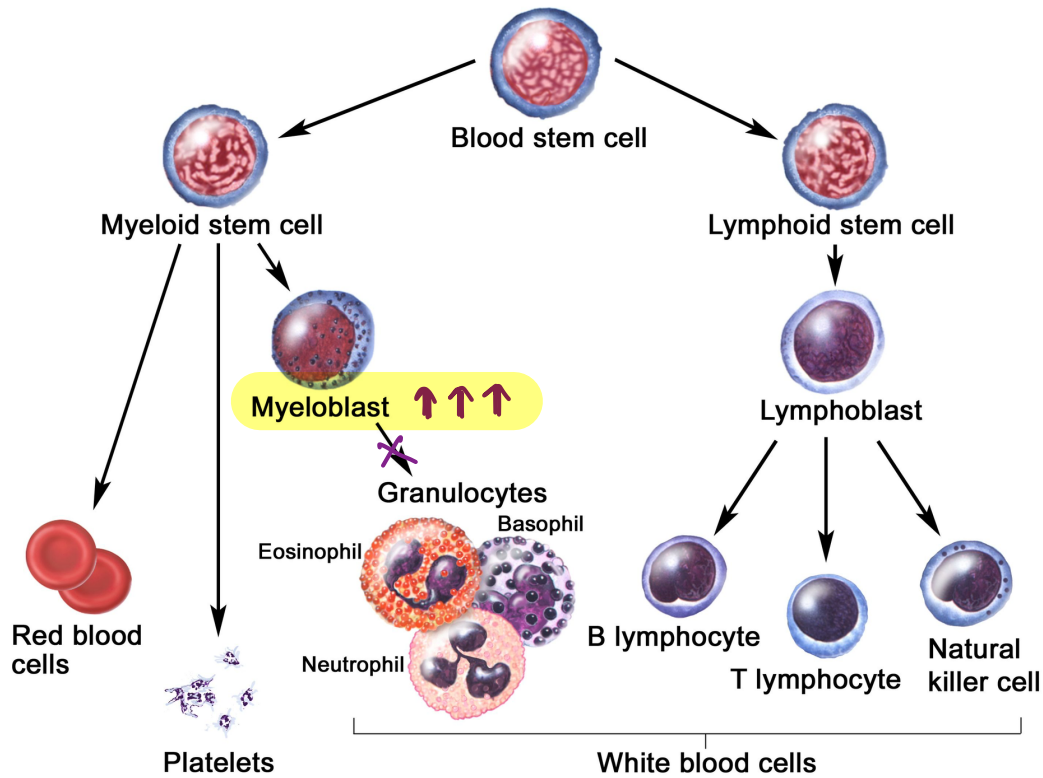


Acute Myeloid Leukemia



- Neoplastic accumulation of Immature Myeloid cells (>20%) in the bone marrow.
- Myeloblasts are usually characterised by Positive cytoplasmic staining for MPO.
- 5 year survival rate = 25%.

Causes:

- Chemoradiation = DNA Mutation
- Idiopathic = 25-50% cases
- Genetic Diseases =
 - Down Syndrome
 - AML Subtype (APL)
 - $t(15:17) \rightarrow$ PML-RARA gene
 - $t(8:21)$ - Myeloid Sarcoma
 - $t(16:16)$

- (iv) Bone marrow disorder = (a) Fanconi Anemia
(b) Diamond black fan Syndrome
- (v) Exposure to Anticancer drugs
- (vi) FLT3-ITD Activation mutation

Effect in Bone marrow:

- (i) $\uparrow$ Myeloblast $\rightarrow \downarrow \downarrow$ WBC (functional) $\rightarrow$ Infection.
- (ii) $\downarrow$ RBC $\rightarrow$ Anemia (Pallor, Dyspnea)
 $\downarrow$ Platelets $\rightarrow$ Thrombocytopenia (Bruising, Bleeding)
- (iii) $\uparrow$ Myeloblasts $\rightarrow$ Bone marrow expansion $\rightarrow$ Bone pain.

Clinical Features:

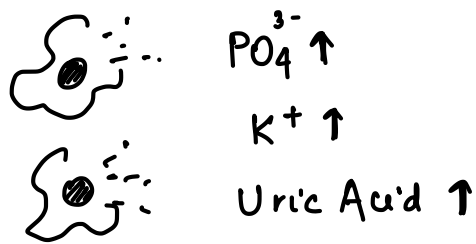
- (i) Anemia, Wt loss, Fatigue
- (ii) Fever
- (iii) Thrombocytopenia - Petechiae, Epistaxis, Purpura
- (iv) Lymphadenopathy
- (v) Hepatosplenomegaly.
- (vi) Blood Vessel blocked due to Very high Myeloblast.

Brain - TIA, Stroke

Lungs - Resp. Distress

Eyes - Vision Loss

(vii) Tumor lysis syndrome.



Tx = (1) IV Fluid
(2) Allopurinol
(3) Rasburicase.

→ Acute Kidney Injury

(viii) Skin = Leukemia Cutis

(ix) Gingiva = Gingival hyperplasia.

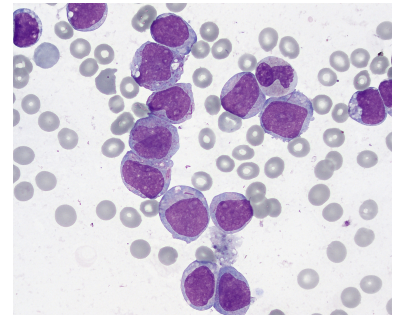
(x) $\frac{\text{DIC}}{\downarrow}$ (only in APC subtype)

$\uparrow$ Fibrinolysis
 $\downarrow$ Clotting factor] - High Bleeding Risk

Involve - Lung, Brain, Priapism, Blindness.

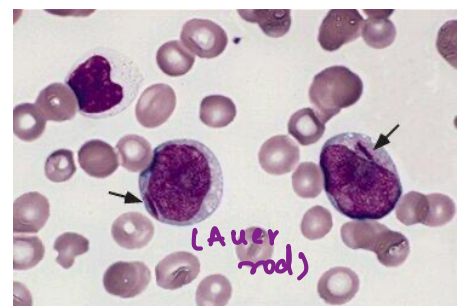
Diagnostic Approach :

- (i) CBC with PBS :
- (a) Hb $\downarrow$
 - (b) RBC $\downarrow$
 - (c) Platelets $\downarrow$
 - (d) TLC can be Normal / $\downarrow$ / $\uparrow$
 - (e) PBS =  $\uparrow$ Myeloblasts.

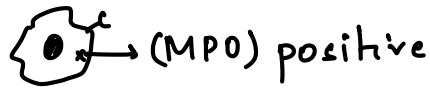


(ii) Bone marrow biopsy : (Definitive diagnosis)

- Myeloblasts $> 20\%$
- Auer rods in Myeloblast



(iii) Immunophenotyping :



• Flow cytometry = CD13 , CD117

(iv) Molecular Study : FLT3

CEBPA

NPM1

(v) Chest X Ray

(vi) HLA typing

(vii) Base line KFT : Tumor lysis Syndrome

↳ Uric Acid ↑

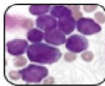
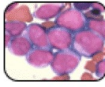
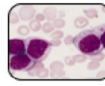
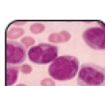
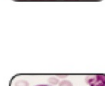
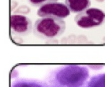
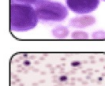
PO₄ ↑

K⁺ ↑

Ca ↓

FAB Classification :

FAB subtype	Name
M0	Undifferentiated acute myeloblastic leukemia
M1	Acute myeloblastic leukemia with minimal maturation
M2	Acute myeloblastic leukemia with maturation
M3	Acute promyelocytic leukemia (APL)
M4	Acute myelomonocytic leukemia
M4 eos	Acute myelomonocytic leukemia with eosinophilia
M5	Acute monocytic leukemia (MPO [⊖])
M6	Acute erythroid leukemia
M7	Acute megakaryoblastic leukemia (MPO [⊖])

FAB CLASSIFICATION	
	M0: Undifferentiated acute myeloblastic leukemia (5%)
	M1: Greater number of myeloblasts with <10% granulocytic differentiation.
	M2: Myeloblasts in great number with granulocytic differentiation >10% , NSE <20%.
	M3: Promyelocytes that are hyper granular with many Auer rods on CAE or Wright-stain and variant form cells with reniform nuclei, multilobed or bibbed, primeval cells with multiple Auer rods or relative scarcity of Hypergranular promyelocytes.
	M4: >20% but <80% NSE-butyrate positivity in Monocytic cells
	M5: Monocytic cells with >80% NSE positivity. (a) Monocytic differentiated (b) Monocytic, differentiated.
	M6: >30% myeloblasts with more than 50% erythroblasts eliminating the erythroid cells.
	M7: Acute megakaryoblastic leukemia <5%

Treatment:

- Chemotherapy (Non AML Subtype):

Induction → Consolidation → Maintenance

- (a) Cytarabine + Anthracyclines
- (b) Daunorubicin

- For APL subtype - AML :

Goal : Promote Differentiation

(Myeloblast → Promyelocyte → Granulocytes)

- (a) ATRA (All-trans-Retinoic acid)
- (b) ± Arsenic

- Bone Marrow Transplant :
 - For Poor prognostic AML
 - Failed Chemotherapy AML



© MedNotes [home.mednotes.in]

Full Ebooks : mednotesebooks.company.site

MedNotes App

