**Leukemias**

• Leukemias are neoplasms of hematopoitic cells proliferating in the bone marrow initially and then disseminate to peripheral blood, lymph nodes, spleen, liver etc.

• Lymphomas differ from leukemias in that, lymphomas arise primarily from lymph nodes but spread to blood and bone marrow only in "leukemic phase” of the diseases.

**Classification of leukemias - is based on**

1. Cell of origin : there are two types of leukemias

• Lymphoid leukemias

• Myeloid leukemias

2. Clinical course of the disease - two forms of presentation of leukemias

• Acute leukemias

• Chronic leukemias

**A) Acute lymphoblastic leukemia (ALL)**

Is common in children: 85 % of cases of ALL occur in children. Lymphoblasts are abnormal white blood cells that are found both in the bone marrow & the peripheral blood of patients with ALL.

**B) Acute myeloblastic leukemia(AML)**

Myeloblasts are abnormal cells that predominantly make up AML. These cells are larger than lymphoblasts.

**Pathophysiology:**

Acute leukemias are characterized by proliferation of immature hematopoietic cells. The most important characteristic is a defect in maturation beyond the myeloblast or promyelocyte level in AML, and beyond lymphoblast in ALL. Acute leukemia develop from early cells, called "blasts". Blasts are young cells, that divide frequently.

These bone marrow changes will decrease the normal blood cells in the circulation and cause:

o Infection - due to decreased WBC

o Anemia - due to decreased RBC

o Bleeding - due to decreased platelets

**Chronic Leukemias**

There are two main types of chronic leukemias

1) Chronic lymphocytic leukemia ( CLL)

2) Chronic myelocytic leukemia( CML)

In chronic leukemia, the leukemia cells come from mature, abnormal cells. The cells grow slowly. It is not unusual in chronic cases for symptoms to take a long time to even appear.

**Symptoms:**

May be easily bruised. Night sweats. Bleed excessively. Feeling sick, fatigued, flu-like symptoms. Nausea/swollen abdomen. Headaches

**Diagnosis:**

Blood cell counts. Bone marrow aspiration. Bone marrow biopsy. Chest x-rays