



WHITE BLOOD CELL DISORDER (LEUKEMIA): TYPES, SYMPTOMS, DIAGNOSIS, TREATMENT, COMPLICATIONS

Hamidova Zilola

Xolmurodova Sug'diyona

Teachers of the Technical College of Public Health named after Abu Ali ibn Sino

Abstract: *Leukemia (leucosis) or white blood disease is a cancer of blood cells. In leukemia, abnormal blood cells are produced in the bone marrow. Usually, the disease is characterized by the production of abnormal types of leukocytes, which are responsible for fighting infection. In a white blood cell disease, abnormal cells do not perform the same functions as normal leukocytes.*

Cancer cells grow and actively divide, interfering with the movement of other blood cells. As a result, there is a decrease in the body's ability to fight infections, loss of bleeding control, and difficulty in transporting oxygen.

Leukemia (leucosis) or white blood disease - cancer of blood cells.

COMMON TYPES OF WHITE BLOOD DISEASE

Pathology is divided into several types based on how quickly it develops and what abnormal cells appear. The four most common types of leukemia include:

Acute lymphocytic leukemia (ALL);

Chronic lymphocytic leukemia (CLL);

Acute myeloid leukemia (AML);

Chronic myeloid leukemia (SML).

If the disease develops rapidly, it is called acute white blood disease (also called acute lymphoblastic leukemia). Acute leukemia is common in children, but it can also affect adults. A large number of leukotic cells quickly accumulate in the blood and marrow, and as a result, symptoms such as rapid susceptibility to infections, fatigue, and body bruising are observed. The acute form of the disease requires prompt therapy.

Chronic white blood cell disease develops over time, usually affecting people over the age of 55. It is almost not observed in children and adolescents. At the beginning of the development of this type of pathology, there are no clear signs. If left untreated, it can eventually develop symptoms similar to acute leukemia.

Depending on the type of pathological cells, myeloid (or acute myeloid) or lymphoid leukemia types are classified. A basic understanding of the normal development of blood cells is necessary to identify the different types of leukemia. Normal blood cells arise from stem cells, which can be many types of cells.

Myeloid stem cells in the bone marrow mature into immature white blood cells called myeloid blasts. When these myeloid blasts mature, they become red blood cells, platelets, or certain types of leukocytes.

Lymphoid stem cells mature in the bone marrow and become lymphoid blasts. Lymphoid blasts become T-lymphocytes or specialized leukocytes. Myeloid leukemias are cells that originate from myeloid blasts, while lymphoid leukemias arise from lymphoid



blast cells. Knowing the cell type involved in leukemia is important in choosing the right treatment.

Less common types of leukemia:

Hairy cell leukemia is a type of chronic form;

Chronic myelomonocytic leukemia is a type that develops from myeloid cells;

Young myelomonocytic leukemia is a common type of myeloid leukemia in children under 6 years of age;

Large granular lymphocytic leukemia.

CAUSES OF LEUKEMIA

The exact cause of leukemia is unknown, but it involves a combination of genetic and environmental factors. Leukemia cells develop mutations in their DNA that cause them to grow abnormally and lose the function of normal white blood cells. It is not known what caused this mutation. One type of cellular DNA mutation that is characteristic of leukemia is called a chromosomal translocation.

Signs and symptoms of white blood cell disease usually include:

- Fever;
- Evening sweats;
- Enlarged lymph nodes, usually without pain;
- Feeling tired;
- Light bleeding;
- Blue or purple spots on the skin;
- Recurrent nosebleeds;
- Frequent infections;
- Bone or joint pain;
- Loss of body weight or loss of appetite;
- Enlargement of the spleen or liver, which may cause abdominal pain or swelling;
- Red spots on the skin.

If leukemia cells enter the brain, symptoms such as headaches, seizures, right-sided confusion, loss of muscle control, and vomiting may occur.

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