will be possible to suppress a pandemic by 100%. Now it can be seen in China - the second wave begins there, because the coronavirus infection is brought from other countries. Over time, the virus nevertheless evolves in the direction of less pathogenicity, retains its spread and joins those coronaviruses that are already known to us, and which already infect humanity for a long time. There are many forecasts for the future of our civilization after quarantine, but everyone agrees that humanity will be different, with new priorities

and a set of values. Life will rise and return to the streets, only from this very moment the streets will begin to change.

Bibliography

1. Lvov D.K., Kolobukhina L.V., Deryabin P.G. Coronavirus infection. Severe acute respiratory syndrome, / Text of a scientific work, Institute of Virology named after DI. Ivanovo Federal State Budgetary Institution, 2015, - 12 p.
2. Stovba L.F, Lebedev V.N, Petrov A.A, et al, Emerging Coronavirus Which Gives Rise to the Disease in Humans/ Problems of Particularly Dangerous Infections, vol. 2, 2015
3. Scientists warned of the possible leakage of the mutant coronavirus from the laboratory back in 2015 [URL: <https://ruwest.ru/news/99428/>].
4. The study confirmed that men die from Covid-19 twice as often as women [URL: <https://naked-science.ru/article/medicine/muzhchiny-umirayut-ot-covid-19-vdvoe-chashhe>]
5. Shchelkanov M. Yu., Popova A. Yu., Dedkov V. G., Akimkin V. G., Maleev V. V. The history of the study and the modern classification of coronaviruses (Nidovirales: Coronaviridae) (Russian) // Infection and immunity: scientific article. - 2020. - T. 10, No. 2. - p. 221-246.
6. Coronavirus in Moscow on June 12: how many sick, dead and cured [URL: <https://sport24.ru/news/zozh/2020-06-11-koronavirus-moskva-statistika-11-iyunya-statistika-koronavirusa-v-moskve>]
7. Chinese researchers have explained the negative effect mechanism of SARS-CoV-2 and the associated effectiveness of the two drugs [URL: <https://naked-science.ru/article/medicine/kitajskie-issledovateli-obyasnili>]
8. Shchelkanov M.Yu., Ananyev V.Yu., Kuznetsov VV, Shumatov VB Middle Eastern respiratory syndrome: when does the smoldering focus break out? // Pacific Medical Journal. 2015. No 2. P. 94–98.
9. World Health Organization. MERS situation update, January 2020. [URL: <http://www.emro.who.int/health-topics/mers-cov/mersoutbreaks.html> (29.02.2020)].
10. Lam T.T., Shum M.H., Zhu H.C. et al Identification of 2019-nCoV related coronaviruses in Malayan pangolins in southern China. bioRxiv, 2020. doi: 10.1101 / 2020.02.13.9.945485
11. Prokopenko I.S. Coronavirus. The killer virus Publisher: Eksmo-Press, 2020, p. 89
12. .Coronavirus COVID-19 as an overture of return. [URL: <https://colonelcassad.livejournal.com/5827237.html>].

13. Unrecognized genome: could a coronavirus be artificially created [<https://iz.ru/971588/anna-urmantceva-mariia-nediuk/nepriznannyi-genom-mog-li-koronavirus-byt-sozdan-iskusstvenno>]
14. The Nobel laureate declared the artificial origin of the SARS-CoV-2 coronavirus [URL: <https://naked-science.ru/article/media/nobelevskij-laureat-zayavil-ob-iskusstvennom>]
15. When will the coronavirus pandemic end and what will happen next with SARS-Cov-2 [URL: <http://www.sib-science.info/ru/institutes/kogda-zakonchitsya-pandemiya-koronavirusa-21052020>]
16. "Conspirology mutates" [URL: <https://www.svoboda.org/a/30538727.html>]