

## **ACUTE LYMPHOBLASTIC ANEMIA**

One of the important problems of modern hematology is the problem of violation of normal hematopoiesis. At the same time, 75% of patients are children with acute lymphoblastic leukemia. One in two thousand children suffers from acute lymphoblastic anemia. This type of blood cancer is more common in developed, rich countries. This suggests that the disease occurs through the modern way of life. There were also quite "wild" assumptions when the appearance of cancer was associated with power cables, electromagnetic waves and chemicals. "The study suggests that acute lymphoblastic leukemia has a clear biological cause and is caused by a variety of infections in children who are predisposed to it and whose immune systems have not received proper training," says Professor Greaves.

Most cases of childhood leukemia are likely to be preventable. It is necessary to give children a safe "cocktail" of bacteria - for example, in a yogurt drink, which will help harden their immune system. Until now, we treated germs as "bad guys," but recognizing their important role in our health and well-being is revolutionizing the understanding of the causes of disease, from allergies to Parkinson's disease and depression, and now leukemia. The malignant nature of leukemia is that the human body usually cannot recover from the disease on its own. But as a result of advances in modern medicine, leukemia in all cases has become treatable, and in many cases has become curable. A dramatic aspect of the current situation in Ukraine is the impossibility of applying in practice modern effective diagnostic and treatment methods due to insufficient funding of the industry and irrational use of already allocated resources.

Typically, patients consult a hematologist after identifying characteristic changes in a detailed blood test (including the presence of anemia or thrombocytopenia), which may suggest the presence of leukemia, but there may be treatment with lymphadenopathy, splenomegaly or systemic symptoms such as fatigue and weakness, significant night sweats, weight loss, prolonged fever.

The diagnostic algorithm has become significantly more complicated over the past few years and today includes not only traditional clinical, laboratory and instrumental methods of examination to verify the diagnosis and start treatment, as well as additional diagnostic options. The full range of diagnostic studies in hematology includes, in addition to cytological examination of blood and bone marrow, their cytochemical analysis, determination of immunophenotypic markers using monoclonal antibodies to confirm linear affiliation and degree of differentiation, establishment of clonal excess based on cytogenetic and molecular, as well as histological examination of lymph nodes and bone marrow with enzyme - linked immunosorbent assay of pathological cells. In addition to these standard methods of examination of oncohematological patients, it has become important to determine the determinants of multiple drug resistance, markers of apoptosis, genetic mutations, the impact of which on the effectiveness of therapy has been convincingly proven in recent years.

Unfortunately, the full range of the above diagnostic measures, which have become routine for developed countries, is not performed in any medical institution of hematological or oncological profile of the Ministry of Health of Ukraine, and cytochemical, immunophenotypic, cytogenetic and molecular genetic research is available only in the institutes of the National Academy of Ukraine and the Academy of Medical Sciences of Ukraine.

Turning to the treatment of acute lymphoblastic anemia, it should be emphasized once again that this disease can manifest itself and proceed in different ways, and therefore with a certain clinical variant and features of the disease, medical treatment may not be required. Due to the development of treatment methods, including chemotherapy, radiotherapy, bone marrow transplantation methods, the survival of children with acute lymphoblastic anemia has increased from 0% in 1970 to 85% in 2017. Science does not stand still, so we have high hopes that very soon in Ukraine it will be possible to conduct operations so complex that we do not seek help from neighboring countries.

### REFERENCES

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