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**Subject:** WBC, s disorder

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**Question no 1: what is leucopoiesis, and also explain its types?**

**Answer:** leucopoiesis is a form of hematopoietic in which white blood cell (WBC, or leucocytes') are formed in bone marrow located in bones in adults and hematopoietic organs in the fetus.

Types of leucopoiesis:

**Granulopiosis (Granulocytes):**

- formation of the granulocytes(neutrophil , eosinophil , and basophil)
- granulocyte maturation divides into six stages
- Structural changes:
  - A Decreased in cell size
  - Condensation of nuclear chromatin
  - Changes in nuclear shape
  - An accumulation of cytoplasmic granules

**A Granulopiosis (A granulocyte):**

- A granulocytes derived from CFC –S and CFC-LY
  - Morphologic changes:
    - Decrease in over all cell and nuclear diameter
    - An increase in nuclear chromatin density
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**Question no 2: compare all phases (chronic, accelerated, blast) of CML?**

**Answer: chronic phase:**

- Approximately 85% of patient is the chronic phase at the time of diagnosis.
- Asymptomatic or have only mild symptoms
- Blast less than 10%
- No splenomegaly

- No anemia
- Thrombocytosis
- May progress to an accelerated phase

**Accelerated phase:**

- 10-19% blasts in the blood or bone marrow
- >20% basophil in the blood or bone marrow
- Platelets count <100,000, unrelated to therapy
- Platelets count >1,000,000, unresponsive to therapy
- In addition to the Philadelphia chromosome other chromosomal abnormalities may be present
- Marked splenomegaly and increasing white blood cell count, unresponsive to therapy

**Blast phase:**

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

**Question no 3: Explain leukemia, and its causes?**

**Answer: Leukemia:**

- Leukemia is a type of blood bone cancer characterized by elevated abnormal production of WBC.
- Leukemia are euplastic proliferation of hematopoietic cells
- Malignant

**CAUSES:**

- Hereditary (down syndrome)
- Injection (human T-cell-leukemia )
- Environmental factors:
  - Ionization radiation

- Chemical carcinoma
- Certain drugs
- Association with disease of immunity (AIDS).

**Question no 4: Differentiate between acute and chronic leukemia?**

**Answer:**

Acute leukemia	Chronic leukemia
<ul style="list-style-type: none"> <li>• Acute leukemia having more than 20% blast cell</li> </ul>	<ul style="list-style-type: none"> <li>• Chronic leukemia 20% less blast cell</li> </ul>
<ul style="list-style-type: none"> <li>• Sudden onset</li> </ul>	<ul style="list-style-type: none"> <li>• Slow onset</li> </ul>
<ul style="list-style-type: none"> <li>• immature cells effects</li> </ul>	<ul style="list-style-type: none"> <li>• Also mature cells effects</li> </ul>
<ul style="list-style-type: none"> <li>• WBC can changeable</li> </ul>	<ul style="list-style-type: none"> <li>• WBC can be increased</li> </ul>
<ul style="list-style-type: none"> <li>• Organomegaly is mild form</li> </ul>	<ul style="list-style-type: none"> <li>• Organomegaly in prominent form</li> </ul>

**Question no 5: Discuss Rai classification of chronic lymphatic leukemia?**

**Answer:**

Rai classification of chronic lymphatic leukemia:

Staging	Lymphocytes	Lymph nodes	Spleen	Platelet count	Survival
0	increased				12.5 years
I	increased	Enlarged			8.5 years
II	increased	Enlarged/some	Enlarged		6 years
III	increased	Enlarged/some	enlarged		1.5 years
IV	increased			decreased	1.5 years

**Question no 6: Explain chronic myeloid leukemia causes and symptoms?**

**Answer: Causes:**

- CML occurs in all age groups
- Most common in the middle-aged and elderly.
- Represents 15 -20% of all cases of adult leukemia in western populations.

- Increased rate of CML were seen in people exposed to the atomic bombing of Hiroshima and Nagasaki.
- Long-term exposure to benzene may also contribute

**Symptoms:**

- Splenomegaly
- Gout like symptoms
- Anemia
- Hyperurecemia
- Bruising
- Expistaxis
- Menorrhagia
- Hemorrhages from other site

-----THE END-----