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SEMASTER 4TH ,

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PAPER WBC AND PLATLETS DISORDER.

Q NO 1 :ans :-leucopoiesis:_

It is the form of hematopoiesis in which white blood cell are formed in bone marrow located in bone adult orgen and heamatopoiesis organ in the fatus .

Types:_

It is divide into main two types .

1)Granulopoiesis:

The proliferation differentiation and maturation of granulocyte is terms as granulopoiesis

Granulocyte progenitors:-

CFU(Colony forming unit)

CFU-EO (Eosinophil)

CFU-BA (Basophil)

CFU-GM(Neulrophil)gvanulocyte, mo nocyte

Structural changes:-

- Decrease cell size
- Condensation of nuclear chromatic
- Changes in nuclar shape
- An accumulation of cytoplasmic granules

Different stages of granulopoesis:-

Myeloblast properties:-

- size -15-20 µm
- nuclear shape –round to oval
- Nucleoli-2-5
- Nuclear shape –round to oval
- N/ C ratio 7:1-5:1
- Cytoplasm –basophilic

Promyelocyte:- it is granalocyte precursor devolaping from myelobalast and developing into myelocyte.

Properties:-

1)cell size -12-24 µm

2)cell shape round to oval

3) nuclear shape round to oval

4)nucleoli 1-3

5)n/c ratio 5:1- 3:1

6)cytoplasm bleu having numerous azurophili granules

Myelocyte properties :_

- Cell size 10-18 micro meter
- cell shape round to oval
- nuclear shape oval
- nucleoli absent
- n/c ratio 1:1
- cytoplasm bluish pink

Meta myelocyte :- it is a cell derived from a myelocyte and leading to band cell.

Properties of metamyelocyte:-

1) Cell size 10-18µm
2) Cell shape round to aval
3) Nucler shape intended (kidney shape)
4) Nucleoli none
5) N/c ratio-11
6) Cytoplasm bluish pink

Band cell :- A cell derived from metamyelocyte and leading to mature granulocyte.

Properties:- 1) cell size 10-18µm 2)cell shape round to oval 3)nuclear shape s,c or u shape 4)nucleoli –none 5) n/c ratio 1:2 6)cytoplasm – pink.

Gvanulocyte : Are whit blood cell characterized by the presence of granulocyte in their cytoplasm .

Properties: 1)cell size 10-18 2)cell shape round to oval 3) nuclear shape lobulated 4)n/c ratio 1:2 5)neutrophilic granules pink 6)eosinphilic granules orange red 7) basophilic granules – dark parple.

Functions:- Release chemical against anligen phagocytosis.

2: Agranalocyte:-

Derived from CFU-S ,CFU-GM CFU- LY

Myloid stem cell.

Promoncyte

Monocyte (blood)

Macrophages(tissue)

Morophology of monocyte:

- Largest cell
- Gyreish cytoplasm

Function : the function in tissue where they differentiate into macrophages .

Lymphopoiesis:

Lymphoid stem cell
Lymphoblast
Prolymphocyte
Lymphocyte.
1)t lymphocyte:

- Cytotoxic (cd8): function : mediate the destruction of their targets
- T Helpler (cd4):function : influence the acquired and innate immunity

2)B lymphocyte :help into antibody (plasma cell)

QNO 2:- ANS---:-The phases of chronic myloid leukemia are given below.

1)**chronic phase**: Approximately 25% of patient are in the chronic phase at the diagnosis

- Asymptomatic or have only mild symptoms
- Blast less than 10%
- No splenomegaly
- No anemia
- Thrombocytosis
- Duration in variable
- May progress to an accelerated phase .

2) **Accelerated phase**:-

- 10-19% blast in the blood or bone marrow
- >20% basophils in the blood or bone
- Platelet count >100000 unresponsive to therapy.
- Marked splenomegaly and increasing white blood cell count unresponsive to therapy
- In addition to the Philadelphia chromosome other chromosomal abnormalities nay be present .

3)**blast crises**:

- Final phase in the evolution of CML.
- Rapid progression and short survival
- Behaves like an acute leukemia
- Diagnosis based on the presence of
- >20% myeloblasts or lymphoblast in the blood or bone marrow
- Large clusters of blasts in the bone marrow on biopsy
- Development of a chloroma (solid focus of leukemia outside the bone marrow)

QNO 5_ ANS:- the stages of ria classification of lymphocytic leukemia are given below

- Stage 0: lymphocytosis no enlargement of lymph nodes,spleen or liver.
- Red blood cell and platlet count are normal
- Servival rate 12 years

Stages no 1:lymphocytesis

- Enlarge lymph nodes
- Spleen or liver or not in large
- Red blood cell count is normal
- Platlets is normal
- Servial rate 8 years

Stages no 2:lymphocytesis

- Enlarge spleen
- Enlarge liver
- Lymph node are may or may not enlarge
- Red blood cell count normal
- Platlets count normal
- Survival rate 8 years

Stages no 3:lymphocytosis

- Lymph node spleen or liver may or may not be enlarge
- Red blood cell count low (anemia)
- Platlets count normal
- Survival rate 2-3 years

Stage no 4:lymphocytosis

- Enlarge lymph node spleen or liver
- Red blood cell count low
- Platlets count low(thrombocytopenia)
- Survival rate 2-3 years
- Stage 0 is low risk
- Stage 1 and 2 are intermediate risk
- Stage 3 and 4 are high risk.

Q NO 3 –ANS:- **Leukaemias**:

- Leukemia can be defined as malignant proliferation, abnormal maturation and accumulation of various cell in the hierarchy (system)of hemopiotic cell.
- A Type of blood bone narrow cancer characterized elevated abnormal production of WBCS.
- Leukemia are neoplastic proliferation of hematopoitic cells .

Etiology causes:

- Heriditory (down syndrome)
- Infection (human t- cell leukemia)
- Environmental factors. Ionization radiation,chemical carcinogen, certaion douys
- Association with disease of immunity (AIDS)
- Siggarettes smoking
- Having chemotherapy and radiation therapy for other cancer .

QNO 4 :ANS:- The different blw acute and chronic leukemia are given below

- **Acute leukemia** :Acute form disease progress repidaly and recover prompt treatment
- Targets immature cell
- The symptom are apperar quickly
- Cell multiplaying very quickly
- The symptom are very severe.

Sign and symptom :

- Pale skin
- Sweating at night
- Infection
- A slight fever

Chronic leukemia:

- Delay onset of action
- Target mature cell
- Develop for over long period of time
- Spread slowely than acute leukemia

Sign and symptom :

- Fatigue
- weight loss
- shortness of breath
- paleness from anemia and fever

QNO 6 ANS :- **Chronic myloid leukemia**: synonymes

- chronic mylogenious
- chronic mylocytic
- chronic granulocytic

definition : chronic myloid leukemia is a clonal myloproliferation disorder characterize by specific genetic fusion of gene (ABL BCR) .Chronic myloid leukemia cause from two gene which are located on chromosome number 9 (ABL)and chromosome number 22 (BCR). ABL gene are located on chromosome number 9 while BCR gene are located on chromosome number 22 .Because of the translocation location chromosome number 9 change their position to chromosome number 22 gene .Because of these abnormality philidiliphia chromosome are formed.

Symptoms:

- splenomegly
- gout like symptoms
- hyperurecemia
- epistaxis
- brusing
- memorrhagia

Causes:

- exposure to chemical (benzene)
- genetic abnormality .

END OF THE PAPER …….