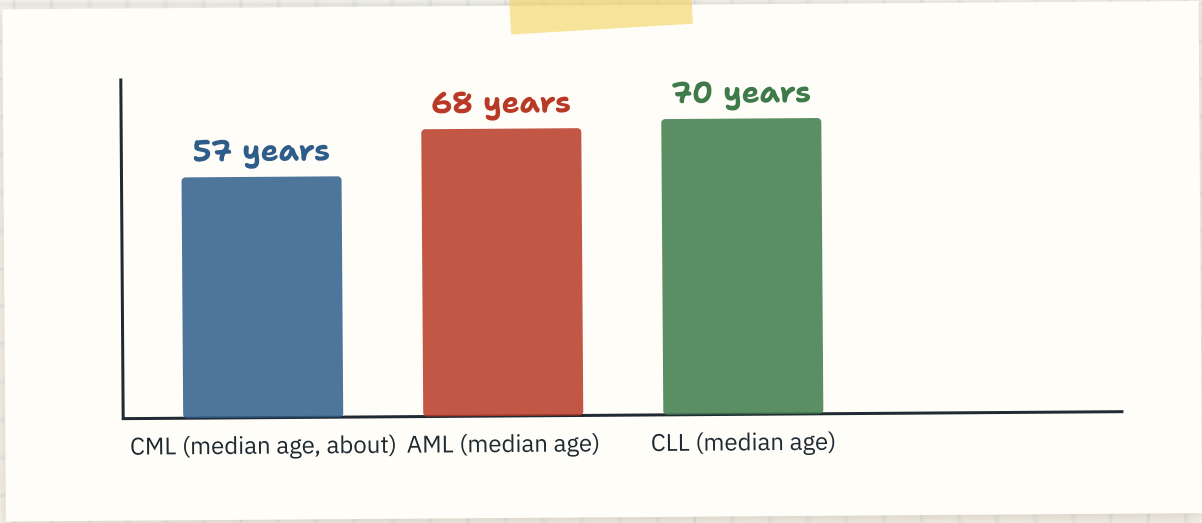
Leukemias: AML, ALL, CML, CLL

Sort by lineage, maturity and age



Step by step

1. Blasts 20 percent or more (exam convention): acute
2. Mature cells: chronic
3. Myeloid or lymphoid: MPO, Auer rods, TdT
4. Match the hallmark

Leukemia	Type	Hallmark
AML	Myeloid, acute	Auer rods, MPO positive
ALL	Lymphoid, acute	MPO negative, TdT positive
CML	Myeloid, chronic	Ph chromosome, t(9;22), BCR-ABL
CLL	Lymphoid, chronic	Smudge cells, CD5 + CD19 + CD23

Hallmark of each leukemia

Rule of thumb

AML: Auer rods; ALL: TdT in children

CML: Philadelphia chromosome; CLL: smudge cells

Maturity decides severity, not the count

Exam traps

- ! A high white count is not automatically the worse disease.
- ! t(15;17) is APL: a myeloid disease, not ALL.
- ! Imatinib blocks the always-on BCR–ABL kinase of CML.

AML vs ALL vs CML vs CLL: leukemia classification made simple

Video, written lesson, practice question and sources: medservatory.com/usmle-step-1/haematology-oncology/aml-vs-all-vs-cml-vs-cll

For exam study only, not medical advice. Follow local guidelines and your lab's ranges.
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