

## **Importance of immunity in the body's fight against Covid19 disease- Can we do something about it?**

The emergence of a pandemic caused by the SARS-CoV-2 virus potentiated the accepted approach on thinking that the essence of the disease is in the cause, and that the more we learn about it, the better we will solve the problem. The condition of the organism naturally comes into the background, although we conclude that there are some people at higher risk, such as diabetics, obese, those suffering from hypertension or chronic diseases. On the other hand, it has been seen that children whose immune system has the least experience as well as pregnant women do not develop severe clinical pictures. The fact that the so-called incubation or period of infection to the onset of symptoms lasts from 5 to 28 days, which is the period of preparation organism to start a storm, speaks for itself that the virus, possibly, is not the most important for the outcome of disease, but the condition of patient organism. Louis Pasteur said on his deathbed: bacteria are nothing, the state of the organism is everything, when he realized that the bacteria that could do nothing to him until then, now can do everything, but not because of the bacteria themselves but because of the condition of his organism. We need to ask ourselves essential question: did we miss the most important period, and that is the incubation period and long before that, to change the reactivity of the immune system in the way that it does not triggers a cytokine storm that can kill the patient. This is a bit at odds with accepted medical dogma to treat the disease and not the condition of the organism, because the previous condition of the person is not recognized, and curative medicine does not delve much into preventive. In our body lives a huge number of bacteria and viruses that do not cause us any problem, even their number exceeds by tens times the number of our cells when it comes to bacteria, and the number of viruses is even more significant and higher. Why we do not fight with them but we have found a mode of coexistence? Children most likely do not suffer because they have not gained enough negative experience of the immune system, so their immune system cannot triggers a fierce immune reaction leading to a lethal outcome. Hence the popular proverb: "Listen to the old man, but don't follow him"

When we take seriously the past of patients suffering from chronic diseases, we often realize that the onset of the disease is most often associated with numerous manifestations in childhood; by type of frequent infections, allergic manifestations, bloating and numerous other manifestations that indicate autoimmune and other chronic diseases. It is often revealed that patient did not tolerate some food, but no special attention was paid to it. Thus, an important indicator and cause is missed development of chronic diseases, which will one day bring a real serious illness, and in case of occurrence of new infectious agents a higher risk of fatal outcome. On a discrete communication disorder of the organism with the external environment is generally not given much attention, although it is a hidden key for solutions to many life problems. There is a wealth of experience in pediatrics that children often suffer from colds and are constantly treated unsuccessfully with antibiotics, can be successfully cured and do not get sick anymore just by removing food they can't stand, by giving specific probiotics, vitamin D and zinc, which indicates that the problem of susceptibility to viral infections can really be solved without antibiotics or antiviral drugs even before the development of serious complications.

When new diseases appearance, for which there is no known cure, there are two ways to think: to discover specific medicine for them and / or to make a vaccine that will specifically protect us. Both would be well if it were available, but we often have to wait a long time for

the results of this research, and usually they also carry a significant risk of side effects at the beginning of the application. However, in the course of evolution life has always faced numerous pathogens for which he had to find a solution himself, because in ancient times there was no science, no medicine, no vaccine. Certainly the most important link in the predominance of the problem was the interaction of the organism with the environment in the broadest sense. Numerous elements of food, water, air, sun affect our body. The effects are proven positive for vitamins, trace elements, protein products, fats and carbohydrates that nourish but also directing the body's metabolism and often protect the body by promoting immune system reactivity. Sun-derived vitamin D is a primordial regulator of metabolism but also regulates functions of immune system. While for the needs of bones and other parts of the body, Vitamin D after the synthesis in the skin is metabolized in the liver and kidneys, for the needs of the immune system it is directly activated in macrophages, initiating the formation of antimicrobial molecules. Zinc is an integral part of special proteins that correct DNA defects in cells produced by the virus. Selenium is an integral element of the antioxidant system. Vitamin C, which we have in fruits and vegetables, as well as vitamin E also has a similar role. With all these elements we have significant treatment experience, sometimes we can achieve faster and more lasting healing with them than with antibiotics and antiviral drugs, which should be given strictly according to the indications and in the phase of the disease determined by the doctor.

Probiotic bacteria, which play multiple roles in the digestive tract which we denote by the common name of the microbiota, have a particularly important place. In addition to support functions of digestive system, contributing to better digestion and resorption of food, probiotic bacteria improve the condition of the epithelium in the digestive system, reducing permeability to toxic products, bacteria and viruses. They show antibiotic properties against specific pathogenic bacteria, sometimes they can be more effective in combating certain pathogens than antibiotics. Their application is not causing antibiotic resistance because probiotic bacteria can change along the way following pathogen changes.

In recent years, various probiotic bacteria and their influence have been increasingly studied. Especially immunomodulatory strains of beneficial bacteria contained in the preparation called Imunolak. This combination of beneficial bacteria shows antibacterial and antiviral properties, reduces the permeability of the intestinal epithelium, but also all other epithelium as well as endothelium and synovial membrane. The immunoregulatory potential of these probiotic bacteria is exceptional, because in addition to solving digestive problems, have a powerful immunoregulatory capacity: they induce oral tolerance to the food we eat, potentiate protection against bacteria and viruses, but also reduce the inflammatory process which is often problematic because it contributes to the great suffering of our cells.

The application of Imunolak in practice has shown the potential for faster healing and less frequent illness of children from various pathogens, especially viral infections. Allergic reactions are reduced or disappear, but it is not negligible effect in autoimmune diseases, especially when harmful elements are removed from food which can do damage on our intestines. In all these situations, the intensity of the inflammatory reaction decreases, which is often excessive in the beginning. This effect along with direct antimicrobial capabilities, usually solves the problem of inflammation by correcting the reactivity of the immune system. It has been shown that the supplementation with beneficial bacteria

contained in Imunolak alters the cytokine profile in patients, thus preventing development of chronic inflammatory diseases and possibly a cytokine storm which is particularly fatal during Covid 19 disease. Many children do not have to have tonsil surgery after such therapy, they no longer have asthma attacks, they do not complain of pain in the abdomen or joints, headache disappears, they are no longer tired or anemic. Hard is to list the symptoms that disappear when the right approach is made and the disorder is recognized in early stage before manifesting fullblown disease.

In the prevention of SARS-CoV-2 virus, the most important measures are social distancing , wearing masks and hands washing. Reducing epithelial permeability by using probiotics like Imunolak as well as antiviral effects of vitamins D, C, E, zinc and selenium can be complementary in that protection and significantly reduce the chance of infection, and to reduce the intense of immune system response that we recognize as a cytokine storm and that leads to a poor outcome.

It is not easy to instruct people to apply simple remedies because they generally expects sophisticated drugs and procedures, which draws responsibility from the man himself, to complete the job. At the time when people died „en masse“ from tuberculosis and when there was no cure for it, someone got the idea to build sanatoriums in the mountains and to provide sunbathing for patients that increased their vitamin D. Patients with tuberculosis after such therapy did not develop cavities in the lungs and did not die in large numbers as before. Later, of course, when specific anti-tuberculosis drugs were found, the sanatoriums lost on significance. The genius who invented it must not be forgotten, more about this man can be found in Thomas Mann's novel „The Magic Mountain“, which testifies to human genius and intuition.

Human life is a part of nature and the wider environment, no matter how good a symptoms recognition system, diagnosis and developed modern medicine with specific drugs we have, outstretched hand nature will never disappoint us if we make effort to feel and recognize it.

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