"Leukemias Summary Table"

Condition	Etiology	Cell Involved	Morphology	Clinical Presentation	CBC / Lab Findings	Demographic
Acute Lymphocytic Leukemia (ALL)	Chromosomal aberrations → abnormal transcription factors affecting B & T cell development	Immature B or T cells (marrow)	Condensed chromatin, scant cytoplasm, small nucleoli	Stormy onset; symptoms related to marrow failure; bone pain; CNS manifestations	Anemia, thrombocytopenia, variable WBCs, >30% lymphoblasts	Mostly children
Chronic Lymphocytic Leukemia (CLL)	13q chromosomal deletion or somatic hypermutation of post-germinal/naive B cells	Peripheral B or T cells (lymph nodes)	Smudge cells, condensed chromatin, scant cytoplasm	Often asymptomatic; nonspecific symptoms; lymphadenopathy; hepatosplenomegaly	Sustained absolute lymphocytosis (>5000/μL); low platelets in 20–30%	Most common leukemia in adults; M:F = 2:1
Acute Myelogenous Leukemia (AML)	Oncogenic mutations impede differentiation → accumulation of immature myeloid blasts	Immature myeloid lineage cells (marrow)	Auer rods (abnormal lysosomes), myeloblasts, monoblasts	Anemia symptoms; spontaneous bleeding; petechiae and ecchymoses	Anemia, neutropenia, thrombocytopenia; >30% myeloblasts; Auer rods present	Adults
Chronic Myeloid Leukemia (CML)	Philadelphia chromosome → tyrosine kinase pathway activation	Pluripotent hematopoietic stem cells (marrow)	Hypercellular marrow; elevated eosinophils & basophils	Insidious onset; mild anemia; splenomegaly	WBC >50,000 asymptomatic, >200,000 symptomatic; some blast forms; increased eosinophils & basophils	Adults 20–50 years; rare in children