

Name M Arif

ID number. **15042**

Program. **Bs MLT 4 semester**

Course Title. **WBC And platelets disorder**

Instructor name . Ms saima hadi

Date . **15 April 2020**

Exam . **Mid term 2020**

Q1. What is leucopoiesis . And also explain it's types ?

Ans . Leucopoiesis is a form of hematopoiesis in which wbc are formed in bone marrow , located in bones in adults organ and hematopoiesis in the fetus.

Types of leucopoiesis .

(1) Polymorphonuclear Neutrophil.

- > Multi – lobe (3 .4) in nucleus.
- Connected by filament
- Five neutrophil Contain lysosomal granules

Life span: 2 .5 days

Function: chemotactic activity (Release chemical against antigen phagocytosis)

Differential : 50 – 70% normal in body.

(2) Eosinophil:

- Bi-lobed (2- segment)
- Blue cytoplasm
- Organ red granules

Function: defense against parasitic infection .

- Allergic reaction .

Life span : 7 – 12 days .

Differential : 3 – 4%

(3) Basophil :

- Lobulated tris
- Purple staining granules.

- Circulate in blood and migrate in tissue where they become (**Mast cells**)

Life span: 12 – 15 days

Differential: 1 -2%

Function : Role in immediate hypersensitivity also help in allergic reaction.

Agranulopoiesis:-

- Derived from cfu-5, cfu, Gm cfu -ly
- Myeloid stem cell
- Myelomonoblast
- Promonocyte
- Monocyte (blood)
- Macrophage (tissue)

Morphology of monocyte.

> Largest cell

>Gyreish cytoplasm

Function : They function in tissue where they differential into macrophage

(Help in antigen . Presenting cell)

Morphology of lymphocytes:

- High nuclear: cytoplasm ratio.
- Dense chromatin clumping

Differential : 25. – 35 % circulating leukocytes.

Life span: 1days.

Q2. Compare all phases (Chronic ,Accelerated, Blast)of CML?

Ans : Phase of CML .

1) chronic phase

2) accelerated phase

3) Blast crises.

(1) chronic phase :-

- The blood and bone marrow contain less than 10% blasts.
- Approximately of 85% the patient are in the chronic phase at the time of diagnosis.
- The duration is variable .
- Asymptomatic or have only mild symptoms.
- Blasts are immature white blood cells.
- This phase can last for several years .
- No anemia.
- No splenomegaly.

(2) Accelerated phase :-

- There is no single definition of accelerated phase .
- Peripheral blood (PB) basophil > 20%.
- Peripheral blood or marrow blast >10%.
- Platelet count < 100,000, unrelated to therapy .
- Marked splenomegaly and increasing WBC count unresponsive to therapy.

(3)Blast crisis phase:-

- Find phase in the evolution of CML.
- Rapid progression and short survival.
- Extramedullary blast proliferations.

- 30% blasts in the PB , marrow ,or both
- Diagnosis based on the presence of.
- 20% myeloblasts or lymphoblasts in the blood marrow.

Q3. Explain Leukemia and its causes ?

Ans 3) Leukemia:-

A type of blood and bone marrow cancer characterized by elevated abnormal production of wbc .

- Leukemia are neoplastic proliferation of hematopoietic cells.

Etiology cause:-

- Turner syndrome
- Bloom syndrome
- Heredity syndrome
- Genetic predisposition
- Most from combination of factors.
- Environment factors
- Infection (human T cell leukemia).

Q4 .Differentiate between Acute and Chronic leukemia?

Ans :- Acute leukemia :->

- Young immature. Blast cell in the bone marrow 20%
- More fulminant presentation
- More aggressively courses
- Sudden onset
- Occur in <15year old>

- Mainly occur in adult but also in every age group .
- Common in younger age groups.
- Progress rapidly.

(3) Chronic leukemia:

- Accumulation of mature and differentiated cells
- Often subclinical or incidental presentation
- Present in above 60 year
- Slowly appears symptoms
- Increase in lymphocytes.
- Frequently splenomegaly.
- Common in older age group
- Progress slowly.

Q6 Explain chronic myeloid leukemia causes and symptoms?

Ans 6). Chronic myeloid leukemia :-

- Predominantly increase all granulocyte
- Splenomegaly
- Slowly appears symptoms.
- Present in 40-60 years

Causes :-

- Causes of development of cancer – causing gene
- Exposure to very high dose of radiation
- High- dose radiation therapy

Symptoms:-

- Feeling of fullness in the abdomen .
- Fever
- Weight loss
- Loss of appetite

- Shortness of breath
- Pale skin .

Q5. Discuss Rai Classification of chronic lymphocytic leukaemia?

Ans :- In this staging system cell is divided into five different stages from zero to four .which is shown in chart below.

Staging lymphocytes lymph nodes spleen platelets survival

0 .	Increased		12.5year
I	Increased	Enlarged	8.5 Year
II	Increased.	Enlarged/some. Enlarged.	6 year
III	Increased.	Enlarged/some .enlarged.	1.5year
IV.	Increased.		Decreased 1.5year