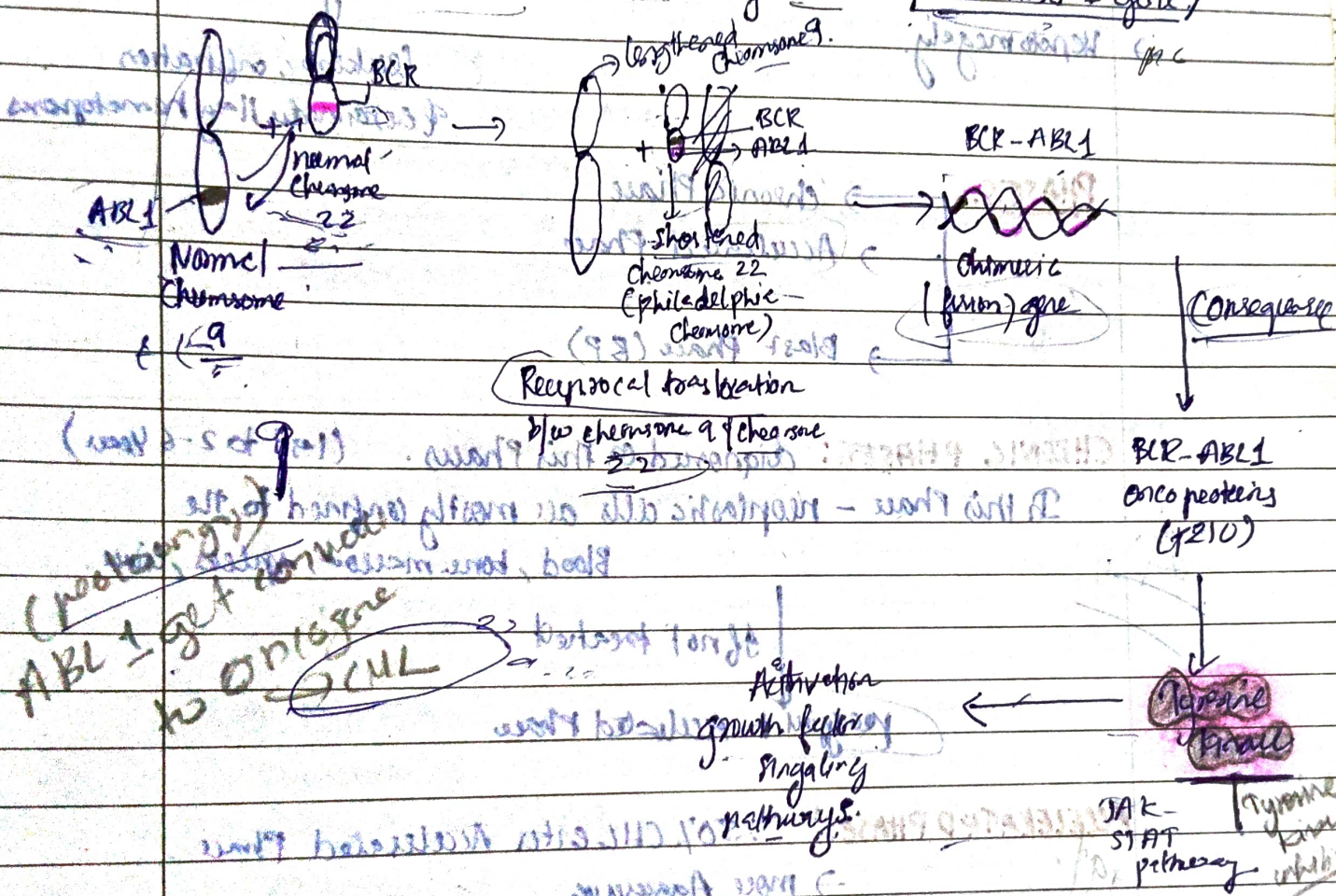


CHRONIC MYELOID LEUKEMIA:

It is a myeloproliferative neoplasm (MPN) characterized by overproduction of cells of Myeloid series with pleomorphic granulocytes in Blood & Bone Marrow.

All have Ability to differentiate.

PATHOGENESIS: characterized by chimeric BCR-ABL 1 gene



↑ WBC → mature WBC → myelophils → (CLLs).

The shortened chromosome is known as chromosome 22 - Philadelphia chromosome. BCR-ABL protein generates factor Receptor Activation, such as Activation of RAS. This greatly decrease the growth factors dependence.

↓ short dependence of RAS proliferator.

They do not inhibit differentiation.

(Excessive production of Relatively normal blood cells.

CLINICAL FEATURES:

Age: Usually Adults 30 to 60 years:

Sex: males

Symptoms:

- Non specific symptoms →
- Fullness of Abdomen → dragging sensation due to splenomegaly
- Hepatomegaly

↓ due to
Leukemia infiltration
of extramedullary hematopoiesis.

PHASES:

- Chronic Phase
- Accelerated Phase
- Blast Phase (BP)

CHRONIC PHASES: diagnosed in this Phase. (last to 2-6 years)

In this Phase - neoplastic cells are mostly confined to the
Blood, bone marrow, spleen, Liver.

↓ if not treated

proceeds to Accelerated Phase

ACCELERATED PHASES:

50% CLL enter Accelerated Phase.

→ more Aggressive

→ Shows ↑ Anemia, new thrombocytopenia

→ Myeloblast are 10-19%

→ striking leukophilia

→ persistent or increasing splenomegaly

BLAST PHASE:

can occur without Accelerated Phase.

→ Blast cells can infiltrate Any extra medullary site

(Spleen, lymph nodes, soft tissue)

→ Peripher smear show 20% of monoblasts

may be either myeloblast or lymphoblast

- Thrombocytopenic cause bleeding

LAB FINDINGS:

Hb $\downarrow$ $< 11 \text{ gm/dl}$

WBC $\uparrow$ sed

PERIPHERAL SMEAR:

→ Normocytic Normochromic

→ Marked leukocytosis

- granulocyte at all stage of development are seen (neutrophil ck)

- Predominant cells are $\rightarrow$ neutrophil

Immature granulocyte $\rightarrow$ myeloblast

- Blast $< 10\%$

- Basophelia of eosinophils

$\rightarrow \downarrow$ NAP/LAP score

$\rightarrow$ Thrombocytopenia

Myeloblast Budge

BONE MARROW:

$\rightarrow$ Hypercellular

$\rightarrow$ H.E. Ratio around 20:1

erythroid $\downarrow$ sed

lymphoid - hyperplasia

megakaryopoiesis $\rightarrow$ absent megakaryoblast

$\rightarrow$ Sea-Blue histiocytes (Gaucher - like cells / Pseudo - Gaucher cells)

BIOCHEMICAL:

Uric Acid $\uparrow$ LDH $\uparrow$ sed

Philadelphia chromosome $\rightarrow$ detected (fluorescent anti hybridization)

Spleen enlarged

extramedullary hematopoiesis $\rightarrow$ splenic infarcts