

The Leukemias

Types of Leukemia:

There are several types of leukemia. The different types of leukemia are grouped in two ways. One way is by how quickly the disease develops and gets worse. The other way is by the type of blood cell that is affected.

The different types of leukemia are categorized as either acute or chronic. In acute leukemia, the abnormal blood cells are blasts that remain very immature and cannot carry out their normal functions. With acute leukemia, the number of blasts increases rapidly, and the disease gets worse quickly. In chronic leukemia cases, some blast cells are present, but in general, these cells are more mature and can carry out some of their normal functions. Also, the number of blasts increases less rapidly than in acute leukemia. As a result, chronic leukemia gets worse gradually.

Leukemia can arise in either of the two main types of white blood cells--lymphoid cells or myeloid cells. When leukemia affects lymphoid cells, it is called lymphocytic leukemia. When myeloid cells are affected, the disease is called myeloid or myelogenous leukemia.

These are the most common types of leukemia:

Acute lymphocytic leukemia : (Lymphoblastic) (ALL) :

Is the most common type of leukemia in young children. Acute lymphocytic leukemia also affects adults, especially those age 65 and older.

Acute myeloid leukemia: (Myelogenous) (AML) :

Occurs in both adults and children (common in adults). This type of leukemia is sometimes called Acute Non Lymphocytic Leukemia (ANLL).

In blood seen decreased in red blood cells, and increase in abnormal and immature white blood cells like (myelocyte, myeloblast, and lymphocyte).

Clinical Features :

- 1- Anaemia, fever, Septicaemia .
- 2- Purpura, bleeding because thrombocytopenia.
- 3- Moderate, Splenomegaly, hepatomegaly in ALL.

Lab. Diagnosis :

- 1- Normochromic, Normocytic, Anaemia.
- 2- WBCs count may be decreased, normal, or increased.

- 3- Thrombocytopenia.
- 4- **Blood Film** : shows variable number of blast cells in AML, the blasts may contain **Auer Rods**, and other abnormal cell may be present, **promyelocyte**, **myelocytes**, **pseudo – pelger cell**.

Chronic Lymphocytic Leukemia: (lymphoid) (CLL):

Most often affects adults over the age of 55, and rare before age 20 years , and uncommon before age 50 years , the median age of onset is 68 years , but it almost never affects children.

Symptoms :

- 1- Low- grade fever, night sweats.
- 2- Weakness, fatigue, Anorexia, Weight loss.
- 3- Hepatosplenomegaly.

Lab. Diagnosis :

- 1- Leukocytosis.
- 2- Absolute lymphocytosis.
- 3- **Peripheral blood smear** : 80 – 90 % small lymphocyte, large lymphoblast may be noted, granulocytes normal, platelets normal, **Basket cell** .

Chronic Myeloid Leukemia : (myelogenous) (CML):

Occurs mainly in young and middle age adults, 30 – 50 years old . A very small number of children also develop chronic myeloid leukemia. Male are affected more than female.
5 – 10 % of patient history of excessive exposure of radiation.

Clinical Signs and Symptoms :

- 1- Fever, Fatigue, weight loss, anorexia .
- 2- Bone pain, night sweats, and fever.
- 3- Splenic enlargement .
- 4- Excessive bleeding and fever occur in later stage.

Lab. Diagnosis :

- 1- Anaemia, leukocytosis.
- 2- **Peripheral blood smear** : shows increased number of granulocytic forms such as Neutrophil segmented and band, decreased number of immature form, myeloblast rarely exceed 5% of nucleated cell, Eosinophil, Basophil may also increased .
- 3- Thrombocytosis .

Chronic Monocytic Leukaemia :

This form of leukaemia is less common than other chronic forms. The incidence of this variety is rare in young persons, it is seen after middle age .

Symptoms :

- 1- Anaemia .
- 2- Enlarged lymph node and spleen .
- 3- Leukopenia.

Lab. Diagnosis :

- 1- Leukopenia .
- 2- Peripheral blood smear : Shows increase in large mature monocyte with irregular nuclei .
- 3- Moderately decreased platelets.

Chronic Myelomonocytic Leukaemia :

Lab. Diagnosis :

- 1- **Peripheral blood smear** : shows monocytosis, neutrophilia, blast cell are usually seen .
- 2- **Bone marrow film** : increased promonocytes.