Volume 2, Issue 11, November 2024 ISSN (E): 2938-3765

FEATURES OF THE INFLUENCE OF COVID-19 STAMP ON THE BODY AT EARLY STAGES AND THEIR PATHOLOGY

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Abstract
This article is devoted to the study of the peculiarities of the influence of the COVID-19 stamp on a person, organized by the world's leading countries, both locally and jointly, within the framework of international programs. Researchers note that the new form of the virus, even with complex treatment, is still capable of causing the so-called “post-Covid” syndrome, characterized by a weakened immune system and a decrease in hemoglobin.

Introduction

The natural immune response to viral bodies penetrating through the nasopharynx is the active production of white blood cells, which are the first barrier to infection. In some cases, this "outpost" copes with its task, neutralizing the infection at an early stage — while the patient does not notice any characteristic symptoms of the pathological condition and still feels quite comfortable. But after coronavirus infection, as with flu and colds, the number of white blood cells decreases to the point that it cannot return to its original value even after 11 weeks (Fig.-1.).

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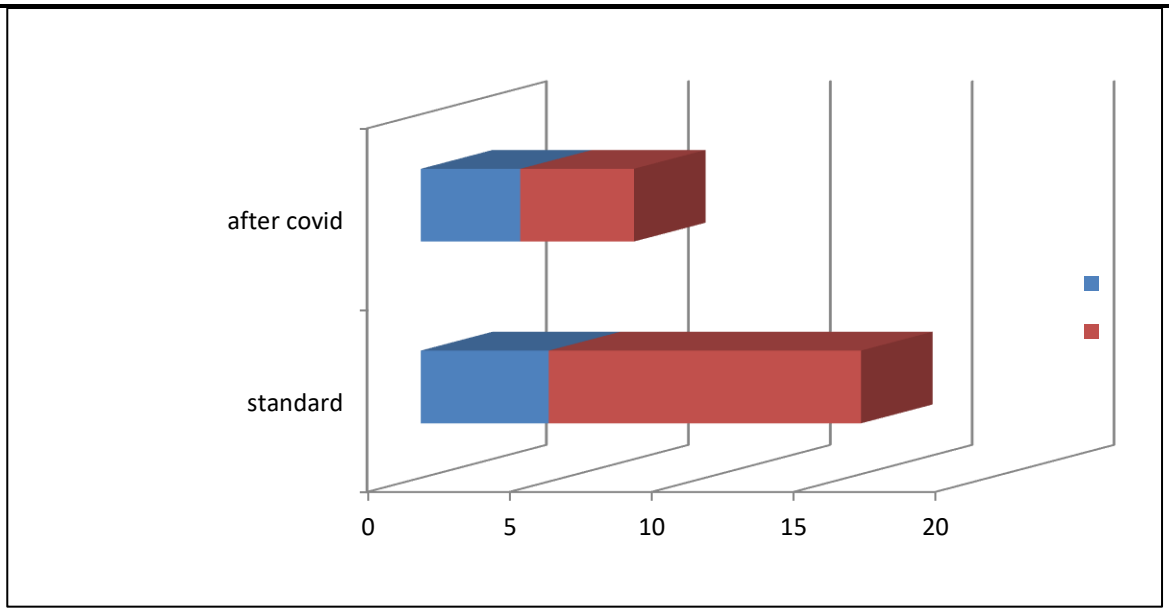
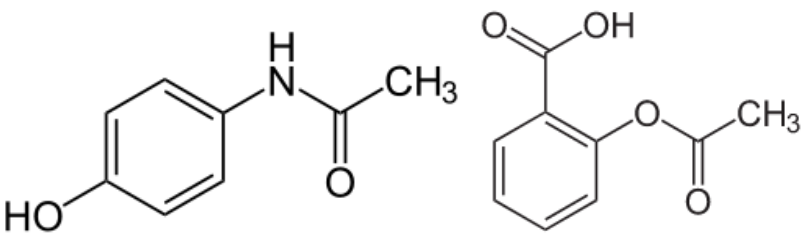


Fig.1.- Decrease in the number of white blood cells of patients before and after covid b at an early stage

If the protection does not work, white blood cells begin to produce cytokines, which are molecules of informational significance that provoke a reaction in the form of an increase in temperature. In parallel, there is the appearance of a dry cough caused by irritation of the upper respiratory tract. However, even here there is a chance to avoid a full—fledged disease - as practice shows, a sufficient rest period (7-10 days), as well as taking medications (paracetamol, acetylsalicylic acid, and so on), can be a sufficient counteraction to pathology.



The really dangerous consequences for the body from the coronavirus in those who have been ill are possible in cases when the strain penetrates the pulmonary structure. Overactive cytokine production leads to excessive accumulation of molecules and, as a result, to pneumonia, which is a serious complication of infection. The fluid accumulating in the alveoli prevents the lungs from fully providing the body with oxygen, which increases the risk of death, which is reduced by artificial tissue saturation procedures.

Another factor that can have a negative impact on the general condition of the patient is the so—called "cytokine storm". The situation in which the accumulated molecular weight becomes critical is accompanied by severe headache and lumbar pain syndrome, myalgia and other side effects. As a result, white blood cells begin to attack not only damaged, but also healthy cells, provoking damage to internal organs (Table 1.).[1]

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Table 1.

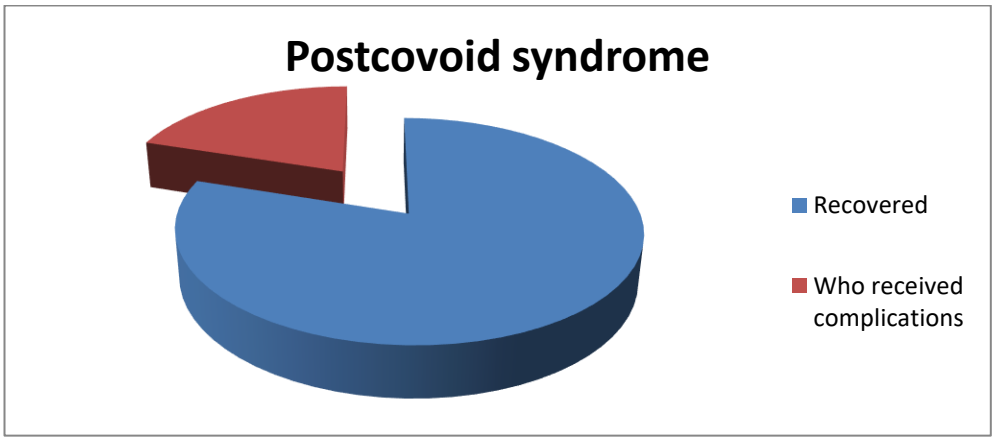
Indicators, pg/ml	amniotic fluid		Blood serum	
	control group (=40)	control group (=28)	control group (=30)	control group (=20)
IL-6	187.2±19.3	435.5± 36.6**	19.6± 1.0	29.3± 1.1
IL-6	10.3±1.4	18.6± 2.1**	8.2± 0.5	13.4± 0.8**
IL-6	235.4±25.6	598.4± 67.5*	368.5± 11.3	718.2± 21.3***
IL-6	52.6±6.1	20.7± 5.2**	73.6± 1.3	28.9± 1.2**
IL-6	10.5±0.5	31.5± 1.3*	12.1± 0.7	20.8± 1.1***

The results of statistical studies allow us to identify several categories that are considered the most vulnerable to the formation of severe complications. This list includes:

• Women and the elderly.
• People suffering from chronic diseases.
• Overweight people.
• Patients who have undergone pathology with advanced symptoms.

In addition, a significant factor determining the increased likelihood of side effects is the lack of proper and timely treatment, as well as subsequent monitoring by health workers [3].

The circumstances that cause problems to arise already in the rehabilitation phase are the subject of active research by the scientific community. The current results suggest that the infection affects not only the lungs, but also the nerve endings, affecting the central nervous system and brain activity, provoking local changes. The transformation of the structure of nerve fibers manifests itself in various forms - possible complications of coronavirus infection in humans include tingling and twisting of joints, persistent pain in the spinal region and general weakness of the body. The most difficult problems from the point of view of relief are pulmonary and arterial thrombosis of various scales, potentially capable of fatal outcome. Asthenia, exhaustion and difficulty breathing caused by a reduction in lung volume, shortness of breath and panic attacks, tachycardia and migraine attacks are also observed. The duration of symptoms depends on individual indications and varies from one week to several months [5].



Up to 20% of people who have had a coronavirus infection suffer from long-term symptoms lasting up to 12 weeks and 2.3% of cases longer [4].

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The most common complications after coronavirus infection:

• Loss of sense of smell (about 13% of patients lose their ability to distinguish odors)
• Rapid fatigue
• Chest pain (observed in 12.8% of patients and is a consequence of damage to the pulmonary structure)
• Shortness of breath (diagnosed in slightly less than a third of cases, 31.6%)
• Systematic cough (occurs in 13% and lasts for 8-10 weeks)
• Weakening of immunity
• Postcovoid syndrome
• Neurological effect
• Heart failure
• Pulmonary fibrosis
• Viral myocarditis
• Kidney damage
• Liver damage
• Pseudomembranous colitis
• Inflammation of nerve endings
• Visual impairment
• Cardiac disorders.

FEFU scientists of the Russian Federation: coronavirus can attack red bone marrow and interfere with the formation of red blood cells

The key target for the virus is erythrocytes, red blood cells responsible in the body for the transport of iron—rich protein hemoglobin and associated oxygen. In the work, the scientists analyzed the results of their own studies of lung samples from 79 patients who died from COVID-19 with confirmation of PCR. The control group consisted of 14 patients who died as a result of injuries incompatible with life [2].

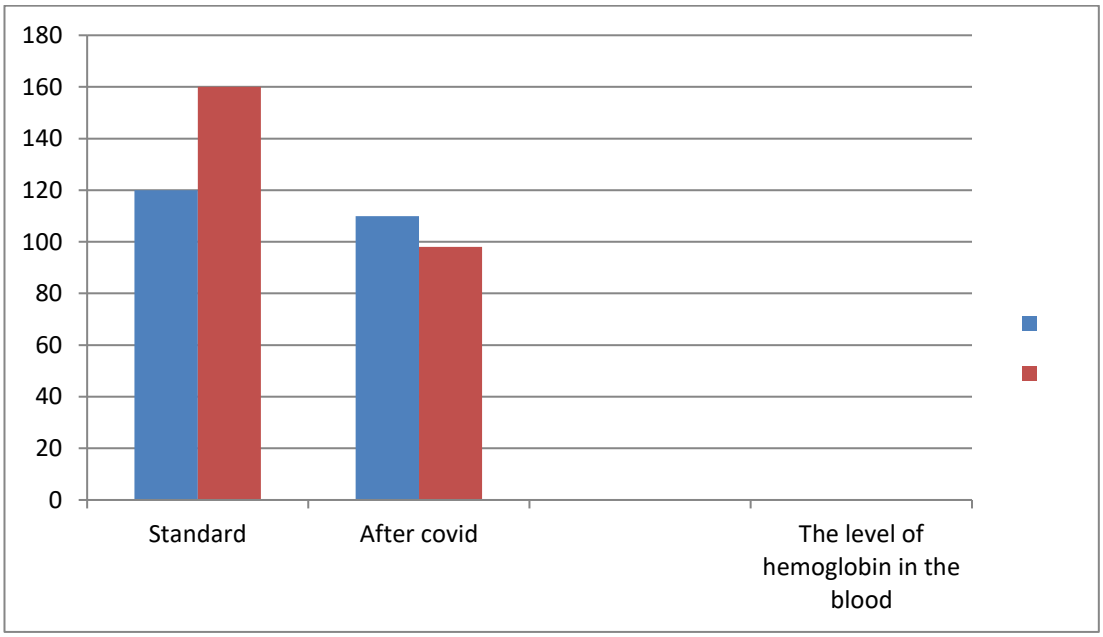

Fig.-2. The level of hemoglobin index in patients before and after covid.

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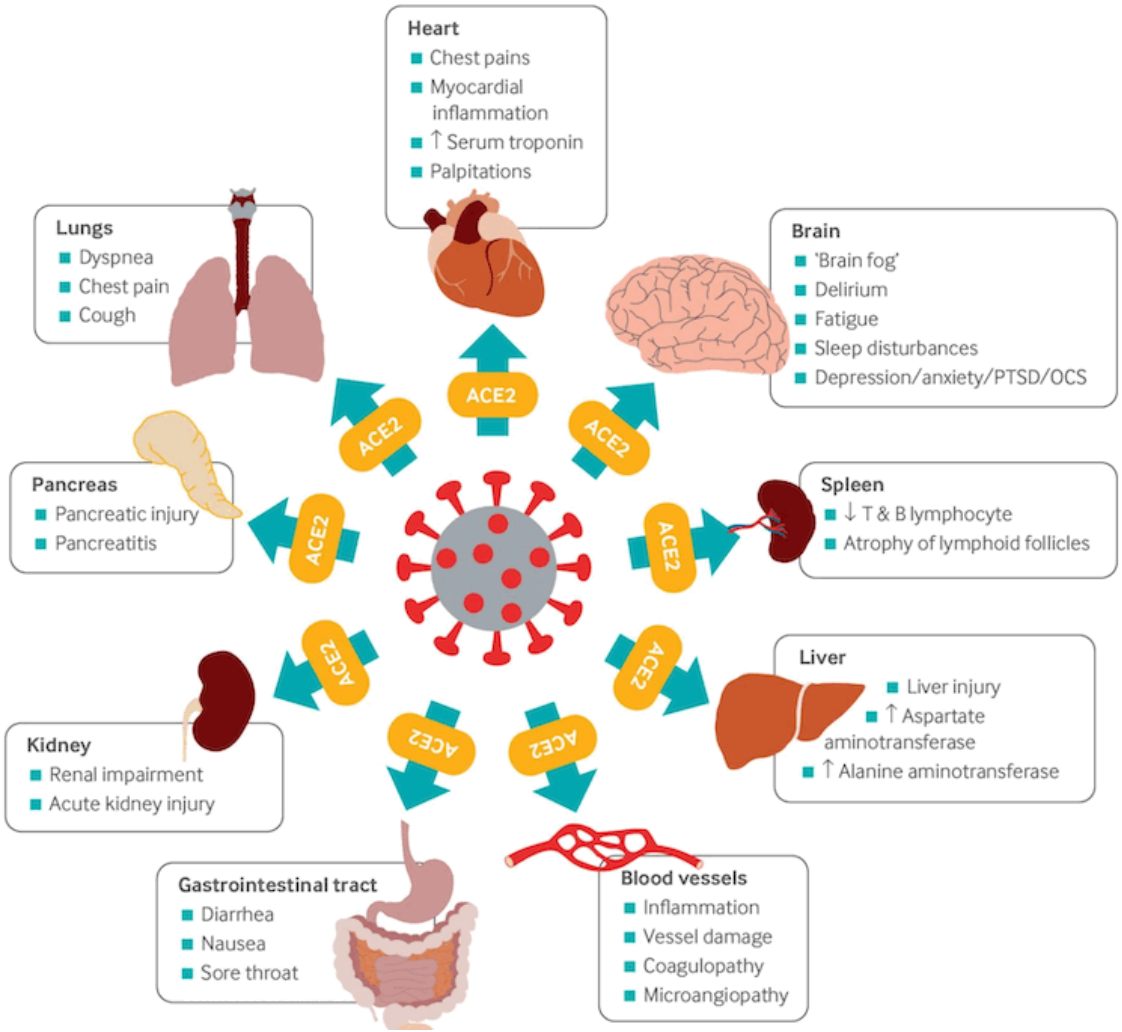
Coronavirus has a devastating effect not only on the lungs, but also on other human organs. Attempts to systematize this process based on the data received from doctors were made by the American publication Science.

As noted by cardiologist Harlan Krumholz, who works at New Haven Hospital and Yale University, the disease can affect a variety of organs and the consequences of this can be catastrophic. "The cruelty of this disease is astounding and shocking," he notes.[8]

The norm of saturation for a healthy person is considered when 95% or more of hemoglobin is associated with oxygen. This is saturation – the percentage of oxyhemoglobin in the blood. With COVID-19, it is recommended to call a doctor when saturation decreases to 94%. Saturation of 92% and below is usually considered critical [6].

Degree	PaO_2, mm of mercury	SaO_2, %
standard	≥80	≥95
DN I	60-80	90-95
DN II	40-60	75-90
DN III	<40	<75

(DN - respiratory failure)



In conclusion, we can conclude that, talking about coronavirus infection, we can say that it has affected absolutely everyone, leaving an indelible mark on our health. The consequences of transferring this infection cannot be denied, as they are clear and obvious and the research of scientists in this industry confirms this. SARS-CoV-2 is our common enemy in an invisibility cloak, attacking from nowhere and hitting us where we did not expect at all.

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