



# Leukemia: An Overview of its Symptoms, Diagnosis and Treatment

Clara Paris\*

Department of Oncology, University of Glasgow, Scotland, United Kingdom

## DESCRIPTION

Leukemia is a type of cancer that affects the blood and bone marrow. It is characterized by the abnormal growth of immature white blood cells known as blasts. These cells do not function properly, leading to a decrease in the number of healthy white blood cells, red blood cells, and platelets. There are several different types of leukemia, including Acute Lymphoblastic Leukemia (ALL), Acute Myeloid Leukemia (AML), Chronic Lymphocytic Leukemia (CLL), and Chronic Myeloid Leukemia (CML). Leukemia is diagnosed through a combination of medical history, physical examination, and laboratory tests. The first step in diagnosing leukemia is to conduct a thorough medical history and physical examination. The physician will look for signs and symptoms of leukemia, such as enlarged lymph nodes, bruising, and bleeding. The doctor may also suggest blood tests, including a Complete Blood Count (CBC) and a blood smear. A CBC measures the number of red blood cells, white blood cells, and platelets in the blood. A blood smear is a microscopic examination of the blood cells to look for abnormal cells. If the results of the CBC and blood smear test show positive, further tests should be done. A bone marrow biopsy is a procedure in which a small sample of bone marrow is removed and examined under a microscope. This test can confirm the diagnosis of leukemia and help determine the subtype of leukemia. Other tests may include imaging tests, such as a CT scan (Computed Tomography) or MRI (Magnetic Resonance Imaging) to look for signs of leukemia in other parts of the body.

The treatment of leukemia depends on several factors including the subtype of leukemia, the age and overall health of the

patient, and the stage of the disease. The main treatments for leukemia are chemotherapy, radiation therapy, and stem cell transplantation. Chemotherapy is the use of drugs to kill cancer cells. These drugs are usually given intravenously, although some can be taken orally. Chemotherapy may be given in cycles, with rest periods in between to allow the body to recover. The side effects of chemotherapy can include nausea, vomiting, hair loss, and fatigue. Radiation therapy uses high-energy radiation to kill cancer cells. It is usually used in combination with chemotherapy. Radiation therapy can be given externally, where a machine passes the radiation in to the body, or internally a radioactive material is placed near the cancer cells. Stem cell transplantation involves replacing the patient's bone marrow with healthy stem cells. The stem cells can come from the patient (autologous transplant) or from a donor (allogeneic transplant). Before the transplant, the patient receives high doses of chemotherapy and radiation therapy to kill the cancer cells and suppress the immune system. The patient then receives the new stem cells, which can grow into healthy bone marrow and produce healthy blood cells. The symptoms of leukemia can vary depending on the subtype of leukemia, the stage of the disease, and the age and overall health of the patient. The abnormal white blood cells in leukemia do not function properly, leading to a decrease in the number of healthy white blood cells, red blood cells, and platelets. This can cause fatigue and weakness. Leukemia can cause a fever, which is a sign that the body is fighting an infection. Some people with leukemia may experience unexplained weight loss. The abnormal white blood cells in leukemia can interfere with the body's ability to form blood clots, leading to bruising and bleeding.

**Correspondence to:** Clara Paris, Department of Oncology, University of Glasgow, Scotland, United Kingdom, E-mail: paris@glasgow.ac.uk

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