Leukemia

Leukemia is a cancer that starts in the bone marrow, the soft tissue inside the bone where blood cells develop. Abnormal blood cells are generated within the bone marrow, multiply, and can spread throughout the body, crowding out healthy white and red blood cells, and platelets. These abnormal cells make it difficult for normal white blood cells, red blood cells, and platelets to function properly within the body, making a person prone to infection, anemia, bruising, and bleeding. The four most common types of leukemia are: acute lymphocytic leukemia (ALL); acute myeloid leukemia (AML); chronic lymphocytic leukemia (CLL); and chronic myeloid leukemia (CML). Acute leukemia is characterized by rapidly growing cells and quickly diminishes a person’s health, and chronic leukemia develops and progresses slowly over time.

Statistics
- In 2018, it is estimated that 60,300 Americans will be diagnosed with new cases of leukemia.
- It is estimated that 24,370 Americans will die from leukemia in 2018.
- In 2018, approximately 3,499 Texans will be diagnosed with leukemia, resulting in an estimated 1,820 deaths.
- Leukemia accounts for about 1 in every 3 cancer cases in children, making it the most common childhood cancer.
- Most leukemias, 92 percent, are diagnosed in adults, most often in adults age 55 and older.
- ALL accounts for 74 percent of leukemias in people age 19 and under. ALL risk is highest in children younger than 5 and rises again after age 50.
- Although rarely diagnosed before age 45, AML is the second most common leukemia in both adults and children. Average age of diagnosis is 68.
- CLL, which is rare in children, is the most diagnosed leukemia type in adults. Average age of diagnosis is 70.
- CML, also rare in children, accounts for about 10 percent of all leukemias. Average age of diagnosis is 64.

Risk Factors
- **Radiation and chemotherapy**: People exposed to high levels of ionizing radiation, like cancer patients, can be at a greater risk for developing leukemia. Leukemia can be a complication of chemotherapy treatments.
- **Exposure to certain chemicals and workplace environments**: Exposure to benzene, a chemical found in cigarette smoke, solvents, gasoline, rubber production, chemical plants, oil refineries, shoe manufacturing, and some glues, art supplies, cleaning products, and paints, can raise acute myeloid leukemia risk.
- **Smoking**: Cigarette smoke is a direct risk for contracting AML as cancer agents in tobacco smoke enter the bloodstream and can be transported through the body.
- **Blood disorders**: People with certain blood disorders including polycythemia vera, essential thrombocytopenia, idiopathic myelofibrosis, and myelodysplastic syndrome are at an increased risk.
- **Genetic diseases**: People with congenital syndromes such as Down syndrome, Trisomy 8, Fanconi anemia, Bloom syndrome, ataxia-telangiectasia, Diamond-Blackfan anemia, Schwachman-Diamond syndrome, Li-Fraumeni syndrome, neurofibromatosis type 1, Klinefelter syndrome, Wiskott-Aldrich syndrome, familial platelet disorder syndrome, and Kostmann syndrome are at a greater risk.
- **Family history**: Having relatives with CLL raises risk for developing CLL.

Symptoms
- Swollen lymph nodes that are not painful
- Frequent fevers or sweating at night
- Feelings of weakness or tiredness
- Shortness of breath
- Reoccurring infections
- Pain or fullness in upper abdomen
- Enlargement of liver or spleen
- Bleeding and bruising easily
- Unexplained weight loss
- Appetite loss
- Joint or bone pain
- Pinpoint flat spots on the skin, called petechiae

Treatment Options
Treating leukemia varies depending on the type of leukemia, age, medical history, general health of the patient, stage of the cancer, and the patient’s treatment goals. However, patients with acute leukemia must be treated immediately due to the rapid progression of the disease. Treatment options for leukemia include:
- **Watchful waiting** (for those with chronic leukemia)
- **Chemotherapy**
- **Targeted therapy**
- **Radiation therapy**
- **Stem cell transplant**
- **Surgery**
- **Monoclonal Antibodies**

Sources: American Cancer Society, American Society of Clinical Oncology, National Cancer Institute, Leukemia & Lymphoma Society, Texas Cancer Registry

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