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Review Article

Competent treatment of coronavirus (literature analysis and own research – level of evidence – 4)

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Abstract

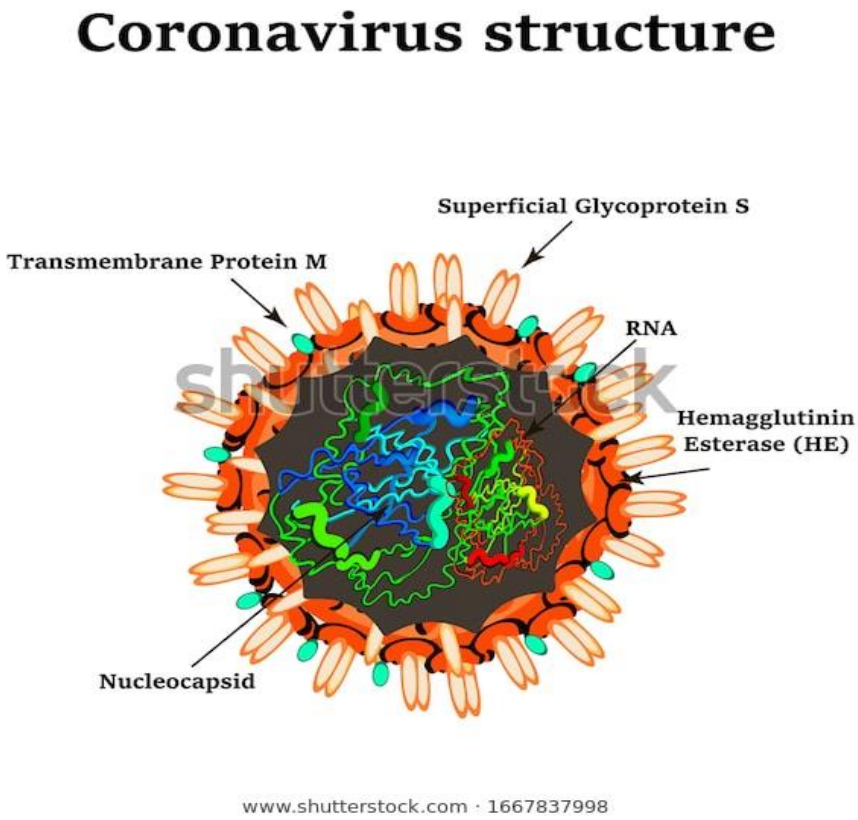
More detailed Patient zero, which was at the beginning of the current pandemic, which has already claimed the lives of about 650 thousand people, appeared in 2012. It was the miners ' lungs that created unique opportunities for recombination in the RNA of the virus. There, in the genome of the virus, thanks to the insertion of 12 nucleotides, the furin site of eight amino acids appeared, which is necessary for the pathogen to enter the human cell. Completely corresponding to the same fragment of a human protein and its gene.

Key words: coronavirus; specific etiotropic treatment; Ribavirin; Imunofan; Mexidol (Mexiprim) - combined drug combination

Introduction

The main biological feature of the virus is high contagiousness, which is many times higher than that of viruses that cause various acute respiratory infections, including influenza.

The root cause is reduced immunity as a result of long – term illiterate vaccination of mankind by generations (author's note).



Coronaviruses (Latin: Coronaviridae) are a family of viruses that infect humans and animals: cats, dogs, cattle, and birds. They cause acute respiratory diseases and intestinal disorders.

The coronavirus is transmitted from person to person and from animal.

More detailed Patient zero, which was at the beginning of the current pandemic, which has already claimed the lives of about 650 thousand people, appeared in 2012. It was the miners ' lungs that created unique opportunities for recombination in the RNA of the virus. There, in the genome of the virus, thanks to the insertion of 12 nucleotides, the furin site of eight amino acids appeared, which is necessary for the pathogen to enter the human cell. Completely corresponding to the same fragment of a human protein and its gene.

These miners really got into a unique situation, as they were subjected to a very large viral load (Konstantin Krutovsky, 2020). After all, they did not just work in the mine, their task was to clear it of accumulated in a huge amount of bat excrement, which is known to be especially saturated with coronaviruses. It is likely that one of the miners could have recombined the RNA of the coronavirus with the RNA of the human gene (controlling the ENaC-α protein) and having the same furin insert. It is believed that it is thanks to it that the effectiveness of SARS-CoV-2 penetration into cells has significantly increased. It is also possible that recombination occurred between SARS-CoV-like viruses, one of which already has this insert. However, it has not yet been found in nature.

Interesting research on Covid-19.

People who are ill without symptoms are more dangerous to others than patients who know about their positive status. They actively spread the disease and virus to the environment, while not getting sick themselves. It all depends on the strength of the immune system.

Scientists made this conclusion based on studies of samples of mucous membranes, as well as rectum, urine and blood in 60% of patients with coronavirus. It turned out that it is in patients who are asymptomatic that the amount of virus in the body is higher than in others. But with vaccination, it will be the same. Inside, a person is ill, but externally it may not be visible. During vaccination, there will also be the phenomenon of imprinting (interaction of vaccines delivered earlier or during the coronavirus pandemic), so virus carriers must be identified and treated. For example, traditional herbal medicine (Phytotherapy - author's note). The genetic material of coronaviruses is highly recombinant, meaning that different parts of their genome can be "collected" from different sources.

And this feature makes it very difficult to track their evolutionary origin, since it is necessary to identify all the recombined sites and find out the history of each of them.

The study found that the line of viruses that SARS-CoV-2 belongs to separated from other bat viruses about 40-70 years ago. And despite the fact that SARS-CoV-2 is about 96% genetically similar to RaTG13 found in horseshoe bats in China's Yunnan province in 2013, the two viruses diverged evolutionarily as early as 1969.

In addition, scientists have found that the receptor-binding domain (RBD) located on the spiked protein SARS-CoV-2, which it uses to enter human cells, is one of the long-acquired features that is also characteristic of related viruses. This means that other viruses capable of infecting humans are now circulating in the horseshoe bat population in China" (David Robertson, 2020).

Since RBD was only found in a few viruses that infect pangolins, these animals were mistakenly considered a necessary intermediate for the virus to pass from bat to human. Apparently, SARS-CoV-2 simultaneously developed the ability to reproduce in the upper respiratory tract of both humans and pangolins.
Scientists believe that to effectively prevent future possible epidemics, it is necessary to carefully monitor the viruses circulating in the population of wild bats, and previously identify those that are potentially capable of infecting humans. Standard coronavirus infections are restricted to the throat and upper respiratory tract. SARS-CoV-2 develops in the lungs. The lungs are much larger in both weight and surface area than the upper respiratory tract. The amount of potentially infected tissue in the average lung is about 4.5 thousand times more than is available for a normal coronavirus infection (Latham and Ellison, 2020).Based on the fragmentary similarity, it has already been concluded that SARS-CoV-2 was created using HIV inserts, that it was made using human inserts. You might as well say that it is made with inserts of manatees, crustaceans or mushrooms. Or that manatees are created with human inserts. In reality, this level of similarity between two genomes will inevitably be found for random reasons, and not just once.

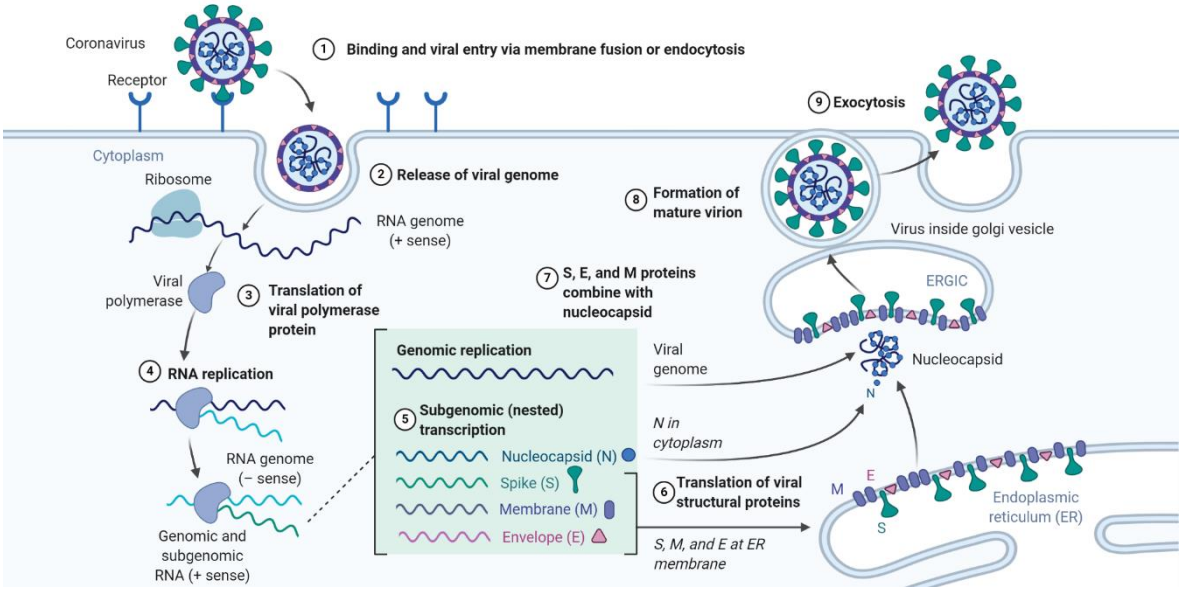
Such a strain as SARS-CoV-2 could well have appeared as a result of natural recombination (Sergey Netesov, 2020). The RmYN02 strain, which has 93.3% homology (similarity), is quite suitable for the role of one of the donors. The RmYN02 strain was found in the same Yunnan province as the closest relative to SARS-CoV-2. Described on may 10, 2020. At the same time, this strain has a furin-specific insert in exactly the same region of the genome - S1-S2, as the SARS-CoV-2 strains. So the current pathogen may well have a natural recombination origin. The exact mechanism of infection is the human factor (illiterate vaccination on the planet).

Restriction sites are areas in the genome that are recognized and cut at this location by special enzymes, restrictases. Restrictases are a kind of molecular "scissors". Before the invention of the CRISPR/CAS (genome editing tool) technology. They were actively used in genetic engineering to insert the necessary fragments into the genome or a specific gene.

Mutation of the virus

The source of the virus was bats. Then it was transmitted to tree - dwelling mammals-palm civets from which it migrated to humans. Communication of producers "Kopi-luvak" (coffee variety) with civets and infection with the virus occurred.

A key factor for the transmission of SARS-CoV-2 coronavirus is the rate of evaporation of moisture in the air.
Using theoretical modeling and hydrodynamic experiments, experts studied the effect of humidity, ambient temperature, and wind speed on the spread of tiny drops of saliva containing virus particles.
It was found that the viability of the virus is significantly reduced at high temperatures and low relative humidity due to the high rate of evaporation. In hot weather with high humidity, the probability of transmission of coronavirus remains high.
The findings explain why the pandemic intensified during July in various densely populated cities around the world with hot and humid climates.
Polymorphisms (mutations) in the gene encoding the ACE2 protein that the coronavirus uses to enter airway cells are known to make it easier or more difficult for the virus to enter cells. Not all people are susceptible to the coronavirus.



Risk factor

Vitamin D and zinc increase the body's resistance to coronavirus infection.

Biorhythms (peaks) of virus activity occur in winter and early spring. You can get infected with close and prolonged contact with the carrier of the virus. Coronavirus is transmitted by airborne droplets and contact routes.

Types of coronaviruses

There are four types of seasonal coronaviruses that cause respiratory infections: HCoV-NL63, HCoV-229E, HCoV-OC43, and HCoV-HKU1. most often, these infections are asymptomatic.

Named signs that a person has suffered a coronavirus asymptomatically

You can get over the coronavirus “on your feet”. According to Federal statistics, about 25% of daily detected infected people are asymptomatic.

According to scientists, there are five "mild" symptoms of the coronavirus.

These are changes in the sense of smell, slight shortness of breath and severe fatigue.

Many patients who were found to have antibodies in their blood reported abdominal pain due to problems with the lower lungs. Some had diarrhea and mild conjunctivitis for no reason.

Many doctors consider an asymptomatic carrier to be an "intermediate state" that does not pass without a trace. The disease can make itself known later, so it is important to contact doctors for any suspicious symptoms.

However, reinfections were most often observed 12 months after initial infection, and in some cases six to nine months later.

This applies to all four viruses studied. Hence, the authors conclude that immunity against the new SARS-CoV-2 coronavirus is likely to be short - no more than a year.

In winter, people in temperate countries are more likely to become infected with this family of viruses. The same picture should be expected for SARS-CoV-2, when it becomes seasonal after the pandemic.

A long - term study of seasonal human coronaviruses has shown that the immunity of those who have had an infection usually does not last long- from six months to a year.

The four viruses studied belong to different groups:

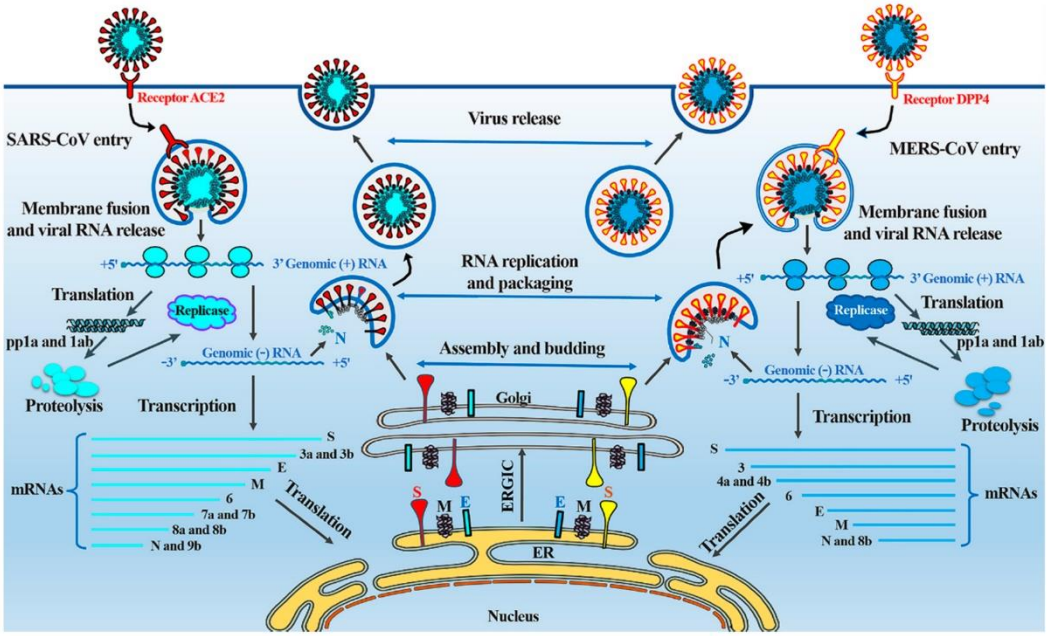
1.HCoV-NL63 and HCoV-229E are alpha - coronaviruses, while HCoV-OC43 and HCoV-HKU1 are beta-coronaviruses. They use different receptors to enter cells. HCoV-NL63 enters the cell through the ACE2 receptor, as does SARS-CoV-2, the rest through other receptors. But the nature of the immune response is very similar for everyone.

You should rely on natural immunity, and not engage in vaccination (author's note).

The mechanism of coronavirus penetration into the brain is revealed

Ciliated cells of the olfactory nasal mucosa are infected with the SARS-CoV-2 virus.

The SARS-CoV-2 virus enters the brain through nerve cells in the olfactory mucosa. COVID-19 is not a purely respiratory disease. In addition to lung damage, SARS-CoV-2 affects the cardiovascular system, gastrointestinal tract, and Central nervous system. One in three patients with COVID-19 reports neurological symptoms, such as loss or change in the sense of smell and taste, headaches, fatigue, dizziness, and nausea. In some patients, coronavirus infection is accompanied by a stroke or other serious diseases caused by the virus entering the brain.



Coronavirus is able to embed its own genetic material into human chromosomes

The retrovirus attaches to strictly defined host cells, since the proteins of its shell (capsid) correspond to receptors on the surface of these cells. After ingestion, the capsid breaks down under the action of either cellular enzymes or its own.

Viral RNA is released and undergoes reverse transcription: reverse transcriptase collects DNA strands along the RNA matrix. This proviral DNA then enters the cell nucleus and is embedded in the host genome. In the nucleus, viral RNA is collected again, and in the cytoplasm, it acquires a capsid. A new virus is coming out of the cell.

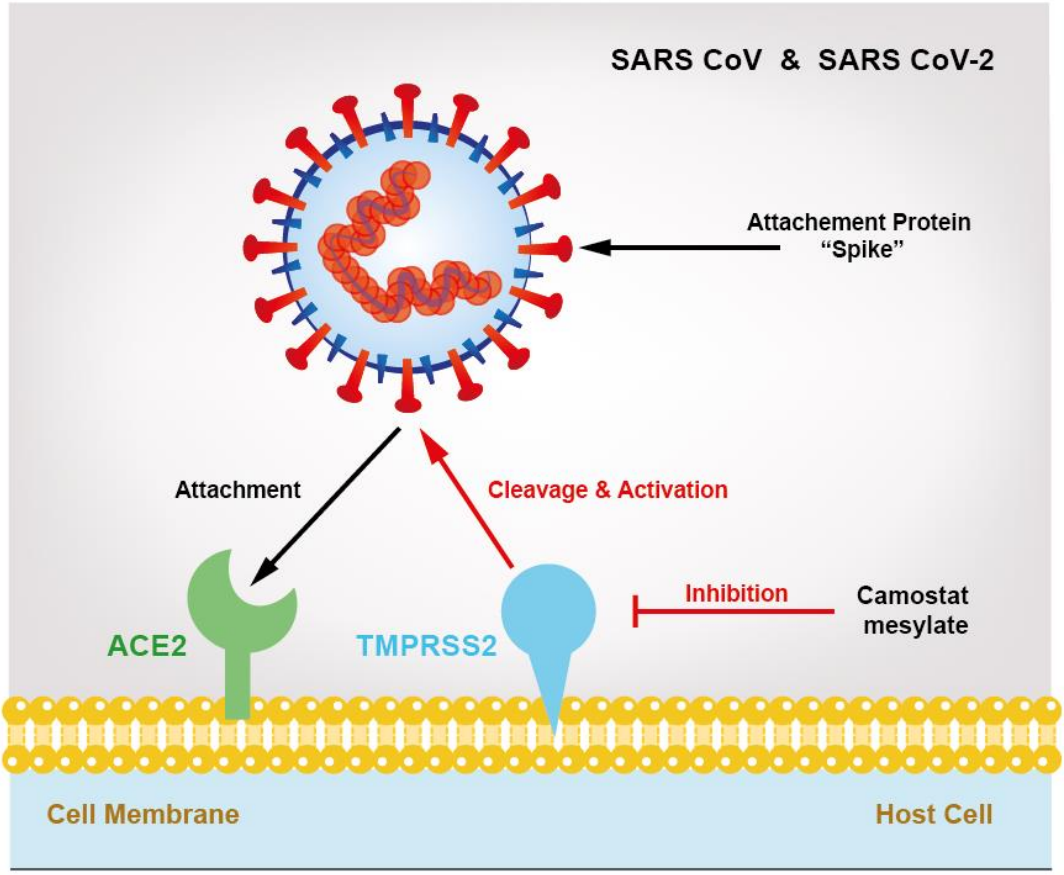


FIGURE 3: SARS-CoV-2 cell entry depends on ACE2 and the protease TMPRSS2.

To enter the cell, it connects to the receptors of angiotensin converting enzyme 2 (ACE 2). Before connecting to them, it is activated by host enzymes called serine proteases (TMPRSS2).

We studied tissue samples from 33 patients who died from COVID-19 in clinics.

Using the latest technology, samples taken from four different brain regions were analyzed.

All the tissues were tested for genetic material and spike protein of the SARS-CoV-2 virus.

As a result, the researchers found evidence of the virus in the neuroanatomic structures that connect the eyes, mouth, and nose to the brain stem. The coronavirus penetrates the olfactory mucosa. The maximum viral load was recorded both inside nerve cells and, in the processes, emanating from the nearest epithelial cells (Frank Heppner, 2020).

This path of penetration is also indicated by the anatomical proximity of mucosal cells, blood vessels and nerve cells in this area.

Once inside the olfactory mucosa, the virus uses neuroanatomic connections, such as the olfactory nerve. The virus moves from nerve cell to nerve cell to reach the brain (Helena Radbruch, 2020). The virus is also carried through blood vessels, as it has also been found in the walls of blood vessels in the brain.

SARS-CoV-2 is not the only virus that can enter the brain in this way. This can be done by the herpes simplex virus and the rabies virus.

The presence of SARS-CoV-2 in the nerve cells of the olfactory mucosa explains well the neurological symptoms found in patients with COVID-19, such as loss of smell or taste (R. Heppner, 2020).

SARS-CoV-2 was detected in areas of the brain that control vital functions such as breathing. It is possible that in patients with severe COVID-19, the presence of the virus in these brain areas exacerbates breathing problems caused by lung infection. Similar problems may occur with regard to cardiovascular function.

All patients in this study had severe COVID-19.

Stages of the coronavirus pandemic

Viral pandemics usually take place in three stages, and then fade away. So, for example, it was with the infamous "Spaniard" at the beginning of the last century. Usually, the second wave is stronger than the first, and the third, on the contrary, is weaker. This is due to the formation of population immunity in the population.

The coronavirus starts with adults who infect children, not the other way around. The virus multiplies in the body only if it has managed to enter the cells. The main "entrance gate" is the ACE2 receptor, the scale of which in cells increases with age, that is, in children it is minimal, and in adults it is maximum, especially in the elderly. In THE structure of covid-19 cases, children make up no more than 10%.

Two of the most subtle symptoms of the coronavirus that can be harbingers of the disease. This is a headache and severe fatigue that patients experience shortly before the disease.

Most often, they were experienced by older people.

Also, infection is indicated by fever, dry cough, unpleasant sensations in the lungs and loss of smell.

Infection with the coronavirus can trigger diseases such as autoimmune thrombocytopenia, lupus erythematosus, vasculitis, multiple sclerosis and Guillain - Barre syndrome.

Doctors usually call lung damage "frosted" glass or consolidation.

This occurs due to the fact that the vessels and alveoli break the barrier and the alveoli of the lungs are filled with fluid from the vessels.

Not all the alveoli in the "frosted glass" zone are completely filled with liquid, but gas exchange is difficult, so it becomes difficult to breathe.

Shortness of breath – occurs when the patient can not finish a sentence (22 breaths or more per minute), the lips and face have a bluish tinge, there is confusion of consciousness.

The possibility of coronavirus entering a human cell.

Comparison with SARS-CoV strains of atypical pneumonia and suspected zoonotic strains showed that SARS-CoV-2 acquired an insertion sequence at the S1/S2 site.

Of more than 20 thousand human proteins, the RRARSVAS peptide is present in only one - ENaC-α. Its low activity on the surface of the respiratory tract leads to impaired fluid reabsorption. This pathology has been observed in COVID-19 patients with acute respiratory distress syndrome. The virus has specifically evolved to mimic the human protease substrate. The probability of such a mutation is negligible (K. Krutovsky, 2020), although it is possible. He allowed several other options: the coronavirus had an intermediate host, it has long existed in the human population, or that it was grown in the laboratory on human cells. He also did not rule out the possibility of artificial origin of the insert.

Cholesterol acts as a "covid taxi", helping it get into healthy cells.

The coronavirus can attach itself to cholesterol particles, which helps it infect healthy cells as quickly as possible.

Scientists have studied the role of "good" cholesterol on the spread of the virus. The SR-B1 receptor present in all cells of the body was analyzed. It turned out that the pathogen cannot connect to the receptor directly, so cholesterol comes to the rescue, which, in turn, moves to the receptor to which it is sensitive.

The cholesterol molecule is transferred to its receptor to transfer the cornavirus to the cell surface.

In the future, a system for blocking the cholesterol receptor can be developed. This will help in the treatment of coronavirus. Especially for people with diabetes, obesity and cardiovascular diseases.

It is with their help that the interaction of the s-protein of the virus with the SRB1 receptors responsible for cholesterol and lipoproteins leads to infection.

For the same reason, many medications for viral hepatitis C, such as Ribavirin, act on coronavirus (author's note). His virus also uses the SRB1 receptor as the main distribution channel. Drugs that block the ACE2 receptor make it easier to carry a coronavirus infection.

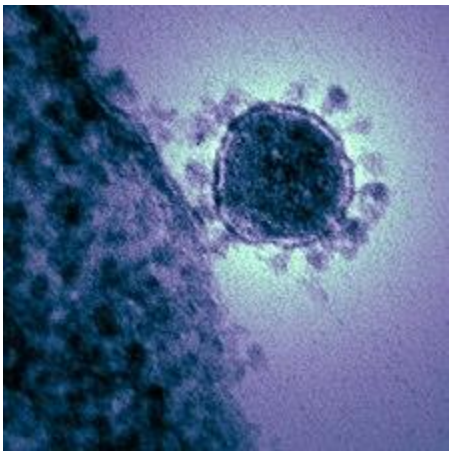
By acting on this feature of the virus, drugs can be created to suppress and treat coronavirus infection.

This system was developed by the author. It is called – Competent treatment of atherosclerosis (the book has not yet been published).

The discovery of the virus

The virus was discovered in 1960 and got its name from the villi on its shell, tending in different directions and resembling a crown.

Coronaviruses are known to cause a range of diseases, from the common cold to severe acute respiratory syndrome (TORS or "SARS").



Moment of attachment of the coronavirus to the cell receptor: coupling of the S-protein of the "crown" of the virus and the receptor.

After the virus attaches, the host cell cuts off the spike protein in one of its special "cleavage sites", exposing fusion peptides-small chains of amino acids that help open the host cell's membrane so that the virus's membrane can fuse with it. Once the invader's genetic material gets inside the cell, the virus commands the host's molecular machinery to produce new viral particles. These offspring then leave the cell to go and infect others.

SARS-CoV-2 is uniquely equipped to enter cells. Both SARS-CoV and SARS-CoV-2 bind to ACE2, but the SARS-CoV-2 receptor-binding domain is particularly tight. This is 10-20 times more likely to bind ACE2 than SARS-CoV.

Even more disturbing is the fact that SARS-COV-2 uses the furin enzyme from the host to break down the viral spike protein. This is a concern because furin is found in abundance in the respiratory tract and is found throughout the body. It is used by other dangerous viruses, including HIV, flu, Dengue fever and Ebola (the author described Ebola treatment back in 2016) to enter cells. In contrast, the cleavage molecules used by SARS-CoV are much less common and not as effective.

Furin's involvement may explain why SARS-CoV-2 penetrates so well from cell to cell, from person to person, and possibly from animal to human (Robert Garry, 2020). It gives SARS-CoV-2 100-1000 times more chances than SARS-CoV to penetrate deep into the lungs through recombination. This particular installation has never been found in any other coronavirus in any species.

At the basic level, viruses spread by entering a cell, capturing some of the cell's hardware, and using it to create more copies of the virus. These new viruses then infect other cells. One step in this process involves the cell making new viral proteins from viral RNA. This is called translation.

Several viral proteins interacted with the proteins of the person involved in the translation, and several drugs interact with these proteins. After testing them, two compounds were found that disrupt the translation of the virus.

These two compounds are called Ternatin-4 and Zotatiphine. Both are currently used to treat multiple myeloma and appear to fight COVID-19 by binding and inhibiting proteins in the cell that are necessary for translation.

Respiratory coronaviruses (for a detailed description)

They belong to the family Coronaviridae with two genera, Coronavirus (which also includes pathogens of gastroenteritis in children and Torovirus, viruses of a rounded shape with a diameter of 50 – 220 nm. Virions have a supercapsid, above which protrude spikes 12 – 24 nm long, they consist of a thin neck and a massive head of spherical or pear-shaped shape and resemble the figure of the solar corona, in connection with which the family is called coronaviruses. The core of the virion contains a nucleocapsid.

Of all RNA viruses, coronaviruses have the largest genome in the form of a single-stranded non-fragmented positive RNA from 27 000 – 32 000.

The virion contains 3 groups of proteins:

1.a nucleocapsid protein bound to RNA

2.matrix protein

3.endowing the virus with the ability to adsorb on the cell's receptors and penetrate it with glycosylated supercapsid proteins.

The natural hosts of coronaviruses are humans, domestic and wild animals, in which they cause widespread diseases.

It was found that the coronavirus has a 3C-like protease, which is the main enzyme in the infection.

COVID-19 has a weak point and can be used to stop the virus from replicating. A study of the disease found a 3C-like protease, which is also known as 3CLpro.

It is the main enzyme in the development of SARS-CoV-2, so if it is disrupted, the activity of the virus can be stopped.

To confirm their guesses, experts conducted experiments on laboratory mice. It turned out that the found protease inhibitors successfully stopped the replication of the infection.

Moreover, a set of medicines can stop not only the coronavirus, but also MERS-CoV. At the moment, the drugs have already received a license and patent and may soon be able to become available to patients.

Note that earlier attempts have already been made to find effective drugs against COVID-19. For example, in July, American scientists using the antiviral drug GC-376 and Boceprevir were able to suppress the viral protease Mpro, which is key in the reproduction of coronavirus.

A new method of treatment for COVID-19 was found in the Russian Federation. Russia has developed an led installation for the safe treatment of serious diseases, including COVID-19. The method is based on light irradiation of large body surfaces in the red range of the spectrum (author's note).

Respiratory coronaviruses are divided into 3 serogroups.

Infection from a sick person occurs by airborne droplets; the incidence is sporadic. Epidemic outbreaks of coronavirus infections in the form of fever, runny nose, bronchitis and pneumonia are observed mainly in the cold season. Before SARS, these outbreaks were most often caused by the HCV-209E coronavirus.

The incubation period is 4 – 6, less often 7 – 10 days. Sometimes up to 37 days!!!

SARS clinic.

The disease begins with an increase in temperature to 38 °C or higher, chills, dry cough, weakness, shortness of breath, and then quickly develops severe pneumonia, which causes respiratory disorders due to edema and inflammation of the alveoli.

Laboratory diagnostics of coronavirus infections, including SARS, is carried out:

1.by isolating virus cultures and identifying them

2.either by detecting virus-specific antibodies and increasing their titer in paired sera using various serological reactions or using DNA and RNA probes, PCR. However, all the proposed test systems for SARS diagnostics require additional study of their specificity. Their accuracy is up to 70 %.

Signs of coronavirus infection in the blood:

1.decrease in the level of white blood cells (leukopenia);

2.increased levels of neutrophils (neutrophilosis);

3.decrease in the level of lymphocytes (lymphocytopenia);

4.reduced platelet levels (thrombocytopenia).

Signs of coronavirus infection in the boichimical analisis of blood:

1.increased levels of liver enzymes ALT, AST or ALAT, ASAT (full name alanine-aminotransferase and aspartate-aminotransferase or transaminase);

2.increased C-reactive protein (abbreviated CRP) - increases with any inflammatory processes in the body;

3.an increase in the level of ferritin in the blood (hyperferritinemia) indicates a severe course in Covid-19. This is a marker of viruses and bacteria entering the body. The level of ferritin is also increased in hemochromatosis and excessive iron accumulation syndrome, sepsis, antiphospholipid syndrome (abbreviated as AFS);

4.increased levels of troponin in the blood are found in patients with ARI (acute respiratory diseases). Troponin indicates damage to the myocardium (heart muscle) and in coronavirus infection, if there is no suspicion of myocardial damage, the level of troponins is not determined;

5.the level of D-dimers (fibrin breakdown products) is increased. D-dimers in high concentrations appear in the blood after the destruction of a blood clot and a high level of D-dimers indicates the presence of blood clots. In patients with severe Covid-19 (severe pneumonia, acute respiratory distress syndrome (ARDS), and other complications of CVI), the level of D-dimers is abnormally elevated.

6.According to the General and biochemical analysis of blood + the level of D-dimers, the diagnosis of Covid-19 is not made.

7.It is recommended to look at the soluble fibrin monomer complex (rfmc)-this is the most sensitive test. This is what is included in the concept of "coagulogram". But, unfortunately, this test was not used everywhere during the epidemic. Everyone has looked at the D-dimer, but it works in very severe conditions, and rfmc is much more sensitive than the D-dimer. The D-dimer may be normal, and the rfmc may be elevated.

The diagnosis is made by a PCR smear from the nose, (if the material is found in the RNA of the coronavirus) + test for antibodies to Covid-19. Sometimes based on a typical picture of viral pneumonia in a chest CT scan. Changes in the lungs in viral pneumonia are poorly visible on a regular x-ray.

Blood tests are included in the mandatory list of examinations for suspected coronavirus infection and for a confirmed diagnosis of Covid-19. A General blood test for viral and bacterial infections looks different. What is called «viral blood» or «viral analysis» in everyday life looks exactly as described above.

8. low levels of glutathione

Glutathione prevents oxidative stress and inflammation, and helps boost the immune function of other cells in the body. Its low level makes the course of COVID-19 infection more difficult - it is associated with increased oxidative stress and exacerbation of inflammation in the lungs, which can lead to respiratory distress syndrome and possible death.

Foods's rich in sulfur (various types of onions, garlic, cruciferous vegetables) help increase the production of glutathione in the body, in addition to them – asparagus, potatoes, peppers, carrots, avocado, zucchini, spinach, dairy products. Regular physical activity also increases its level and reduces oxidative stress.

Piperine (black hot pepper) - copes with covid-19.

9.With 14 days of quarantine-swab sampling is taken for 10 days. Tests should be done within 48 hours. A coronavirus test is not done if there are no symptoms of the disease.

The author proposes to look at the dynamics:

1.Biochemical analysis - CRP, rheumatoid factor, ferritin, serum iron, zinc, thymol test, AST, ALT, creatinine phosphokinase, D-dimer in venous blood – increased ferritin, decreased zinc, increased inflammation.

2.immunograms of 2 levels of complexity and their analysis (reduction of Ig A and secretory IgA)

3.Protein fractions (decrease in total protein, hypoalbuminemia, rarely – hypoglobulinemia)

4.clinical analysis (blood from the finger) – leukopenia, lymphocytopenia, thrombocytopenia, acceleration of ESR.

Attention! In any case, PCR of smears from the anus in the case of children may be more informative for searching for infection than PCR of nasopharyngeal flushes (author's note).

5.in dynamics (at the initial treatment of the patient and after 2 weeks), blood Immunological fermentative analisis (IFA) is performed for the presence of antibodies to coronavirus. The minimum increase in the antibody titer to confirm the diagnosis is twofold. The most informative IFA becomes 10 or more days after the first clinical manifestations.

To make laboratory diagnostics more accurate, you need to:

It is necessary to do a microbiological analysis-seeding of urine, sputum, blood, the contents of the nasal and pharyngeal mucosa (author's note).

Moreover, for the correct laboratory result – you need to do smears for tests from all areas (author's note).

Before passing the coronavirus test, it is better for patients not to blow their nose, do not wash their nose and throat. At the same time, there are also rules for the laboratory: doctors must choose the right time for taking tests and follow the procedure. Before the pharyngeal smear, the patient should not eat or rinse his mouth with an antiseptic solution.

For three hours, a person should not drink, smoke, or brush their teeth.

Viral RNA is a fragile substance that quickly breaks down under the action of a number of enzymes.

The author observed the movement of Staphylococcus aureus in children, when they did only a smear from the throat, then the bacteria moved to the nose, so it was concluded that the same overlap of viruses can be in this case, so you need to do smears from different places to detect the coronavirus (author's note).

Moreover, for the correct laboratory result – you need to do smears for tests from all areas (author's note).

6.for the purpose of differential diagnosis, a bacteriological examination of feces and a coprogram are used.

7.roentgenography of organs of a thorax in 2 projections,

8.multispiral computed tomography of the lungs is used less often (to exclude similar pathologies).

9.markers – interleukin-6 (Christoph Messner, 2020).

10.Lactate is a product of cellular metabolism, a derivative of lactic acid. It can be found in cells in the form of lactic acid itself, or in the form of its salts. It begins to form in the body when the oxygen level in the cell drops.

11.glycosylated Hb

12.porphyrin of blood and urine

The radiological picture is usually characterized by a unilateral interstitial lesion in the form of pneumonitis, or bilateral focal drain pneumonia.

Differential diagnosis is performed with other acute respiratory infections, influenza, Ku fever, pneumocystosis, tuberculosis, legionellosis, ornithosis, mycoplasmosis, bacterial rhinopharyngitis, bronchitis, pneumonitis and pneumonia.

It is necessary to differentiate this pathology with viral diarrhea, salmonellosis, food toxicoinfections, dysentery, enterovirus infection.

13.pulse oximetry – oxygen saturation – low saturation – gives shortness of breath.

Opinion of a foreign colleague-after treating hundreds of patients in the United States (Dr. Hany Mahfouz, 2020):

COVID-19 does not cause severe viral pneumonia or ARDS, as originally thought. All lung mechanics are intact, and lung compliance in the ventilator looks normal. COVID-19 is a very unpleasant virus that causes a unique effect because it affects the hemoglobin molecules in the blood, and therefore develops severe hypoxemia and multiple organ failure due to a serious decrease in HB throughput caused by binding and inhibition of the hemoglobin molecule. Here's how the Hydroxychloroquine and Flavipilis, by inhibiting binding of the virus coat protein with the molecule of the porphyrin ring. Ventilation protocols and ARDS can cause lung damage caused by a ventilator, rather than treat it. Infiltrate in radiography and computed tomography is caused by oxidative stress from the accumulation of heme secreted by the virus in the alveoli, which causes chemical pneumonitis, not viral pneumonia. The virus depends on porphyrin, so it is more severe in men and grows faster with glycosylated Hb, and so it is bad in diabetics and elderly patients. The higher the Hb F and A2, the better, since there are no beta globin chains that can be linked. This is good for children. Hyperbaric oxygen and blood transfusions may temporarily help. The virus causes a condition similar to growth, methemoglobinemia, and carbon monoxide poisoning.

My Opinion of an Expert Clinical Pharmacist is that it is pneumonitis

Pneumonitis is an inflammation of the alveolar walls and interstitial lung tissue, in this case of infectious origin, which leads to scarring of the alveoli and fibrous changes in the supporting structures of the lungs.

The difference between pneumonitis and pneumonia is clearly visible on x-rays.

With pneumonitis, the pulmonary pattern is enhanced, darkening is observed in the lower part of the lungs, with pneumonia - darkening foci have uneven contours in various parts of the lungs.

Pneumonia is still an incorrect term, patients with COVID-19 develop virus-induced interstitiopathy (pneumonitis).

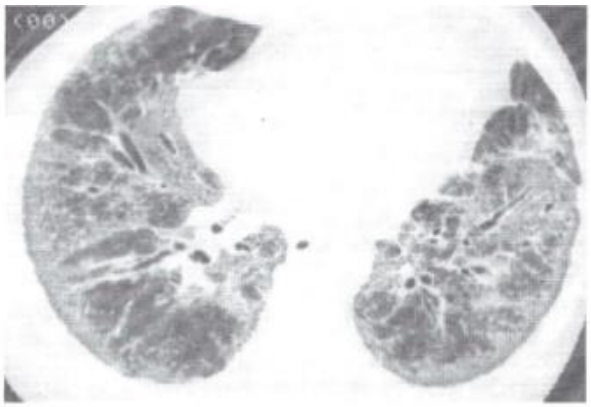
With pneumonitis, the pulmonary pattern is enhanced, darkening is observed in the lower part of the lungs, with pneumonia-darkening foci have uneven contours in various parts of the lungs.

Those changes that are detected in the lungs with covid are not true pneumonia. On a CT scan, the doctor sees a "frosted glass" - a decrease in the transparency of the lung tissue with a visible pattern of blood vessels and bronchi. This is due to a decrease in the airiness of the alveoli and thickening of the walls.

Two x-rays of the woman's chest.

The images show white spots in the lower corner of her lungs, which indicate what radiologists call «opaque frosted glass».

а



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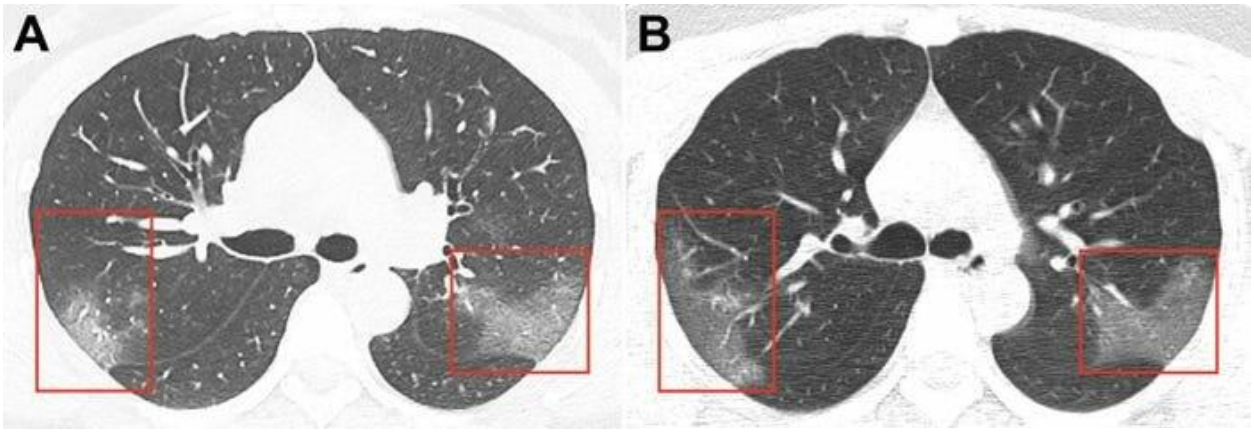


X-ray of the patient's chest. The difference between the images is 3 days.

Features in children - complications of pneumonia and pneumonitis in young patients appear immediately after the disease.

A child who is considered recovered may not feel well.

The following pathologies are more common.

Syndrome of Waterhouse-Friderichsen. Severe headaches occur, blood pressure drops quickly, and body temperature rises. Possible coma.

The neurotoxicity. The child becomes overly active, may have tantrums, or, conversely, it becomes excessively sluggish, shows indifference to everything. Your body temperature may rise significantly.

Pulmonary insufficiency. There is shortness of breath, breathing problems, darkening of the nasolabial triangle.

Sepsis. Your body temperature rises, your blood pressure drops, and you have problems with your heart rate. Loss of consciousness may occur.

Distinctive features of coughing when a person is sick with COVID-19

Regardless of the intensity of the cough in COVID-19 is always dry, not accompanied by sputum. If such a symptom appears, you should be examined (Nate Favini, 2020).

Dry cough is possible with allergies, asthma and gastroesophageal reflux. In asthma, the hallmark can be wheezing, which is almost not found in patients with COVID-19. And with allergies, coughing, like other symptoms such as itching and swelling, should go away after taking antihistamines (Sarah Narayan, 2020).

Percentage of lung damage in covid and what % is dangerous

Assessment of the severity of lung damage

The severity of the disease depends on the percentage of lung tissue damage. To calculate the percentage of damage, the doctor takes into account how many lung lobes are involved in the pathological process (there are 5 of them). It is estimated in points (from 1 to 5) the percentage of damage to each lobe, where:

1 point – less than 5% affected;

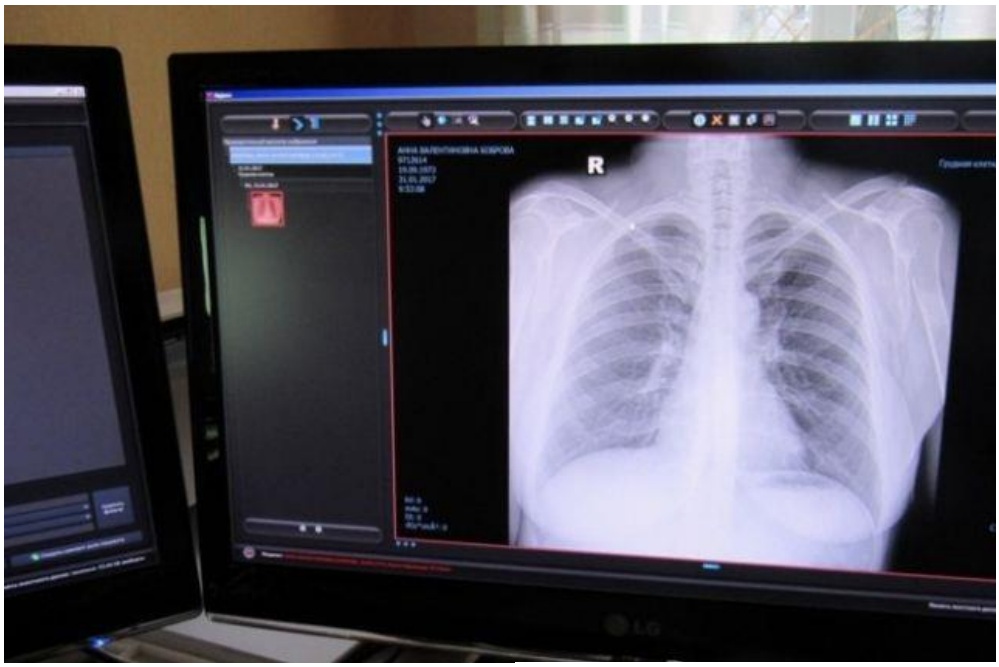
2 points-from 6 to 25%;

3 points-from 26 to 50%;

4 points-from 51 to 75%;

5 points – more than 76%.

Then the five received digits (points) are added together, and then multiplied by 4. This will be the percentage of lung tissue involved in the pathological process. It is important to understand that with the same severity of the disease, patients may feel differently: one will feel good if 50-75% of the lungs are affected, and the other will need a ventilator (this usually applies to those who have concomitant heart and vascular diseases).



At the beginning of the epidemic, doctors said that the most accurate picture of lung damage can only be seen with a CT scan.

Now the recommendations have changed somewhat. Perhaps, because huge queues accumulate at the CT, and people do not find themselves in these queues because of excessive suspiciousness.

In the first days of the disease, CT should not be done, and secondly, the doctor can see the lung damage on the x-ray.

In this regard, the majority of patients are disoriented. And this is quite predictable: a specific sick person-a teacher, driver, accountant-does not have medical knowledge. Therefore, it is not very clear when people are reproached for panicking, asking for examinations, etc. People are just afraid for their lives.

By the way, these days, none of the patients (some of them are ill at home with a high temperature and signs similar to covid, but the doctor diagnoses SARS) said that the doctors offered to examine the lungs on an x – ray.

Does x-ray or fluorography show viral pneumonia? I got sick at the end of September, went for CT-showed lung damage CT-1, took two antibiotics at the same time for 10 days, plus some other drugs, the temperature dropped, and after 10 days the therapist gave me a referral for fluorography. It showed that the lungs were fine, but the chest pain remained, a week later I did a second CT scan, the lung lesion remained CT-1. Who has encountered the same? Changed the scheme? (Patient Sergey Umnov, Magnitogorsk).

Can not stand! In social networks, South Ural residents discuss on kt in more Detail

Previously, pneumonia was diagnosed using x-rays. At the beginning of the coronavirus epidemic, it was believed that you can only see lung damage on CT.

Depending on the causative agent of pneumonia, they differ from each other in the clinic, the rate of increase in symptoms, and the size of the lung tissue lesion.

But with any pneumonia, there is a violation of the function of external respiration and intoxication. Pneumonia has its own differences in the x-ray picture. In bacterial pneumonia, the foci of inflammation are sharper and clearly visible on radiographs. When viral, on the contrary, more "blurring".

The standards for the examination of patients with suspected pneumonia include a chest x-ray. An experienced radiologist can immediately distinguish bacterial pneumonia from viral.

Initially, CT was given priority in the guidelines for covid-19. Yes, it is more informative in terms of diagnosing the localization of inflammation and its size. But this is only if this inflammation is present.

"Frosted glass" is an x-ray symptom. It occurs when interstitial lung damage occurs. A characteristic symptom of interstitial lung diseases is shortness of breath, which is a reflection of pulmonary insufficiency. It also occurs in covid-19.

The bottom line is that against the background of darkening of the lung tissue, the vessels and the lumen of the bronchi become visible. In principle, this can be seen on a simple radiograph-sometimes, but not always. But on CT, this symptom is easier to see.

It is important to understand that if there is no shortness of breath, fever, or intoxication, you should not immediately run for a CT scan. It won't do anything. Moreover, you should not make an appointment for a CT scan almost a month in advance-just in case.

Symptoms that require emergency measures are fever (which does not decrease for more than 3 days), shortness of breath, and intoxication. In any case, the diagnosis should be made by the doctor, and not by the patient himself.

Patients are advised to lie more on their stomach

In severe covid-19, there is edema of the alveoli, where gas exchange occurs. Because of this edema, the patient's lungs cannot get the necessary volume of air, oxygen absorption and carbon dioxide removal are disrupted.

To reduce this swelling and make it more uniform, patients are sometimes placed on their stomach so that the fluid flows from the back of the lung (which is where the lesion most often occurs) to the front. It's called propozitia. It is prescribed only by doctors.

In addition to coupling with ACE-2, there is also an enzyme metalloproteinase, which includes zinc.

Due to a decrease in the concentration of zinc in the body, colds occur. Need zinc-containing herbs or zinc preparations (author's note).

There is a substitution reaction, the displacement of zinc and iron from red blood cells, hypoxia develops due to the fact that red blood cells stop carrying oxygen. Sometimes iron is adsorbed more than necessary, being absorbed into the organs, and not into the blood. There is a transient phenomenon of hemochromatosis because ferritin increases (author's note).

Red blood cells behave like platelets, and they can initiate the blood clotting process when damaged. These damaged red blood cells in the lungs in small vessels begin to cause clotting, and this clotting can be prevented at first to avoid Ppevmonitis. Initially, the process is not in the alveoli themselves, but in the interstitial tissue, in the connective tissue, between the acinuses, so anti-inflammatory herbs are effective.

A dry cough is a marker of a negative development of events, if it becomes wet, it may soon begin to simply flow water into the lungs, such a cough passes in an upright position, when taking soda 4% solution, and indicates the likely penetration of coronavirus into cells and ACE-2 deficiency. ACE-2 deficiency causes shock reactions, especially against the background of panic, because the basic vascular tone drops.

The SARS-CoV-2 (COVID-19) coronavirus has similar weaknesses to other coronaviruses.

This will allow you to create a single cure. In the scientific work, scientists talked about the common drug target of pathogens that cause coronaviruses. "The researchers found more than 300 proteins produced by the infected cell that interact with SARS-CoV-2." Of these, experts have identified 20 molecules that affect how many viral particles of each coronavirus are synthesized inside the cells of the human body. These include the Tom70 protein (interacts with the Orf9b coronavirus gene).

Tom70 - is a mitochondrial enzyme. It is responsible for moving protein molecules from the cytosol to the mitochondria. In addition, it is responsible for activating mitochondrial signaling proteins that create protection against virus infection. According to scientists, the Tom70-Orf9b mix can be used as a target for antiviral drugs.

Russian virologists have identified SARS-CoV-2 coronavirus mutations in 13 Russian regions, but the latter do not affect the severity of COVID-19.

All identified substitutions in SARS-CoV-2 proteins are currently not associated with the clinical severity of the disease and do not affect the pathogenicity of the virus.

The M153T mutation in the s-protein of the coronavirus was detected in St. Petersburg and the Leningrad region, in Moscow, Perm, Altai, Krasnodar and Primorsky territories, in the republics of Adygea, Karachay-Cherkessia and Khakassia, Novosibirsk, Sverdlovsk and Omsk regions.

In General, most Russian viruses belong to the G, GR, and GH clades (the so-called groups of related virus strains that are widely distributed in Europe).

A Russian consortium for coronavirus sequencing has been organized to monitor the variability of SARS-CoV-2 viruses.

Experts have identified a partial mutation of the SARS-CoV-2 coronavirus, which suggests that a new version of it is being formed beyond the Urals. This conclusion was made by scientists based on certain changes in the virus protein.

The lowest risk of infection with coronavirus was found in medical institutions.

Depending on the proximity of contacts with patients, the risk level increases. The risk of infection is lower in public transport, catering establishments, and entertainment venues, but higher when communicating with a wide range of relatives.

The greatest risk of Contracting COVID-19 was in a family whose members live together. During self-isolation, they often come into contact with each other. At the same time, the longer members of the same family that has a covid-19 patient are together, the higher the risk of infection. Every day spent in the same home with an infected person increases the likelihood of transmission by 10 %.

Going grocery shopping during the coronavirus pandemic is more dangerous from the point of view of possible infection than traveling by plane. This is due to the operation of ventilation systems on Board aircraft and air recirculation, so it is important to use personal protective equipment.

Mutation of the coronavirus

The genetic material of coronaviruses is highly recombinant, meaning that different parts of their genome can be "collected" from different sources. And this feature makes it very difficult to track their evolutionary origin, since it is necessary to identify all the recombined sites and find out the history of each of them.

The study found that the line of viruses that SARS-CoV-2 belongs to separated from other bat viruses about 40-70 years ago. And despite the fact that SARS-CoV-2 is about 96% genetically similar to RaTG13 found in horseshoe bats in China's Yunnan province in 2013, the two viruses diverged evolutionarily as early as 1969.

In addition, scientists have found that the receptor-binding domain (RBD) located on the spiked protein SARS-CoV-2, which it uses to enter human cells, is one of the long-acquired features that is also characteristic of related viruses. This means that other viruses capable of infecting humans are now circulating in the horseshoe bat population in China (David Robertson, 2020).

Since RBD was only found in a few viruses that infect pangolins, these animals were mistakenly considered a necessary intermediate for the virus to pass from bat to human. Apparently, SARS-CoV-2 simultaneously developed the ability to reproduce in the upper respiratory tract of both humans and pangolins.

To effectively prevent future possible epidemics, careful monitoring of viruses circulating in the wild bat population is necessary, and early identification of those that are potentially capable of infecting humans.

The source of the virus was bats. Then it was transmitted to tree-dwelling mammals-palm civets from which they migrated to humans. Communication of producers "Kopi-luvak" (coffee variety) with civets and infection with the virus occurred.

The new variant of the virus in Britain is the classic SARS – CoV-2, but with a certain set of mutations.

The British focus is on two major changes affecting the virus's spike protein. The first is at the so-called N-end of the sequence. And the second is in the receptor-binding domain, through which the infection penetrates into human cells.

A mutation at the N-end is a deletion or simply a loss from the chain of two sites: H-69 and V-70. And, in fact, there is nothing new in this – such changes have happened in the structure of the virus before, it just gets rid of excess. And it does make him a little more dangerous. According to the results of studies in France, it was found that such a mutation slightly increases the chances of the virus giving a false negative result in the analysis.

Individual deletions that are now beneficial, which shorten his genome. That is, they even give him a small benefit in the speed of reproduction. The shorter the genome, the faster the virus multiplies (P. Volchkov, 2020). the

Second change was observed in the n-501 region, at the very end of the spike protein. One amino acid changed to another: asparagine to Terezin. Such a mutation in the coronavirus is generally one of the most common. After all, it's just one amino acid out of about a thousand that make up spike protein.

It is clear that one mutation can spoil one specific epitope, one specific antigen for recognizing immunity. But there is still the rest of the spike, and just like that, the virus will not leave the immune system (M. Kostinov, 2020).

So the new British form of the virus can not be called after all, and existing vaccines against it should work. A couple of missing amino acids and one replaced one are too few to start worrying seriously. But it is the expression of genes that can give rise to the virus and trigger cancer (author's note).

Yet the news from England once again reminds us that the virus continues to mutate. The longer it circulates among people, the faster its evolution proceeds, so it is possible that one day a more dangerous strain may still appear. However, it will be much easier to deal with it than with a new infection.

Predicting the severity of the disease-biomarkers of the disease

As a result, the researchers were able to identify six protein molecules, the concentration of which in the blood of a patient with COVID-19 on the first day of stay in the intensive care unit can predict how events will develop further, whether the person's condition will worsen, and patient survival.

The biomarkers found can be used to assess the risk of complications even before the patient is placed in intensive care, at the stage of seeking medical help (Douglas Fraser, 2020).

These are markers such as:

1.microalbuminuria-microalbuminuria/creatinine ratio - in patients with sepsis, high MAX levels appear earlier than increases in C-reactive protein and procalcitonin levels. The level of microalbuminuria itself can serve as a marker of the severity of the septic process. And sepsis is the growth of opportunistic flora and this condition should be treated with Immunomodulators, not antibiotics (author's note).

2.syndecan-1-its elevated level is a marker of glycocalyx destruction.

3.endocan is another glycocalyx base protein and can be released from it when exposed to IL-1 and TNF-α-indicating extensive lung damage.

4.glycosaminoglycans-their level indicates lung damage in acute respiratory distress syndrome.

5.angiopoietins – (Ang) - while fraction 2 (can not be determined).

Until now, it was assumed that such a massive formation of blood clots is associated with overexcitation of the blood clotting system as a result of a cytokine storm - an excessively strong immune response to the virus, so patients are prescribed anticoagulants-drugs that reduce the abnormal activity of the blood clotting system.

But the process of thrombosis is based on a completely different mechanism: during a cytokine storm, enzymes are formed that destroy the glycocalyx - the protective layer that separates the surface of the internal walls of blood vessels from the blood flow.

Glycocalyx, among other things, does not allow platelets circulating in the blood to adhere to the walls of blood vessels. When the glycocalyx is damaged, the vessel walls become inflamed, which creates favorable conditions for platelets to adhere to them and form blood clots.

When preventing and treating thrombosis in severe patients with COVID-19, instead of anticoagulants, it is necessary to use drugs that protect or restore glycocalyx, as well as substances that inhibit the ability of platelets to adhere to the walls of blood vessels. Clinical trials should prove the effectiveness of such therapy.

The mechanism of development of pneumonitis is twofold.

First, red blood cells settle, causing coagulation and loss of fibrin, and intracellular penetration of the coronavirus joins, then a cytokine storm develops, when all the active substances that destroy the cells affected by the virus are collected in the area of inflammation. Plus pulmonary edema caused by complications from the heart and blood vessels (author's note).

Intussusception angiogenesis (IA) is the way the body compensates for thrombosis and damage to blood vessels.

Damaged blood vessels may also be at the root of other problems observed, such as leg COVID, children with Kawasaki, stroke, and other seemingly unrelated problems observed with COVID-19.

This study shows the need for additional research on the angiogenesis and vascular effects of COVID-19.

Pulmonary edema is removed as follows: a needle is inserted into a vein and the blood goes down into the basin (a little blood). This is the fastest way to relieve pulmonary edema (author's note).

If you enter a diuretic – Furosemide (Lasix) into a vein, you may not have time because of the fatal outcome!!!

Smoking is a serious risk factor for coronavirus, because when Smoking, hemoglobin is elevated and serum iron in the body is a compensatory reaction to hypoxia (author's note).

Risk factors for death:

1.black and Asian people.

2.men

3.the elderly

4.uncontrolled diabetes

5.severe forms of bronchial asthma.

6.children under 1 year old

7.obesity

Acute phase of the coronavirus

After the incubation period, the acute phase of the coronavirus occurs and a person has the following symptoms:

High temperature (38-39 degrees)

Cough

Rhinitis

Sore and sore throat

Severe chills

Fever

Complicated breathing

Symptoms of intoxication:

Weakness

Dizziness

Headache

Nausea

Loss of appetite

Headache in coronavirus infection is associated with damage to vascular endothelial cells.

This applies not only to the lungs, but also to all organs absolutely. When the walls of blood vessels become inflamed, their lumen narrows, resulting in insufficient blood flow. Headache is a sign of hypoxia, that is, lack of oxygen, which is carried with the blood flow. This is a cry for oxygen starvation. This is why the author included the treatment of Mexidol (Mexiprim) in the adult treatment standards (author's note). Due to vascular damage, blood clots and hemorrhages occur, which worsen the blood supply to the tissues.

Severe stage of coronavirus

In a few days, the 2019-nCoV coronavirus is turning into a severe stage. The patient begins to have pneumonia.

Testing treatments to counter the effects of Covid-19 in the most seriously ill patients.

People with the most severe form of the disease have been found to have an extremely low number of immune cells, called T-cells, that clear the body of infection.

The clinical trial will assess whether a drug called interleukin 7, known for boosting T-cell counts, can help patients recover.

Immune cells in the blood of 60 Covid-19 patients and found a clear decrease in the number of T-cells (Adrian Haydey, 2020).

In a drop of microliter (0.001 ml) of blood, normal healthy adults have between 2,000 and 4,000 T-cells, also called T-lymphocytes.

In patients with Covid-19 between 200 - 1, 200.

Checking the level of T-cells in the blood, which could provide early signs of someone who may go on to develop a more severe disease.

But it also makes it possible for specific treatments to reverse this decline in immune cells.

About 70% of the patients, he sees in intensive care with Covid-19 arrive with between 400 and 800 lymphocytes per microliter. When they start to recover, their lymphocyte levels also start to return up (Manu Shankar-Hari, 2020).

Interleukin-7 has already been tested in a small group of patients with sepsis and has proven to safely increase the production of these specific cells.

In this trial, it will be given to patients with a low lymphocyte count, who have been in critical care for more than 3 days.

The asymptomatic course of COVID-19 is somehow related to the level of white blood cells

Key risk factor for developing a severe form of COVID-19 may be the level of CD4+ white blood cells, new research by American scientists has shown. They found that with the same viral load, it is the level of CD4+ that determines which scenario the disease will develop - asymptomatic or with hospitalization.

The question of why some patients carries COVID-19 asymptomatically, while others, even in the same families, require intensive care is of concern to scientists around the world. A new explanation is provided by American researchers who were able to analyze different indicators in the body of these two groups of patients.

The EurekAlert study involved 27 patients with severe COVID-19 and 25 people who were admitted to the Hospital for other reasons, but they tested positive for coronavirus. The researchers analyzed swab samples from the pharynx to assess the viral load in the body, as well as blood samples to measure the level of immunoglobulins, cytokines and immune cells.

Although both groups had a comparable viral load, there was a difference in the level of immune cells.

Asymptomatic patients had higher levels of CD4+ cells – white blood cells that are responsible for the body's immune response to the pathogen.

It is noteworthy that in this study, the researchers did not find significant differences in cytokine levels between the two groups, although it is known that patients showing symptoms are much more likely to have functional disorders in the organs.

Meanwhile, British scientists also name the probable cause of the development of a mild or severe form of COVID-19. In their opinion, the problem may be in the «breakdown» of the T-cell inhibitory mechanism.

Does the flu shoot increase CD4+ cells?

But when the flu is complicated by covid, the death rate increases 6 times.

So, the same thing will happen when you do 2 flu shots and covid.

Seven manifestations of the mild form of COVID-19 are described

Scientists divided the symptoms of mild COVID-19 into groups, and also identified blood biomarkers that allow monitoring treatment (Winfried Pickl, Rudolf Valentina, 2010).

A comparative study was conducted, which involved 109 patients WITH covid-19 in mild form and 98 healthy people, from which a control group was formed.

The authors identified seven groups of mild COVID-19 symptoms:

1.flu symptoms - fever, chills, fatigue, and cough

2."cold" symptoms - rhinitis, sneezing, dry throat and nasal congestion

3.joint and muscle pain

4.inflammation of the eyes and mucous membranes

5.respiratory problems-pneumonia and shortness of breath

6.gastrointestinal problems - diarrhea and nausea, as well as headaches

7.loss of smell and taste.

Researchers attribute the first three groups to systemic symptoms, and the last two to organ - specific ones. This separation is necessary for the correct diagnosis of the primary disease.

It has been found that loss of smell and taste mainly affects people with a fresh immune response, measured by the number of immune cells, T-lymphocytes, that have recently arrived from the thymus gland.

At the same time, scientists have found that the mild form of COVID-19 leaves behind significant changes in the immune system, well detected within ten weeks after the onset of the disease.

One of these signs is a low level of granulocytes-white blood cells responsible for fighting bacterial pathogens. And this, according to the authors, should be taken into account when determining the treatment strategy and developing vaccines.

In patients with mild COVID-19, memory cells developed in the CD4 and CD8 compartments of T-lymphocytes, while CD8 T-lymphocytes remained strongly activated for a long time. This indicates that a few weeks after the initial infection, the immune system is still actively fighting the disease. At the same time, the number of regulatory cells is significantly reduced. This can lead to an autoimmune reaction.

Elevated levels of antibody-forming immune cells were found in the blood of the convalescents.

And the higher the patient's temperature was with a mild course of the disease, the higher the level of antibodies.

Research shows that in COVID-19, the human immune system doubles its efforts due to the combined action of immune cells and antibodies. This is similar to how a modern football team operates, building a defense - memory cells can remember certain "moves" from the virus and respond to them. We are talking about using these results to develop vaccines against COVID-19.

The identified biomarkers will not only help to develop highly effective drugs, but also allow creating a more accurate system for monitoring the disease.

1.1.1 Risk factors for coronavirus (severe stage)

1.1.2 People are considered extremely vulnerable if they are at very high risk of developing a serious illness as a result of exposure to the coronavirus (COVID-19), and may need to be hospitalized. People with a range of long-term lung diseases are in this group if their condition is severe.

1.1.3 People with severe long-term lung diseases in this group include people:

1.1.4 1.all types of cystic fibrosis

1.1.5 2.severe asthma

1.1.6 3.severe chronic obstructive pulmonary disease (COPD)

1.1.7 4.lung cancer and mesothelioma that are undergoing active chemotherapy or radical radiation therapy

1.1.8 5.severe bronchiectasis

1.1.9 6.interstitial lung diseases, including pulmonary fibrosis and sarcoidosis

1.1.10 People with severe COPD

1.1.11 1.Triple therapy. This means taking a long-acting beta agonist (LABA) and a long-acting muscarinic agonist (LAMA) and an inhaled corticosteroid (ICS) in either November or December 2019. They can be prescribed either as 3 separate medications, or as a combination of single and double or combined medications, or as a triple therapy.

1.1.12 2.People who had a prescription for roflumilast as Recently as November 2019 or December 2019.

1.1.13 But some people who take this type of medication may only have mild COPD. And not everyone with severe COPD gets triple therapy.

1.1.14 Severe bronchiectasis

1.1.15 This includes people with bronchiectasia who:

1.1.16 1.meet any of the criteria listed in the COPD list

1.1.17 2.take long-term antibiotics, such as inhaled antibiotics or macrolides

1.1.18 3.have a long-term Pseudomonas aeruginosa infection, long-term pulmonary aspergillosis, or are receiving treatment for non-tuberculous Mycobacterium pulmonary disease (NTM)

1.1.19 4.there are 3 or more outbreaks or exacerbations per year

1.1.20 5.use of inhalation physiotherapy

1.1.21 6.tuberculosis

1.1.22 7.Interstitial lung diseases, including pulmonary fibrosis

1.1.23 8.Sarcoidosis

1.1.24 9.Pulmonary hypertension

1.1.25 10.Immunosuppressants

1.1.26 People taking immunosuppressive medications should practice social protection for any reason. These include:

1.1.27 1.Prednisone

1.1.28 2.Methotrexate

1.1.29 3.Azathioprine

1.1.30 4.Mofetil Mycophenolate and sodium Mycophenolate

1.1.31 5.Cyclosporine

1.1.32 6.Sirolimus

1.1.33 7.Tacrolimus

1.1.34 8.received intravenous Cyclophosphamide, Rituximab, or Infliximab within the last 6 months.

Other lung diseases

Criteria:

1.the use of oxygen at home

2.use of non-invasive ventilation

3.walking more than 100 m due to shortness of breath, even at your own pace

4.hospitalization in the clinic last year due to an acute attack of lung condition

5.treatment with immunosuppressive agents

Your conditions make patients particularly vulnerable to the coronavirus.

The severity of the coronavirus determines the composition of the lung microbiota

SARS-CoV-2 S-protein binds not only to ACE2 protein, but also to host immune cell lectins. The coronavirus interacts with polysaccharides of the lung microbiome bacteria that can cause respiratory tract infections.

This fact allows us to understand new molecular pathways involved in infection to exploit virus transmission and exacerbate the patient's immune response. Binding of SARS-CoV-2 S-protein to lectins leads to an inadequate immune response. It is noteworthy that earlier doctors did not know about this fact.

Symptoms of severe coronavirus:

severe cough (often wet, rarely dry)

Pain in the chest

Severe shortness of breath

Fluid in the lungs

Difficulty breathing

Tachycardia (thisfile)

Indigestion

Diarrhea

Abdominal pain (abdominal syndrome).

Changes in hearing can signal infection with coronavirus.

It is noted that a number of patients who were diagnosed with COVID-19 previously complained of tinnitus – ringing or tinnitus without any external stimulus. In addition, cases were identified when patients with severe coronavirus had this symptom resulting in complete hearing loss in the future. Immunity from the actions of the virus is greatly weakened, which leads to an exacerbation of chronic diseases.

The risk group includes the elderly and people with weakened immune systems. The coronavirus is not only dangerous for adults, children can also get sick.

Important!!! The coronavirus can cause changes in the brain associated with manifestations of schizophrenia, Alzheimer's and Parkinson's disease. At the same time, it turned out that the virus causes such changes not only in patients with complications, but also in patients with a mild form of the disease.

Attention! During hospitalization, you need to give earplugs because there is a lot of coughing in the wards.

Attention! The discharge from the nose in coronavirus has a sour-lemon taste, similar to the smell of lemon or copper oxide (author's note).

In Moscow, hospitals feed well – 5 times a day. On the periphery in Russia - the food is bad.

Clinical examples

Nurse Madina evloeva worked in a covid hospital and did not hurry to go on maternity leave, so as not to abandon colleagues and patients. I got infected while I was already pregnant. She was seven months pregnant when the virus hit her lungs, causing her to stop breathing on her own. Madina gave birth to a son already on a ventilator with a diagnosis of "coronavirus" and a lung lesion of 90 %.

Doctors decided to perform an emergency caesarean section. The baby was almost not given a chance; however, the doctors took the risk and were not mistaken. The son survived, after that the doctors fought for 20 days for the life of his mother. But Madina died without ever taking her baby in her arms.

The baby was born prematurely, but it was released. The coronavirus was not transmitted to him.

Baby Kirei is under the care of doctors. After the New year, his aunt can pick him up.

Baby Kirei was transferred from the intensive care unit of the hospital to the ward on December 21. Doctors noted that the boy is developing well, gaining weight. He will stay under medical supervision until the New Year. If the court does not establish paternity, the child can be taken by aunt Kireya. She's already applied to the foster care service. Kirei was born in Botkin hospital. Now he is in the Children's city hospital. His mother died at 32 weeks of pregnancy from the coronavirus. Also, the parents of this 36-year-old woman - the baby's grandparents-died from COVID-19. Two applications have already been submitted to the guardianship authorities-from a young man who considers himself the biological father, as well as a great-aunt of the child's mother, who lives in Mordovia.

Abnormal cases of coronavirus in children have been recorded

The results of PCR analysis for SARS-CoV-2 were negative all the time. At the same time, specific antibodies to the virus were observed in infected people. The researchers monitored the health of a family of five in which both parents were ill with COVID-19. The symptoms started a few days later, after they returned from a trip where they did not take their children with them. Signs of the disease included coughing, nasal congestion, fever, and headache. After going to the doctor, the whole family was tested for SARS-CoV-2, and the results of tests were positive for the parents, and negative for the children, despite the fact that they had been in contact with their loved ones for a week and a half.

Although two boys aged nine and seven subsequently developed mild symptoms, the results of repeated tests were still negative. The five-year-old daughter had no symptoms at all, although she often slept in the same bed with her parents during their illness.

The researchers asked the family to take part in a study that took blood, saliva, stool, and urine samples from everyone, as well as swabs from the nose and throat every two to three days. It turned out that each family member had antibodies against SARS-CoV-2 in their saliva. Thus, a certain level of exposure from the coronavirus caused an immune response in children, while the youngest child in the family had the highest antibody response.

The fact that the children were able to fight the virus, and they did not even have a positive test result, suggests that their immune system is active enough to respond and effectively fight the virus. However, they never get COVID-19 (Shidan Tosif, 2020).

Abnormal clinical cases of coronavirus in adults

Weakness, fog in the head, pain in the ribs (it hurts the lungs), headaches to the point of nausea and photophobia. I get tired very quickly, shortness of breath, at the end of a walk with the dog I just can't walk, it stings and aches in my lungs, I suffocate.

COVID-19 affects infants somewhat differently than adults, adolescents, and even children over 3 years of age.

1.in newborns and infants, community-acquired pneumonia – the most dangerous complication, according to who, is registered several times less often than in adults – 5% of all cases.

2.Newborns can get infected even in the first minutes of birth, and the mother's immunity will not save (unlike diseases such as measles, chicken pox, and others). The mother's antibodies, even if she has had covid, are not transmitted to the child. Usually up to 3 months, the baby has the mother's antibodies, but not in this case.

3.according to research by Chinese doctors, the virus is not transmitted in utero. A sick woman in labor (if safety rules are observed) will not infect the newborn. But in the case of operative childbirth, this rule for some reason gave exceptions – about 10%.

4.the Overwhelming number of infants easily carry the infection, often asymptomatic. But some babies were found to have pneumonia without its external manifestations and characteristic symptoms. Sometimes a strong sniff of the baby.

5.symptoms of coronavirus: fever, cough, weakness, diarrhea. There may be respiratory failure. If the temperature is higher than 39°, you should call an ambulance, as well as in case of heavy breathing, blue nasolabial triangle, coughing attacks.

6.in young children, the enzyme that SARS-Cov-2 clings to is rigid in structure, which means that the virus's spikes can't cling tightly, and the disease often passes easily.

7.babies have clean lungs without chronic diseases, and they have not yet acquired bad habits, have not been poisoned by the environment.

8.an interesting fact, not yet explained by scientists: if a child has another virus, the "crown", joining the first infection, often passes easily. And, strangely, in this case, the child, having all the signs of covid, does not show laboratory "+".

9.there Are isolated cases of infant deaths from this virus. Symptoms became pronounced, there were "bubbly" wheezing, cracking in the lungs, respiratory failure and heart problems.

10.Weak infants, underweight, with malformations - at risk.

11.the Coronavirus is not transmitted through breast milk, but it is transmitted by airborne droplets. A sick mother can be isolated, but expressed. Or be with a child, but in a mask that needs to be changed often. It is undesirable to stop lactation abruptly: it is harmful for both mother and baby.

12.When pumping you need to follow special hygiene and to disinfect the hands, chest, a bottle and a breast pump.

13.treatment of the baby according to the scheme of ARVI: drinking, rest, washing the nose, airing the room, fighting high temperature, if there is one.

14.In the treatment of sick mother some antibiotics, breastfeeding can save. But you need to consult a doctor.

The genomes of coronaviruses

We examined the genomes of 4856 patients from China, Europe, and the United States who had COVID-19, and found variations in two regions that determine the severity of the disease. They then determined which proteins encode these sections of the genome and what role these proteins play in the body in the context of the disease.

One of the two regions of the genome was associated with the CD209 antigen, a protein that causes the SARS-CoV-2 virus to infect human cells.

Scientists are increasingly finding genome hotspots associated with COVID-19, but it is often not clear how they affect the disease mechanisms themselves (R. Gersten, 2020). The protein most strongly expressed in this region is a coreceptor of the virus that causes COVID-19. Currently available so-called antibody cocktails mainly target the virus's spike proteins. But proteins in the human body are captured by SARS-CoV-2 and other coronaviruses.

The second region of the genome identified by the researchers is associated with the poorly understood protein CXCL16, an inflammatory chemokine that scientists believe plays a role in attracting immune cells-lymphocytes-to sites of infection.

The researchers discovered the virus in a laboratory setting and forced it to multiply in a culture of human cells.

For the experiment, the cells were modified: the gene for reverse transcriptase (RT), an enzyme that triggers the formation of double - stranded DNA based on information from single-stranded RNA, was included. In some cells, the OT gene characteristic of HIV was used, in others-LINE-1: intranuclear elements in DNA that are considered fragments of ancient retroviral infections. Today, they occupy about 17 % of the human genome, but are rarely activated.

Due to reverse transcriptase, parts of SARS-CoV-2 RNA were converted to DNA and integrated into chromosomes.

Despite the fact that the work was carried out in laboratory conditions, the same processes can be triggered in the human body when infected with a new coronavirus. At risk, first of all, are patients with HIV.

Elements of SARS-CoV-2, embedded in human DNA, most likely become subgenomic fragments. It is no longer about a full-fledged virus, but about its traces in the DNA. Perhaps because of them, in patients with COVID-19, PCR analysis often gives a positive result even after recovery.

This means that the tests distort the results of studies evaluating the effectiveness of treatment. In addition, the question remains open: whether SARS-CoV-2, embedded in the DNA, can produce its own copies, as, for example, HIV does. After integration of RNA fragments into the genome, reproduction of the new virus is impossible. This means that those who have been ill, despite positive tests, are no longer contagious.

A way to accurately predict the severity of COVID-19 has been found

But laboratory conditions are significantly different from a living organism. In addition, the probability of integrating viral RNA into the genome using LINE-1 elements is extremely low. They rarely show activity in human DNA.

There is no clear evidence that human DNA fragments similar to SARS-CoV-2 elements appeared as a result of reverse transcription of viral RNA (Marius Walter, 2020).

Fragments of SARS-CoV-2 are in principle able to integrate into the genome. Apparently, the virus, embedded in the chromosomes, stops reproducing, and from a biological point of view, it is death for him (David Baltimore, an American biochemist who received the Nobel prize for the discovery of reverse transcriptase). Moreover, it is not yet clear whether the cells in the human body where the reverse transcription process occurred die or continue to live.

Most experts do not deny that hypothetically SARS-CoV-2 can be embedded in human DNA, although the probability is extremely small. But in the distant past, many viruses did a similar trick.

The proof of this is the human genome: it contains about 98 thousand endogenous retroviral elements (ERV) - DNA sequences of ancient viruses.

The last such retrovirus infected the population about 150 thousand years ago. Judging by the original genome, which was restored by two groups of scientists at once, it was exogenous, extremely contagious and had the same reverse transcription mechanism. However, unlike SARS-CoV-2, it converted RNA to DNA on its own. In addition, it affected either germ cells or germinal cells - eggs and spermatozoa are formed from them in the early stages of embryogenesis.

Today, no modern virus with a DNA stage, not even HIV, is able to infect them.

Appeared complications: clicks in one ear and hard hearing him (otolaryngologist shrugged); greatly decreased vision to minus one; there are blackouts, the growth was less than two to three inches (this is noticed by others), doctor said it was due to the loss of fluid and protein; much hair falls out. The liver and pancreas were affected, and digestion was disrupted.

Use of Antibiotics in coronavirus

The use of antibacterial therapy in patients with COVID-19 is justified only if there are convincing signs of bacterial infection, including leukocytosis, the appearance of purulent sputum and an increase in procalcitonin levels ≥ 0.5 ng/ ml.

It is justified only if there is a reasonable suspicion of the development of severe community-acquired bacterial pneumonia against the background of a viral infection, while macrolides are used in combination with anti-pneumococcal β-lactam antibiotics.

The same applies to the use of respiratory fluoroquinolones. When nosocomial (nosocomial) bacterial pneumonia develops in patients with COVID-19, antibacterial therapy is performed according to the General rules-taking into account the severity of the patient's condition, the local epidemiology of antibiotic resistance in the hospital/Department, risk factors for infection caused by resistant bacteria, and the results of microbiological diagnostics (R. S. Kozlov, 2020).

Nutrition features and laboratory tests

If the hemoglobin is low, you can take pomegranate juice, liver, Fig peaches, apricots.

If hemoglobin is elevated, ferritin is elevated, then you need drugs that remove excess hemoglobin and ferritin from the body (author's note). These can be synthetic or herbal preparations (you need to select them).

Attention! Due to the long-term quarantine in Russia, there are more divorces in families. Some people find it difficult to stay 24 hours a day with their spouses and children.

Examples of writing diagnoses in medical records and medical records (author, 2020):

1.SARS is always severe (L-form) with or without transient hemochromatosis, eosinophilia or without it

2. 2019-nCoV – S-form

3.intestinal coronavirus, gastroenteritis

4.SARS, complicated by Kawasaki disease (typical for children 1-2 years old)

5.MERS

Groups of coronaviruses

Pathogens are a family of RNA-containing coronaviruses.

Within the family, there are three groups of infectious agents that are dangerous to humans:

1.human coronavirus 229 E

2.human OS-43 virus

3.enteric coronaviruses of man.

The reason for the appearance of a new type of virus (SARS pathogen) is considered to be a spontaneous mutation, when other nucleotides are formed instead of the usual RNA of the human genome that provide human metabolism (author's note). But this is a consequence of the cause. Mutations arise from agents, such as viruses, drugs, and other xenobiotics (author's note). The source of the infectious agent is a sick person (or carrier), the transmission pathways are airborne and, much less often, contact – household, implemented through toys and household items contaminated with coronavirus.

Risk factors for coronavirus are:

1.children's age

2.reduced immunity as a result of prolonged illiterate vaccination – this is both the root cause of the disease

3.prolonged stay in poorly ventilated areas with a large crowd of people (a large concentration of viral particles for the occurrence of the disease).

The stability of the coronavirus

The pathogen is unstable in the environment, dies when exposed to normal doses of disinfectants, ultraviolet light and high temperatures.

SARS - associated coronavirus is more stable outside the body and can persist in the external environment for up to 4 days.

Risk groups for the incidence of atypical coronavirus pneumonia are:

1.children

2.HIV-infected persons

3.elderly people

4.patients with severe chronic diseases (lung damage, diabetes, cancer),

5.residents of communal apartments, dormitories, barracks, barracks,

6.medical personnel and service workers.

At a severe stage, additional symptoms are often found – diarrhea, stomach upset (up to 30% of cases). In addition, the body may encounter concomitant diseases – fungal infection, rotavirus, neurological pathologies. Immunity from coronavirus infection drops sharply, so all chronic diseases become more acute.

The overall mortality rate from 2019-nCoV is estimated to be up to 10%. The risk group includes people with weakened immune systems and the elderly.

The main manifestation of coronavirus infection is an abundant watery transparent discharge from the nose, which is replaced by a mucous membrane - rhinorrhea (sour-lemon smell).

Difficult nasal breathing and decreased sense of smell are characteristic. In children and immunocompromised individuals are observed scratchy, sore throat, harsh cough with no sputum and the increase in cervical lymph nodes.

Coronaviruses can only cause isolated damage to the digestive system, accompanied by nausea, vomiting, abdominal pain (mainly in the epigastrium) and liquid watery stools.

Gastroenteritis is usually benign, without the development of dehydration, although if the coronavirus affects the digestive system of infants, it may quickly progress to exicosis.

Signs of TORS (SARS) are (severe coronavirus):

1.no runny nose

2.high fever (more than 39°C)

3.painful dry cough and

4.progressive shortness of breath;

5.in some cases, the so-called adult respiratory distress syndrome develops, leading to severe respiratory failure.

6.after BCG vaccination for 1-2 years, there may be risks of respiratory distress syndrome in children, leading to sleep apnea in infants (leads to death in sleep)-(author's note), so it is necessary to distinguish nosology from iatropathy (author's note).

The difference between the mild stage of coronavirus infection from severe and very severe.

The incubation period of coronavirus infection is from 2 to 14 days, on average-5-7 days.

The most severe shortness of breath develops by 6-8 days from the moment of infection. It was also found that the first symptoms may include myalgia (11%), confusion (9%), headaches (8%), hemoptysis (2-3%), diarrhea (3%), nausea, vomiting, palpitations. These symptoms at the onset of infection can also be observed in the absence of an increase in body temperature.

C-reactive protein (CRP) is the main laboratory marker of lung activity. Its increase correlates with the volume of lung tissue damage and is the basis for starting anti-inflammatory therapy.

Acute respiratory distress syndrome is a severe manifestation of respiratory failure: less oxygen reaches the organs than necessary.

The study shows a new direction in the treatment of severe COVID-19

Researchers have identified an effective treatment for the deadly over-activation of the immune system seen in many patients with severe COVID-19.

How exactly does the dangerous complication of the coronavirus - cytokine storm develop? Cytokines are a group of small proteins that can either enhance or suppress our body's immune response to infections, injuries, and diseases such as cancer. One of their main functions is to stimulate inflammation, which triggers the healing process. The problem is that excessive stimulation of the inflammatory response can lead to dangerous complications, ranging from asthma to severe autoimmune diseases, respiratory distress syndrome, and death. To better understand the molecular mechanisms of the reaction, the researchers first studied the

cytokine profiles of 91 patients with bacterial sepsis, acute respiratory distress syndrome, or burns. Patients from all three groups had elevated levels of the Pro-inflammatory cytokines IL-6, IL-8, IL-10, and MCP-10, as well as a protein called PAI-1, which causes small blood clots to form in blood vessels throughout the body, including the lungs.

Elevated PAI-1 levels are associated with more severe cases of pneumonia, a common cause of death in patients with COVID - 19. Since IL-6 was associated with levels of other cytokines and PAI-1, the researchers concluded that IL-6 signaling is crucial for the development of a cytokine storm after infection or injury. This may play a major role in the pathogenesis of COVID-19. A study of cytokine profiles in patients with severe COVID-19 revealed an increase in IL-6 levels in the early stages of the disease process, causing the release of PAI-1 from blood vessels.

The dynamics of the disease

1.2 The first period lasts from 6 to 10 days.

1.3 The temperature is kept up to 37.5 and mild symptoms: coughing may not be, slight malaise, muscle aches, drowsiness are common symptoms of ARVI. Loss of smell occurs in 35% of cases. Conjunctivitis also occurs - it depends on the entrance gate of the infection, if, for example, it entered the body through the eye mucosa. It usually lasts 3-4 days, then disappears.

1.4 The temperature is stable for 3-4 days or more. Usually with SARS, the temperature does not hold so much, after a couple of days it goes down. With Covid-19, it will persist at the level of 37 to 37.5. It can periodically increase to 38, against the background of relatively normal health.

1.5 Most patients who carry the infection, after 7-8 days of illness, there is a temporary improvement in health - an imaginary recovery. The temperature and most of the symptoms pass, the person begins to feel almost good - even if he lay down for a day and is ready to live a normal life. The period of imaginary recovery lasts up to 48 hours, after which the second phase begins.

1.6 The second phase is characterized by dry cough, sweating, temperature from 37.5 to 38.5. the Main sign is a dry cough.

1.7 It should be noted that in most people, the disease will pass in a mild form. They will limit everything to the first phase and a small dry cough. This is the end of their illness.

1.8 If this is a moderate disease, then the second phase will be with a strong cough, high fever.

1.9 If the current is heavy, then the second phase may pass into the third. It is characterized by difficulty breathing. The patient feels shortness of breath, lack of air, stuffiness in the room, even if the room is fresh. If it comes to this, you need to call an ambulance immediately.

Vulnerability of the coronavirus by blood group

In Denmark, there are fewer COVID-positive patients with the first blood group (AB0) and more with A (second), B (third) and AB (fourth). Experts attribute these results to the fact that the first blood group does not contain antigens of red blood cells that pass the virus into the body.

A similar study was also conducted in Canada, which compared data from 95 seriously ill patients. The presence of blood type A or AB increased the likelihood of complications that required intensive care and connection to a ventilator.

It also became known that patients with the second blood group are more likely to die from complications caused by the coronavirus. Those with the third and fourth blood groups are less likely to die, and the most invulnerable are people with the first blood group.

Prognosis and prevention

In the absence of complications, a full recovery occurs within 7-10 days.

There is a special treatment, developed and tested by me (author's note, 2020), which would be aimed specifically at the coronavirus. But many drugs are not available on the periphery, so patients on the periphery can only receive symptomatic and supportive therapy.

If you have any suspicious symptoms, contact your doctor or a Clinical pharmacist and try not to infect others.

In Russia, all regions are infected and the growth of coronavirus continues.

Coronaviruses have the largest and most complex genome among RNA-containing viruses in humans and other mammals.

It contains from 26 to 32 thousand nucleotides, which is about three times more than in the HIV genome. They make up a linear single-stranded RNA molecule in which five functional regions can be distinguished. At the edges of the genome, there are two non-coding regions that perform regulatory functions. They account for no more than 5% of the genome. In the middle there are three sections that encode proteins. The first two occupy about 60% of the genome and are responsible for numerous and poorly understood functions that control the reproduction of the virus inside an infected cell. A total of 16 proteins are synthesized from these two sites. The third section encodes four so-called structural proteins that are responsible for the virus entering the cell and form coronavirus particles together with genomic RNA and lipids, as well as auxiliary proteins that help the virus adapt to different hosts (Gorbalenya, A.E., Baker, S.C., Baric, R.S. et al./Nat Microbiol, 2020).

Experts studied the d614g mutation, which appeared in Europe and is currently dominant around the world.

Although this strain reproduces 10 times faster and is more easily transmitted, it is weaker than the ancestral Chinese strain. Also, it is more sensitive to neutralization with antibodies, and therefore better treated.

The mutation penetrates cells more effectively by binding its S-protein to the ace2 cell receptor. D614G is actively synthesized in the epithelial cells of the nasal cavity, which helps it spread more easily from person to person by air. The strain affects the structure of the S-protein, facilitating contact with the receptor, but it also facilitates the binding of the protein to antibodies.

As a specialist-Expert in Clinical Pharmacy, I give forecasts of promising treatment based on already conducted studies of the coronavirus genome. if this is an RNA virus, then the use of RNA-Aza can help. This drug is available in Russia.

Second, if the RNA virus is very long, it means that there may be many mutations. This phenomenon is called gene expression, when other nucleotides are formed instead of one nucleotide. This means that it is necessary to treat with sparing therapy. It can be traditional herbal medicine. Otherwise, there may be further chromosome aberrations and mutations in humans that can carry cancer after infection.

Attention! The use of ventilators and barotherapy – can carry reverse reinfection and the risk of fires and explosions.

Pathological anatomy - named leading to death in coronavirus-abnormal pathology

Hundreds of blood clots are found in the lungs of patients who died from coronavirus. There are no changes in the lungs during autopsy.

Abnormal blood clotting leads to a fatal outcome. It was patients with this syndrome who were more likely to suffer from coronavirus and end up in intensive care.

In addition to the affected coronavirus pneumonia pulmonary alveoli, in the lungs there were hundreds of microthrombi.

This deviation is not observed in other types of lung infections.

The biological mechanism of increased blood clotting, which leads to thrombosis against the background of coronavirus.

The lungs with covid are dramatically altered-heavy, weighing two to three times more than normal lungs. They have a shiny lacquered surface of dark cherry color, which is almost never the case with other diseases. And, most importantly, they are very dense. The very name of the organ says that it must be air, because the lungs are filled with air (A. Kupryushin, 2020). The alveoli in COVID-19 are filled with a variety of their own cells and fluids, including blood.

On the incision, the lungs are dry, unlike many diseases. When pressed, a thick, muddy red liquid flows down from them. In other diseases, this picture is not met.

Sometimes it happens that a bacterial infection joins the coronavirus, and in some areas of the lungs, the usual purulent pneumonia develops. Then the lungs look different. In such cases, pus flows from the incision surface and is squeezed out of the small bronchi.

For example, a virus affects the heart. It often turns out to be flabby, looks like a bag. If the heart is lifted, it hangs, does not keep its shape.

Usually the heart is dense, and after the coronavirus it is all "flattened".

The hearts of patients who died from COVID-19 are damaged.

They are enlarged. They are heavier than usual. They are uneven in shape (James's stone, 2020).

In earlier studies, it was already noted that patients with covid suffered from myocarditis (inflammatory damage to the heart muscle) and other heart damage, and we were talking about patients who did not previously have cardiovascular diseases, and this already suggests that there is a high probability that the relationship between COVID-19 and heart complications is causal.

Most of the complications were unexpected for doctors and scientists. Not only the completely harmless 4 types of seasonal cold coronaviruses, but even the highly lethal SARS and MERS did not show such a large amount of heart damage.

Myocarditis is not the most common, but it is quite understandable complication from infections, since it is caused by an inflammatory reaction of the body to the pathogen.

However, when samples of heart muscle tissue from 21 patients who died from covid aged 44-86 were analyzed, he found that although 86% of the tissue was inflamed, only three had myocarditis. Other patients had heart damage caused by right ventricular overstrain, blood clots, and others (stone, 2020). it's

All about APF2

1216 patients aged 52-71 years from 69 countries of six continents, 55% had serious cardiac dysfunction, while 15% suffered from tamponade (severe ventricular dysfunction), and 3% were diagnosed with myocardial infarction (M. Dweck, 2020). Echocardiograms were performed on living patients, and 60% of them ended up in intensive care units, and 40% were hospitalized, but were able to recover without extreme measures of intervention. This suggests that heart disease in such cases can take a chronic character.

The reason for such a variety of heart muscle injuries in COVID-19 (E. Topol, 2020) sees in the APF2 receptor (in Latin transcription-ACE2).

Angiotensin-converting enzyme 2 is the most important regulator of heart functions and it is also the receptor to which the spike protein of the SARS-CoV-2 virus is attached, after which the pathogen enters the cell. The affinity of the new coronavirus with this receptor is much higher than that of its dangerous predecessors.

We analyzed cases when the heart is affected in very young people who have suffered the disease easily or even asymptomatically.

The cases of young athletes who were diagnosed with myocarditis some time after they had a mild illness are indicative.

On August 7, 2020, a tragic accident occurred. 27-year-old American basketball player of Nigerian origin Michael Ojo died of a heart attack during training. Before he suffered covid, the young athlete was completely healthy.

It is obvious that COVID-19 carries not only a visible danger for those who experience pronounced severe symptoms, but also a hidden one for all those who have been ill, even for young and physically strong people. It is absolutely necessary to keep it in mind, to diagnose cardiac disorders in patients and to monitor those who have recovered, even if they, at first glance, have not suffered much from the disease. And prolonged shortness of breath, chest pain, weakness should be perceived as serious signals of possible chronic heart disease.
The most intriguing question remains why COVID-19 causes heart complications in some people, while others do not.
This requires careful study.

There are blood clots in the major arteries of the lungs.

So, it's a thromboembolism: pathologists determine where the blood clots came from in the lungs. Most often, from the veins of the lower extremities, for example, the lower leg, less often-the hips. Blood clots enter the lungs and this is the direct cause of death, because it is impossible to live with a massive thromboembolism.

Usually, the entry in this document looks like this: the lowest line, the main disease - "new coronavirus infection"; the second line, a complication of COVID-19 - "viral pneumonia"; the third line, the direct cause of death - "respiratory distress syndrome", manifested in a patient with respiratory failure. This is the standard entry for a coronavirus infection.

In the case of blood clots, there will be a different record. The main disease, the bottom line - "new coronavirus infection". Above, in the middle line, we indicate "leg vein thrombosis", and on the top line - "pulmonary embolism".

Statistics are made on the lowest line, and complications can be different. For example, when a coronavirus infection usually forms thrombosis.

If the blood clots are in the brain, there will be areas of necrosis. In this case, the bottom line is written - "new coronavirus infection", in the middle line - "thrombohemorrhagic syndrome" and in the top line - "multiple brain infarctions".

If a coronavirus infection causes brain hemorrhages, the second line will also contain "thrombohemorrhagic syndrome", and the third line will contain "non - traumatic brain hemorrhage". The bottom line, the main disease, and in the case of heart attacks and hemorrhages in the brain will be the same - "new coronavirus infection".

There are sick people with severe heart failure caused by coronary heart disease-post-infarction cardiosclerosis and small changes in the lungs. Then covid will be listed in the column "diseases that contributed to the onset of death", and in the lowest line, the main cause of death - "post-infarction cardiosclerosis". Above they write "acute cardiac arrest", the

manifestation of which in the study of the deceased will be pulmonary edema. And then it will be clear from the death certificate that covid was only a trigger for decompensation of heart activity.

Coronavirus toxins damage the brain so that it becomes less sensitive to hypoxia than before the lesion. He doesn't perceive it. Normally, a person from lack of oxygen in the brain will lose consciousness, or it will be confused. With covid, the amount of oxygen in the blood decreases, and for some reason the brain does not respond to this, and the doctor does not respond either. But that doesn't last long. As a result, a brain coma develops and the person dies.

Special glasses are needed for autopsy to work calmly (prevention of fogging of glasses). Observe strict procedures for dressing and removing protective suits.

Masks are not worn, because it is necessary to protect others, and not the person who is wearing a mask. If masks protected a specific person, more people would wear masks. Stupidity and callousness, human stupidity is amazing. The trouble with our people is that they don't notice each other (author's note).

Thrombosis is one of the most common complications in severe COVID - 19, but the process of forming blood clots in this case is different from the usual one. Scientists have found that this is due to the ingestion of a certain type of MBL protein - a lectin that binds mannose, which triggers the process of blood clotting. In this case, traditional blood thinning medications do not help.

Experts have found that together with this protein, the so - called complement system is activated-a set of plasma proteins involved in the implementation of the immune response. It performs the function of recognizing and quickly neutralizing bacteria and viruses, as well as dead and damaged cells in the bloodstream.

In theory, this way the blood should be purified, but with coronavirus, the complement system starts at full capacity and begins to damage the body's own cells. You need to do an Immunogram of 3 levels of complexity with the definition of the complement system and treat (author's note).

Antiplatelet agents and anticoagulants

Antiaggregants

Aspirin

Clopidogrel (Plavix)

Ticagrelor (Brilinta)

Prasugrel (Effient)

Pentoxifylline (Trental)

Cilostazol (Platax)

Dipyridamole (Curantil)

injectable or intravenous antiplatelet Medications include Tirofiban (Aggramed) and Eptifibatide (Integrilin).

Anticoagulants

In some cases, doctors prescribe anticoagulants, which are divided into three classes:

Heparins and low-molecular-weight heparins

Vitamin K antagonists, such as Warfarin

New direct-acting oral anticoagulants

The process of blood clotting is very complex and depends on a number of factors. Thus, warfarin prevents the formation of vitamin K-dependent proteins necessary for blood clotting, and new direct - acting oral anticoagulants suppress the so-called factor XA, an activator (Pro)of thrombin, both in the blood itself and in already formed clots. Heparins also inactivate thrombin, helping to resolve blood clots.

New direct-acting anticoagulants include Dabigatran (Pradaxa), Edoxaban (Savaisa), Rivaroxaban (Xarelto), and Apixaban (Eliquis).

1.10 Blood thinners help prevent the formation or even get rid of pre-existing blood clots that partially or completely block vascular blood flow.

1.11 These clots are called blood clots, and they are a common cause of heart attack, stroke, or pulmonary embolism. Blood thinners prevent blood clots from forming and reduce the risk of heart attack, stroke, and pulmonary embolism. Blood clots can form in any part of the circulatory system, but are most often localized in certain risk areas. The location of the clot formation determines its threat to a particular vital organ. A blood clot in the blood vessels leading to the brain can trigger a stroke, and a violation of blood circulation in the heart area leads to a heart attack. In deep vein thrombosis (DVT), blood clotted in the lower extremities can shift and move to the lungs, causing a pulmonary embolism. In addition, in people with atrial fibrillation, blood clots can form inside the heart itself due to a violation of the heart rhythm. To fight blood clots, drugs that block the main factors of blood clotting are used. In the case of coronavirus, you need to treat these two groups of drugs in a difficult situation (author's note).

1.11.1 Side effect

1.11.2 The main side effect of blood thinners and, above all, anticoagulants, is an increased risk of bleeding. In some cases, even a small cut may require medical attention.

1.11.3 The most common side effects of antiplatelet agents include the appearance of small bruises, nosebleeds, traces of blood in the urine, gastric bleeding, difficulty breathing (when taking Ticagrelor), low platelet levels, and Aspirin-induced asthma.

1.11.4 Warfarin, in addition to bleeding, can cause nausea and vomiting, abdominal pain, flatulence, and changes in taste. If you experience dangerous bleeding caused by taking Warfarin, you can reverse the effect of the drug by injecting the patient with Vitamin K, plasma or prothrombin complex.

1.11.5 New direct-acting oral anticoagulants have much fewer side effects, primarily bleeding. In case of their manifestation (low platelet levels, fractures, osteoporosis, decreased aldosterone levels, allergies), patients cancel the drug and enter Protamine sulfate, which inactivates Heparin.

1.11.6 Drug interaction

1.11.7 Before taking antiplatelet agents and anticoagulants, patients should inform Their doctor and clinical Pharmacist about all medications they are taking. The risk of bleeding increases when taking Aspirin or antiplatelet drugs together with diuretics, non-steroidal anti-inflammatory drugs (Ibuprofen), steroids, statins, opioids, Omeprazole, alcohol.

1.11.8 Warfarin

1.11.9 It is undesirable to take Warfarin together with antibiotics and antifungal drugs, other anticoagulants and antiplatelet agents, products with a high content of Vitamin K.

1.11.10 Constant use of Warfarin requires regular (once every 2-3 weeks) blood tests for prothrombin time, the target values of which for people taking anticoagulants are in the range of 2-3 seconds.

Heparin

A person taking heparin should avoid any medications that increase the risk of bleeding. If you need to take other anticoagulants, the treatment process should be under the close supervision of the attending physician.

New direct-acting oral anticoagulants

Compared with Warfarin, new anticoagulants have a lower degree of drug interaction. They don't require diet changes or regular blood tests.

However, they also have their drawbacks. Firstly, they are much more expensive than traditional blood thinners, and secondly, due to short clinical practice, they are insufficiently studied.

Natural blood thinners

Some foods, Vitamins, and dietary supplements can also thin the blood and reduce blood clots. People who take prescription antiplatelet agents and anticoagulants should be aware of them and limit their combined intake to avoid the risk of severe bleeding. The most common ones are garlic, Ginkgo biloba, chokeberry, ginger, turmeric, vitamin E, green tea.

The clotting disorder partly explains the occurrence of hypoxia (a drop in blood oxygen levels) in patients with COVID-19.

Abnormal blood clotting in severe coronavirus significantly increases the risk of stroke or heart attack (James o'donnell, 2020). Abnormal blood clotting in severe coronavirus significantly increases the risk of stroke and heart attack, so you need to include Thrombolytics (preferably a combination of drugs with different pharmacological actions) in the treatment standards when necessary (author's note).

Differences in the course of coronavirus in women and men.

Women carry this infection more easily.

Men are more difficult to tolerate a new type of coronavirus due to the influence of sex hormones on the functioning of the immune system.

The male hormone testosterone does not have the ability to destroy viruses intracellularly.

Female sex hormones-estrogens facilitate the penetration of protective proteins, antibodies, into cells, so even a minimal level of immune response with the production of antibodies leads to the fact that these antibodies in women are easier and faster to penetrate into the cell and destroy viruses intracellularly.

In men, due to hormones, the manifestations of atherosclerosis are more pronounced. Thrombosis in men against the background of coronavirus infection develops more often, they are more extensive than in women.

But women are more likely than men to experience autoimmune diseases, so it is not recommended to vaccinate women (author's note).

Women tolerate hypoxia more easily than men.

Science knows this, and in any diseases that are associated with acute hypoxia and serious manifestations, women survive better than men (A. Minurova, 2020). It depends on the physiology - male and female.

In addition to physiology, another factor is the lifestyle of men.

The male half of humanity is still less health-conscious and less likely to take care of chronic diseases that worsen the course of the coronavirus.

There is an accumulation of fluid inside the alveoli of the lungs, but also many other processes.

Programmed cell death (PHC) is strictly controlled by regulatory systems. The virus actively disrupts the mechanism of PHC. For example, the cell does not have time to implement the mechanism of apoptosis and dies due to necrosis. When there is an accumulation of defective changes in the cell in adults (harmful production and toxic drugs, etc.), as a result of critical damage, uncontrolled pathological phenomena occur - necrosis. Also toxic shock. Drug therapy can lead to anaphylactic shock. Industrial safety is now a formality. Bosses tell workers: "Die and fuck you." The Ministry of health has proved to us by a priori method that we don't really care about anything.

First of all, the adult immune system is less controlled by the Central nervous system, then the number of adult cells is more and the immunological memory is more strained. Plus - the metabolism is more massive, less activity of immune cells, etc. In General, centralized management and quantitative superiority over the pathogen is less than in a child. Therefore, for an adult, quality-specific immunity-comes to the fore. A minimum of entropy is a sign of all living things, and control is transmitted primarily to the skin, which is actually the first to meet the pathogen.

Perhaps it is related to the thymus gland???? Just in children, it functions perfectly up to 10 years. But as it Matures, it lends itself to involution (author's note).

Attention! In the past three weeks, there has been a clear increase in the number of children of all ages suffering from a systemic inflammatory disease that requires intensive care - Kawasaki syndrome (children 1-2-5 years old).

Caused by certain vaccine infections that have gained strength against the background of coronavirus (increased infection syndrome).

The inflammatory condition is described: signs of toxic shock, blood test results, as in severe COVID-19, manifestations similar to Kawasaki syndrom, heart problems.

Kawasaki syndrome manifests itself in the form of lesions of the mucous membranes, lymph nodes, conjunctivitis, rash, peeling of the skin on the fingers and toes, cracks on the lips, as well as abdominal pain, diarrhea and vomiting, fever.

Serious heart complications are very common. In Kawasaki syndrome, the arteries are affected. It is necessary to develop a treatment for Kawasaki syndrome and disease - these are different nosologies (author's note).

Neurological disorders

Dissemination of SARS-CoV-2 from the systemic circulation or through the lamina cribrosa (Lamina cribrosa) can lead to brain damage.

Reduced sense of smell in people in the early stages of the disease - indicates damage to the Central nervous system and swelling of the nasopharyngeal mucosa.

Claire Hopkins, (2020) stated that loss of taste and smell are the surest early symptoms of the coronavirus. They are more common than coughs or fevers.

Vicente Diaz, (2020) have discovered a new rare symptom of coronavirus that causes redness of the eyes in humans. Coronavirus can only be confirmed if other symptoms or fever are present in addition to redness of the eyes. This phenomenon can also be a sign of normal conjunctivitis, caused, for example, by allergies.

Complications of coronavirus

1.myocarditis

2.croup pneumonia

3.sinusitis

4.lesions of the gastrointestinal tract (in children)

5.bronchitis

6.sepsis

The most formidable of them:

1.pulmonary embolism

2.myocarditis

3.pericarditis

4.spontaneous pneumothorax

5.heart failure

6.heart rhythm disorders (arrhythmias).

7.there are data on the detection of coronaviruses in the cerebrospinal fluid in patients with multiple sclerosis (author's note). Not only coronavirus, but also all vaccinations made in childhood and adolescence – are in the brain in different concentrations and in children cause spinal atrophy (through parents), primary and secondary immunodeficiency, in young women cause multiple sclerosis, in young men – ALS (amyotrophic lateral sclerosis).

8.heart attacks and strokes

9.many patients are diagnosed with secondary infections during their hospital stay. Most often, it is rotavirus and other infections (Staphylococcus aureus).

Drug-resistant bacteria are among the microbes that cause these secondary infections. Secondary infections affect the survival rate of patients.

10.The COVID-19 epidemic may indirectly trigger HIV outbreaks.

11.distress syndrome

12.multiple organ failure

Immunity in patients

Who have been ill, it usually takes about three weeks for a Person to develop antibodies against COVID-19 and other similar viruses? But they will only last for three months!!! Currently, there are already known cases of repeated infection with coronavirus.

COVID-19 can become a chronic disease for some people, like herpes. In this case, the disease will manifest itself in a chronic form.

Attention! Author's opinion - once and for all, we will be saved from coronavirus not by an effective vaccine (author's note), but by a strong immune system without vaccines and the absence of other infections and specific etiotropic treatment (author's note). From the use of any vaccine, you can get sick many times. No vaccine provides lifelong immunity to coronavirus, like any other vaccine (author's note).

But the virus may be the result of prolonged illiterate vaccination of children, starting in the 30s of the 20th centuries. Several years have passed and several generations of children and their parents once vaccinated (author's note). I believe this is the root cause of the pandemic on Earth.

Optimal conditions for the transmission of coronavirus are temperatures from 5 to 8.72 degrees Celsius and humidity of 35-50 %.

It is necessary to treat in a personalized way, and this is possible only with the help of Clinical Pharmacists (author's note).

The virus turns the defense mechanisms of our immune system to its advantage, using human Interferon.

It is known that ACE2 receptors, through which the coronavirus interacts with human cells, are present in many of its organs. However, it is also known that the degree of damage and the rate of spread of the virus in them are not the same. In earlier studies, it was shown that the activation of viral glycoprotein S, which binds to ACE2 of the host cell, requires a human enzyme-serine protease type II (TMPRSS2) and a number of other, less important enzymes.

All this kit is available only in some cells of our body:

1.Goblet cells of the mucosa of the nasal cavity that produce mucus.

2.type II Pneumocytes located in the lower parts of the lungs, where they produce surfactant – a substance that does not allow the air sacs – alveoli to subside.

3.small enterocytes of the colon, which ensure the absorption of nutrients and minerals.

But the most important finding of the study was the fact that ACE2 receptors are not only part of the renin-angiotensin-aldosterone system (RAAS), which regulates blood pressure.

They are also part of the Interferon system – the so-called complex of genes that are responsible for the production of interferons, factors that control their activity, receptors and enzymes that are activated by their action.

The process of activating ACE2 when interacting with the coronavirus triggers the production of interferons by the human body. On the one hand, the interferon needs to fight the virus. On the other hand, as it turned out, they activate the processes of ACE2 production – both in the already infected cell and in neighboring ones, which makes them more vulnerable to coronavirus.

The data obtained can explain why taking drugs that stimulate the production of interferon in the body is dangerous for a person infected with coronavirus. Where is this balance? Note that in his clinical study, the author uses an immunomodulator of a special structure, and not interferon stimulators (author's note).

Ferritin, a well-known inflammatory protein, has become a marker of an unfavorable prognosis

Ferritin is a blood protein containing iron. A ferritin test helps you understand how much iron is stored in your body. If a test for ferritin shows that its blood level is below normal, it indicates that your body has low iron reserves, which can lead to the development of anemia. Then Ribavirin can not be used (author's note). Sufficient levels of iron in the body are very important in a normal state. The increase in serum ferritin levels during the disease is not due to the amount of iron in the body, but to the fact that there is an inflammatory process.

Serum ferritin is a well-known marker of inflammation. If the C-reactive protein and ESR in the blood test are higher than normal (this is what can be observed in COVID-19), then ferritin characterizes the severity of the inflammatory process.

Ferritin is a protein complex that serves as an intracellular store for iron in all organs and tissues (up to 30% is stored in the liver and spleen). One molecule of ferritin can contain up to 4.5 thousand iron molecules.

Ferritin levels are important to understand for at least the following reasons:

This is an important marker of the state of iron reserves in the body (a decrease below 30 ng / ml in an adult blood test signals an iron deficiency).

Serum ferritin originates from damaged cells and is thus a direct indicator of cellular damage in the body as a whole (Douglas Kell, 2020).

A study of 1,8 thousand patients in the United States showed that liver abnormalities occur in the majority of hospitalized patients with COVID-19 and may be associated with worse outcomes.

Ferritin is a well-known acute phase protein that correlates with markers of cell damage, markers of hydroxyl radical formation (and oxidative stress), and with the severity of the disease. In patients with COVID-19, when a cytokine storm occurs, the level of increase is significant. Hyperferritinemia (high ferritin levels) is an independent predictor of death in adults in intensive care units

The prognosis of patients with COVID-19 on the level of ferritin and the appointment of anti-cytokine therapy in phase 2 of the disease is practiced (author's note). In healthy people, the concentration of ferritin in the serum is low and is most often used to diagnose the amount of iron reserves.

When exposed to a damaging factor, pro-inflammatory cytokines stimulate the liver to produce several protective proteins, one of which is ferritin. Ferritin synthesis is a response to the activation of a special gene by interleukin and interferon molecules through increased binding of the nuclear factor-nkb. Also, in inflammation, there is an increase in the secretion of ferritin by macrophages and its release from damaged cells. As a result, there is an increase in pro-inflammatory factors in liver cells. Thus, ferritin and proinflammatory cytokines form a vicious cycle of activation of the nuclear factor-nkv and contribute to the development of cytokine storm syndrome - the main cause of death in patients.

Ribonucleic acid SARS-COV-2 acts on the surface of cells of the immune system and triggers a cascade of synthesis of the nuclear factor nkb and as a result, there is an activation of pro-inflammatory factors and the synthesis of ferritin.

Based on data from more than 10 thousand patients with confirmed COVID-19, it was confirmed that high levels of ferritin predict a significant deterioration in the condition of patients (Linlin Cheng, Haolong Li, 2020).

Analysis of the data showed that the level of ferritin:

1.significantly increased in severe patients compared to the level in patients with moderate severity of the disease;

2.significantly higher in deceased patients compared to survivors;

3.significantly higher in patients with one or more comorbidities, including diabetes, thrombotic complications, and cancer, than in patients without these diseases.

In Russia, a blood test for ferritin is often prescribed in patients with confirmed coronavirus infection, as well as if it is suspected.

The protein ferritin is a marker of pneumonitis and contains a large amount of iron, which is carried inside the cells.

It is known that the level of ferritin can reveal the severity of the disease, the degree of development of cytokine storm or oxidative stress.

According to a study by Chinese scientists, serum ferritin, d - dimer, lactate dehydrogenase, and IL-6 levels increase with severe exacerbation, indicating a high risk of death (Fei Zhou, Ting Yu, 2020).

The development of a progressive pro-inflammatory condition (so - called "cytokine storm") has been demonstrated in patients with adverse COVID-19 progression and an increased risk of death, so the measurement of inflammatory biomarkers such as ferritin is very important for the early and accurate detection of COVID-19 patients with an increased risk of adverse progression.

Important! Infectious diseases flow in cycles. The same temperature of 38 degrees on the first day means the beginning of the acute phase of the disease, on the 8th-foreshadows death, on the 16th day it indicates a possible joining nosocomial infection. The reasons are different-outdated equipment, drainage tubes, catheters, and so on.

Through the hands of the staff are transmitted: Staphylococcus aureus, epidermal Staphylococcus, Streptococcus A, Enterococcus, Escherichia, Klebsiella, Enterobacteria, proteus, Salmonella, Pseudomonas aeruginosa, anaerobic bacteria, Candida fungus, herpes simplex, polio virus, hepatitis A virus.

Bradykinin storm

At the first stage, the coronavirus attacks the neuroepithelium ("olfactory lining") of the nasal cavity. The density of the angiotensin-converting enzyme (ACE) that SARS-CoV-2 uses to enter cells is 700 times higher here than in other cells.

As a result, the coronavirus causes a neuroinflammatory process, and the person loses their sense of smell or taste for a while.

After five to seven days of parasitizing coronaviruses in the mucous membrane of the upper respiratory tract, their exponential growth and the process of viremia (the spread of infection through the bloodstream throughout the body) can occur.

The next place of concentration of coronaviruses are type II alveocytes (cells lining the epithelium of the pulmonary alveoli (vesicles). The surface of these cells is also rich in ACE.

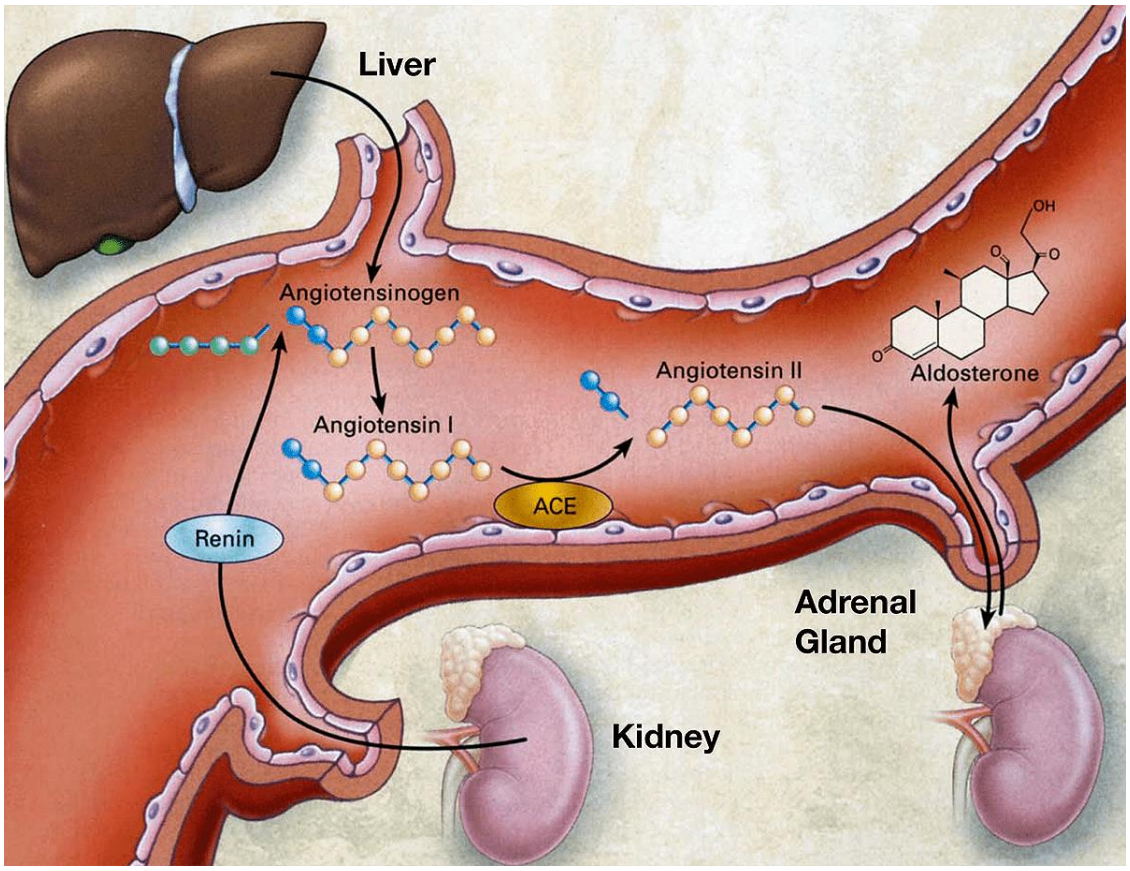
On the first critical day of the disease, billions of dead cells are formed in the body. A protective reaction is activated, which was previously called a cytokine storm, but in fact it is a bradykinin storm (A. G. Chuchalin, 2020).

The combination of the cytokines TNF-alpha and gamma interferon is fatal for macrophages. The revealed duo doesn't just kill cells. It has a deadly effect on the entire body. When such a combination was introduced into the body of mice, they died after 10 hours. The combination of cytokines causes three types of cell death.

The first is apoptosis, in which case programmed cell death occurs. The second and third types are pyroptosis and necroptosis, they most dangerously affect the state of organs, causing their limited functions.

After attacking the cells of the pulmonary epithelium, the coronavirus affects the endothelium (the layer of cells lining the inner surface of blood vessels) of capillaries and veins. Under a microscope, the endothelium affected by SARS-CoV-2 resembles moth-eaten tissue.

Then can begin the formation of complications such as systemic vasculitis (a disease, which is based on inflammation of the blood vessels), pulmonary edema, and others.



Drawing. The renin-angiotensin system is involved in the regulation of blood pressure.

The active form of the hormone angiotensin-angiotensin-II, which increases blood pressure by narrowing blood vessels and increasing the volume of circulating blood, is obtained from a precursor hormone under the influence of an angiotensin-converting enzyme (ACE). It is on the inhibition of ACE that the action of many drugs that reduce blood pressure is directed. In addition to the synthesis of angiotensin-II, the action of ACE is caused by the destruction of bradykinin, a peptide that dilates blood vessels and reduces blood pressure.

Older people have special manifestations of COVID-19.

The list of symptoms of coronavirus infection should include geriatric delirium, or acute cognitive impairment.

Immunology of coronavirus

Cells infected with SARS-CoV-2 produce unusually low levels of antiviral proteins called interferons compared to cells infected with other respiratory viruses (D. Blanco-Melo et al., 2020 Benjamin Tenever, 2020). But levels of certain proteins, such as IL-6, that activate more General immune responses.

The new type of coronovirus does not live at high temperatures.

If the virus gets on the surface of an object at +33 degrees, it becomes inactive for 16 hours. If the temperature reaches +56, the virus dies in 10 minutes.

It is impossible to maintain such temperatures in offices and homes, so it is necessary to treat furniture with antiseptic as often as possible. Please note that on smooth surfaces, such as mobile phone screens or bills, the virus can persist for up to 28 days.

Household soap-lye, which is an unfavorable environment for the life of the virus. Soap is better than alcohol to disinfect the virus.

COVID-19 really feels better in conditions of high humidity, combined with temperatures in the range of +15-20 °C. In hotter and drier weather, it is uncomfortable, and in winter, when humidity is low, the virus is localized closer to the surface of the earth, almost not hovering in the air.

The virus lives on a smartphone – the coronavirus on average can stay on almost any surface for about a day, depending on the material (for example, on paper it lives for about 12 hours, and on metal - 24).

The results indicate an immune imbalance

Low levels of interferons reduce the cell's ability to limit viral replication, and activation of less specific immune responses promotes inflammation.

In General, children have low levels of Ig A and secretory Ig A. Probiotics help, for example, hilak-Forte drops and others.

More often than men, they are naturally iron levels are always higher by about a third, women 180 particles per microgram, men 300 particles per microgram, so it is important to raise or lower this indicator depending on. You can install it in the laboratory or by indirect signs.

For example, a lack of iron in the blood leads to increased weakness, anemia, pale skin, not enough air, the pulse will be higher than normal (due to the need to pump more blood to saturate the body with oxygen) to iron, oxygen is just attached to the lungs and transported throughout the body.

Elevated iron is dry skin, lack of appetite, heartburn and digestive disorders, the gastrointestinal tract as whole symptoms are similar to other diseases, so it is better to do a blood test.

Increased ferritin content is more common in athletes due to the fact that they are facing high loads, they need a more abundant supply of oxygen and its assimilation, for this they eat special supplements, or a high-iron diet, but it is not necessary that iron will be well absorbed by your body.

The fact is that there are two types of iron.

Iron can be heme (divalent) and non-heme (trivalent). The first is found in animal products and is easily digested (about 25%), the second is part of plants and is digested by only 8-10%. This is why vegetarians often lack this element, even if they eat foods rich in plant-based iron.

Does this mean that meat eaters are at risk? It is too early to talk about this, because 90% of people eat meat and other products with a light degree of iron absorption, which means they can exceed its level in their body.

The virus binds to hemoglobin cells goes inside and starts the synthesis of its own RNA or makes it produce more cytokines of the immune system and the latter attack their own blood cells. The mechanism itself is not completely clear.

Who has a lot of iron in the body, the immune system falls faster than anyone else and the death rate from the same HIV increases by the same 50%? This is a key indicator.

You can independently reduce the level of iron in the body this is facilitated by tannins, which are contained in black tea, they worsen the absorption of this element by the intestines. Coffee has a similar effect. On the other hand, our body needs oxygen. Masks, drugs for lowering blood pressure - reduce the concentration of oxygen in the human body (author's note).

Moderate exercise, for example, a short run reduces the level of iron (it is destroyed by released cytokines), and heavy physical activity, on the contrary, increases, due to greater food intake and its accumulation in the tissues.

The first option of light labor is you burn mostly fast sugars that break down into water and carbon dioxide. The mechanism is cascading, triggering long chains in the body, while not having time to accumulate a large level of toxins.

Gene expression when other nucleotides are formed instead of normal ones (author's note).

These properties are possessed by viruses and, oddly enough, by anti - Retroviral prerarates (author's note), so I do not recommend using them for children under 1 year of life who are HIV-infected from HIV-infected mothers (author's note). If you do not use vaccines, and HIV-infected people are not shown vaccines, then the body of children can heal itself (author's note).

Attention! I do not recommend taking Antiretroviral drugs for the treatment of coronavirus (author's note).

Opinion of the author-an Expert Clinical Pharmacist.

Official medicine is mistaken that the pneumococcal vaccine can save from bacterial complications of the coronavirus. There is an increase in infection (increased infection syndrome) when mixed infections develop.

When vaccination occurs, there are 3 possible outcomes:

1.a surge of immunity, fighting infection, when a natural virus occurs, the immune response is sluggish, the body often gets sick again from vaccines,

2.the second way is complications as a result of the lack of antibodies that are not formed in 20-30% of children and adults.

3.3 the way is death. This was recognized by the Ministry of health of Russia, while blaming the responsibility of vaccination on the parents of children!!!

The virus is weakened by infecting a person and jumping to another person. The virus mutates. But it doesn't make exact copies, but different ones to mutate. This is important to him for infection.

Attention! You need to do Immunograms in dynamics to select Immunomodulators. They should be prescribed for proper treatment, except for the drug - Imunofan (author's note).

Attention! To improve the effectiveness of treatment, there is a whole army of Clinical Pharmacists (author's note).

Signs of COVID-19 in children, as well as the course of the disease.

Children's clinical signs:

1.lethargic sleep

2.refusing to drink

3.diarrhea

4.rapid increase in acute respiratory failure

You can assign - Ivermectin (Ivermectin), (a combination of Ivermec (Ivermectin + Vitamin E) – analogues - Stromectol and Mectisan. One dose of the drug is enough to stop the spread of the virus from the cell culture in vitro for a day, and for 2 days to neutralize all the RNA of the virus. The dosage is calculated based on the patient's body weight. The average single dose is 12 mg. Children over 5 years of age with a body weight of at least 15 kg are prescribed 150 mcg of the drug per 1 kg of weight.

At the moment, scientists continue to study the drug on infected people with an acceptable dosage.

Admission is possible from the age of 5 years and a body weight of 15 kg.

Contraindications – asthma, meningitis, up to 5 years, HIV, AIDS, lactation, pregnancy.

Interaction - the combination of Ivermectin with Warfarin can increase its content in the blood. Concomitant use with other inhibitors increases the likelihood of overcoming the blood-brain barrier, leading to serious side effects.

Data from researchers on the veterinary drug Ivermectin, which was studied in families where there was one patient. The results of the study suggest that taking this medicine in 70% of cases prevented the spread of infection in the family.

Any disinfectants kill the coronavirus – lemon essential oil, hydrogen peroxide, all chlorine-containing liquids for washing the pharynx and for surface treatment. But the virus is spreading further.

In newborns, as well as the elderly, the disease is also severe – with fever and pneumonia.

Coronavirus can enter the body of infants during caesarean section (Saba Alzabin, 2020).

Children tend to tolerate the viral disease more easily.

Coronavirus is quite often similar to SARS. Children infected with COVID-19 often experience diarrhea and vomiting.

Children in the hearth should be examined for any unclear symptoms, changes in the frequency or rhythm of breathing, any problems with the chair.

Promising drugs are products for children - containing surfactant (kurosurf, Exosurf) (author's note).

Symptoms of coronavirus in the elderly

Symptoms of COVID-19 depend on the severity and will appear 2-14 days after exposure to the virus. In some cases, older people may develop symptoms that are not found in other people, or the symptoms may take longer to develop. The risk of developing complications from COVID-19 increases with age.

People over the age of 65 have different typical symptoms. For example, since the normal body temperature of an elderly person may be low, the temperature indicating fever may also be below the typical threshold. Some older people may develop atypical symptoms or take longer to develop symptoms.

When measuring the temperature of a person aged 65 years, the following signs may indicate infection:

single increase in temperature to 37.8°C

multiple increases to 37.2°C

increases of more than 1.1°C above the typical temperature

Elderly people with COVID-19 (symptoms):

1.sore throat

2.delirium

3.unexplained hypoxia - low oxygen levels in the blood

4.rapid heartbeat

5.shortness of breath

Other symptoms of COVID-19 include:

1.cough

2.fever

3.chills

4.shortness of breath or difficulty breathing

5.loss of taste or smell

6.nasal congestion or runny nose

7.headache

8.fatigue

9.muscle e pain

10.nausea or vomiting

11.diarrhea

Patients with dementia are not able to report that they feel ill.

The best treatment includes rest, medication, and maintaining hydration.

Seek emergency help if you experience the following symptoms:

1.a change in the color of the lips or face that may appear bluish in people with light skin or grayish in people with dark skin

2.inability to wake up

3.constant pain or pressure in the chest

4.shortness of breath

The seventh-day rule for viral infection. Recovery or exacerbation

By studying the numerous medical records of COVID-19 patients, practitioners have come to the conclusion that the disease has a so-called tipping point, or "point of no return".

This is usually the seventh or ninth day since the onset of the disease. From this day on, the patient either goes on the mend, or the disease goes into a severe form.

Coronavirus infection occurs in two stages.

The first stage lasts 3-6 days, it is characterized as a phase of latent inflammation.

In the first days, the fight of immunity with the virus occurs on an equal footing.

In response to the massive reproduction of the coronavirus, the body responds with a rapid response of the immune system.

it defends the body by killing the virus itself and destroying the cells affected by the virus, thereby reducing the affected areas.

Symptoms on these days can manifest in different ways. Patients have cough, fever, sore throat, nasal congestion, nausea and diarrhea.

in many cases, these symptoms last three to five days and disappear completely, or become barely noticeable.

Often people perceive relief of symptoms as recovery. But unfortunately, this is not always the case.

on the 7th - 9th day, the disease can return with a new force. This is manifested by the rapid development of hyperinflammatory syndrome.

By the seventh day, there is a mass exit of the coronavirus from the cells and an inflammatory reaction develops on the part of the patient's immune system.

At this time, immunity is either reduced to a minimum and the body ceases to resist the virus, or a "cytokine-bradykinin storm" develops, when the immune system directs its capabilities against the host body.

this is what causes hospitalization in the hospital.

This is a turning point in the course of the COVID19 disease. it is important that the activity of the immune system at this time remains compensated.

In this case, the patient will recover. If the temperature rises to 38.5-39 degrees on critical days, drugs for specific treatment are added to the treatment regimen.

This course of the disease was previously typical for patients 45+, and in young people, usually on the seventh day, recovery occurred.

This was in the first wave of the pandemic. now, young people of 30-40 years often develop the disease according to a severe scenario.

Attention! Adolescents 12-16 years old get sick with a mutation of the virus.

Long-term complications after COVID-19 occur in about 10% of patients aged 18 to 49 years, and in every fifth patient over 70 years, but the exact cause of this has not yet been established.

The researchers took blood samples from 194 patients and hospital staff with varying degrees of COVID-19 severity and tested for autoantibodies targeting nearly 3,000 human body proteins. Antibodies fight viruses by clinging to proteins on their surface, but autoantibodies bind to proteins that are on the surface of the body's own cells, leading to various complications.

The researchers note that patients with COVID-19 experienced a "dramatic increase in autoantibody activity" compared to healthy hospital staff.

While some autoantibodies in some patients appeared to be present before infection, others appeared as the disease progressed.

More than 5% of the hospitalized patients had autoantibodies that weaken the part of the immune system that regulates the production of interferons - proteins released by the body's cells in response to the invasion of the virus. The immune system of these patients was unable to control the viral load, which led to more severe symptoms.

In the two most severe cases, patients had autoantibodies targeting B-lymphocytes, which, upon contact with antigens, transform into antibody-

producing cells or B-memory cells. Another patient had antibodies that destroyed T cells necessary for the formation of acquired immunity.

Further tests showed that the more autoantibodies were in the patients ' blood, the more severe the disease was.

Patients with COVID-19 had more autoantibodies than people with lupus, a common autoimmune disease.

In COVID-19, the body produces autoantibodies that actually interfere with the body's immune response (Aaron Ring, 2020). They are harmful to patients."

The harmful effects may well continue after the infection has subsided, leading to complications.

Since antibodies can persist for a long time, they may contribute to the development of long-term complications.

it is not that there are any specific antibodies, but that antibodies of different types are produced, which attack different organs and systems of the body, from the brain to the gastrointestinal tract. They confirmed this assumption in experiments on mice-autoantibodies made the animals more susceptible to infection and increased the risk of death.

The combination of heterogeneous autoantibodies can explain a significant part of the variation in symptoms in patients.

Conditions such as rheumatoid arthritis, lupus and multiple sclerosis are caused by a malfunction of the immune system and its attack on the body.

But less is known about viral infections and their ability to cause autoimmune reactions. Currently, work is underway to study whether autoantibodies play a role in the severe course of the disease when infected with ebola and chikugunya viruses, as well as in cancer patients after immunotherapy.

If the autoantibodies that were triggered by COVID-19 persist in the body, they may play a role in long-term symptoms.

Symptoms after the infection disappears can be caused by autoantibodies that remain in the body after it gets rid of the virus. if this is the case, then immunosuppressive treatments, such as those used for rheumatological diseases, may be effective."

Danny Altmann (2020) noted that the presence of autoantibodies may well explain the variety of COVID-19 symptoms and the long-term ailments that some patients experience. He believes it is likely that the autoimmune reaction plays an important role here and in the coming months. He intends to look for a link between the immune response and the long-term symptoms of COVID-19.

Examples of patients.

Lyudmila Savenko

Checked. The first week is so-so, it is not clear: then the nose was blocked, then the throat was sore, by the evening 37, 4. On the seventh day 39, 6, chills, shortness of breath when lifting! Five days later it was already easier, however, a lot of injections, antibiotics, but at home.

Elena, often young strong men with good immunity burn out in three days, and elderly 90-year-old grannies survive.

Elena is 30 years old

On the seventh day, her saturation plummeted to 50, and she died 10 days later (December 13). complete treatment resistance. Negative dynamics. And the body for some reason did not cope. There were no chronic diseases.

Maya Volkova

Before that, I felt tired for a week. They listened - the breath was hard, took a smear for PCR, prescribed an antibiotic and antiviral. And at 5 am came the result that the test +. On day 2, the doctor came, added Aquadetrim and magnesium B6. There was only weakness, no cough, no sore throat, smell, taste did not disappear, temperature 35.3-35.5. On day 10, she began to pass 36. After 10 days, the PCR was negative, the X-ray showed a slight inflammation, and the doctor listened to the wheezing. I drank another antibiotic and ADC, then another antibiotic and aloe in injections, UAC is normal. According to the results of the ELISA, there are no antibodies on day 14. After 4 weeks, he was discharged to work. In addition to breathing exercises, no more recommendations, mowing (rare). It won't go away right away.

Viktor Viktorov

The first 7 days as SARS with large-intestinal manifestations. Next, the day of imaginary well-being. And exit from the intestinal epithelium of the virus into the blood with the development of viremia and tropicity in alveocytes. This period is the cytokine-bradykinin storm or the first stage of DIC syndrome. Next, as you're lucky. Sometimes Dexamethasone saves, it dramatically increases the level of white blood cells (author's note). But apply 2-3 days, no more.

Danila has had only a lack of taste and smell for a week, no more symptoms, and the temperature is 35.9.

In the republic of south Africa, a new type of coronavirus has been discovered, which prevails during the second wave of the spread of the disease.

This type of coronavirus is called 501. v2. it is characterized by a faster spread. in addition, 501. v2 is more likely to lead to severe covid-19 among young people.

it is noted that 501. v2. was reported in some other countries, including the UK and Australia.

Obviously, this is the cause of death in young people (author's note).

A certain type of human immune cells due to the coronavirus can cause a number of complications of the bacterial or fungal spectrum.

In particular, secondary bacterial pneumonia or a fungal lesion of the larynx may develop. The researchers suggested using drugs that suppress the activity of so-called MAIT cells to prevent complications.

A new method of treating patients with coronavirus has been found that will help prevent the development of secondary tissue inflammation that is dangerous for COVID-19 patients.

In humans and mammals, there are a variety of immune cells in the body that perform protective functions to search for, recognize and destroy bacteria, fungi and other pathogens - they are associated with the body's mucous membranes, as well as blood, liver and lungs. They are called MAIT cells - when the virus enters, they trigger a secondary inflammatory process in the body. In addition to COVID-19, the patient has a number of complications of the bacterial or fungal spectrum. In particular, secondary bacterial pneumonia, fungal lesions of the larynx and inflammation of the genitourinary system can develop.

In general, these cells are useful because they protect against bacterial or fungal infections. But in the case of an already developed viral infection and a high level of inflammation, the activity of MAIT cells can aggravate the course of the disease.

l.Drozdova (2020) noted that mait cells mainly have two mechanisms of action-protective or tissue - reducing. In the second case, when these cells come into contact with bacteria and are activated, they turn on genes that can trigger the healing process of damaged tissue.

It should be understood that they are extremely ancient in evolutionary terms, they can be found even in very remotely related to humans'

animals. for example, in mice or possums. MAIT cells have changed very little over 150 million years, which indicates their important role for health. however, with the coronavirus, as it turned out, they turned against people.

MAIT cells can be activated by simple vitamin-like molecules and used to heal chronic skin ulcers, as well as to treat colitis and Crohn's disease. while these diseases are not subject to complete cure.

at the same time, they can worsen a person's condition if the virus has not previously entered the body. defense cells secrete an excessive number of signaling molecules that " cause immune cells to attack everything. This depletes the immune system and contributes to the development of secondary infections.

our immune system and the cells that help protect it are a very complex mechanism. if a pathogen that becomes a new threat to the body gets into it, then the immune response can be unpredictable-it depends on the amount of virus inside the person.

At the same time, if you do not seek help in time, then, once in the blood, MAIT cells cause an inflammatory reaction and saturate it with chemically aggressive molecules. As a result, the entire circulatory and immune system is disrupted.

In turn, Russian researchers suggest using drugs that suppress the activity of MAIT cells. In patients with coronavirus, these cells, found in the blood, liver and lungs, perform protective functions, but cause inflammation of the tissues.

Due to a malfunction of the immune system, one in seven seriously ill patients with coronavirus develop bacterial or fungal infections, which, as a result, lead to complications.

The activation of MAIT cells is a prime example of how complex the immune system is and how it can make mistakes.

Meanwhile, it is known that the activation of MAIT cells has already been described in viral infections, in particular, herpes, hepatitis and influenza. Recently, several studies have examined the relationship between MAIT cells and COVID-19, showing that these cells accumulate in the lungs, and the degree of their activation is related to the severity of the disease, although the nature of this relationship is not yet known.

Older people with COVID-19 don't show typical symptoms

COVID-19 is manifested by respiratory symptoms: fever, runny nose, chills, severe cough, shortness of breath. But the elderly, already ill, may not have any of these characteristics.

Instead, at an early stage of infection, they may just seem different from what they usually are. For example, sleep more than usual, complain of lack of appetite, nausea. Be unusually apathetic, lethargic, complain of dizziness.

In old age, the immune response may be blunted, and the ability to regulate temperature may be altered (Joseph Ouslander, 2020).

Major chronic diseases can mask the signs of infection or interfere with them.

Some older people, whether due to age-related changes or previous neurological problems such as a stroke, may have changed their cough reflexes. Other people with cognitive impairments may not be able to report their symptoms.

Quratulain Sayed, (2020) describes a man at the age of 80 years, which she treated in mid-March. After a few days, this patient, who had heart disease, diabetes, and mild cognitive impairment, stopped walking, developed urinary incontinence, and became profoundly lethargic. But he didn't have a fever or cough. His only respiratory symptom: frequent sneezing.

Muscle pain, fatigue, and blisters on the legs (vesicopustullosis) may indicate that the patient has contracted the coronavirus (author's note).

Older people (Sam Torbati, 2020) who are profoundly disoriented and unable to speak, and who at first appear to have suffered strokes.

They become weak and dehydrated, and when they get up to walk, they faint and are severely injured.

An 81-year-old woman (Anthony Perry, 2020) with nausea, vomiting and diarrhea who tested positive for COVID-19 in the emergency room. After intravenous fluids, oxygen, and medication for a bowel disorder, she returned home two days later and is doing well.

Another 80-year-old patient (Rush, 2020) with similar symptoms – nausea and vomiting, but no cough, fever or shortness of breath – is in intensive care after testing positive for COVID-19 and should be placed on artificial ventilation.

List of typical and atypical symptoms in elderly patients infected with covid:

The list of atypical patients includes (Sylvain Nguyen, 2020).

Changes in the patient's normal condition, falls, fatigue, lethargy, low blood pressure, painful swallowing, fainting, diarrhea, nausea, vomiting, abdominal pain and loss of smell and taste, dry mouth, subdepression, drowsiness.

Coronavirus can cause serious brain damage - 40 patients were diagnosed with acute multiple encephalomyelitis-twelve of these patients suffered from inflammation of the Central nervous system, ten-from transient encephalopathy (brain disease) with delusions or psychoses, eight had a stroke, another eight - nerve damage, mainly with Guillain-Barre syndrome.

Cases of hallucinations and strange behavior have been recorded in patients who have recovered from covid.

A study of 12 patients who complained of visual impairment after covid. They were found to have "hyperreflexive lesions at the level of ganglion cells and internal plexiform layers", although patients had not previously complained of vision.

Among the known consequences left by the disease: post-traumatic syndrome, heart and kidney failure, male infertility, inflammation of the heart muscle (myocardial infarction), compaction of the lung structure (pulmonary fibrosis), a decrease in the level of lymphocytes in the blood (lymphopenia), acute inflammation of the intestinal mucosa (pseudomembranous colitis), damage to the Central nervous system receptors (anosmia).

Many patients still have "chills" after the complete disappearance of clinical symptoms, regardless of the ambient temperature (even in hot weather).

The patient is infected 3-4 days before the onset of symptoms (author's note).

A way to prevent complications after coronavirus due to the antidepressant Fluvoxamine.

One hundred and fifty-two adults participated in the study. All participants were confirmed to have coronavirus, and all the usual symptoms were also noticed. Patients took this drug for a whole week. They did not show any clinical deterioration. In those patients who were given a placebo, no changes occurred.

Distributed for taking 100 mg of Fluvoxamine three times daily. - fifteen days.

In patients taking Fluvoxamine, the coronavirus does not become severe.

COVID-19 survivors always have high levels of zinc in their blood

Need zinc-containing plants and a zinc-containing diet (selected individually). Diagnosis of zinc is possible by blood biochemistry and by the author's method (author's note).

It is associated with the ingestion of a certain type of MBL protein along with the infection-this is a lectin that binds mannose, which triggers the blood clotting process. In this case, traditional blood thinning medications do not help.

Need a special diet without lectins (author's note).

Exclude for the duration of coronavirus disease-lectins that are found in the following food groups:

cereals (especially whole wheat, whole flour, brown rice;

legumes (especially soy);

nuts and seeds;

dairy produce;

nightshade (tomatoes, peppers, eggplant, potatoes);

seafood (eel, shellfish, halibut and flounder);

genetically modified foods;

fats that are produced from the listed product groups.

The smallest number of lectins is found in all types of cabbage, leafy greens; mushrooms; pumpkin, zucchini, sweet potatoes, carrots, avocado, asparagus; citrus fruits and pineapples, cherries and apples; animal proteins (meat, poultry, fish, eggs); olive oil and butter; pork fat.

Recommended time of soaking:

the beans 12-24 hours

lamb peas (chickpeas) - 12-24 hours brown

rice-12 hours

wheat-12 hours

oat flakes 8-12

hours white rice - 9 hours

rye-8 hours

lentils-8 hours pearl

barley - 6 hours

millet-5-7 hours wild

rice-5 hours

amaranth - 3 hours

Fermentation - fermentation or pre-treatment of foods using enzymes or beneficial microorganisms also helps reduce the number of lectins in food.

Heat treatment

Heating, steaming, and baking is another way to eliminate lectins. So, cooking peas for 80 minutes reduces the lectin content by 79%. When products are boiled, the number of lectins in water decreases, but some of the useful substances (Vitamins D, a, E, C, group B) are also lost. The temperature also kills the enzyme phytase, which is a powerful agent for neutralizing phytic acid. On the other hand, cooking at a temperature increases the bioavailability of certain minerals and phytochemicals.

Peeling and seed removal

The rind and seeds contain the largest number of lectins, so it is better to peel vegetables and fruits from the rind and seeds. Tomatoes are the record holders for the amount of dangerous protein, it is advisable to put them out a little. And, of course, it is better to use seasonal vegetables and fruits, if they ripen naturally, without the use of chemistry, they contain less lectins.

Foods with the highest levels of lectins

1.red beans-raw beans also contain high levels of a lectin called phytohemagglutinin.

2.soy-fermented soy products include soy sauce, miso, and tempeh. Soy sprouts are also widely available and can be added to salads or used in roasts.

Soy beans are a fantastic source of high-quality protein, vitamins, minerals, and isoflavones. You can dramatically reduce the content of lectin in them by cooking, fermentation and germination.

3.wheat, if you don't have problems digesting gluten, then whole wheat also contains antioxidants such as ferulic acid, which is linked to reducing heart disease.

Raw wheat, especially wheat germ, has many lectins. But lectins are almost completely eliminated by cooking and processing (author's note).

Lectins are not found in cooked pasta. In addition, research shows that whole wheat pasta does not contain any lectins at all, since it is usually heat-treated during production.

4.peanuts-contains Biotin, vitamin E. Unlike some other foods, the lectins in peanuts do not decrease when heated.

5.tomatoes-contain fiber and are rich in vitamin C. They are also a good source of potassium, folic acid, and Vitamin K1. One of the most studied compounds in tomatoes is the antioxidant lycopene.

6.potatoes are a rich source of vitamin C and folate. Potato peels contain high amounts of antioxidants such as chlorogenic acid, which helps reduce the risk of heart disease, type 2 diabetes, and Alzheimer's disease.

Proper processing of these foods reduces the number of lectins that they can be consumed.

Lectins are present even in dairy products.

The exception is butter from the milk of grazing cows. This milk contains fewer lectins than the milk of grain-fed cows, due to increased levels of SlgA, a secretory immunoglobulin that binds to lectins.

Lectins get their name from the Latin word legere, from which the word "choose" is derived, and this is exactly what they do: they select specific biological structures (attach to them), which allows them to release toxins, and this is part of the plant's self-defense mechanism against pests.

But lectins have antitumor activity, which means that they can be used to treat cancer (the author has an additional specialization in clinical herbal medicine).

For example, the essential oil of bagulnik-ledol, treats bronchitis, bronchial asthma, whooping cough, tuberculosis, stage 1 hypertension with a cough manifestation of the disease or against the background of taking I-ACE, which can be used in clinical medicine. Even long-term use of Bolotnik does not cause an addictive effect. It is necessary to participate in the treatment of Clinical Pharmacists who have additional specialization in Clinical herbal Medicine (author's note).

Aboveground parts also contain:

Flavonoids-substances of this group improve vascular tone, reduce the permeability of the vascular wall, have a healing effect on the blood supply system, as well as small vessels.

Tannins-have an astringent effect, help stop bleeding.

Arbutin is a glycoside that has an antiseptic effect. Quickly and effectively suppresses the growth of pathogenic flora. It is considered the most effective against Staphylococcus aureus.

Nemertean - glycosides having insulin-like action.

In a small amount, various minerals, amino acids, vitamins, organic acids, and enzymes are found in the plant.

The younger the shoots, the greater the concentration of nutrients observed in them.

Preparations from bagulnik can be used in the treatment of coronavirus and its complications (author's note).

The dishes in which food is prepared also matter. It is best to delay the lectins of a fast-acting pressure cooker (author's note).

Prevention

To avoid infection with SARS-CoV-2, follow the recommendations:

1.wash your hands frequently, 20 seconds at a time, with soap and water

2.use a hand sanitizer containing at least 60% alcohol if hand washing is not possible

3.avoid touching your eyes, nose, and mouth with unwashed hands, and stay away from people with COVID-19

4.keep at least 2 meters away from other people

5.cover your mouth and nose with a tissue when coughing or sneezing

6.clean and disinfect frequently touching surfaces.

Doctors recommend wearing fabric face masks in public places where it is difficult to maintain physical distance. This will help slow the spread of the virus from people who don't know they are infected.

The symptoms of COVID-19 in the elderly are basically the same as in other people. However, older people may develop different symptoms or take longer to develop common symptoms.

If serious or alarming symptoms occur, seek immediate medical attention.

If an elderly person is receiving treatment for an underlying medical condition, they should continue with their treatment plan. Consult your doctor or Clinical pharmacist before making any changes.

As always, taking precautions such as washing your hands frequently, wearing face masks, and physically distancing yourself is crucial.

The body needs healthy mucous membranes

In this case, the person most likely will not get infected, even if there is a carrier of the infection in the same room with them.

Attention to the mucous membranes because it is the main defense mechanism against dangerous bacteria and viruses. In fact, our local immune defense. Now, during the COVID-19 epidemic, doctors advise strengthening local immunity by restoring the mucous membranes of the respiratory tract and gastrointestinal tract. This protection is – the lymphoid tissue of the nasal mucosa and tonsils in the pharynx (there are several in the nasopharynx and they can not be removed) and the intestinal lymphoid tissue (author's note).

All mucous membranes protect a person from pathogenic bacteria, toxins and viruses. With the help of mucus. Mucus (mucin) – is needed to mechanically protect cells from "interventionists", wash them off and remove them from the body.

In addition, the mucus contains special substances – Secretory Immunoglobulins A, which are able to neutralize viruses directly where they try to enter the body. This is called local immunity.

Product rejection

First of all, you need to give up simple carbohydrates, pastries, cookies and all sweet things, including honey and jam.

At the same time, complex carbohydrates (cereals and vegetables), fruits and greens can not be excluded. To prevent stool disorders, a person needs about 35 grams of fiber per day, which is about 600 grams of vegetables and a bunch of greens. It is advisable to choose seasonal fruits, berries are useful for a large number of antioxidants and vitamins.

From dairy products, it is better to limit the consumption of kefir and ryazhenka, which can worsen diarrhea in COVID-19. You can eat cottage cheese, hard cheeses, etc.

It is important not to create a deficit in the consumption of animal and vegetable fats. They should be at least 30-35 % of the caloric content of the diet. The body also needs protein-poultry, fish, meat, seafood.

If the patient has problems with appetite, it is recommended to prepare a light soup with vegetables and Turkey, not strong broths or meat in the form of a souffle. Forcibly and eat a lot during the disease is not necessary, so as not to overload the body. At the same time, you should observe the drinking regime - at least 1.5 liters of water per day.

Antivirus antibiotic of animal origin – Ecmolin.

Ecmoline (Ecmolinum) - 0.5% aqueous solution of tryprotamine sulfate.

Produce a solution of triprotamine sulfate, in vials of 10 ml.

It is used for the prevention and treatment of catarrhal phenomena in the upper respiratory tract in case of flu, etc.

Ecmoline is administered 4-10 drops in each nostril 3 times a day or used for inhalation in the form of an aerosol - 0.5 ml of Ecmoline in 5 ml of isotonic sodium chloride solution.

You can add 10,000 UNITS of crystalline penicillin to 1 ml of the solution.

Side effects of medications

Favipiravir - a drug for the treatment of COVID-19 - can lead to an imbalance (impact on the cerebellum).

The drug Favipiravir (Avigan) can lead to non-specific Motor disorders that can cause a fall.

Other side effects include sudden running (sleep running legs syndrome).

In may-July, Russia registered three drugs on the basis of Favipiravir's - Avifavir, Areplevir and Coronavir.

September 17, 2020. The Ministry of health has allowed outpatient use of Arplevir and Coronavir. Sales of Avifavir's in pharmacies is not allowed.

ECG abnormalities were found in patients treated for COVID with Azithromycin and Hydroxychloroquine

Their most dangerous cardiological side effects include sudden death, pirouette tachycardia, and prolongation of the QT interval on the cardiogram. The QT interval on the cardiogram reflects the time it takes for the heart to fully "recharge". When it is extended on an ECG, there is a risk of developing dangerous arrhythmias and death.

Important! Azithromycin can cause myocardial infarction!

Non-steroidal anti-inflammatory drugs (NSAIDs) are among the most commonly used medications and have a wide range of applications.

NSAIDs include non-selective cyclooxygenase (COX) inhibitors (such as Ibuprofen, Aspirin (Acetylsalicylate), Diclofenac, and Naproxen), as well as selective COX2 inhibitors (such as; Celecoxib, Rofecoxib, Etoricoxib, Lumiracoxib, and Valecoxib).

Expert opinion-Clinical Pharmacist – my rich Clinical experience shows that it is necessary to introduce etiotropic drugs for the treatment of infections.

Of the most effective drugs in this group with the greatest clinical effect, but not in COVID-19, oxycamic acid derivatives (Piroxicam, Tenoxicam, and others) are applicable. Only this group does not cause reverse inflammation (markers of inflammation – you need to look at the dynamics) and can be used 1 time a day at night. Then the clinical anti-inflammatory effect is more pronounced at therapeutic doses or even lower than therapeutic doses.

As for Paracetamol, I do not recommend prescribing it to children. Adults on indications, and COVID-19, I believe that such an indication is not.

If you have a "wet cough" for prevention of atropatia from the Paracetamol (Acetaminophen) is assigned to ACC (Acetylcysteine).

If the temperature is high, then Nurofen is better (author's note).

In the UK, thrombolytics are often used in the treatment of cancer tumors, since the blood of such patients is condensed. I observed clinical cases in hospitals during my studies (author's note).

At the moment, Russia has developed an alternative drug Trombovazim, which is a fibrinolytic. It acts directly on polymerized fibrin without affecting the blood formula. The drug dissolves blood clots in the circulatory system, capillaries and alveoli of the lungs. It is recommended to use it in the early stages of the disease COVID–19. In addition, Trombovazim was transferred for clinical trials to medical institutions in the Tomsk region.

One of the most effective means of preventing pneumonia for older people is breathing exercises, which helps to increase the volume of the lungs and, consequently, increase the effective areas of the respiratory system. An increase in lung volume by 2-4% makes it possible to successfully resist viral pneumonia. Such exercises include breathing exercises that involve all the lobes of the lungs: the upper lobes (clavicular breathing), the middle lobes (rib breathing) and the lower lobes (diaphragmatic breathing), so during treatment and rehabilitation, patients need to work with a physical therapy doctor.

Combined treatment (Pharmacotherapy + Herbal medicine) = rational grain for the joint use of two types of therapy (author's note).

Complications of coronavirus

In 36.4% of the 214 patients with COVID-19 observed in Wuhan, seizures, encephalopathy, encephalitis, Guillain - Barre and Miller - Fischer syndromes were recorded. Among the seriously ill, there are more of them - 45.5 %. A third of them lose their sense of smell and taste, have a headache, fatigue, nausea and vomiting. One of the characteristic symptoms is confusion. Moreover, some neurological conditions occur after recovery. All this suggests that the coronavirus affects the brain.

Markers of inflammation

There are certain impairments of cognitive functions: it is harder to concentrate, they began to forget more things that frighten, sometimes really important, periodically there is a feeling of fog in the head. This is said by those who were ill with COVID-19 a month ago. His sense of smell had only partially returned. Many people have similar symptoms.

According to previously obtained data, coronaviruses can infect the Central nervous system, and this leads to an immune response (Giuseppe de Santis, 2020).

SARS-CoV-2 penetrates through the olfactory bulb-the area of the brain responsible for the perception of odors, reaches the brain stem, killing neurons. Inflammatory precursor molecules (cytokines) can trigger a violent reaction in the body - a cytokine storm - and damage the brain. That is why specialists should be prepared for the fact that the condition of COVID-19 patients with loss of smell will worsen.

The number of virus particles in the body of a COVID-19 patient was calculated

The virus attacks neurons

SARS-CoV-2 damages the cells of the olfactory bulb of hamsters, AND the ace2 receptor, which lets the infection into the body, is actively synthesized in the brain in the black body responsible for motor function, the posterior cingulate and middle temporal gyrus of the cortex.

Human neurons were infected with SARS-CoV-2 and, for comparison, SARS-CoV, the causative agent of SARS that caused the epidemic in Southeast Asia in 2002-2003. It turned out that the new coronavirus infects organoids and replicates in them, and penetrates directly into the

cells of the cerebral cortex. This explains the loss of smell and taste, as well as other neurological symptoms in patients with COVID-19.

Moreover, the virus infects the brain stem cells themselves, which means that by penetrating the patient's olfactory bulb, where there is a population of neuronal stem cells, it damages them as well. After that, the odors do not return immediately and only partially.

Virus RNA in the brain

Scientists from Germany conducted a large post-mortem study of nerve tissue, taking samples from several brain regions and mucus from the nasopharynx from 33 deceased patients with COVID-19 aged 30 to 98 years. Some patients experienced confusion, intracranial hemorrhage, headaches, behavioral changes, and acute cerebral ischemia.

Of all the samples, the most viral RNA and spike protein, which the virus clings to the cell membrane, were found in nasopharyngeal mucus. SARS-CoV-2 is able to use it as an entrance gate to the brain (F. Heppner, 2020).

Apparently, the virus spreads from the nasopharynx along the olfactory nerves located nearby, although other pathways are possible, for example, blood. But scientists emphasize that they analyzed the tissues of deceased seriously ill patients who needed artificial ventilation.

It is associated with the ingestion of a certain type of MBL protein along with the infection-this is a lectin that binds mannose, which triggers the blood clotting process. In this case, traditional blood thinning medications do not help.

Promising compounds for the treatment of coronavirus

This Japanese honeysuckle, which is used in the treatment of upper respiratory tract infections, can also help fight COVID-19.

In the context of the spread of COVID-19, you need to regularly use immune-boosting products.

One of the most useful from this point of view is sea cabbage, pine nuts.

Named an alcoholic drink that facilitates the course of COVID-19.

Inhalations based on synthetic analogues of interferon-beta-1-a protein of the immune system-accelerate the recovery of covid-19 carriers and reduce the likelihood of severe forms of the disease.

Interferon-beta-1 can be used to restore normal immune function and accelerate the recovery of patients with COVID-19. Inhalations of this protein are aimed at overall strengthening the immune system of the lungs, and not just to fight the coronavirus, which helps them cope with concomitant infections (Tom Wilkinson, 2020).

High hopes in this regard are pinned on artificial analogues of Interferon-beta-1-a protein of the immune system that can neutralize various viral particles and suppress the inflammation caused by them. Drugs based on it are already used to treat multiple sclerosis and other autoimmune diseases that are accompanied by inflammatory processes.

Antiviral inhalations

The first large-scale clinical trial aimed at treating coronavirus infection using a synthetic analog of interferon-beta – 1-SNG0001 was conducted. It can be injected into the human body using inhalers.

These experiments involved one hundred Britons who were infected with a new type of coronavirus in April-may of this year. They were divided into three groups that received standard treatment for COVID-19, SNG0001 inhalation, or "placebo". Neither the doctors, scientists, or volunteers knew what they were getting, which ensured that the experiment was as clean as possible.

Experiments have shown that synthetic Interferons improved the condition of patients, speeding up their recovery and easing the symptoms of the disease. On average, among those patients who took SNG0001, fully recovered patients on day 15-16 of treatment turned out to be about 2-3 times more than in the other groups. Similarly, symptoms of the disease, such as coughing or shortness of breath, disappeared significantly faster than in the control group.

Parallel clinical trials, in which another interferon analog, beta-1, was injected under the skin of patients in several clinics in France, ended without success. British scientists suggest that their success is due to the fact that they injected the drug directly into the lungs of patients, which concentrated its effect (targeted therapy - author's note).

The wine contains the antioxidant resveratrol, which can ease the course of COVID-19.

It is noted that the coronavirus also disrupts the ACE2 protein, which is present in the tissues of the lungs, heart, kidneys, and brain and is necessary for life. Resveratrol increases the concentration of ACE2 and thereby reduces the severity of acute respiratory distress syndrome (ARDS) accompanying COVID-19.

In addition, the antioxidant can suppress immune system cells by reducing the number of cytokines. Since ARDS is also caused by an excessive immune response, resveratrol may have an additional positive effect in this complication.

Resveratrol is found not only in wine, but also in grapes, cranberries, and peanuts.

Leveling (removing) the risk factor for coronavirus

Vitamin D is very useful. To do this, it is advisable to be in the sun every day for at least 10 minutes. Currently, the doctor is investigating the effects of the vitamin on the human immune system. Low levels of this vitamin in the human body can seriously increase the risk of coronavirus disease.

A product that will save you from vitamin D deficiency in self-isolation

It is known that vitamin D is a group of biologically active substances that the body receives in two ways: it synthesizes under the influence of ultraviolet light and is taken from food.

Being at home, the deficit can be avoided with the help of cod liver. It is enough to eat 25 grams of the product every day. If the cod liver causes you a persistent rejection, as an alternative, you can consider butter, meat, fatty fish. It is useful to accompany these products with vegetables.

Daily exposure to the sun for at least 10 minutes can reduce the risk of coronavirus. Vitamin D, if produced by exposure to sunlight, can significantly increase resistance to infections (Rachel Neal, 2020).

People who have low Vitamin D levels are at risk for developing acute respiratory infections and acute respiratory infections (and COVID-19 belongs to this category).

The author developed a bloodless differential diagnosis of hypovitaminosis (author's note).

The wave – like flow of the coronavirus-the cough then disappears, then returns, as well as the temperature.

When the temperature goes down – an Immunomodulator – Imunofan to reduce intoxication.

Up temperature – antiviral (Ribavirin).

Schemes of Immunomodulators instead of – candles, in/m instead of droppers. Candles from 2 years, from 1 year candles can be put in per rectum 1 time a day – the rate in 3 days.

Attention! Curcumin contained in turmeric can protect the lungs from fibrosis caused by radiation, chemotherapy, and other toxins.

Curcumin can protect against chronic obstructive pulmonary disease (COPD), acute respiratory distress syndrome, and allergic asthma.

Cytokines are glycoproteins (regulatory proteins that are secreted by white blood cells) that are not normally synthesized by the immune system. They appear when foreign agents invade the body.

Scientific studies have shown that the COVID-19 virus promotes the synthesis of cytokines that attract T-leukocytes, which are responsible for protecting the body, in the area of virus invasion. Since viruses can get inside cells, the immune system is forced to eliminate them along with these cells. This can lead to destruction of the alveoli of the lungs, respiratory failure, and pulmonary edema.

In severe cases:

1.nebulizer Pulmicort

2.turbuhaler Dexamethasone

3. Mexidol (Mexiprim)

4. giving oxygen through cannulas.

1.12 Doses are prescribed by a doctor or Clinical Pharmacist.

1.13 Diet - simple foods that protect against viruses

1.14 Garlic (contains - allicin), vitamin E-rich almonds, anti-oxidative blueberries, chicken broth from poultry, broccoli, mushrooms, dark chocolate and citrus fruits (except orange), kiwi, pomegranates and cook dishes using red bell pepper and spinach, drink green tea rich in antioxidants.

1.15 Limit – cheese, refuse sausage products.

1.16 The work of the immune system can also deteriorate due to excessive consumption of animal protein. The fact is that it contains a lot of so-called free radicals that cause mutations in human cells and destroy them. That is why many nutritionists recommend replacing animal fats with vegetable analogues (preferably olive, corn).

1.17 Refuse any vaccination, so as not to reduce the immune system.

1.18 Extreme practices increase immunity.

1.19 Take, for example, sobbing breath, the founder of the method managed to recover from diabetes. But those suffering from diabetes are at risk for infection with coronavirus. They have almost no protection. People have 4 elements to protect the Earth – water, air, sun, wind.

1.20 There are 5 elements of Earth – these are people who can stop the virus (author's note).

Permitted products for pneumonia

The daily diet of a person suffering from pneumonia should include easily digestible foods that saturate the body with useful vitamin and mineral substances.

chicken and vegetable broths;

fresh fruits, vegetables and berries;

porridges;

pasta;

lean meats, poultry and fish – chicken, Turkey, rabbit, veal;

cottage cheese, yogurt, ryazhenka and other fermented milk products;

baking from rye flour;

egg;

dried apricots, prunes and other dried fruits;

walnuts, peanuts, almonds, cashews;

olive and sunflower oil.

Sweets are allowed to include pastilles, jam, jams, and marshmallows. In the absence of allergies, you can add a small amount of honey to the menu, replacing them with confectionery. From drinking, it is best to give preference to a decoction of rose hips, green tea with raspberries or lemon, herbal teas, still mineral water.

The list of prohibited products includes:

pork, lamb, other types of fatty meat and fish;

sausages, sausages and sausages;

lard (sometimes possible)

pearl and barley groats;

canned food, marinades, smoked products;

sauerkraut and canned vegetables;

hot and salty cheeses;

fat sour cream, cream;

mushrooms;

vegetables – white cabbage, radishes, onions and garlic;

spices, "burning" spices;

cakes, pies and other confectionery products.

If you have pneumonia, you need to give up strong black tea and coffee, alcoholic, low-alcohol and carbonated beverages.

The use of these products has an increased load on the digestive system, contributing to the rapid proliferation of pathogenic bacteria. This slows down the treatment of pneumonia.

One of the important elements in the treatment of this infection is zinc, which is rich in chicken meat. And severe forms can be prevented by consuming vitamin D - a lot of it, for example, in herring. In the acute phase, you should focus on carbohydrates, since they provide more energy.

Scientists have named a drink that helps fight the coronavirus

Tea with lemon and ginger, garlic can promote sweating.

Emphasis on carbohydrates, eggs, fish - everything that the patient wants to eat.

The main feature of the course of viral infections.

When the patient is seriously ill, with a high temperature, catabolic processes take precedence over anabolic, energy consumption is greater than the arrival. We need strength to fight the virus.

Example of a daily menu

For pneumonia, all meals should be easily digestible and nutritious. Sample menu:

Breakfast – oatmeal porridge with fruit (oatmeal porridge with banana in the oven), cottage cheese casserole, omelette with chicken and vegetables;

second Breakfast – fresh fruit, yogurt;

lunch – soup with vegetables and vermicelli, buckwheat porridge or pilaf, boiled fish, steamed meatballs or cabbage rolls;

afternoon tea – cottage cheese, freshly squeezed fresh;

dinner – salad of fresh vegetables, baked fish or chicken breast, boiled potatoes.

A balanced diet for pneumonia helps restore the respiratory system, reduce inflammation, and strengthen the immune system. Proper nutrition improves overall well-being and prevents relapse of the disease.

Foods with a strong antioxidant effect or activity against ACE2 (the SARS - Cov-2 "entry point" protein in the cell, such as raw or sauerkraut, are mainly consumed in European countries with low mortality rates, Korea and Taiwan, and can be considered a low-mortality group.

Residents of Turkey, another country with a low mortality rate (2.4%), also consume a lot of cabbage and fermented milk products.

Low-fat dairy and fermented milk products are part of many diets, the rationality of which is proven. They help to remove uric acid, normalize lipid and carbohydrate metabolism, and are a source of calcium and Vitamin D.

When you include in the diet of food products (in particular cabbage vegetables, fermented milk products) that have a Pro - and prebiotic effect on the human microbiota, the immune response will only increase, which as a result will affect the body's fight against the virus.

Coconut oil has the ability to destroy COVID-19 and restore the immune system of patients.

After an experiment involving 56 people who had not suffered an infection in a mild form.

Molecules of extra-virgin coconut oil, with a low level of COVID-19 in the blood, can reduce this value by 60-90%. Coconut oil also helps to increase the survival rate of human cells.

Currently, a hospital in the Philippines is conducting a detailed study of the relationship between the intake of exotic oil and the condition of severe patients with COVID-19.

Diet is just one of the factors that affect mortality

from COVID-19.

And first of all, it is important how food affects the human immune system.

But nutrition affects the immune system, which depends on the state of susceptibility to this infection.

The incidence primarily depends on the number of contacts and viral load.

Poor nutrition can lead to obesity, and it, in turn, to various problems: from diabetes and cardiovascular diseases to the development of cancer. Such conditions definitely have an impact on the severity of the course of coronavirus infection.

The course of COVID-19 is affected by a wide range of factors, including the lack of a balanced diet, an abundance of foods with a high content of sugar, fat, chemical stabilizers, flavor enhancers, and preservatives. All this leads to metabolic disorders, obesity, diabetes and other health problems. And the more of them a person has, the more severe any infectious disease is.

There are a lot of obese patients, and their disease is quite severe.

Already in April and may, it became clear that people with morbid obesity (BMI more than 40), as well as those suffering from type 2 diabetes and other nutritional disorders, died from infection more often.

A rational diet rich in Vitamins and Antioxidant substances contributes to the formation of adequate immunity, maintaining a healthy weight and can be a factor in recovery, as well as a favorable course of coronavirus infection.

Vitamins against coronavirus

The most important substances to support the immune system in COVID-19 are vitamins D and C, zinc, and omega-3 unsaturated fatty acids.

First of all, the researchers ' attention was drawn to vitamin D, as it helps to block respiratory infections, including those caused by pathogens from the group of coronaviruses.
Summarizing the clinical data, it was found that among patients with sufficient vitamin D content in the blood, the severe form of COVID-19 is less common and the mortality rate is lower.
Vitamin D-helps prevent cytokine storm, a dangerous complication in coronavirus associated with an overactive immune response. A direct link was found between covid-19 mortality and low vitamin d levels.
Vitamin D in the blood of people with a positive and negative test for coronavirus is almost the same, if you take into account adjustments for age, weight and concomitant diseases.
Now the preventive properties of vitamin D are being tested in more than sixty clinical trials, and a large study involving 2,700 people is starting in the United States.

Important!!! Vitamin D in the form of IVS cannot be used to treat patients with severe coronavirus. This vitamin is needed as a means of preventing infection.

Vitamin C is a powerful antioxidant that protects the body from free radicals that damage and destroy healthy cells. It is also vital for the immune system.

Vitamin C is useful both for the prevention of coronavirus infection and at all stages of the disease, including the most severe, when a cytokine storm develops, since in high doses this vitamin reduces the level of the cytokine interleukin-6.

Currently, more than forty clinical trials of the effectiveness of vitamin C against COVID-19 are being planned or conducted worldwide.

Zinc plays an important role in the production of white blood cells, the body's main defense against pathogens. The use of zinc in colds caused by seasonal coronaviruses has shown that taking this trace element immediately after the first symptoms appear contributes to rapid recovery.

All mechanisms of action of zinc on the body in viral infections are described in detail and it is proved that zinc works against SARS-CoV-2. Zinc cleanses the mucous membrane of viruses, restores tissue barriers and epithelial integrity, which prevents pathogens from entering the blood, and also suppresses virus replication. Zinc is able to relieve General inflammation, which is very important in a cytokine storm.

The ability of zinc to block coronavirus by reducing the activity of angiotensin-converting enzyme 2 (ACE2), which the virus uses to enter cells, is being studied.

More than thirty studies have been devoted to the use of zinc for the treatment of COVID-19, often together with other medications or supplements.

Omega-3-unsaturated fatty acids are part of cell membranes and blood vessels. They are also essential for the proper functioning of the immune system. These organic acids can partially prevent infection and alleviate COVID-19.

Omega-3 acids are found in fish, shellfish and algae, but not all people prefer this diet. Scientists propose to compensate for the lack of useful substances with the help of dietary supplements with omega-3 (fish oil) - a traditional source of fatty acids, as well as vitamins A, D and E.

Researchers have started clinical trials to evaluate the anti-inflammatory effect, increased immune protection, and beneficial effects of cod fat on metabolism and cardiovascular health in patients with COVID-19. The

authors of all works emphasize that their conclusions are preliminary and in no case can be considered as a guide to action.

Not all vitamins can be taken during viremia, viruses can build their walls by eating vitamins (author's note).

Vitamins should be taken naturally, they work for a long time (the half-life in the human body is up to 21 days), when as-synthetic vitamins have an elimination period of 3-4 hours (author's note).

Drug targets for SARS-CoV-2 virus

New ways of regulating the enzymes ACE2 and TMPRSS2, which play a key role in the mechanism of SARS-CoV-2 penetration into cells, have been found. You can purposefully reduce the amount of ACE2 and TMPRSS2 by affecting small non-coding mRNAs.

The inverse relationship between the expression of ACE2 and TMPRSS2 and the expression of microRNA molecules is clearly observed (S. Nersisyan, A. Tonevitsky, M. Shkurnikov, E. Knyazev, A. Turchinovich, 2020).

The enzymes ACE2 (angiotensin converting enzyme 2) and TMPRSS2 (transmembrane serine protease type 2) are the entrance gate to the cell for the new coronavirus. After successful penetration, the virus, fueled by the resources of the cell, multiplies and goes out to infect new cells. Research teams around the world are experimenting with drug effects on ACE2 and TMPRSS2 in order to stop SARS-CoV-2 from entering human cells.

In addition, the ACE2 enzyme also plays a major role in the development of acute respiratory distress syndrome, the main cause of death in patients with coronavirus. In addition to the organs of the human respiratory system, ACE2 and TMPRSS2 are clearly represented in other organs, in particular, in the digestive system, kidneys and liver. This explains the various symptoms of patients, for example, disorders in the gastrointestinal tract.

Potential ways to influence these enzymes through microRNA molecules have been studied.

Bioinformatic analysis of available RNA sequencing data in the tissues of key human organs was performed. The main task was to search for microRNAs whose expression significantly negatively correlated with the expression of the ACE2 and TMPRSS2 genes. As a result, scientists found such correlations that are specific to several organs at once.

The researchers found that the JARID1B protein can simultaneously affect the expression of all these microRNA families. Thus, a new way of influencing ACE2 and TMPRSS2 was discovered. An increase in JARID1B expression leads to a decrease in the expression of the desired miRNA families, which in turn leads to an increase in the expression of ACE2 and TMPRSS2. Conversely, by reducing the expression of JARID1B, the desired miRNAs can be activated, which ultimately reduces the expression of ACE2 and TMPRSS2.

The effect on gene expression by microRNA is a well - studied mechanism. Non-direct interaction of genes (JARID1B with ACE2 and JARID1B with TMPRSS2) was found, which occurs through direct interactions with microRNA molecules. This helped to identify JARID1B. By increasing or decreasing its expression, for example, through drugs, it is possible to influence the expression of ACE2/ TMPRSS2 genes, which is extremely important in the context of a raging pandemic.

To further verify the result, the authors analyzed the results of RNA sequencing of single cells. It turned out that in most human cells (including epithelial cells of the respiratory system), the expression of ACE2 and TMPRSS2 is impossible without JARID1B expression. Now it is important to find drugs that can purposefully affect the functioning of JARID1B, and test them in vitro and in vivo.

To affect a healthy cell, the virus must disrupt the integrity of the cell membrane using organic sulfur molecules. The same mechanism uses COVID-19 to enter the cell.

In a number of experiments, scientists identified inhibitors with high efficiency and were able to block the process of virus penetration into the cell. Sulfur molecules are present in the natural environment, they are present in the membranes of eukaryotic cells and in the viral membranes of toxins, viruses or bacteria. It is the sulfur compounds that contribute to the absorption of the virus by the cell, so the discovery of scientists will help develop a new strategy for creating antiviral drugs with a high degree of effectiveness.

While you can use plants of the cruciferous family, onions, garlic, which is part of the sulfur. You can use sulfur purified inside, sprinkling sulfur powder on bread and eat (small doses).

Vida krasilnaya is a unique plant from the cruciferous family.

High antiviral and antimicrobial activity is confirmed by research results.

Attention! It is worth noting that water extracts of Vida, along with Japanese honeysuckle, were used to treat patients with an outbreak of the SARS virus (a type of coronavirus) in China in 2003.

The effects of Vida, red Peony, and Japanese Honeysuckle were studied in in vitro experiments on sensitive cell cultures using influenza, measles, and mumps viruses, and in vivo on a mouse model using the H5N1 subtype avian influenza virus. A series of experiments confirmed the high biological activity of the Vida root. After its use, more than half of the rodents infected with the avian flu virus survived. The maximum protection coefficient was also recorded in Japanese honeysuckle, which was effective against measles and mumps viruses, among other things.

Phytopreparations, unlike synthetic chemical products, are characterized by low toxicity and good tolerability, which is especially important for people with low immunity who have many diseases that serve as a contraindication for taking certain medications.

It was possible to overcome the cytokine storm in the human body, which is manifested in patients with a severe form of coronavirus infection.

Drugs that help patients – translation inhibitors (author, 2020)

A coronavirus infection changes human cells. To do this, scientists used a special type of mass spectrometry method mePROD to determine the rate of protein synthesis in the culture of colon cells and their number. It turned out that many viruses stop the production of host proteins in favor of viral proteins, SARS-CoV-2 only slightly affects the production of protein, but at the same time accelerates its synthesis.

To reduce the rate of virus reproduction, the researchers used translation Inhibitors that inhibit the process of protein synthesis, which involves ribosomes, matrix RNA, and transport RNA. Among the substances that stop the virus from multiplying in cell culture are 2 - Deoxy-D-glucose (2-DG), as well as Ribavirin, an antiviral drug used against hepatitis and other infections.

There is an antiviral drug - Ribavirin. I used it in the early stages of the disease and got good results. When shortness of breath occurs, Ribavirin helps in combination with Prednisolone (5 mg) or Dexamethasone 500 mcg (the course of treatment is short – it is better to prescribe GCS (corticosteroid) in the morning in small doses). At the same time, the effect of GCS is maximum. Do not prescribe antibiotics, sulfonamides - they will not be useful in this case.
In women, during the treatment of oral contraceptives (OC) - with the simultaneous use of hormonal contraceptives - there is an increase in the action of Prednisolone. The dose of Prednisolone should be reduced.

Ribavirin 200 mg (capsules) helps with bacterial infections, there are cases of helping patients (author's note).

My combination – Ribavirin + Imunofan = rational combination – only for adults and children from 2 years of age (author's note).

This combination cures. The action occurs on many viruses, both DNA and RNA viruses. And at the same time removes intoxication. No need for IVS. The drug Imunofan, in addition to intramuscular administration, can be administered through the rectum. This is preferable for patients (author's note).

When used simultaneously with interferons, the therapeutic effectiveness increases.

Concomitant use with Ribavirin may reduce the effectiveness of Stavudine and Zidovudine.

Ribavirin is not used for HIV infection!!!

Combination of Ribavirin + Imunofan = best!!!

Attention! Development or exacerbation of infections after taking GCS after use in conjunction with immunosuppressants and vaccination.

Antiviral agent – Ribavirin. It quickly penetrates cells and acts inside virus-infected cells. Intracellularly, Ribavirin is easily phosphorylated by adenosine kinase to mono-, di -, and triphosphate metabolites. Ribavirin triphosphate is a strong competitive inhibitor of inosine monophosphate dehydrogenase, influenza virus RNA polymerase, and guanylyl information RNA transferase, the latter manifests itself by inhibiting the process of information RNA coating. These various effects lead to a significant reduction in the amount of intracellular guanosine triphosphate, as well as suppression of viral RNA and protein synthesis. Ribavirin inhibits the replication of new virions, which reduces the viral load, selectively inhibits the synthesis of viral RNA, without suppressing RNA synthesis in normally functioning cells.

Contraindications – pregnancy. There are a number of other contraindications.

The rules of treatment

Not tracheal intubation and artificial ventilation, as in intensive care, but simply the supply of oxygen through a mask or nasal cannula. And it is precisely these devices that are not enough in our hospitals. This problem must be solved, especially since this technique is often necessary not only for pneumonia of any Genesis, but also for patients with coronavirus infection.

An alternative scheme for the treatment of coronavirus in adults (M. Kuznetsova, 2020).

1. Spironolactone prevents the development of fibrosis (growth of connective tissue), which occurs after severe inflammation and disrupts the work of the lungs.

2. Plus, it blocks the receptors of sex hormones, in particular, testosterone. It has been noted that "brutal" men who have high testosterone are more often and more severely affected by covid. Temporary suppression of these receptors reduces the severity of complications.

3. it reduces the excretion of potassium. Almost all patients had reduced blood potassium.

4. Hypokalemia contributes to the development of cytokine-bradykinin storm (hyperactivity of the immune system, when it begins to destroy healthy cells).

5. according to a number of studies, Bromhexine, known to us as a mucolytic, suppresses a certain enzyme necessary for the activation of the protein by which the coronavirus enters the cell. This works especially well in the first days of illness.

6. Bromhexine promotes the production of surfactant. Let me remind you that the coronavirus destroys the cells of the alveoli, and they normally produce surfactant. This substance prevents the alveoli from falling down and provides local protection.

You can use not only Bromhexine, but its active metabolite Ambroxol!!!

In light and moderate course:

1.Bromhexine-8 mg-4 times a day.

2.Spironolactone (Veroshpiron) - 50 mg-1 time per day.

3.Rivaroxaban (xarelto) – 10 mg-1 time a day or Apixaban (Eliquis) — 2.5 mg-2 times a day.

4.Dipyridamole-75 mg-2 times on the first day, then 150 mg-2 times a day.

Cytokine storm (more precisely, bradykinin storm).

1. with coronavirus infection, in some cases, the immune system begins to attack its own cells and provoke inflammation in various organs.

2. Multiple vascular wall injuries. This causes activation of the blood clotting system and the formation of blood clots. As a result, the nutrition of organs is disrupted, heart attacks and strokes occur.

To prevent this complication, anticoagulants are prescribed (mainly Xarelto or Eliquis). They block the blood clotting factor, which plays a major role in the formation of blood clots.

Dipyridamole (Chimes Were)

It performs several functions:

1. Prevents the adhesion (aggregation) of platelets and the formation of blood clots.

2. Reduces the adhesion of platelets to the vascular wall.

3. Provides a mild vasodilating effect, improves microcirculation.

4. It is an inducer of interferon. But Dipyridamole is added to the scheme not for the sake of this property, but for the sake of the first three.

In moderate to severe covid-19, Colchicine can be added to this regimen.

It is usually used for gout, because it affects the exchange of uric acid and relieves the attack. But it also has a pronounced anti-inflammatory effect, so it is used to treat autoimmune diseases.

Colchicine inhibits the production of white blood cells and lymphocytes. And these are the main cells of the immune defense. It is from lymphocytes that cytokines are formed, which can cause chaos in the body and lead the patient to death.

Colchicine was used not when the cytokine storm was already beginning, but when an increase in C-reactive protein, one of the markers of inflammation, was noted. This allowed to prevent hyperactivity of the immune system and avoid a terrible complication (2020).

In severe cases, you can use:

Glucocorticosteroids to relieve the increased activity of the immune system.

Monoclonal antibody preparations: Tocilizumab, Secukinumab, Kanakinumab - to suppress the main culprits of the cytokine storm.

Janus kinase inhibitors-enzymes that regulate signals between cells of the immune system – to reduce its activity.

Janus kinase 3 inhibitors, also called JAK3 inhibitors, are a new class of immunomodulatory agents that inhibit Janus kinase 3. they are used to treat autoimmune diseases

JAK1 expression in cancer cells causes individual cells to contract, potentially allowing them to escape from tumors and metastases to other parts of the body.

It is not necessary to concentrate on antiviral drugs with unproven effectiveness and antibiotics, which are needed in about 10% of cases when bacterial flora joins, and solves 4 problems:

1. Remove the intensity of inflammation.

2. Prevent the development of fibrosis in the lungs.

3. Prevent the formation of blood clots.

4. Protect and repair blood vessels.

Treatment does not need Immunomodulatory – it depends on what, -

- interferon inducers-this is already straining the body. It is forced to squeeze out its own interferon. But the synthetic drug is purified-Interferon can be used. You can use Imunofan – a special Immunomodulator that helps the human body cope with the virus because it has a 3-phase mechanism of action. Imunofan relieves intoxication, the effect lasts 3-4 days, then 7-8 days increases the phagocytosis reactions in the human body, then has an immunomodulatory effect, killing the virus and completely restoring the body. Another advantage is that when prescribing Imunofan, you do not need to do Immunograms (author's note).

The Drug Ingavirin

Increases the number and activity of interferon receptors in the infected cell, increases the sensitivity of cells to their own interferon, so that they begin to produce an antiviral protein. This stops the virus from multiplying.

It has an anti-inflammatory effect. Suppresses the production of cytokines, including those that provoke a cytokine storm.

Of the side effects-rarely allergic reactions.

Ingavirin does not stimulate the immune system. With coronavirus, this is not necessary.

It suppresses the production of cytokines, which are responsible for increasing the activity of the immune system.

A drug with the same active substance – Dicarbamine-in a dosage of 100 mg, which was positioned as a means to stimulate leukopoiesis against the background of chemotherapy of cancer patients. Imidazolylidene pentandiol acid (Imidazolyl ethanamide pentandioic acid). It has a rapid effect on leukopoiesis. After 10 minutes from the time of administration, the drug is determined as part of the blood plasma. Reaching the maximum concentration is detected in half an hour, and for 2 hours it decreases. Inside the body, the drug is rapidly and evenly distributed. Excretion from the body is carried out with the help of the kidneys.

Author's observations (author's note).

Prevention of SARS (caused by a CORONAVIRUS that causes a runny nose, but this disease is caused by a mutant coronavirus).

One of the first to fall ill was Chinese doctor Liu Zhan Liu, who saw the disease for the first time. Infection occurs by airborne droplets, from sick animals. With the development of the disease, a condition similar to the deadly flu develops, with the development of pneumonitis and pneumonia. This virus has a protein envelope that can mutate. Using this envelope, the virus is introduced into human cells, which quickly multiply, affecting other cells (sang, 2004).

Early sign:

1.dry cough

2.fever

3.measurement of body temperature with an ear thermometer - from 15 to 17 hours of the day, with an increase - laboratory analysis for atypical pneumonia (author's note).

Primary prevention:

1.compliance with hand hygiene, body.

Secondary prevention:

1.specific medications are available (see the text), except for the drug – Arbidol (acts on coronaviruses), but not in all patients (author's note).

2.antiviral therapy (see above).

3.the use of masks, respirators, the introduction of a mass quarantine.

In regular chain pharmacies in Russia, there is only one drug - Ribavirin. The rest are rare. Ribavirin is an antiviral agent used to treat hepatitis C. side effect – anemia. But with COVID-19, when there is more often an excess of iron, the drug is just acceptable (author's note).

Ribavirin helps infants and children with severe respiratory syncytial virus infection. It is strictly forbidden to take it for pregnant women.

The study found that morning temperature checks for COVID-19 don't make sense. Fever in patients with coronavirus is more common in the evenings. The author has long described the temperature rises from 15 to 17 hours of the day (author's note).

It is well known that temperature spikes are the first signs of a coronavirus infection along with a dry, prolonged cough. However, scientists from the United States advise not to measure the temperature in the morning, because in this case you can miss the disease at an early stage. Patients with COVID-19 are less likely to have a fever in the morning and much more often in the evening. They are similar to flu patients, who have 44% less fever in the morning, compared to daytime and evening.

The authors of the study relied on observations of 300 thousand people over 10 years. All of them visited the emergency departments of American hospitals. It was found that morning temperature measurements can only diagnose the disease in half of the patients who actually have it. These measurements were specifically related to the flu, the authors of the study believe that they can be attributed to other infectious diseases like COVID-19.

An increase in temperature indicates an increase in the immune system. The immune system produces antibodies to fight the pathogen, which increases inflammatory processes and, as a result, leads to a jump in temperature. In hospitals, patients ' temperatures are measured first, and now such screening has become common even in workplaces, airports, and schools. To do this, use special infrared portable thermometers.

Author's note: RNA-aza can be used to stop the disease, since it acts on RNA viruses (author's note). This drug is available in Russia.

The principle of action is based on depolymerization of RNA to the level of acid-soluble oligopeptides, monopeptides.

Ribonuclease dilutes thick sputum, pus, viscous sputum, mucus, and has an anti-inflammatory effect.

The drug delays the reproduction of certain types of RNA-containing viruses due to the destruction of nucleic acids.

By the number of acid-soluble substances that are released during RNA hydrolysis, the activity of ribonuclease is evaluated using a biological method.

One milligram of Ribonuclease corresponds to a unit of activity (EA).

Attention! Ribonuclease is not prescribed for respiratory failure!!!, so not all patients are suitable!!!

Patients with asthma and cyanosis are prescribed oxygen, and for bronchitis and pneumonia – sputum removal and maintenance of the respiratory tract.

Promising drug for the treatment of coronavirus

Spitsyn A. A, (2020) of razrabot RNA drug which is able to destroy coronavirus. Vitalang 2 has been developed and tested to fight measles, avian flu, swine flu, hepatitis, and many others.

At the moment, great interest in Vitalang was shown in China, the drug was sent for testing in the fight against the COVID-19 coronavirus to the Chinese Ministry of emergency situations in Shanghai.

In Russia, Vitalang has passed preclinical and clinical trials, and has shown its high effectiveness against all viral diseases. As well as bacterial diseases. After 6 hours, the amount of Interferon increases by 9 times, which creates a high tension of the immune system.

Experts from China are actively testing the Russian-made drug Triazavirin to assess its effectiveness in coronavirus.

Bryonia is a perennial plant in the pumpkin family that has a massive root.

Bryonia acts by irritating the serous and synovial membranes that line the internal organs and joints. If in large quantities it could cause harm, then small fractions of the substance benefit the body. The therapeutic effect extends, for the most part, to the organs of the respiratory system - the lungs, bronchi, trachea, pleura.

The dosage of the bryony 30.

Take: once if you have confirmed bilateral pneumonia or a covid 19 test (showing all associated symptoms) 3 peas, there should be a break of at least 30 minutes between meals before and after.

For the treatment of coronavirus diseases, including SARS, antiviral drugs are now used: Ribavirin, Interferons, specific immunoglobulins (blood plasma of people who have had SARS); for the prevention of bacterial complications – Antibiotics (B-Lactam, Fluoroquinolones, Cephalosporins, Tetracyclines).
Four more drugs have now been added to the previously recommended nine drugs. In addition, the recommendation includes therapy with helium-oxygen mixtures.
Previously, the website of the Ministry of health recommended the use of nine drugs: Hydroxychloroquine, Chloroquine, Mefloquine (causes serious side effects - it is better not to use), Azithromycin, Lopinavir plus Ritonavir (Kaletra), Recombinant Interferon beta-1b and Recombinant Interferon alpha, Umifenovir (Arbidol), Tocilizumab (monoclonal antibody – only softens the course of the disease, but does not cure – it is better not to use).
Today, the list was updated to include sarilumab, Methylprednisolone, Dexamethasone, and Baricitinib.
Also, therapy with helium-oxygen gas mixtures and pressure chambers is included in the recommendations for the treatment of coronavirus. However, the effectiveness of this method is still being studied.
As one of the treatment options, the oral cavity is irradiated for 10-15 minutes with blue light with a wavelength of 450 nanometers.
The device is a phototherapy device with nozzles for insertion into the mouth and nose for exposure for several minutes. For example, if the device weighs 50-60 kg, it is suggested to hold it in your mouth for 25 minutes, and more than 70 kg - 30 minutes. The emitted light of the cold blue spectrum affects the blood non-invasively, that is, through the skin.

This is not ultraviolet, but a blue spectrum with a wavelength of 450 nanometers. It's all about this spectrum of a certain wavelength. Cells responsible for activating the immune system - T-lymphocytes, B-lymphocytes, and immunoglobulins absorb in this range. The light seems to wake them up, and then they protect the body from all kinds of microbes and viruses, including COVID-19.

The most effective phyto-weapon is fir, or rather, its essential oil. In pine and fir forests, people usually do not suffer from respiratory viral diseases. To protect yourself from infection, you can attach a cotton pad soaked with 2-3 drops of this oil to the inside of the two-layer mask.

Attention! The anticoagulant Heparin causes acute platelet failure. As a result, new blood clots appear.

Short treatment regimen for coronavirus (author, 2020).

For the elderly

1.Mexidol (Mexiprim) – 5 ml intravenously-solvent-isotonic solution of 0.9% sodium chloride.

Doses are selected individually.

The drug gently lowers blood pressure and destroys the coronavirus, as the virus removes oxygen.

2.for children-candles in the rectum - Imunofan-immunomodulator-prescribed from 2 years. Possible exceptions-reception from 1 year – 1 candle 1 time in 3 days. Doses are selected individually.

Ivermectin – drug for the treatment of children.

3.for detoxification in adults-Imunofan-1 ml intramuscularly. After 3-4 days of treatment, the drug acts as a detoxifier. You can do without artificial lung ventilation (IVL).

4.In severe cases, during the phase of intoxication, it is possible to use suppository, intramuscular injection-the drug Imunofan in cancer. Doses are selected individually. The course of treatment is up to 20 injections.

5.in the phase of fever - you can prescribe antiviral drugs or a combination of them (more in my book-requires publication). Doses are selected individually. During the temperature rise phase, it is best not to use Immunomodulators, since Immunomodulators can increase body temperature.

6.Analgesics-it is better not to prescribe, except Nurofen.

7.the Author found several chemical formulas for creating a drug with a new etiotropic effect on coronavirus.

8.with an increase in the content of iron in the blood serum and ferritin, and the coronavirus has this property, since it removes oxygen from the blood and tissues, there are transient phenomene's of hemochromatosis (increased concentration of iron in the blood and tissues). We Need Antioxidants. You can avoid heavy drugs - iron-removing, and also use plants-iron-removing (iron-removing) plants-traditional herbal medicine (sparing treatment for patients with coronavirus).

9.Ribavirin for Children with 3 years - Inhalations are carried out only in stationary conditions and in the first three days of infection.

The procedure is performed twice a day for 3-7 days. Dosage calculation – 10-20 mcg of Ribavirin per 1 kg of weight. The solution is prepared on the basis of powder and water for injection. The resulting medicine is poured into a spray bottle, the child is placed in an oxygen tent or allowed to breathe through an oxygen mask.

10.Ribavirin for Elderly – 400 mg 2-time days.

These methods are up to 98% effective.

You don't need a vaccination, tracheal intubation, or medically induced coma.

In childbirth in homes, children and mothers are separated, isolated, although it is enough for a mother to put on a mask. But a baby cry without a mother.

The fact of repeated infection with the coronavirus, and not a relapse, is confirmed by the study of the genomes of the isolated viruses.

The evidence for re-infection is the differences between the first and second strains in the viral genomes (Mikhail Lebedev, 2020).

If pronounced differences in viral genomes are detected between the first and second strains, then it is possible to confirm the presence of re-infection (and not a relapse of the primary infection)!!!

The main factors in the development of reinfection are the state of the immune system during a repeated encounter with the pathogen, that is, the presence of immunodeficiency, as well as the amount of virus that has entered the body.

The body produces antibodies of various classes when infected with coronavirus, their presence allows you to establish the fact of infection. In this case, it is possible to detect immunoglobulins G (IgG), indicating the formation of a stable immune response to various virus proteins.

But the presence of antibodies (even in high titers) does not always mean the presence of immunity. Many tests used today detect antibodies to the nucleocapsid protein N, which is a marker of infection (but not the presence of immune protection). Other antibodies have a protective (neutralizing) function - IgG to the S-protein (spike protein), or rather to its receptor-binding domain (RBD). Laboratory tests for determining IgG to S-protein are now quite available, they allow us to judge the presence of protective immunity.

2 Conclusion.

2 Short treatment of coronavirus.

It is necessary to take into account the opinion of independent experts when developing new treatment methods.

3 Everyone who has been sitting in state seats in Russia for 20-30 years can't do anything good. Only vaccination. Vaccine manufacturers and Resellers (the Bill gates and Rastropovich funds) have a lot in their pockets, but they and their children and grandchildren are not users of vaccines.

4 And the first BCG vaccination – kills the entire immune system of the child, causing phagocytosis deficiency, when the body can not fight tuberculosis bacteria (Koch's Bacillus) and any viruses. Everyone is shouting that disinfection and hypochlorite are needed, but the human body has hypochlorite in macrophages, but it is killed, so the natural one does not work.

3 We must also take into account the fact that 20-30% of children do not produce antibodies, but only cause complications and death. The author started her work to treat this population of children as an alternative to vaccinating them to protect their health. You can also make vaccination blockers when the risk of vaccination exceeds the benefit. And develop new specific Etiotropic drugs to cure diseases, and not to cultivate them, as doctors do.

4 Attention! Now Rospotrebnadzor has temporarily suspended vaccination, except for BCG in children. I believe that it is necessary to stop any vaccination (author's note).

Patients with coronavirus have a common complication

Many Russians who have had the coronavirus after the complete disappearance of the clinical symptoms of COVID-19 complain of the appearance of chills, regardless of the weather. Patients often mistake this complication for a recurring illness and start taking medication again.

However, since tests for COVID-19 show the absence of coronavirus in the body of these patients, we are talking about violations in the Central nervous system, because of which the thermoregulation center suffers. In addition, it can be iatropathy (complication on medication (author's note).

COVID-19 can affect not only the epithelial cells of the respiratory system, gastrointestinal tract, but also the cells of the Central nervous system tissue.

The study of protein L-FABP

The study involved 41 people. In the urine of 13 patients, an increased content of L-FABP was recorded, while eight of them had a very bad condition during the week, and two needed to be connected to artificial lung ventilation.

The link between the L-FABP protein and the symptoms of people who have contracted COVID-19. This protein occurs in a person's urine when

the body's oxygen level decreases. This means that you need Mexidol (Mexiprim). This is better than a ventilator (author's note). The diagnostic standards should include this study (author's note).

Weak point of the pathogen

Experts called a kind of "pocket" on the surface of the particle, which can be administered antiviral drugs. This can stop the activity of the microorganism before it gets into other human cells.

SARS-CoV-2 uses a small molecule, linoleic acid, to bind and spread. If it is destroyed, the virus will stop spreading. Scientists believe that this mechanism can be used to create low-molecular-weight antiviral drugs against SARS-CoV-2.

The aggressiveness of the virus will decrease, including due to its sensitivity to UV rays.

People who had SARS during the 2003 outbreak may be immune to the COVID-19 coronavirus.

Experts have found that infection with the SARS-CoV virus, which causes acute respiratory syndrome, stimulates the production of antibodies that target the" spike " protein (S-protein) responsible for joining the coronavirus with receptors on the cell surface.

One of the varieties of such antibodies - S309 - can effectively neutralize the SARS-CoV-2 S-protein sites. Thus, people who have had acute respiratory syndrome may be immune to the new coronavirus.

Cocktails of such antibodies can be used in the treatment of severe forms of COVID-19 and for the prevention of the disease in people at high risk of infection.

COVID-19 coronavirus pandemic has spread almost all over the world. According to the latest data, there are more than 4.6 million infected people, 312 thousand of them have died.

Coronavirus RNA was detected in samples from the respiratory tract of patients 20 days after the first symptoms appeared.

The minimum period during which it was possible to detect RNA of the virus in smears from the respiratory tract was 8 days, and the maximum period was 37 days. This means that even a patient who has already recovered can still spread the infection.

The findings suggest that the two-week isolation period that is currently being set around the world for people with SARS may not be sufficient to protect others. It is also important that a person who has already been ill may remain infected with the virus for some time.

Scientists have found the smallest protein compound that neutralizes the SARS-CoV-2 virus.

Experts in the United States conducted a rapid analysis of one hundred billion potential molecules that can bind to the coronavirus S-protein involved in infection with the pathogen. As a result, the scientists found a protein compound ten times smaller than a full-size antibody, which, merging with part of the immunoglobulin, forms the Ab8 drug and acquires the functions of a full-size antibody.

Further experiments showed that even the lowest doses of Ab8 significantly reduced the number of viral particles in laboratory animals infected with coronavirus. Scientists note that the small size of the molecule increases its ability to diffuse in tissues, helps to better neutralize the virus, and also allows the drug to be administered by inhalation.

In September, the Ministry of health named six drugs that can be used to treat coronavirus: Favipiravir, Hydroxychloroquine, Azithromycin (in combination with Hydroxychloroquine), Interferon-alpha drugs, as well as Remdesivir and Umifenovir (Arbidol).

Favipiravir is a Japanese anti - flu medication. In July, Japanese experts could not confirm the effectiveness of the drug in the treatment of COVID-19. The Russian equivalent of Favipiravir Aviewer became the country's first drug authorized for the treatment of coronavirus.

People with allergies are less likely to get a coronavirus infection than others.

This is due to the fact that they have an increased reactin background, that is, a lot of so-called immunoglobulin E (IgE).

A number of COVID-19 symptoms may coincide with seasonal Allergy symptoms.

We analyzed the effect of the antiviral drug 4482/EIDD-2801 or Molnupiravir on SARS-CoV-2, which is effective against influenza viruses and has a broad spectrum of action against RNA-containing viruses.

As a result of laboratory research on animals, it turned out that the drug showed a good result at an early stage of the disease. The drug does not allow COVID-19 to progress to a severe form, reduces the duration of infection in the body and can block the transmission of the virus during the first day.

Scientists note that if the effectiveness of the drug is confirmed in clinical trials, patients with COVID-19 will stop transmitting SARS-CoV-2 to others within 24 hours after starting treatment.

Named a category of people who are less susceptible to viral and cancer diseases, including coronavirus.

Nutritional supplements protect the mucous membranes of the respiratory tract from exposure to coronavirus.

These are Omega-3 fatty acids with a daily intake of 300-500 mg per day. You also need vitamin B3 (Nicotinic acid or Vitamin PP) - it does not allow the appearance of frosted glass in the lungs. Fat - soluble vitamins A and D3 help protect the mucosa. The same vitamins are needed for those who have had covid to restore lung tissue. But this is all during the period of rehabilitation after illness (author's note).

Patients with coronavirus have symptoms associated with damage to the neuromuscular tissue. For its protection (recovery), it is recommended to take the amino acids L-carnitine and L-arginine.

Alkaline water during the coronavirus period

Alkaline water is used to treat hyperacidity, coronavirus, rheumatism, arthritis, osteoporosis, and allergies

With the exception of rare cases of alkalosis, it has no contraindications.

If you are taking medications, wash them down with plain water so that their effectiveness does not decrease if the alkaline water is absorbed too quickly.

If your doctor finds you have symptoms of alkalosis, you will have to stop drinking alkaline water. However, this dysfunction is extremely rare.

Some recommend switching to alkaline water gradually. And alternate it with the usual one. It is also important that the PH does not exceed 10.

If you drink strongly alkaline water with a pH of more than 10, then side effects and harm to the body are possible. As with everything, moderation is important. But you will find it difficult to find such water.

To be fully absorbed by the body, water must have an optimal pH value between 8.5 and 9.5.

You can buy alkaline water:

Mineral water in bottles.

Cook at home yourself.

Use an ionizer.

Go to a resort and drink water from wells.

Mineral water

Keep a list of alkaline mineral waters. Known to all:

Essentuki No. 4 and No. 17

Narzan

Borjomi

The break is water from Serbia of volcanic origin. Helps to remove excess fluid. You can drink instead of the usual one.

Bilinska kiselka accelerates metabolism and helps to lose weight.

Rudolfov PRAMEN is rich in easily digestible iron, normalizes blood pressure and hemoglobin levels.

Sigecica Bitter - record holder in the magnesium content.

Vincenta is rich in iodine, helps with fever and viruses.

How to make alkaline water at home

Limon

Take a pitcher and fill it with a liter of water.

Cut the lemon, squeeze half the lemon into a jug, then thinly slice the other half and add it to the water.

Add a tablespoon of heaped sea salt or Himalayan pink. Mix well and leave overnight (at least 8-9 hours). Enjoy! You can do without salt, just lemon.

Boiling

Regular boiling for five minutes also increases the pH of the water, but can produce heavy water (due to deuterium).

PH drops

PH drops are liquids with a high concentration of minerals and electrolytes. You only need to add a couple of drops to a glass of water to increase its pH.

Drops are usually sold in small convenient bottles, so you can carry them everywhere with you. A single bottle can improve the pH of hundreds of glasses of water.

List of main errors in therapy for patients with severe forms of coronavirus infection.

Among them: excessive use of antibiotics, which increases the risk of developing superinfections, the development of Kawasaki syndrome, dysbiosis, allergic reactions to antibiotics, unnoticed dynamic overblowing of the lungs, not prescribed timely anti-cytokine therapy, lack of rates of Clinical Pharmacists who can help effectively, preventing side effects of pharmacotherapy (author's note).

Attention! In the Ivanovo region, one of the pregnant women infected with coronavirus infection died. She was 33 years old.

The patient's condition deteriorated sharply, and she had to resort to emergency delivery at 32 weeks. The child is now in a clinic in Ivanovo, doctors are fighting for his life.

The woman was hospitalized in a timely manner, and also sought advice from Federal centers. Despite timely medical attention, she died. According to the autopsy results, almost 90% of the lungs are affected, total damage, and signs of thromboembolism. The number of pregnant women infected with COVID-19 in the region is growing. When trying to make a purchase of the drug in the region, the Ministry of health did not even respond (author's note).

Russian medicine

Official sources from the Ministry of health confidently state that the development of a medicine for the coronavirus of domestic production will not take much time.

People can either hope for, - "if it gets through", or look for alternatives.

The author found such an alternative (author's note).

Pregnancy is one of the factors that increase the risk of death in COVID-19.

Expectant mothers are almost three times more likely to be transferred to intensive care units and on artificial ventilation. Gynecologists specify that women in the second and third trimesters of pregnancy are particularly at risk. They may not have enough oxygen and immunity, thrown to protect the fetus.

Women during pregnancy are more at risk of death from coronavirus or severe illness.

Of the 19,600 pregnant women examined, 33 died, which is 0.2 percent of the death rate. Among non-pregnant women, the mortality rate was 0.1%. Thus, the death rate from coronavirus among non-pregnant women was half as much.

Pregnant women catch the virus more often.

The disease is more severe and can lead to premature birth.

Most of all, pregnant women in the second and third trimesters, as well as women who have heart, lung, malignant diseases, and those who had problems during previous childbirth are susceptible to severe course of the disease.

Of course, any viral infections have serious consequences for both the fetus and the expectant mother. In the case of the coronavirus, which is an unknown aggressor for the body, the entire immune system is aimed at not creating any kind of contraceptive response. That is, so that the body does not reject the child to save the mother.

A woman's immunity is directed not to her protection, but to the child, thereby worsening the course of the disease and leading to serious consequences. Moreover, SARS-CoV-2 affects the lungs and cardiovascular system, which are already under stress during pregnancy.

Closer to birth, the uterus increases many times and all internal organs adjust to the transformation. The lungs lose a certain volume, which in coronavirus infection creates shortness of breath, which significantly affects respiratory function - less oxygen enters the blood.

A negative impact on the fetus is also found if complications develop, in particular, pneumonia - secondary bacterial flora joins the main infection.

Therapy against COVID-19 can also have negative consequences, since pregnant women are strictly contraindicated in treatment with antimalarial drugs, as well as a number of antiviral medications.

Favipiravir is contraindicated for pregnant women and the need to follow the rules of contraception during and some time after the end of treatment, both women and men. This is due to the fact that the drug can negatively affect the formation of the fetus.

It is necessary to treat expectant mothers at random, to be in touch 24/7, because the reaction of the body, which undergoes a large load due to hormonal adjustment, may be inadequate. Gynecologists first of all have a task - to save the child in any situation.

If the coronavirus entered the body in the early stages, caused a severe form, and there is no effect from therapy, then, according to the spring recommendations of the Ministry of health, a woman may be offered an abortion. But since the effect of the disease on the developing fetus has not yet been studied, doctors in most cases offer to save the baby.

Tips at this time for expectant mothers - as much as possible to protect themselves from contact with any viruses. You need to wear a mask, maintain a social distance, and stay away from people who may be infected. Be sure to walk and take vitamins (preferably natural).

Earlier, the Ministry of health warned that pregnant women with a coronavirus infection may suddenly develop a critical condition against the background of a stable course of the disease.

Initially, they presented it as a drug to treat the flu, but it turned out to be ineffective. Tested for coronavirus, but refused to use it, because this drug, as it turned out, has pronounced embryotoxic and teratogenic properties – it can cause damage to the fetus and lead to developmental abnormalities

You can use Perftoran in the intensive care unit, 2 infusions are enough to return a person from the intensive care unit to the ward (the drug draws oxygen). But when testing a new treatment in my region, this drug was not found (author's note).

At the end of September, pregnant Muscovites were added to the list of categories of citizens who are ordered to stay at home when the incidence of coronavirus increases.

The combination of colds and COVID-19 is very dangerous for them and can also have serious consequences.

New drug compound found that blocks increased regulation of CD14 protein

The medicinal compound will help in the fight against many diseases, including the fight against coronavirus infection.

Increased levels of CD14 protein contribute to the appearance of inflammatory processes in the human body. If the inflammation is too strong, then acute chronic diseases appear.

The protein is formed in individual immune cells called macrophages. As a rule, the number of CD14 in macrofagah is increased by means of inflammatory processes. If this factor is ignored, it will lead to bad consequences.

Scientists are confident that the discovery they made will help create the basis for the emergence of new ways to treat diseases. Experts plan to continue studying the drug compound. They will soon begin conducting clinical trials.

Received a patent for a domestic product - Latrygin, which helps to prevent or mitigate the complications of coronavirus.

The Tyr-D-Ala-Gly-Phe-Leu-Arg Hexapeptide is a completely domestic development. Its uniqueness lies in the fact that it does not repeat foreign experience in any way. This is the first and only Delta-opioid receptor agonist in the world so far that has entered practical medicine. As specified, the source of the drug is called "Dalargin", previously it was used to treat stomach ulcers, acute pancreatitis and pancreonecrosis. It plays a role in the processes of tissue healing and regeneration, and also participates in the organization of the immune response. This substance was used to create a new drug form against COVID-19.

This form of the drug will help mitigate the so-called "Cytokine storm" that has been observed in many patients with coronavirus. The phenomenon is a massive release of Pro-inflammatory substances, which leads to the development of severe respiratory and General systemic disorders in people with COVID-19.

Antibodies to coronavirus

Patients come for a blood test for antibodies a few months after the disease caused by a new virus, and in some cases, IgG is no longer detected after 4 months. This suggests that the coronavirus is similar to seasonal flu viruses and will strain us in terms of morbidity - 4 varieties of the virus until 2025 (author's note).

Important!!! Antibodies appear and disappear in waves. You should not focus only on antibodies. After all, the person is protected not only by antibodies. Memory cells still. For life.

Some scientists claim that the antibodies last 2-3 months, others – more than four months. However, according to doctors, protective antibodies don't come out of nowhere. Antibodies are synthesized by B-lymphocytes – "memory cells" that receive information about the new virus from the primary links of the immune system (macrophages, NK cells, T-lymphocytes, etc.). memory cells produce antibodies, and antibodies bind the desired pathogen and remove it from the body. After "cleaning" the body, the level of antibodies decreases, but the pool of memory cells remains. When you meet this microorganism again, memory cells begin to quickly and in large quantities produce antibodies to it.

A positive test result for antibodies to SARS-CoV-2 indicates that the immune system "recognized" this pathogen, respectively – the body has immunoglobulins to this virus and B-lymphocytes – memory cells that synthesized them. With a high probability, memory cells will remain in the future, even if the level of antibodies in the dynamics decreases to undetectable by modern laboratory methods. If you encounter SARS-CoV-2 again, the immune system will respond to it quickly and in a specialized way, preventing a repeat of the disease. Such children and adults do not need to be vaccinated (author's note).

Today, it is known that antibodies to coronavirus are synthesized in more than 80% of patients who have had COVID-19 of varying severity. In asymptomatic patients, they are also produced, but less intensively than in patients with clinical symptoms. The level of antibodies varies depending on the examined population, the severity of the infection, the age of patients, and laboratory methods of research. In 20-30% of children and adults, antibodies are not formed, so they can not be vaccinated!!! If you are sick with coronavirus, only treat with Etiotropic therapy (author's note).

The largest share of people from Russia with antibodies to coronavirus was recorded in Tatarstan, St. Petersburg, and the Tula region.

One of the youngest patients to have contracted a new coronavirus infection in Scotland is on the mend. The girl arrived prematurely and became ill when she was just three weeks old.

Her mother developed preeclampsia, a dangerous pregnancy complication associated with high blood pressure. They had a caesarean section. The girl weighed just over 1.5 kg and needed special care. She was placed in a special incubator for premature babies. Three weeks later, the parents were informed that the baby had tested positive for COVID-19. Although no signs of the disease were observed, except for one. I was just alerted by the strange sniffling of the child, which prompted me to check the tests. They reported the need for a two-week quarantine away from Peyton. Parents begged doctors not to separate the family for so long. And the staff kindly agreed to joint isolation in the hospital. Doctors were able to quickly cure the baby with the help of steroids, which strengthened the children's lungs. When two tests came back negative for infection, the girl was released from the hospital. Her dad picked her up for the first time and took her home.

Attention! Who stated that drugs such as Remdesivir, Hydroxychloroquine, Lopinavir/Litonavir and Interferon are ineffective, citing interim results of a clinical trial conducted in 30 countries?

The effectiveness of the plasma of patients who were ill, which should contain virus-neutralizing antibodies, was "far from expected".

Revelations of Russian patients

Sverdlovsk woman infected with COVID - how she tried to get a KT scan

Yekaterinburg resident Irina Annenkova felt bad: the girl's temperature rose. The next day, she tested positive for coronavirus, and two days later, she received a positive result. In her column, the Sverdlovsk woman told how she tried to get medical care, sign up for a CT scan and get a sick leave.

On October 11, my temperature rose, on the 12th I did a test, and on the 14th in the evening I found out that I had a coronavirus.

On the morning of the 15th, I call the clinic and say: "I have a coronavirus, I need medical help." No, it's not. I spent two hours trying to call the covid phone numbers listed on the 23rd hospital's website. Vainly. Once I got through to the registry, and they told me: "You call the Rospotrebnadzor, they will write you an order, let us know about you, and then we will come to you. We won't come without an order. We won't come anyway, there aren't enough doctors."

- So, there's no point in calling a doctor? I speak.

- No. If you feel unwell, call an ambulance. If the form is light, be patient (and recover on your own). The Rospotrebnadzor will also discharge you from the hospital.

They gave me the phone number of Ordzhonikidze Rospotrebnadzor, told me to call there, but I, of course, did not get through. Then I went to the site, called the boss, and asked the Secretary "what to do and where to send my analysis at least by email." Sent, exhaled.

Then I called the regional Rospotrebnadzor, because I have a regional registration, they sent the data "Hemotest", where I passed the analysis. The employee was adequate, told me how everything should be according to the instructions that I should go, take the phone numbers of all contacts for 2 weeks, write out an order to stay at home and sick leave. Thank you, kind girl.

Today is Monday. No one contacted me. No one took the contact phone numbers. Half of them have already received negative tests that they are not infected. I know for sure that there are at least two people walking around the city from work who had symptoms like me and who also have 100% coronavirus. One knows that he has a "crown", the second, most likely, does not.

I'm off sick for a week. A week without medical attention. Fortunately, my mother is a doctor, and the condition is monitored. And the pulse oximeter is even more expensive than in March, but not prohibitively. And you can buy it.

At the same time, I can safely walk around the city, my entire quarantine is strictly on my social responsibility, I did not sign any papers.

Sign up for a KT scan to understand the extent of the lesion? Try to call the reception, where you will be told - no directions with a light form. Either lie to the ambulance that you're dying of shortness of breath, or go to the toll booth, where the record is for the end of October, on a dark night at three o'clock. You'll probably be well by then, but it doesn't matter.

In summary, the number of real infected people can be safely multiplied by 5. If not by 10. My infection looked like a common cold, and I was sure I had normal laryngotracheitis until I got the test.

All that is written in the instructions - at the first signs of SARS, sit at home and call a doctor, if you have difficulty breathing, you will get a KT scan to assess the extent of the lesion - all this does not work, so take care of yourself. If you don't, you'll have to play Russian roulette with a system where no one cares about you, where you won't get even nominal medical care, if you don't die and suffocate, and no one cares that you can walk around and infect others.

And, believe me, those who will stay at home in such a situation, so as not to be dangerous to society, are only a few of them. Take care. All health and clean lungs.

Due to the high workload, only severe patients are referred for KT scans of the lungs.

One of the Syktyvkar women has been in the Komi Republican clinical hospital for almost two weeks with suspected coronavirus.

The girl has not been home since August 7.
She talked about how her treatment is going.
Syktyvkar resident Irina evgenieva already knew that she had been in contact with a person who had COVID-19 when she felt ill.
The sense of smell and taste disappeared, a slight temperature rose, and a cough began. She notified her doctor on July 28. The smear was taken only a week later. It turned out to be negative. That was the first time I thought I'd gotten away with it. But the attending doctor noticed when listening to the lungs that breathing was difficult, so she sent me for a KT scan, while saying that everything is fine, that all this is done for prevention.
However, Irina was told that a KT scan revealed left-sided viral pneumonia and the girl was forced to go to the hospital.
The girl was forcibly admitted to a hospital full of patients with a coronavirus infection. Today, people are not legally savvy at all. Obediently, she changed into the issued dressing gown and followed the hospital worker. Threats of responsibility always act on law-abiding citizens, so since August 7, the girl was in the KRB.
Irina was placed in a ward with patients who already have a confirmed coronavirus infection. The girl was admitted to the hospital on Friday, so the drugs were allegedly in short supply. The nurse explained that all the medications were gone, and since pharmacies are closed on Saturday, there will be no treatment until Monday. Imagine, pharmacies are closed on Saturday. That's how she was left locked up without any treatment for the weekend in a ward with people whose diagnosis had already been confirmed.
The girl said that, starting from Monday, she began to be given Ingavirin, do UVR of the throat and oral cavity and inhalation. According to the patient, the procedures took at most 15 minutes all together and took place once a day.
They also gave a solution of Chlorhexidine marked gargle up to six times a day. From the very beginning, I did not understand why I was in this institution, because my smear was negative, and I did not receive any treatment. I just lie in the hospital, sleep, eat, and breathe the same air as people with coronavirus. To my questions, my doctor replied that since the smear is negative, he does not want to prescribe strong therapy, so he only treats pneumonia. Let me remind you that the treatment consisted of antivirals, UFOs, gargling and inhalation.
A little later, the girl discovered that patients are in the Department of neurosurgery and their treatment is not infectious diseases, but neurosurgeons.

Irina's second smear for coronavirus, which was already done in the hospital, came back negative. The girl breathed a sigh of relief, but her doctor explained that for the discharge of such smears, two are needed and added to the treatment of Grippferon drops. And after another ten days in the hospital, on August 19, Irina tested positive for coronavirus.
In addition to the ward, there are 15 other wards on the floor with a capacity of three people. Toilet and shower for the entire Department, which are washed carelessly and not ventilated. There are no masks, they give one mask for the entire stay in the hospital. The clinical picture in all colors, and what do you think, what was the smear after 10 days of stay in the Department full of people who have positive smears? That's right. It came back positive. In response to my requests to explain how this could have happened, the doctor said that it was unlikely that she could have been infected in the hospital, that the virus could simply have been located just below the place where the swab was taken.
Almost two weeks Irina is in the hospital and only one day of them she is sick with coronavirus. The girl said that her "treatment" did not change even after that.

Sitting on a bed with holes in the bedclothes in a cold ward in just the robe that was given out when I was admitted, I realized what a mistake I made when I obediently changed my clothes and followed the messenger of hell himself, who led me to a place where I could not get out. I still do not understand why the doctors are so indifferent, do not have a sense of tact, telling you that you will have to stay here in a good way for another two weeks, and, most likely, that you are now in this place because of the doctors, because of their negligence and connivance. If you go around infecting others with the "crown", there is an administrative responsibility. Is there a responsibility to understand the whole situation and quietly observe how a healthy person turns into a sick person?

The girl hopes that her story will help people understand how important it is to prevent infection, how important it is to know your rights.

I really want to avoid making mistakes and avoid infection at all. I ask you to take all necessary measures for this, because if you get sick, you are more likely to face the same thing that Irina had to face. It is time to recognize the fact that our hospitals do not treat, but maim. We are all told that Russia, or rather, in this case, the Komi Republic, is fighting the coronavirus, that doctors use the most powerful and reliable drugs to cure patients. Irina had a "happy" chance to test the whole system for herself, and therefore she felt it necessary to convey this to people.

Patient revelations: a resident of Novosibirsk keeps a diary of the fight against coronavirus.

Almost everyone in Olga Lavrova's family fell ill - she, her son and his wife, as well as two small children. They had to not only fight to call doctors to their homes, but also hear in response the words that they are hysterical people. The Siberian woman talked about the symptoms that were observed in her family members, the reaction of doctors (and that it is not realistic to call doctors), and also shared useful tips that she learned from this situation. We publish a coronavirus diary from the life of a Novosibirsk family.

We have a large family, three working adults and two children - one year old, the other five years old. I am a grandmother, 54 years old. The disease began in my son with a rise in temperature in the evening 37.5 and aches in the joints. We decided to call a doctor in the morning. They could not get through, the daughter-in-law went to the 27th polyclinic, stood in line for an hour at the reception, and then still got through to the number 124 and issued a call to the house. My son's temperature began to rise, and paracetamol did not help. By one o'clock in the afternoon, the temperature jumped to 41.3, sharp chest pains, shortness of breath. The ambulance arrived, the cardiogram is normal, the temperature was brought down. A cough appeared. The doctor did not come that day.

On the second day, go to the reception again and repeat the call (calls are not transferred, you need to call again each time). The doctor came at about 18:00, told me to drink an antibiotic for 5 days, then go to the clinic. For some reason, I wrote out my sick leave from the day of arrival, and not from the day of the call. Later, my employee talked about the same oddity: she did not wait for the doctor at home, went to the clinic for an appointment, and there were several people in the queue. How can I not walk here? The employer needs a sick list, you can only get it from a doctor, a doctor in a polyclinic. All tips about home calls exist only on paper, in reality, no one comes.

On the third day, my son lost his sense of smell. The temperature does not decrease, the cough remains. A one-year-old granddaughter got sick: the temperature rises, we give antiviral drugs and reduce the temperature. By Monday, October 5, there are no improvements. I lost my sense of smell. It seems that you can't go to the clinic, because, most likely, we are all infected. But there is nothing to do - the daughter-in-law again goes to the clinic to issue a call. The call is accepted. No one comes. On October 6, everything repeats, also no one.

Wednesday, October 7. Making a call. The reception Desk says that they know about us and that a special covid team will come to us before 14:00. No one comes here. We can't get through to the reception. The daughter-in-law's temperature rose, and her sense of smell disappeared.

What to do? It is not clear. My son's medication has long since run out, his fever and cough continue, and he complains of severe weakness. Five-year-old grandson got sick, temperature 38.5. I try to call the Ministry of health - they immediately pick up the phone, give the phone number of the chief doctor's office.

In the reception area, they are attentive, ask which clinic we are applying to, and give us two phone numbers: the head of polyclinic No. 27 and the Department of quality control of medical services (wow, is there one?). The Manager's phone does not answer for a long time, and when dialing again, it immediately goes into short beeps mode (and so on until the end of the working day and the next day). No one answers the number of the quality control Department. I call the chief doctor's office again. They advise you to contact the registry's hotline. I call there, no one picks up the phone. I spend two hours on these calls.

I call the chief doctor's office again. They try to help and give the phone number of the head nurse. On it (miracle!) dial. She assures us that they know about us, and that she will personally take our data to the covid team, which is about to arrive, wait. No one comes here.

Thursday, October 8. We understand that no one will come and it is useless to call. We are trying to make an appointment for paid tests, CT scans, and an appointment with a paid doctor. The entry is only for next week. The daughter-in-law with children goes to her parents in another district to call a doctor and get at least some prescriptions for medicines (polyclinic No. 29). Everything works out there, they prescribe treatment. Well, at least something. Suddenly, a doctor comes to us - in full "zamot", with ready-made printed prescriptions, so as not to write medications, but only to delete unnecessary ones. My son has pneumonia, and he advises me to just drink more fluids, since there is no fever. We're not supposed to get covid tests. The children were brought home. Treat.

Friday, October 9. In the morning I feel weak and slightly suffocated, I write it off as intoxication: the whole family can barely walk, constantly feels sick. I try to go outside: maybe the air will make it easier. Abruptly becomes ill, numb hands and feet, vision does not focus, severe nausea, I slide down. I have time to call my son to help him get home and call an ambulance. Chills, a state of severe poisoning, speech has become slurred and severe lethargy. An ambulance arrives, and after the examination they are taken to the first city hospital. I spend almost all day there, reclining in the reception corridor. I'm being examined first. I understand everything, but my body feels like it's not mine, and I'm completely apathetic, I don't feel pain from needles, I don't feel anything at all. I want to sleep. They're slowing me down, they're doing tests, I need to rule out a stroke.

Thanks to the doctor on duty, he didn't leave the shift until he was sure I was getting help. After the dropper it makes me feel better, sit on the couch, unable to speak. Fortunately, there is no stroke, they let me go home, give me a statement with recommendations. The doctor wonders why we did not take a swab at the clinic. Not a word about covid in the discharge, the doctor warns orally that this is a covid complication on the brain, that the deterioration of health will repeat and you need to take care of yourself and see a therapist. My son takes me home by car, and on the way, we buy the recommended antithrombotic medications. Treat.

Saturday, October 10. No one believes in calling a doctor at home anymore, we just don't call them. On weekends, we lie down as a family (well, as far as you can lie down when children climb into all the places and do not want to play with toys piled on the floor). The kids are doing well, they walk on their heads. Food and groceries were ordered at home. It turns out that there are a lot of caring people around: we are consulted by "friends of friends" - a neurologist and a therapist, we bought more medicines. Others offer help: some with food, some with medicine, some with a pulse oximeter. On Sunday, I'm dead again, but at least I don't have any chills and I have something to breathe, so I just lie there.
Monday, October 12. My son's temperature does not decrease, it remains at the level of 37.3–37.5. The daughter-in-law has the same. Everyone has a cough, some kind of background, we are already used to it, we do inhalations, we drink antibiotics. We use a pulse oximeter; it calms us down. My state of inhibition periodically returns, but not so sharply, a few hours later - and it becomes easier. The son began to smell, the kids also feel. My daughter-in-law and I live in a smell-free world with almost no taste. Everyone gets sick all the time. I don't even want to look at the food. Attacks of weakness roll in, when you need to move your finger through effort. In General, everything is in order.
Tomorrow to go to the doctor's appointment in the clinic, you need to extend the sick leave for me and my son. In the evening, we got through to the reception with the question: call a doctor at home or go? They asked for a long time who we are, what our diagnosis is (my God, how do we know what we have written?), what condition, and then told us to call a doctor at home in the morning. I don't believe much in it.

What the situation taught us

1. Go to the clinic for sick leave on your own at the first sign of malaise, wearing a mask and gloves.

2. with chest pain, do not be afraid and count the pulse, this is most likely just a reaction of the heart muscle to overload (rapid heartbeat and intoxication).

3. For removal of intoxication to drink warm acidified liquid (a lot!) and there are vitamins.

4. with covid, there is a high probability of thrombosis of all organs, it is important to monitor the pressure (reduce the increased pressure) and take antithrombotic drugs.

5. If possible, do not lie flat, and often move at home, but not on the stairs and not to the store.

6. Eat, although you do not want to: very quickly comes exhaustion, you need to replenish energy in fractional portions - protein, fiber.

7. Well, if there is someone who can get a doctor to come and take a smear, it should be knocked out, but there is no strength for it-enlist the help of friends or relatives.

8. polyclinics do not have a system for processing and transmitting information, the availability of medical care is not organized, and this means that time is lost.

9. No one can help you but yourself. Don't rely on the medical system to help yourself as much as possible.

Another family from Novosibirsk honestly told how they got sick with coronavirus.

They were given treatment over the phone (but they still had to go to the door of hospital rooms to do this). At the reception, people are called hysterics. For what I ask, when will the doctor come???

And designer-jeweler Natalia Zaitseva shared her story. She got sick with the coronavirus, started treatment, but she had a severe allergic reaction to the drugs from covid. She waited for an ambulance for 8 hours, but to no avail. In Novosibirsk, a girl with Quincke's edema waited 8 hours for an ambulance.

The situation with coronavirus in Novosibirsk is heating up - the number of cases and deaths is gradually increasing, and on Monday, October 12, it became known about the death of a 25-year-old girl with coronavirus. The authorities do not yet see any reason for the return of restrictions, and medical institutions can barely cope with the increased load. Chairman of the primary organization of the trade Union "Action" in Novosibirsk Sergey Komlev said that some Novosibirsk residents have to wait for an ambulance for 40 hours. Our reader Natalia Zaitseva found herself in a similar situation. The girl got sick with coronavirus, and against the background of treatment, she developed Quincke's edema, she called an ambulance, but the doctors did not wait.

Then from the first person.

My husband and I were diagnosed with covid in early October. And since the degree of the disease is mild, we are almost at the stage of recovery. At first, the symptoms of the coronavirus appeared in my husband: fever and stifled heavy breathing, lost the sense of taste and smell. The next day after these symptoms, the temperature dropped, and he independently passed a covid test in "Invitro" and did a CT (CT scan) to prepare for the arrival of doctors and not to waste time. After a couple of days, the taste disappeared from me, although the temperature only once rose to 37.1 degrees. I realized that the virus probably caught up with me - I didn't get through to the clinic, so I took the test myself.

After receiving positive results, we still managed to call a doctor at home. And you can only do this until 16:00. Once I got through at 15:55, and I was immediately told that while they will fill in the data, it will be 5 minutes, and the call will not be accepted, call tomorrow. I do not understand why calls are registered only before 16:00, at least, such rules in the polyclinic No. 27 of the Zaeltsovsky district. By the way, you can't get through to 124 either: either it's busy, or the call breaks down, or after 10-15 minutes of waiting on the line, they pick up and hang up.

This weekend I woke up with Quincke's edema (acute tissue edema) on half of my face. As it turned out, it was an allergic reaction to one of the prescribed antibiotics. After drinking suprastin and some other Allergy pills, I went back to bed. When I woke up, I realized that the swelling did not go away. I started calling an ambulance, and for more than 10 minutes I hung on the line waiting for a response from the ambulance. During this time, you can move the horses. And it makes me really sad. From the operator's question: "Can you still breathe normally? » I felt a little uneasy. The call was received at 16:57, and 10 minutes later I was sitting on the couch with my passport and policy ready, waiting for the doorbell to ring.

Three hours later, I called the ambulance again. "Wait, call accepted." Five hours later, the same response. Seven hours later, the same thing.

"But you can already die in that time! "Yes, you can," replied the tired voice of the operator, who apparently repeats this a hundred times a day."

My husband went to the pharmacy and bought medicine and syringes. After practicing on an orange and wiping the perspiration from his forehead, he gave me an injection. As a result, we waited for an ambulance for 8 hours. At one o'clock in the morning, I canceled the call.

I had no Allergy before, especially to medications, so the doctor could not have known about such consequences either. Now the swelling has become a little less, but it is still quite strong. I've been trying to call the reception since 8 am, to no avail. Constantly busy on all rooms. I decided that if I didn't get through in the next hour, I would go to the clinic on foot. Despite the fact that the decree on self-isolation is in hand until October 23.

I don't see any other way out. On the one hand, I need to take medication to cure pneumonia (I have it in the mildest form, but still have it), on the other hand, I can't drink these antibiotics because of allergies. And the edema must, of course, be stopped. Everywhere they write that it can descend on the throat, and then suffocation will begin. And there won't be any help, as I've already found out. And you need to pass a routine smear. This is also important. I will go on foot; friends say that the queue for the clinic begins on the street. I will try to avoid people: mask, gloves.

It all makes you scared. Natural selection is at work, the strongest survives, and there is no one to help. Private ambulances and doctors do not go to covid patients. The whole city is thrown on the unfortunate municipal hospitals and clinics.

Ambulance surgeon.

Good morning! I come to the shift and see another breakout of the bottom. Anti-records beat not only the numbers of infected people, but also, traditionally, the ambulance. Waiting time for the ambulance team to arrive for infectious diseases. In minutes. This is not even a single day. In the first wave, as far as I remember, it was a little more than a day and you could count them on your fingers. Now only at our substation there are not a dozen of them "hanging".

From red "hang" suffocating couple of hours (130 minutes), which is not so long in recent times.

What is the reason for this? The answer is simple - the city's health care system is ruined. There is a shortage of personnel in the ambulance service. It got to the point that specialists are transferred to "zeros" to receive calls on the phone 103. More accept - more "hang" will be. It is impossible to increase the number of infectious teams by ambulance - then there will be no one to go to other calls (now non-infectious calls can also "hang"for hours).

Emergency care in the clinic. in one of the largest polyclinics in the city (27) there are about a dozen of them. And there is no equipment either, by and large, so after visiting the patient and making a decision about hospitalization, the emergency doctor .... will call an ambulance for transportation to the hospital.

Call the therapist at home for a temperature to prescribe treatment and/or issue a sick leave. Here comments are unnecessary. I am sure that many people have encountered it themselves, or your relatives or friends. Put on a mask and go to the clinic with your temperature, because there is a separate office for receiving this category of patients. Or the clinic itself will respond briefly - call an ambulance. That's the population and causes massively.

It turns out that in the third city of the country, in the metropolis, patients are always waiting. Not just the arrival of an ambulance or emergency room/therapist. If he is taken to a hospital, then he will wait for his turn there, but it is not a fact that there will be a place for him.

Everyone is dissatisfied. Both residents and medical workers. But apparently, these are our problems, since the Ministry of health will always comment on everything, answer everyone that "all processes are under control and everything is working normally. There is no" nothing", and if there is, it is still not true.

Larisa, 34 years old.

Got sick. A doctor or paramedic came, prescribed antibiotics, and closed the hospital in 2 weeks. No test, and I work with students. Suspicion that there are many more cases. But, apparently, they test only in Moscow. Peripherals interrupt!

Ivan Kovalenko.

The clinic has about 50 home calls per day for ONE doctor. Load!!!

Julia

We have the worst thing that our government continues to help" someone", but not their own, their own and so everything is fine, everything is under control.

Maria, 26 years old. An ambulance was called at 3 am today. Arrived at 6. The child has a temperature of 39.5

Nata is 35 years old

There are terrible queues in polyclinics, you can't get an appointment with a therapist, 6 out of 12 therapists work, and the rest are temporarily absent.

Olga 24 years old

MD. full scribe… Exactly the Apocalypse.

Patient

My God, at least someone who works in this structure said how it really is, and not like on TV and how the Ministry of health is lying, sending letters that patients should not be admitted or hospitalized (there are no places) with suspicion of covid, and on TV as always everything is fine. Itself 11.10.20, faced with a call for an ambulance, the phone just did not take, as it turned out later, for the entire Dzerzhinsk district of Novosibirsk, two teams are working, and then with a trip to the Chkalovsky hospital!!!! Horror!!!!! In short, all health, God forbid to get sick at all, but to get sick during this period.... Doctors themselves are scared + decrees from the Ministry of health+ the health care system is collapsed and there is simply no one to work, and people are deliberately driven into a panic, they are also fined, in short, mutual responsibility, and there is no real help. The government had a whole summer to prepare for the second wave, well, no, as always, everything is "Maybe".

Yuri

GL.the doctor does not need us, so it is not surprising! For example, it is better to get rid of people like me by saying that they are not satisfied with business qualities.

Julia, 28 years old.

Sick from may 25 to end of June, the KT may 31-pneumonia with lesions 25-50%, medium-heavy form, but fortunately, there were no hospitals, KT July 31 foci of inflammation already not detected, i.e., the dynamics is very good, but fibrosis remained unchanged (it is a long time or even forever), all the tests are normal. I felt great, returned to the usual active rhythm of life, on the advice of a pulmonologist, I walked a lot, or rode a Bicycle for 2 hours in the country, and also resumed swimming training. Everything seemed to be more than OK. And in mid-August, the hair began to fall out in clumps, just catastrophically, and the loss stopped only in early October. According to my estimates, 50-70% fell out, I already began to think about the wig! I am very glad that the "new growth"has started to appear. The pulmonologist said that very many of the "postcovid" mark this syndrome.

So, it's not far-fetched. And it is not known where and what else will "shoot" after this muck.

Svetlana K. G. Ivanovo

An ambulance, not an ambulance anymore....

High temperature in my daughter (20 years old) 41.3. Ya in shock!! This has never happened... Paracetamol doesn't help!!! I call the ambulance at 6 PM, they accepted the call. Arrived at 6 in the morning!!!! The inspection lasted about 5 minutes, and call the district police officer for the result. And, left. By the arrival of the ambulance, the temperature was wiped with water and vinegar, compresses on the head and Paracetamol a little knocked down... But during the night, the temperature returned and decreased. I never thought that 39 would be a joy for me...At night, I called the ambulance, they said that we are not an emergency, so we will wait...

32-year-old Regina Gareeva, whose grandfather died a few days after being discharged from the hospital, suspected the doctors of the 5th city hospital of Naberezhnye Chelny of falsifying the CT result.

At first, doctors refused to hospitalize the 81-year-old patient and give him a CT scan, citing the fact that the device does not work. After the pensioner's granddaughter complained to the Ministry of health of the Republic of Tatarstan, a place in the hospital for the old man was still found and he was allegedly examined on a tomograph. After the death of my grandfather, we learned that the tomograph in the hospital really did not work. It turns out that the result was simply faked and in fact the doctors did not know what was going on in the grandfather's lungs, so they did not provide him with adequate help?

The order of the Prosecutor's office regarding the non-working tomographs appeared several weeks late. The tomograph at hospital No. 5 was indeed under repair for some time, it was repaired in mid-November. By the time the patient went to the hospital, the tomograph was already working, but they tried not to load it to the maximum after the repair. Images are internal documentation, the result of the study is stored in the system, and only the conclusion is issued.

In turn, the territorial body of Roszdravnadzor for the Republic of Tatarstan reported about the shortage of dexamethasone in ampoules in hospitals and pharmacies, that This drug should not be sold in pharmacies without fail:

The drug "Dexamethasone" in ampoules is not included in the minimum range of drugs for pharmacies. In accordance with the licensing requirements, pharmacies must necessarily have only Dexamethasone in tablets.

In the hospital of the city hospital No. 5 there is an analog of the drug – Prednisone. Deliveries of medicines are carried out 3-4 times a week.

Tatarstan woman about her COVID treatment: "Medications didn't help" Nizhnekamsk

Resident Olga Bazhanova talked about her treatment for coronavirus in an infectious disease's hospital. The patient was discharged on August 25, but she is still undergoing rehabilitation.

The woman's husband was the first to fall ill. He complained that he did not feel the taste of food, in addition, the temperature rose to 37 degrees. The woman suffered from the disease more severely – the temperature was up to 38 degrees, "medications did not help." The couple was sent to the hospital, had a computer tomogram (CT), and very quickly it turned out that emergency medical assistance was required.

KT showed that 75% of the woman's lungs were affected. By this time, there was shortness of breath, and every movement was difficult – "even two or three steps to the toilet turned into a real test." The illness is caused by "absolute impotence". It was difficult even to eat, to swallow food. And even after being discharged from the hospital, the woman remained very weak.

The first visit to the doctor was only on September 11. All this time, the patient called the doctor at home.

In conclusion, the woman noted that she narrowly escaped death and assured everyone that the disease exists, and in some cases it is severe.

Doctors do not do tests, do not go on calls, "treat" with antibiotics.

In Russia, on October 16, 15,150 people infected with coronavirus were detected per day for the first time since the beginning of the pandemic, according to the Federal operational headquarters for the fight against coronavirus. The number of cases has been growing steadily since October 9, not only in Moscow, but also in the regions.

There are reports from the regions of the country that it is impossible to do a covid test - either for a fee or for free, about waiting lists at the clinic, ambulances that did not arrive, refusal of hospitalization, tests and computer tomography (KT).

Irkutsk region. "You are a covid patient - the doctor will not come"

Zhanna Fedorova lives in Angarsk and teaches at a private school, she is 48 years old. A friend she had seen before was confirmed to have a coronavirus infection on October 6. Zhanna immediately passed the test in a paid clinic and self-isolated at home.

Already on October 8, I was informed that the covid was confirmed. I called the clinic and reported it, but they answered me: "We are waiting for the decision of Rospotrebnadzor." It was impossible to reach them. No treatment was prescribed to me, the doctor did not come. The clinic told me directly: "Since you are a covid patient, the doctor will not come to you. You are only admitted to the hospital as a seriously ill person.

Jeanne felt weak and had a fever. For help, she turned to a doctor she knew who works in a covid hospital. She advised to start treatment and gave the scheme. The therapist from the clinic called her only on October 12, but did not come in person, and added anticoagulants to the antibiotics. And said: "If it gets worse, call an ambulance, and I'll call you."

And soon I became worse, I started coughing, I called the clinic a referral for blood tests and a CT scan. I heard back: "No, since you have a moderate condition, it means that you are not supposed to have a CT scan. There are no places on the KT, we only send heavy ones. And they will not take your tests, because you are ill, and no one will come to you. Neither paid nor free.

She tried to get a KT scan for money, but it was impossible.

Before the epidemic, KT could be done both for a fee and for free, there were 4 devices in our small city. And now there are huge queues for KT scans in state institutions, hospitals and hospitals are full, only the heavy ones are sent there. And you can't do it for a fee. I called all the medical centers this morning, but I couldn't find them anywhere. I will look for a paid KT scan in neighboring Irkutsk, - the patient concludes.

Zhanna mentions that now in Angarsk it is difficult to do even a paid smear on covid - there are queues for it. Her husband was given a free test on October 15, and her 17-year-old son is still waiting to be examined. The family is in self-isolation.

I've already had two courses of antibiotics. From unpleasant, frightening sensations were swelling of the throat, it was painful to breathe, as if there was a lump. My sense of smell is gone, I've been coughing for three days, but I don't have shortness of breath, just tightness in my chest. I have chronic bronchitis. There is no fever, but the cough is frightening. Nobody listened to me, what's in my lungs? What are my blood tests now? Jeanne is indignant.

Deputy Minister of health of the Irkutsk region, Galina Sinkova, said that free tests for coronavirus will be provided only 12 laboratories are processed, as well as branches of Russian networks. These volumes are not enough. It takes 48 hours to process one test, and another day is given to inform the patient about the result, so free tests are performed primarily

for hospital patients, patients with confirmed coronavirus or diagnosed pneumonia, as well as people who have arrived from other countries with signs of infection. In case of contact with a patient who has confirmed covid, the test is done in 8-10 days, Sinkova stressed.

Kemerovo region. A patient with a temperature of 40 waited in the waiting room for 8 hours

In Kemerovo, a patient in serious condition, who was brought to the hospital by ambulance, waited about 8 hours for an appointment with a temperature of 40, without the opportunity to go to the toilet or drink water. Her daughter, Alexandra Ageeva, wrote about this in social networks to the Governor of the Kemerovo region, Sergey Tsivilev.

Before the hospital, Alexandra's mother's temperature did not drop for six days. The clinic told me to wait for the doctor at home, but no one came during this time.

"While she was being taken to the hospital, the ambulance stopped by four more patients on the way! My mother was waiting in the car all this time, because there are no other carriages. Then she had to wait eight hours in a tiny, stuffy, unventilated room, with two dozen other people who were just as ill, each with a high fever, cough, nausea, and wobbly legs. People are standing close to each other. There is no longer a social distance. They stand and lie on the floor. Because there are not enough chairs for everyone," Alexandra Ageeva wrote in her address to the Governor.

After 8 hours of waiting, the woman was still hospitalized with bilateral pneumonia. Hours of waiting in the waiting room. Olga rogaleva's father-In-law from Belovo was unable to call an ambulance or wait for a therapist from the clinic. Her son, who lives in Novosibirsk, was the first to fall ill in her family. He did not know this yet when he came to visit his parents and grandparents in the village of Novy Gorodok.

Three days after my son left, my 74-year-old father-in-law fell ill. Already on October 4, his temperature rose to 39.5. We call an ambulance. They say: "We will not arrive, call a doctor from the clinic." My mother-in-law somehow got through. We waited a day, but the doctor didn't come. At 8 PM, they called an ambulance again, and they said: "We only go to children and heart patients, call a therapist."

The therapist came to the pensioner on October 6, took a test for covid and said that an x-ray was needed. I offered to make it for a fee in Belovo - in the New town where the family lives, he did not work. Olga's husband himself took his father to take pictures, and the radiologist diagnosed him with bilateral polysegmental pneumonia of a viral basis. Like Olga's son, who was already hospitalized in Novosibirsk at that time.

By the evening, dad's temperature is over 39 again, we call an ambulance. They arrive at one o'clock in the morning from 6 to 7 October, check the oxygen in the blood. The doctor says that the oxygen is at the limit, we need to urgently hospitalize. But at the same time, they can't take it, because they must first call the clinic in the morning so that the therapist puts it on the queue, or tells them to come if there is a place in the hospital. That's exactly what we were told.

4.1 The ambulance arrived on October 7 at 11:20, took Olga's father-in-law. But at 11:55, he called: "I was discharged, take me. The doctor said I wasn't sick enough." His temperature dropped to 37.5 because he had taken antibiotics an hour earlier. The pensioner could not walk at the same time - it was such a weakness.

4.2 In the clinic, the Manager promised that a doctor would come to Olga's father-in-law and mother-in-law (who was already ill at that time). But his family waited another five days.

4.3 On October 12, Olga could not get through to the clinic for several hours - she succeeded for the 40th time.

4.4 I asked them: "How do you monitor your patients? The person has been ill since October 6. The doctors took a swab from him, but we still don't know the result." And they answer me: "What do you want? We haven't had any results since October 5." The next day, two girls came from the clinic, took a test from their mother-in-law and prescribed injections of antibiotics. They told us to set them ourselves. They didn't even look at my grandfather.

4.5 Olga visited 12 pharmacies in search of Levofloxacin, but it was nowhere to be found. The pharmacist said that this antibiotic ran out of stock. "Although I bought it two days ago - 10 tablets for 840 rubles. There is no erythromycin or levofloxacin, and these are the drugs that treat pneumonia," Olga emphasizes. As a result, the drug was brought to her from Novosibirsk.

4.6 There are no doctors, no results, and no one comes to the parents-in-law. The worst thing is when you look into the eyes of your parents, filled with tears, and realize that there is nothing to help, - Olga laments. And yet they watch TV, in which they say that everything is under control!

4.7 In the Kemerovo region, 1,583 people are in hospital with a diagnosis of COVID-19, 2,344 are being treated at home, Deputy Minister of health of Kuzbass Elena Zelenina said at a briefing on October 16. Other patients are treated at home.

4.8 79 people are on artificial ventilation in hospitals, 763 are on oxygen supply. the Number of beds for patients with severe pneumonia and coronavirus infection is 3,159, and another 350 will be added soon.

4.9 Hospital admission is determined by the severity of symptoms. A large part of the [patients] suffer a disease is relatively easy and can be observed remotely. 79 patients are currently on a ventilator.

4.10 All patients with community-acquired pneumonia are examined. But first of all, "they are taken for examination with signs of respiratory infection in people over 65 years of age and with chronic diseases - diseases of the circulatory system, Oncology, diabetes," the official said.

4.11 In the Kemerovo region, a woman with severe pneumonia and signs of coronavirus infection was denied treatment for covid-19 by doctors. With a high fever and pneumonia, she was treated at home until saturation decreased - the 49-year-old patient was placed in an artificial coma**.** Her daughter recorded a video and posted it on social networks.

Nizhny Novgorod. "Treatment was not prescribed, only swabs were taken»

In the Nizhny Novgorod region, people with signs of SARS from October 16 are required to observe self-isolation and call a doctor at home. They may not be able to visit the clinic, as well as the University, school or kindergarten.

Alexander Pichugin from Bogorodsky district became ill with coronavirus on September 13. His temperature rose, after which the patient visited the clinic and passed the test. Fears were confirmed - covid.

The very next day after we found out about my positive test, they came home from the Central district hospital and took swabs from all the family members - my wife and two children, " he says. - A day later, they came to me to do a second smear, and another day later.

They just came and took swabs. It was just that. When we asked, "What's next?" we got the answer: «Sit at home. Quarantine». There were no other calls from the CRH, no recommendations for treatment were given to us. I took antibiotics and General tonic medications, and my wife, since she is a nursing mother, was "treated" with tea and raspberries. Our five-year-old son and five-month-old daughter didn't feel anything.

Alexander's temperature rose to a maximum of 38.5. My wife - up to 39, she was more ill and did not get help. But the symptoms passed in a week, only weakness remained.

Pravmir asked the Ministry of health of the Nizhny Novgorod region why Alexander was not prescribed treatment.

As of October 15, 61 patients in the region were connected to artificial lung ventilation (IVL) devices. At the same time, a few days ago there were 49 of them. the workload of beds for coronavirus patients is 87% - 3,836 places are occupied. At the same time, 90% of ventilators remain free.

Perm region. "Tests are not taken from everyone»

In the Perm region, a patient with suspected covid was denied a test. Anna Gulyaeva became ill on October 1 - her sense of smell disappeared and a fever started. She called a doctor from the clinic and said that she suspected covid. She had a husband and two children, and she was worried about them, too. The doctor came at 10 PM, was in a protective suit. But I was not tested for covid, arguing that tests in the Perm region are taken from two categories of citizens - people aged 65 and older, and those who are diagnosed with lung problems, so I was refused the test, and was diagnosed with SARS. "What to do with children, because they go to kindergarten", I heard: "If children don't have symptoms, then they are healthy."

The Gulyaev family self-isolated, and Anna tried to sign up for a paid test. But for symptoms of SARS, it is forbidden to take a smear in a private laboratory. I had to call a nurse at home for 4,800 rubles, even for this service in Perm queue. As a result, the test was done on October 9, and the diagnosis was confirmed. It took several hours to get through to Rospotrebnadzor. After that, they promised that a doctor from the clinic would come.

My doctor gave me, I'm sorry, peplomycin - Immunomodulators are of unproven effectiveness. How and how can they help in this situation? No swabs were taken from her husband or children. We were just told that we should be at home. My family and I have been staying at home for more than a week, but we have no orders or other documents that we should be quarantined. Fortunately, both my job and my spouses allow me to work from home. What if the job was different?

Chelyabinsk region. "All around covid, and therapists from protection - only masks»

In the Chelyabinsk region, by the morning of October 15, 70 patients were waiting for hospitalization with pneumonia. Already in the afternoon they were hospitalized, said the Vice-Governor of the Chelyabinsk region Irina Gekht.

Problems arose because there were too many requests. Only for October 10-11, about 700 people were hospitalized in the region. Among them are not only people with confirmed or suspected coronavirus, but also patients with other diseases and injuries, according to the Ministry of health.

"To date, 5,510 beds have been deployed in 25 medical institutions in the Chelyabinsk region. If necessary, the capacity can be increased. Of these, it is occupied by patients with pneumonia and patients with COVID-19 3702 beds."

4.12 I am well aware that doctors simply do not have time. How I feel for them! You go to the therapists, there's covid everywhere, and they only have masks for protection. What if they all get sick? What should I do then?

Postcovid syndrome

Not everyone is affected by this syndrome, but about 10-12% of those who have been ill. COVID-19 affects the Central nervous system, peripheral nervous system, and autonomic nervous system. We have, as you know, three nervous systems. With COVID-19, thrombovasculitis occurs. And this thrombovasculitis, we call it encephalitis, because it is an inflammation of the brain tissue, it does not go away immediately after the disease.

Initially, everyone attacked the lungs, because the lungs are what was visible from shortness of breath and other symptoms. But among all patients with covid, severe lung damage is only a few percent. Most of them were ill without such lung damage. Unfortunately, many of them had brain damage. This manifests itself as follows. For example, a temperature violation. Not only increase, but also decrease: 35.5 or 36.0. And this can persist for a long time. This temperature postcovid syndrome does not adjust.

British women who had been ill with COVID-19 told about premature menopause after the disease.

Dawn knight, from Somerset, had the coronavirus in March when she returned from a trip to Thailand. The disease lasted for several weeks and in addition to the usual symptoms, the 46-year-old woman did not have critical days.
The symptoms of COVID-19 were so terrible and lasted for months, which made it difficult to get up from the couch, so the lack of menstruation was the least of my problems.
The symptoms of the disease lasted for several months. The woman felt weak, confused - the usual signs of "prolonged COVID-19".
In June, I went to the doctor after I felt an exacerbation of symptoms - my pulse became faster and there was a fever in my hands and feet. A blood test showed that the patient's reproductive hormones - estrogen, progesterone, and follicle - stimulating hormone (FSH) - were at "postmenopausal" levels.
The doctor stated that dawn had gone through menopause. The woman was very surprised, so she had no prerequisites for this.
A similar case was that of 47-year-old Anna Maria Grieve from Shotts. She had the coronavirus in March. Symptoms included coughing, difficulty breathing, and loss of taste and smell, and a month later she didn't get her period, even though she was pregnant just a year ago. At the same time, the symptoms of COVID-19 have persisted for several months.
Around the world, women with COVID-19 have experienced menstrual irregularities.
Some long-term COVID symptoms have worsened during menstruation.
Avtov observed a decrease in libido until it completely disappeared in women in the coronavirus pandemic (author's note).
Symptoms of prolonged COVID-19, such as dizziness, fatigue and confusion, are also characteristic of menopause, which may indicate a link between these phenomena (Louise Newson, 2020).
The most common group of people suffering from long-term COVID-19 is people in their 50s, so menopause or perimenopause may be their symptoms. Are these phenomena caused by a virus due to ovarian damage, a protective reaction of the body to a health threat, or did menopause occur on time?
When postcovid syndrome marked severe headaches.
Weakness - and many describe such weakness that they literally can't get out of bed. People with an active lifestyle who run several kilometers a

day, they can't leave the house. Also, when rostkoviana syndrome may be loss of smell. Loss of smell is not as common as weakness.
Respiratory disorders, feeling of lack of air, spasms in the chest without pronounced lung damage. Some patients have skin lesions, various rashes, and some begin to lose their hair.
There are also mental disorders: tearfulness, bad mood, depressive mood, suicidal thoughts. But psychiatric problems can be exacerbated by infection. And if this is an isolated problem from all other symptoms, then here it is mental problems. And if combined with other symptoms, it is a brain lesion.
Understanding which people are more prone to postavenia syndrome, not now. People who lead an active lifestyle notice this better than those who lead a passive lifestyle.
Russians who were ill with COVID-19 told about strange complications after the coronavirus.
Patients complain of hair loss, increased blood sugar, problems with the stomach and sense of smell. In addition, many appear-increased anxiety, dizziness, panic attacks,and memory loss.
Chill. Outwardly, this is not very visible. It's creepy inside. Then it goes away. Then again.
Periodic numbness of the legs below the knees. This has been going on for six months.
Remaining symptoms: tingling in the hands and feet, numbness in the hands, heaviness and headaches.
Loss of appetite, dysbiosis and stomach cramps, conjunctivitis,
watery eyes, asthenization (severe weakness).
One of the commenters showed symptoms of diabetes, with a normal sugar level of 5.5.
Severe dry mouth, very frequent urination, weakness, dizziness after eating and before eating, after eating throws a fever, thirst-many people consume 3-4 liters of liquid a day.
Another COVID-19 patient had to have a tooth removed. According to doctors, this had to be done because of an immune reaction.
Nerve removal, local medications for temporary fillings, antibiotics, and so on-without results.
Patient reviews
Elena Ilyicheva, 45 years old
I had a severe covid in may, and then I lost 15-18 kg. Weakness, insomnia, depression are present, but they were already there. The worst thing now is problems with the gastrointestinal tract, shortness of breath with increased physical activity and difficulties with the musculoskeletal system. The most unpleasant surprise-2 weeks after the hospital, hair began to fall out in clumps. And I had to go to the dentist, thoroughly engage in dental treatment.

Lilia T., 56 years old

I was ill with my husband at the end of September, not very ill, but uncomfortable. Still weak, sweating. The saturation will never reach 97 at least... But we have grandchildren. Kindergarten, school, clubs, feed, play, walk, prepare the yard for the winter. We go to mushrooms in October, just for a walk in the Park. Somehow it is easier to transfer in matters of concern. Especially when they are pleasant. I hope we don't need a neurologist. 4 months live without TV. More precisely, children sometimes turn on the Carousel, husband match on TV. The atmosphere of the house is calm.

Elena Svetlova, 35 years old

Six months ago, I was ill with SARS, which turned out to be covid. I have been struggling with asthenia for six months, my arms and legs have become like sticks, my back does not hold, now the entire gastrointestinal tract has gone into disarray from the weakening of the muscles. I have a great neurologist, but nothing really helps right now. Now I have an Allergy to medications!!!

Russians who were ill with COVID-19 told about strange complications after the coronavirus.

Patients complain of hair loss, increased blood sugar, problems with the stomach and sense of smell. In addition, many had increased anxiety, dizziness, panic attacks, and memory loss.

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Severe dry mouth, very frequent urination, weakness, dizziness after eating and before eating, after eating throws a fever, thirst – many people consume 3-4 liters of liquid a day.

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Nerve removal, local medications for temporary fillings, antibiotics, and so on - without results.

Reference. The coronavirus pandemic has reached almost the entire world. Currently, more than 39.4 million cases of infection have been recorded, and more than 1.1 million patients have died. The most infected are in the United States, India, and Brazil.

Almost 1.4 million cases of infection have been registered in Russia. Over 1.07 million patients recovered, and more than 24,000 died.

It is with such a broad effect of the coronavirus on the body that its high lethality is associated.

Sometimes the coronavirus becomes a trigger for the development of sinusitis.

Palatine tonsils also suffer when they encounter the virus, so COVID-19 is often accompanied by tonsillitis and pharyngitis, as well as Kawasaki syndrome (author's note).

Unfortunately, the devastating effect of coronavirus infection on the body is not limited to the respiratory system. The insidiousness of the virus is that it can negatively affect the work of almost all organs and systems. And where the failure occurs depends on what weak point there is in the body.

For example, in people with a predisposition to cardiovascular diseases, the coronavirus can lead to a heart attack or stroke. Coronavirus infection is especially dangerous for obese people who lead a sedentary lifestyle. The fact is that the virus causes inflammation of the walls of blood vessels, leads to blood clots and blood clots. To pump thick blood, the heart has to work with an increased load, and overweight people are almost always predisposed to hypertension and heart disease.

Also, recent research has shown that the coronavirus can affect the Central nervous system, so in people with neurological diseases, COVID-19 can lead to dizziness and other serious conditions, up to the development of Parkinson's disease.

In addition, lack of oxygen caused by coronavirus pneumonia can trigger cognitive impairment in older people, so COVID-19 often gives an impetus to the development of dementia in older people.

Another serious complication of the coronavirus is kidney failure and other problems with the urinary system. After all, the virus can penetrate the kidney tissue, causing their inflammation.

In people with diabetes, the coronavirus can worsen the course of the disease, because the pancreas also suffers from the negative effects of COVID-19. Moreover, there are cases when people with a weak pancreas developed type 2 diabetes after suffering a coronavirus infection.

It is with such a broad effect of the coronavirus on the body that its high lethality is associated.

Revealed a way to prevent COVID-19 infection

A structure in the coronavirus S-protein that can be used to prevent infection with SARS-CoV-2 and the development of severe COVID-19. An S-protein called the "spike" protein is located on the surface of the virus and binds to ACE2 receptors located on the surface of human cells, which allows the virus to get inside and start replicating, causing tissue damage. The three-dimensional structure of the protein was derived. It turned out that the S-protein contains a "pocket" where there is a molecule of linoleic acid - a fatty acid that is involved in many cellular functions, including inflammatory reactions and the development of an immune response. It also plays a role in the severe form of coronavirus, characterized by systemic inflammation, pneumonia, and acute-respiratory distress syndrome. This will allow you to find small molecules that will effectively block the pocket, while disrupting the structure of the S-protein and making it non-functional. This strategy has been successfully used in the fight against rhinovirus, which causes the common cold.

Adult patients can use-omega-3 fatty acids (Omacor capsules). This drug turns off inflammation and reduces the level of triacylglycerides (author's note). This drug can be included in the coronavirus treatment standards as appropriate (author's note).

If you continue to feel unwell after the disease, you can recommend:

1.Taking Vitamin D, Vitamin B.

2.Observe the mode of work and rest, walk more.

To speed up recovery from the disease, you need to follow three main recommendations: monitor your diet, devote time to physical activity, and generally lead a healthy lifestyle. The human immune system can recover on its own, but it may need help after the coronavirus. To speed up the process, it is necessary to adhere to a healthy lifestyle, monitor nutrition, and exercise is also important.

During the rehabilitation period, you need to consume a lot of protein, since its cells are similar in structure to immune cells. It is recommended to eat poultry meat and fish as these foods are less taxing to the body. Vitamin d also plays an important role. To make up for it in the body, you should eat fish, dairy products, and also sunbathe.

Vitamin B12 can block the reproduction of coronavirus.

Natural products can suppress nsp12, which is contained in the SARS-Cov-2 genome and is responsible for the reproduction of the virus.

A special form of B12 release - methylcobalamin - which is best absorbed by the body, is able to suppress the replication of viral cells.
Vitamin B 12 increases the release of melatonin, which is one of the antioxidant molecules. It affects the mechanisms of innate immunity through the intestinal microbiota and has an anti-inflammatory effect. So far, performance in 12 has been confirmed only in mice, and has not been investigated for COVID-19.

The highest amount of Vitamin B12 is found in liver, beef, pork, lamb, eggs and Turkey breast. Vitamin B12, which is taken from natural foods, does not accumulate in the body and does not cause harm. During a pandemic, it will be useful to add these foods to your diet.

Coronavirus affects the lungs the most, so to make up for the lack of oxygen, it is necessary to be outdoors as often as possible. To reduce inflammatory symptoms, low-intensity outdoor exercise is needed. She advises young people to ride a Bicycle, and older people to take walks and engage in Nordic walking.

In any seed, in any nut, phytic acid is necessarily present. When it enters the human gastrointestinal tract, it begins to interfere with the absorption of iron, magnesium, calcium, zinc – all trace elements. Because of this, the digestibility is reduced by 30-40%. Vegetarians, for example, have low iron levels, because they often eat nuts just from a bag.

There are three ways to break down phytic acid and activate nuts.

The first method: temperature treatment, it is necessary to heat the nut. But there are a lot of oils in the nut, and heating is not very useful. The second method: fermentation in a special solution. And the easiest and most common method is soaking. Pour any nut for 5-6 hours or overnight, then rinse, and you will get a ready-made product that is convenient for digestion.

You can activate more than just nuts.

This applies to everything that sprouts. This can be both legumes and cereals. But after you have washed the product, it will need to be stored in the refrigerator, because it will be a "live" product, and it will quickly deteriorate.

Rospotrebnadzor revealed the maximum collective immunity to coronavirus in the children's population

A study of population immunity to a new coronavirus infection has shown that the maximum level of collective immunity is in preschoolers and primary school children. These results were obtained by Rospotrebnadzor, having completed the first stage of serological studies on COVID-19 in Russian regions (Elena Ezhlova, 2020).

The rate of collective immunity to a new coronavirus infection in preschoolers and early school children reaches 71%.

In total, 74.4 thousand people were examined in 26 regions as part of the first stage of serological studies on COVID-19. Among social groups, the highest level of serovalence was found in health care workers (47.9%) and education workers (up to 42%).

Among the regions, the lowest level of collective immunity (less than 10%) was found in residents of the Krasnodar and Stavropol territories, Belgorod, Irkutsk, Nizhny Novgorod and Novosibirsk regions, and the Republic of Crimea. In Moscow, Saint Petersburg, Leningrad and Moscow regions – the regions with the highest level of new coronavirus infection – the collective immunity index is more than 20%.

The study of population immunity to the new coronavirus began in July in 23 regions of Russia with different levels of intensity of the epidemic process. In June, Saint Petersburg, the Khabarovsk territory and the Tyumen region participated as pilot regions. The study covers the healthy population, which is divided into seven age groups (from 1 year to 70 years and older, who had and did not have COVID-19). All patient information is depersonalized and encoded. When processing the results, the analysis is carried out for the population of the region as a whole and in different subgroups – by age, gender, and profession.

The processed results of 730 thousand serological studies are presented. Positive results of antibody tests were found in 17% of Russians. The minimum number of positive tests for SARS-COV-2 antibodies was

observed in children, adolescents, and people aged 65+. The maximum number of "positive" patients (55%) is in the age group of people aged 18-45 years.

The results of monitoring in Russia show that it is too early to talk about collective immunity. At the moment, it is not known how long the protective antibodies remain in patients who have been ill.

The level of collective immunity to SARS-Cov-2 varies in regions from 6% to 50%.

Overview of new treatments

The emphasis on deploying intensive care beds and ventilators has not paid off. The transfer to a ventilator was accompanied by an extremely high mortality rate, in different hospitals, from 80% to 93%.

But inhalation of nitric oxide improved oxygenation (blood oxygen saturation) and blood flow in the small (pulmonary) circulatory system. Almost 75% of patients who were at risk of being transferred to ecmo (blood oxygen supply using a special device), avoided this as a result of inhalation.

Another method associated with the use of gas mixtures - thermogenics. This is an inhalation preheated to 70-90°With an oxygen-helium mixture, and helium is needed, among other things, to prevent burns.

Nitric oxide and helium have been used to treat various respiratory diseases for about 20 years.

Engineers have developed a unique intelligent system that allows you to personalize the oxygen and helium dose, as well as the temperature.

Among other things, the high temperature of the gas mixture has a detrimental effect on SARS-CoV-2. Already on the next day after inhalation in 80% of patients, the results of the PCR test become negative (A. G. Chuchalin, 2020).

Cardiovascular diseases lead to a severe course of COVID-19 and occur in every third patient hospitalized with a coronavirus infection. And they increase the risk of death by about 12 times.

First of all, we are talking about coronary heart disease. Arterial hypertension and cerebrovascular disease also probably increase the risk of severe coronavirus infection, but this topic is still being studied.

Anti-aging pills as a chance for elderly patients

In the body of older people, so-called senescent cells accumulate with age. These are old cells that have lost the ability to perform their functions. Their accumulation leads to the development of local and systemic inflammation in the body, tissue damage, and the development of neoplasms.

Such anti-aging drugs are called sinaiticum. They have already been tested for severe respiratory infection caused by coronaviruses, although not SARS-CoV-2. Senolytics reduce the severity of the disease by 20-50%.

Myocarditis with a question mark

After thrombosis, the most common cardiovascular complications of COVID-19 are cardiac arrhythmias and heart failure. Then, with a question mark, myocarditis.

Myocardial damage in COVID-19 is common, but its nature often does not meet the formal criteria for any particular heart pathology.

Against the background of COVID-19, the risk of strokes increases significantly, six times more than with the flu.

Business intelligence for hospitals

The fate of patients depends on an individual approach. Individual approach will be provided by Clinical Pharmacists (author's note).

At the same time, a register of patients with cardiovascular manifestations of COVID-19 is being formed. Based on the study of various analyses and ECG assessment, it is planned to create models of patient dynamics in order to create a personalized approach in the future.

Complications of self-isolation

Self-isolation leads to inactivity, weight gain, increased alcohol consumption, stress, and anxiety and depressive disorders in many people. All these factors, in turn, provoke various cardiovascular diseases.

Meanwhile, the system of providing medical care to patients with cardiovascular diseases, but without COVID-19, has become "inadequate". In almost all countries of the world, the number of requests for medical care for people with such ailments decreased by about 40%, and the number of planned hospitalizations due to cardiovascular diseases decreased by 20-50%.

While preventing coronavirus infection, it is necessary to maintain the physical, cognitive and social activity of older people. A separate problem is the appearance of patients who carry the coronavirus infection repeatedly.

Cases covid – the views of patients.

Alina

My daughter is 7 months old today. At the moment, we have been ill with Covid together with my husband for a week. My temperature was exactly one day, it did not rise above 37.7. I didn't stop breastfeeding (the doctor said that my antibodies to the virus are transmitted through milk, although this is not the case with the coronavirus). We continue to sleep together with our daughter, as well as hugs and kisses, because I don't see the point in trying to isolate myself from her. We are together 24/7. At the moment, we feel normal. It was bad only for the first 2 days, but not worse than with the usual flu.

I got infected when I was lying with my daughter in an infectious disease's hospital with rotovirus. There, when they were admitted together, they passed Covid tests-they were negative. My husband also passed at this time. And the test was also negative. On arrival home in 2 days I got sick, and a day later my husband. My daughter is not ill, although the test was not taken from her, since there are no signs.

Elena Frolova

I was ill with covid just now, the child is 11 months old, breast-feeding, 4 days had a temperature above 38.5 knocked Paracetamol, it is compatible with breast-feeding, and otherwise took vitamin D, C and omega. Although it all started with a fever, she called an ambulance on Monday, the temperature was 39, and I was covered in the evening on Thursday, on Friday they took a smear and confirmed covid...and my daughter's smear was taken only the following Tuesday - it was negative. It puts pressure on the psyche and the sense of smell has not fully returned yet.

Oksana Tsygankova

The temperature of a child at 7 months is reduced only if it is 38.5, and so doctors say the body must fight itself. My son 7 months old temperature was 39.5 gave Nurofen, and the next day called the doctor. It turns out-it's just getting teeth, we have snot and cough. Don't panic ahead of time. I have 8 children and no one has ever had Covid.

Lyudmila Komarova

And we got Covid from my dad, both my daughter and I. Even breast milk didn't help. My doctor did not prescribe any medicine, "because I feed", 3 weeks of incessant cough and runny nose, I am treated with folk

remedies (copious warm drink, honey-lemon-ginger, vitamin C, vitamin D, multivitamins), antibiotics were not prescribed. We are waiting for repeated smears and hope for recovery.

ladyawa

My baby was infected with covid by a foster nurse who came in the next day.the day after you leave for work.

Anna Tour

We are now 8 months old, at 7 we got sick with covid-19. The tests confirmed it! I got it from my grandfather. Luckily moved easily, a little otemperature. We made do with Viburcol candles.

Milena

My daughter (1.7 years old) had a sharp temperature increase to 39, a blue nasolabial triangle, several times had diarrhea and rapid breathing. Call an ambulance.

Vaccination in Russia

Approximately one in seven volunteers vaccinated against coronavirus complained of unpleasant sensations - muscle pain, weakness, fever.

Vaccinations against SARS-CoV-2 were made during post-registration trials of the Sputnik V vaccine, in which, according to the plans of the authorities, several tens of thousands of volunteers should participate. Some of them promised to inject a placebo so that the tests would meet accepted international standards.

More than 300 people were vaccinated. 14 % have small complaints of weakness, muscle pain is small during the day, occasionally there is a temperature.

Another vaccine was registered in Russia – without any normal research and evidence. Now there is a lot of talk about the fact that after an illness, immunity does not last. This is an ad for vaccines. A vaccine never protects you better than a previous illness. Or a strong own immunity. But to do this, you Need to live without any vaccination (author's note).

in Russia, there are observations, and there are such observations abroad, that a person who has been ill releases the virus for up to 90 days. Our observations today in Russia - up to 48 days in Russia, and abroad there are up to 90 days.

Side effects of Russian vaccines

Fever, pain and redness at the site of injections, fainting - these are the side effects of residents of the Novosibirsk region who were vaccinated against coronavirus. After vaccination, patients are offered to sit for half an hour to prevent possible fainting.

Toguchinskaya CRH became one of the first medical organizations of the Novosibirsk region, which began to vaccinate against coronavirus. Also, the drug received hospital Bolotninskiy and suzunskaya areas. There are hundreds of people who want to get vaccinated, but not everyone will get it at the first stage. Now the priority is given to those who have a risk of infection with coronavirus - doctors and teachers, social workers, police officers, employees of transport enterprises and housing and communal services. Vaccinated drug "Apiversion". The vaccination is one-component, but the course provides for a double introduction with an interval of at least 14-21 days.

Now there is no documented information, but, according to unofficial data, the moscow vaccine "sputnik v" provides the patient with antibodies for two years, and the novosibirsk "epivaccorona" gives immunity for one year.

The COVID-19 vaccine will not only not protect against the coronavirus, but also contribute to its spread.

1.The reason for refusing vaccination-vector vaccines have a serious side effect - there is a risk that after vaccination, the virus will begin to spread at a high rate, causing complications in the kidneys, liver and heart, which can cause death. This is a syndrome of increased infection.
2.During the epidemic, you can not do any vaccinations – this usually gives the imprinting syndrome.

3.Pregnant women should not be vaccinated. They can't use antiviral drugs either.

4.Imprinting syndrome-interaction with already made vaccines. Made vaccines do not disappear anywhere. They remain in the human body in the brain in different concentrations.

Propaganda tries to develop a public attitude to antibodies, the more the better. But in fact, there is self-regulation in the human body, which reduces the production of antibodies in the absence of infection and increases when it appears. There are still memory T-cells. It is not necessary to forget about it.

Vector vaccines (mRNA, by the way, too) break this mechanism and cause the body to produce a large number of immunoglobulins constantly. This can lead to the suppression of unused memory cells and, thus, to the nullification of specific immunity to all other diseases.

Interfering with the immune system is dangerous.

And pharmacists should know all this very well, so as not to succumb to the pressure of the authorities and doctors. At the same time, it is necessary to have not only your own opinion, but it should be based on fundamental knowledge, and not a race for profit, as they do in Russia. On vaccination in the pockets of officials settle large funds for the health of children and adults. The authorities use the funds of the tax payers to buy vaccines in order to make them "free of charge"for everyone. Nothing is free. Free cheese only happens in a mousetrap.

"Pediatricians" Namazova and Baranov from Russia are testing US vaccines on Russian children who become disabled.

At the same time, everyone is sitting firmly in their seats, and they should be sitting in prison without the right to practice medicine.

At the cost of my health and life, I tested the treatment of coronavirus in the spring of 2020, gave several schemes for children and adults.

We need testing on pregnant women because two people die-a mother and a child. They can't be vaccinated. They can not use antiviral drugs. Only treat with the drugs that I gave for treatment. You can treat everyone without vaccination.

Necessary to carry out the testing of Kawasaki syndrome in children because of Aspirin and Immunoglobulin produce serious effects. They can not be used in covid-19, otherwise it gives Guillain-Barre syndrome, and this is re-resuscitation. In addition, gene expression occurs from interferon stimulant drugs. This is especially dangerous for the occurrence of cancer.

I am ready to conduct a study in Europe in any hospital. Ready to prove the truth.

My methods are gentle for children and pregnant women, but effective by 98%.

Ready to give these methods to the whole world to destroy viral infections. But I need funding.

I'll give you the schematics:

Sometimes manufaoture better than something "heavy". Covid-19 begins with pneumonitis (on Rh-grams in the lower segments of the lungs, darkening is visible), pneumonia comes later, so it is difficult to breathe.

I agree with inhalations, except for children (there are paradoxical reactions – bronchospasm, so it is better not to do it until 5-7 years old).

It is necessary to make Immunograms of 3 levels of complexity in dynamics, but we have bad immunologists, they are bad at decoding.

Antibiotics – only for tests for non-pet. flora with the determination of specific strains of bacteria with the determination of sensitivity to microflora from 9-10 days from the onset of the disease.

Pulmonary edema is removed by venopuncture by draining blood into the basin. It's fast and without diuretics.

Nurofen from 38.5 or above, or derivatives of aciclovi acids (Piroxicam and his entire group – reception in the evening). They do not cause reverse inflammation. You can use it for no more than 10 days.

The disease goes into 2 phases.

Phase 1-treatment –

Ekmolin – nose drops.

Adults and Elderly-Mexidol (Mexiprim) - iv.

Oxygen through nasal cannulas, avoiding ventilators.

Imunofan-v/m.

Ribavirin capsules-especially those with elevated ferritin, Ribavirin gives a decrease in ferritin and kills the coronavirus.

Phase 2 is a cytokine-bradykinin storm.

Zinc-containing plants.

Vitamin C – i/v.

Bromhexine (Ambroxol).

Dipyridamole (Curantil)

Tocilizumab – in severe cases (monoclonal antibodies are the substrate of the disease, they are formed during the disease, but sometimes they soften the disease, but do not cure it).

Children (treatment) –

Derinat – nose drops.

Imunofan (candles in the anus) - from 2 years, if the benefit exceeds the risk, then earlier-from 1 year. The drug is 3-phase. The first phase – detoxification (3-4 days) - no need for droppers, increased phagocytosis (7-8 days), then-immunomodulation and disappearance of the virus. The course of treatment is 20 days.

Ivermec (Ivermectin + vit. E)

Nurofen syrup - for Children.

Ribavirin-inhalation from 3 years (powder with water), if the benefit exceeds the risk, then you can use it before 3 years.

Rehabilitation for adults-herbs, green tea, Omacor (capsules), omega-3-fatty acids.

Rehabilitation for children-lemon water without zest (tea), gooseberries, Rhodiola rosea.

Postvaccinal syndrome for the russian vaccine occurs in 15 % of patients (patient andrey vasilenko, 36 years old) – it is better to avoid vaccination!!!

The senior doctor (Chebotarev) was asked what diagnosis to make, there is a post-vaccination reaction. He said that this diagnosis should not be made, they came up with something themselves and hung up. Doctors offered to put SARS. After 2-3 hours, the second group arrived, the usual ambulance. The situation repeated itself. Let them come from the clinic tomorrow and " look for the coronavirus and issue an order for self-isolation”" Here the patient was taken aback, what self-isolation, when I volunteer and I was promised that I can after vaccination can lead a normal life?!!! The patient was outraged by this attitude.

The next day, the patient's temperature returned to normal. The district therapist confirmed that vasilenko is healthy, sars is not present. But by the evening, the volunteer's temperature rose again and his condition deteriorated sharply.

There were pains in the heart, the pulse increased to 140-160 beats per second, it became difficult to breathe. Previously, I had no heart problems, I had an ECG done in July and then no pathologies were found. The patient filled out a self-observation diary, where he indicated all the symptoms. Everyone is assured that the researchers constantly monitor the diaries and, in case of complications, contact them. The next day, the heart continued to "pull", the pulse was under 100, the temperature jumped, but did not fall below 37. I tried to contact telemedicine, no one called me back" (complained Andrey Vasilenko).

Further, the volunteer turned in turn to all instances, but nowhere did he meet attention and help.

Presence of antibodies to coronavirus

Antibodies appear in people when they have successfully overcome COVID-19. Ig G antibodies do not leave a person until 6 months.

Vaccination against coronavirus is not recommended for people who have Ig G antibodies to it.

The natural enzyme catalase can be an effective remedy for COVID-19 symptoms, suppressing the replication of the SARS-CoV-2 coronavirus.

The enzyme has an anti - inflammatory effect and is able to regulate the production of cytokines- signaling protein molecules synthesized by white blood cells. Cytokines are involved in the immune response and, when excessive amounts are observed in a cytokine storm, they can provoke deadly systemic inflammation. Catalase can also protect the cells lining the inner surface of the alveoli in the lungs.

The concentration of antibodies to the coronavirus in the body of those who have been ill quickly falls, falling to an insignificant level in about 3-4 months.

In the lymph nodes of patients who have suffered severe forms of COVID-19 or have not coped with the disease.

The results showed that in coronavirus infection, the so-called germinative centers (special zones in the lymph nodes where Mature lymphocytes that have ingested the virus antigens migrate) are disrupted. After these lymphocytes begin to actively multiply and produce various variations of antibodies. This process is accelerated by the fact that the auxiliary cells of the germinal centers attract the attention of immature lymphocytes, forcing them to penetrate into themselves and join the process of developing an immune response.

After this process is completed, the germinative centers disintegrate. As a result, there is a set of immune cells that actively produce antibodies, and so-called memory B cells that can exist in the human blood for an unlimited time and quickly recognize the virus in the event of subsequent contacts.

When infected with SARS-CoV-2, germinal centers simply did not form in the body of patients: due to infection, a large amount of TNF protein appeared in their blood. As a rule, this substance helps inflammation and activation of the immune system. However, in the case of coronavirus infection, it interferes with the work of a special type of T cells, which are responsible for the formation of germinal centers and attracting B cells to them. When scientists neutralized TNF in the body of sick mice using antibodies, their germinative centers resumed work.

In addition, experiments have shown that catalase can inhibit the replication of the SARS-CoV-2 virus in rhesus macaques without having a toxic effect.

The usual 3 % hydrogen peroxide will help, either externally or internally, provided that a particular person has their own catalase. In some individuals, catalase does not work, then you can not use hydrogen peroxide (author's note).

Vitamin D and COVID-19

Vitamin D (calciferol) is a hormone produced by the kidneys that controls the concentration of calcium in the blood and affects the immune system. Most vitamin D is found in salmon, trout, tuna, mackerel, and fish oil.

An adequate recommended daily intake of Vitamin is 30-100 ng/ml.

In particular, it is indicated that more than 80 % of 216 patients infected with coronavirus had a Vitamin D deficiency, while men had lower vitamin levels than women. This cohort of patients also had elevated serum levels of inflammatory markers such as ferritin and D-dimer, which is consistent with the author's clinical study (author's note).

A correlation was found between low vitamin D levels and hyperactivity of the immune system.

Such a discovery by scientists could explain the low mortality rate from COVID-19 among children.

The researchers noted that patients from countries with high covid-19 mortality rates, such as Italy, Spain, and the United Kingdom, had lower levels of vitamin D compared to patients from countries where there were no large-scale negative effects from the pandemic.

It is important to inform people about how vitamin d deficiency may be associated with mortality. But you can't prescribe vitamin D everywhere.

To study the effect of vitamin D levels on covid-19 mortality rates in different countries.

Some people have hypothesized that differences in mortality rates in different countries may be due to differences in the quality of health care, age distribution in the population, testing rates, and finally, different strains of coronavirus. There are differences in mortality rates, even if we consider the same age group. Instead, attention should be paid to a factor such as vitamin d deficiency (Vadim Backman, 2020).

Thus, after analyzing data from patients from all over the world, the Professor found a strong correlation between vitamin D levels and the development of a cytokine storm caused by overactivation of the immune system, as well as a link between vitamin D deficiency and mortality.

Caution: before you start taking dietary supplements, you must pass an extended comprehensive blood test for vitamins. Keep in mind the possible development of hypervitaminosis.

Named products that help avoid the second wave of the virus

The second wave of the virus will help to avoid Vitamin D. This means that the diet should include products containing this vitamin. Scientists conducted research involving 500 Americans and found that people with vitamin D deficiency were twice as likely to get coronavirus.

The daily value of Vitamin D is from 2.5 to 5 micrograms. Vitamin D synthesis occurs only with sufficient ultraviolet radiation. This vitamin is obtained from food. We are talking about products such as mushrooms, sea fish, seafood, egg yolks, cereals, cheese and fish oil.

Vitamin D plays a key role in the human immune system. Vitamin D regulates mineral metabolism and improves muscle tone. It is important for teeth and bones, as well as for the healthy functioning of the thyroid gland. In addition, Vitamin D provides blood clotting. This substance stabilizes blood pressure and normalizes the heart rate, as well as strengthens the nervous system and prevents the development of cancer cells. The need for vitamin D is compensated by vitamin D3 (cholecalciferol), which is formed in the skin from provitamins under the influence of ultraviolet rays of sunlight.

You should also pay attention to Vitamins A, B, and C. The expert recommends adding to the diet foods containing zinc, which is responsible for metabolism and immune responses (there is a mention in the text). Zinc is found in chicken meat, low-fat cheese, almonds, green peas, and pumpkin seeds. Vitamin D deficiency occurs when there is a lack of sunlight. The amount of vitamin synthesized under the influence of ultraviolet rays is also affected by the length of the light wave. The most useful is the average wave spectrum, which occurs at dawn (8-10 am) and at sunset.

Low Vitamin levels are also caused by high air pollution (city dust, industrial emissions, and other air pollution factors block the access of ultraviolet rays. This is why rickets is so common in children in industrial cities in Asia and Africa. Also, the cause of vitamin deficiency may be naturally dark skin (the stronger the pigmentation, the less vitamin D is produced under the influence of sunlight) and old age (over the years, the skin is less able to synthesize Vitamin D).

The author has developed a differential diagnosis of hypovitaminosis and microementosis, but has not yet been published (author's note).

Three symptoms of covid for urgent hospitalization

Symptoms of coronavirus, which may be a cause for urgent hospitalization in Russia.

First, the body temperature is above 38 degrees, which can not be brought down for more than 48 hours.

Second, the respiratory rate is 25-26 breaths per minute. Note that an adult, being healthy and in a state of physiological rest, performs, on average, from 16 to 20 respiratory movements per minute.

Third, the blood oxygen level is less than 92%. To measure this indicator, a pulse oximeter is used. A modern compact pulse oximeter can take the form of a "clothespin" placed on the finger, earlobe or sinus of the nose.

The presence of all three of the above symptoms is a reason for emergency medical treatment.

Vaccine developers will not vaccinate children against COVID-19 in 2020.

Patients should not be vaccinated against flu and chickenpox, which is happening now. Otherwise, there is a syndrome of increased infection when they overlap. As well as imprinting syndrome (interaction of vaccinations with each other with the issuance of toxic phenomena). And against the background of existing treatment of Kawasaki syndrome in children, there is also the occurrence of Rey's syndrome, which is life -

threatening for children. The vaccinations themselves cause many autoimmune reactions, which is now reported in contraindications of the coronavirus vaccine. In fact, you can't do it!!! Especially for those who have already been ill.

I want to pay attention to the health of children, Russian citizens, who do not have antibodies at all for any vaccination, but only give complications and death. We need a mandatory alternative for these children and adults.

The domestic Sputnik-V vaccine has an efficiency of 92%, but three doctors in Altai and one in Kuzbass contracted coronavirus after vaccination. There are also fatal cases (author's note).

Attention!!!

Earlier in the UK, trials of the adenovirus coronavirus vaccine resumed after

suspensions due to inadequate response of the volunteer-he has

they found transverse myelitis (an inflammatory disease of the spinal cord).

This is a side effect of vaccination. The patient was diagnosed with multiple sclerosis.

Unfortunately, clinical Pharmacy is still not being restored in Russia, but only this industry can prevent the interaction of drugs and vaccines. Differential diagnosis of iatropathies is necessary, when it is necessary to be able to recognize the true primary disease from iatropathies. This is very important. And this can only Be done by clinical Pharmacists. In addition, Pharmacists are now also in a coronavirus pandemic, so they also need additional payments for working in a coronavirus pandemic.

Neurological complications of covid

Any infection, including viral, begins with the prodromal period. These are the harbingers of the disease. Which usually few people pay attention to.

Coronavirus infection has a fairly long period of harbingers, when a person has already become ill, but does not yet know about it. It is no coincidence that the period of self-isolation for those who have been in contact with patients is as long as 14 days.

From recent observations:

The first story. A woman who came to an appointment with a suspected stroke. Pressure 160/100, reduced badly. Although she is an experienced hypertensive patient, the therapy is well chosen for her, and she takes everything in a disciplined manner. But for some reason, her blood pressure jumped. Then dizziness, nausea, and vomiting joined in. It's been bad for a week. Weakness, no strength. The temperature is normal. No cough. And signs of a cold, too. The next day, the woman had a fever. Smear positive for coronavirus.

Attention! By the way, strokes often occur against the background of infection (author's note)!!!

The second story. A woman with a headache. Her headache experience is impressive, and the diagnosis is not the simplest-a migraine with an atypical course plus a tension headache. And then for a week (again this period is seven days), my head hurts and hurts. And the localization of pain is not quite typical, and the usual means do not help. it hurts and hurts. And the mood abruptly went down - I don't want anything, apathy, weakness. After seven days, the sense of smell disappeared and the temperature rose.

The third story. Again, for a duration of one week. The man has nausea and weakness, decreased appetite, incomprehensible abdominal pain, periodically heart rhythm disturbances-the heart seems to miss one beat, then beats again as usual. He's been examined by all the doctors. The tests are normal. The tests are fine. A week later-a rise in temperature, a positive smear.

The story of the fourth. A young woman.

High blood pressure, incomprehensible headaches, we drink painkillers every day, I was sick, I couldn't look at food at all. My aunt also had a very high blood pressure, an ambulance was called, they did not understand the reason at first even. The son of my mother's friend had such headaches that he literally screamed in pain, painkillers did not help.

The fifth story.

The weakness is terrible, all the time I wanted to lie down, nelelya. I had a headache, plus a migraine, for a week. No painkillers, plus Sumatriptan, helped. My legs, arms, shoulders ached, even crying. My left shoulder has been hurting for more than a month. No fever, but chills, the first day only 37.5. No cough, no runny nose. There was no sense of smell for 2 days. Water, food is bitter. Now it seems that I feel normal, only weakness covers me. This is my last month. I gave blood for antibodies yesterday.

Attention! Coronavirus infection has many faces. it is necessary to part with the template thinking.

T-lymphocytes, which play an important role in the antiviral immune response.

T-lymphocytes that recognize this virus can occur not only in patients who have been ill, but also in people who have not been in contact with the virus in any way. Separately, a group of people who were in close contact with COVID-19 patients, but not only did not have any symptoms of the disease, but also did not develop antibodies to this virus, was studied. It turned out that many of them have T-lymphocytes that recognize the coronavirus and provide them with protection from it.

My great-grandmother Ekaterina, who lived in the Ryazan region, took care of her children who were ill with typhus, but did not get sick herself (author's note). It all fits together.

Here it is necessary to explain that the system of acquired immunity consists of two parts. The first is represented by antibodies - these are special protein molecules (immunoglobulins). They are produced by the body in response to the attack of viruses or bacteria and are found in the blood plasma. Such immunity is called humoral, from the Latin word "humor" - liquid. The presence of antibodies in the blood is used to confirm the diagnosis. Also, these antibodies are formed after vaccination. Or not formed. In addition, the blood serum of patients who have been ill, containing a large number of protective antibodies, can be used in the treatment of COVID-19. But this also does not always help (author's note).

The second part of the acquired immunity is cellular. It is represented by special cells-lymphocytes. Among them are T-lymphocytes (sometimes called simply T-cells). Some of the T-lymphocytes, so-called T-killers, kill the virus-infected cells and thus prevent the production of new viral particles. Other T-lymphocytes (called T-helper cells) are needed by the immune system to produce antiviral antibodies.

T-lymphocytes are not just able to cope with the infection. They keep the memory of the body's encounter with the virus for a very long time, for years. If the virus enters the human body again, it is thanks to the immune memory that the infection will not develop or will proceed much easier.

During the study, antibodies and T-cells were evaluated.

Group 1 included those who were ill with COVID-19, and group 2 and 3 included healthy people who were not ill.

The results were interesting. First, not all patients with COVID-19 are found to have antibodies - some recovered immune response is provided only by T-cells. Apparently, they are quite enough to protect the body.

Action juice. Which products are the enemies of the coronavirus, and which are its friends

Secondly, and this is the most interesting thing, sometimes the T-cell response to coronavirus is observed in people who have not had it. T-cell response was observed in donors from both groups. At the same time, healthy donors who were recruited already during the pandemic, on average, had a higher level of T-cell response than those who donated blood before 2019. This is probably due to the fact that some healthy people somehow came into contact with the virus without knowing about it.

But how to explain that T-lymphocytes were also found in those who could not have had contact with the pathogen COVID-19? Most likely, this is the result of so-called cross-immunity. Many seasonal colds, particularly SARS, are also caused by viruses from the coronavirus family. Probably, some of them from the point of view of T-lymphocytes are similar to the virus that causes COVID-19, so T-cells are ready in advance to fight it. Perhaps this makes cross-immunity holders immune to COVID-19.

Third, which areas of the coronavirus are recognized by T-lymphocytes. This data can be used to create a test that evaluates T-cell immunity. The test will allow you to understand whether a person has suffered COVID-19 or not, even in the absence of antibodies. It is important that antibodies do not always occur after infection, especially in those who have an infection that is mild or asymptomatic. Today, in such cases, the diagnosis cannot be confirmed.

Russia has already developed such a test. So far, it is used for scientific purposes, but it is expected that in early 2021 it will be registered for clinical use.

Compounds that prevent the reproduction of SARS-CoV-2 in the epithelial cells of the pulmonary alveoli were found

Viruses are very simple: under their protein-lipid envelope, the genome is hidden in the form of nucleic acids (DNA or RNA, as in the case of a new coronavirus). They themselves are not able to reproduce, so when they enter a living cell, they force it to produce parts for new viral particles. In the SARS-CoV-2 genome, about 27 proteins are encoded that interact with host proteins, affecting the course of intracellular processes.

In COVID-19, the severity of the disease, as well as mortality, is largely determined by damage to the alveoli – the smallest pulmonary structures in the form of a bubble that open into the lumen of the airways. It is through the wall of the alveoli, densely entwined with blood capillaries, that air oxygen is exchanged for blood carbon dioxide. the importance of these structures is indicated by their number: in the human lungs, the number of alveoli reaches more than 700 million!

The cavities of the alveoli are lined with epithelial cells, and the SARS-CoV-2 coronavirus infects cells of the so-called alveolar epithelium type 2 (AT2). These cells are mainly responsible for the synthesis of surfactant – a complex mixture of substances of lipid-protein nature that can reduce surface tension. Surfactant, which forms a film at the liquid-gas interface, supports the alveoli during inhalation in a straightened state.

During the first day after infection with the SARS-CoV-2 virus in infected cells, changes in the level of various proteins and the degree of their phosphorylation (addition of a phosphate group), which determines their activity. It turned out that in the infected cells, the amount and level of phosphorylation of several thousand proteins involved in a variety of cellular processes, including protein synthesis, chromatin remodeling and cell cycle maintenance, significantly changed. In other words, SARS-CoV-2 almost completely "reprograms" cellular processes in the epithelium of the pulmonary alveoli, and new viral particles leave the depleted and critically damaged cells, leaving them to die. A new viral generation infects other epithelial cells and the cycle repeats.

Based on the available information about the new coronavirus, the researchers identified a range of substances that could inhibit its activity in AT2 cells.

As a result, scientists found 5 drugs that suppressed the reproduction of the virus in the cells of the alveolar epithelium by more than 90%. among them: the antibiotic levofloxacin, losmapimod, which is currently undergoing clinical trials as a drug for the treatment of muscular dystrophy, as well as inhibitors of kinase enzymes (az20, frax486 and kn-93). It is significant that four of these compounds practically did not inhibit the reproduction of the virus in Vero E6 cells, which indicates the uniqueness of the involvement of the alveolar epithelium in the infectious process in COVID-19.

According to scientists, all these compounds can be effective for the treatment of COVID-19 and are promising for their trials in this capacity.

Possibly affecting chromantins as a process of toxic increase in hydroxylation in the body, the virus at the same time temporarily stops the phospholation process, that is, increases the time gap between these processes, that is, temporarily reduces the synthesis of a surfactant consisting of phospholipids, as a surface tension film at the liquid-gas interface.

With its lack, the alveoli shrink and their protective hydrophobic function of surface-active properties is violated, so it is easier for the virus to penetrate the alveoli.

Thus, it is necessary to actively balance the processes of hydroxylation and postulirovana. Maybe I need to slow down toxic hydroxylation and accelerate postulirovana. This should be done by cellular immunity. Here it is proposed to do the opposite – to give phospholation inhibitors, so four out of five drugs did not suppress the reproduction of the virus in cells… Apparently, the proposed drug "Losmapimod" simply activates both processes by inhibiting kinase, which is not absolutely necessary in this case…

And at first glance, everything is true - these epithelial proteins suppress the virus, but without considering the general physiology and metabolic processes in it, we can get even greater autoimmune reactions from these same proteins.

Here we are talking about balance: when all the alveoli have collapsed, there is a real threat of death.

Everyone knows the ACE2 receptor as the entry point of the coronavirus, but the conversion of angiotensin-1 to angiotensin-2 is also catalyzed there.

Angiotensin receptors are also G-protein coupled receptors, that is, G-protein coupled receptors (GPCRs), which more than half encode olfactory receptors (the rest encode endogenous compound receptors), so with COVID-19, most people lose their sense of smell (and not because of neuro-receptor nephropathy). Having lost the sensitivity of GPCR, the key reaction of reducing the number of their receptors is phosphorylation of the intracellular domain of the receptor by protein kinases to call for the help of the T-lymphocyte reaction, so the drugs seem to have an effect in experiments on the alveolar epithelium.

But if there are not enough lymphocytes, when cellular immunity is depleted, then these proteins and lymphocytes conflict, and this leads to an autoimmune reaction in the body. This is a high risk of mortality due to serious complications of secondary autoimmune reactions. And here it is proposed to activate them, since drugs help only in this way, regardless of other processes in the body... So

far, one of the last causes of incurable COVID-19 is the genetic nature of the conflict with different reaction rates of cellular immunity of the epithelium, primarily starting from the ACE2 receptor.

In the treatment of general physiological principles of normalization of the state of metabolic processes by their activation, but taking into account the reactions and status of immunity in fact as boundary states, and then in extreme cases by inhibiting immune states or even the entire metabolism, and this is all individual.

Studies of "Losmapimod", which suppresses ACE2 receptors, but separately in the epithelium of the alveoli, and when acting in the body as a whole has serious drawbacks, it actually destroys the receptor itself and even the tissue itself, disrupting metabolic processes and causing autoimmune reactions from increasing the concentration of reactive proteins, that is, it works on the side of the virus.

But there is continue to research, hoping for some sort of application on the basis of genetic predispositions.

Scientists have found that special immune B-cells retain the memory of the virus and when the pathogen re-enters the body and quickly trigger the production of protective antibodies.

The researchers recruited a group of 25 patients with COVID-19 and took 36 blood samples from them from 4 days to 242 days after infection. As in other similar studies, antibodies to the virus began to be produced on the 20th day after infection.

However, all patients retained immune memory B cells that recognized one of the two components of the SARS-CoV-2 virus-the spike protein and the nucleocapsid protein. These specific memory B cells were consistently present 8 months after infection.

These results definitely show that patients infected with the COVID-19 virus actually retain immunity to the virus and disease (Menno van ZELM, 2020). This explains the small number of examples of true re-infection among the millions of people around the world who have been diagnosed with coronavirus.

References

1. M. Yu., Kolobukhina L. V., Lviv D. K, (2013). The human coronavirus (Nidovirales, Coronaviridae): the highest level of epidemic danger /shchelkanov //Attending physician.
2. Muradyan A. Ya, (2005). The role of coronavirus infection in the acute pathology of the respiratory tract: abstract.
3. Denisova A. R., Maksimov M. L, (2018). Acute respiratory viral infections: etiology, diagnosis, modern view of treatment/. //Russian medical journal — N1 (2).
4. Reshetnik L. A., Spasova Yu. S, (2017). Acute respiratory infections in children: Textbook.

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