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PAPER:WBC AND PLATELETS DISORDER

ANS.1.

LEUCOPOSIS:

It is a form of hematoposis in which the WBC are formed in bones of adult and also the organ in fetus.

Explanation:

Causes:

Lecuoposis process which is stimulated by various colony-stimulating factor (csfs) which are hormones produced by mature WBC.

TYPES

1. GRANALOPOSIS.
   In the granaloposis the granalucytes(neutrophils, basophile and easinophil) are formed.
   - The structure may be changed.
   - The cells size is decreased.
   - Nuclear chromatin are also condensed
   - The shape of nucleus is changed
   - The cytoplasmic granules are accumulated
2. **AGRANALOPOSIS**.
   In AGRANALOPOSIS the monocytes and lymphocytes are formed. These are derived from CFU-GM,CFU,S lymphocytes and also stem cell .the myeloid stem cell changed into myominoblast which is changed into promonocytes and are changed into monocyes (blood) which is convert into macrophages tissues which is largest cell.

Ans No.3

Leukaemia.

It is the type of blood i.e bone marrow cancer in which elevated abnormal production of WBC .the leukaemia is neuplastic proliferation of hemophitic cell.

Causes ETIOLOGY).

The leukaemia is mostly cause due to the following reasons.

1.HEREDITARY .

Caused due to HEREDITARY.

I.e down SYNDROME.

2.INFECTION.

The leukaemia is caused due to infection (human T.cell leukaemia.

3.ENVOIRMENTAL FACTORS.

Leukaemia are caused due to environmental factors which are given below.
A. Ionization
B. chemical carcinogens
A. Certain drugs
Associated with disease of immunity AIDS.

SYMPTOMS:

- Fever
- Weakness and fatigue
- Frequent infections
- Lymph node swelling
- Bleeding and braising
- Joint and bone pain
- Loss of appetite

Diagnosis.

We done blood test. I.e CBC,TLC,HB and platelets decrease.

Ans No 4.

1.ACUTE LEUKAEMIA.

The acute leukaemia have the following types.

A. Acute lymphoblastic leukaemia.

- It occurred in age of 2 to 5.
- It is sudden onset.
- The blast cell in bone marrow greater than 20%.
- The ALLA positive (the most common lymphoblastic leukaemia antigen)membrane protein is exposed by acute lymphoblastic leukaemia.
- TDL POSITIVE (Terminal deoxynucleotide tranferese also known as nucleotide transferease in which nuclear proteins widely used a marker for diagnosis of immature lymphocytes.
- PAS positive periatic acid Schiff which demonstrated by glycogen.

B.ACUTE MYLOID LEUKAEMIA.

- It is also sudden onset.
- Blast cell and bone marrow is greater than 20%.
- Mainly occurring in adults but occurs in every age.

- MPO(MYELOPEROXIDASE) the mpo is present in granules of myloid and monocytic cells but absent in lymphocytes.
- Also the immature protein formed which is aver roads which is called myloid cells lumbs of proteins are formed.

2.CHRONIC LEUKAEMIA.

The chronic leukaemia have following types.

A.CHRONIC MYLOID LEUKAEMIA.

- Occured in age between 40 to 60.
- Slowly appear SYMPTOMS
- Also predominate
- The granulytes are increased.
- Also spleenomagely is occured.
- Blast crisis phase in which chronic myloid leukaemia is convert into acute leukaemia.
- It is very difficult to control the over production of WBC s .

B.CHRONIC LYMLPHOCITIC LEUKAEMIA.

- Occured in above 60 years.
- Slowly appear SYMPTOMS
- Increased in lymphocytes.
- Spleenomagely is occured.
- Abnormal fragile lymphoblastic cells are present.

Ans No.2

Phase of CML:

There are three phases of CML.

1. **Chronic phase:**
   - At time of diagnosis the 85% of patients are the chronic phase.
   - Have mild symptoms (asymptomatic)
   - The blast cell are less than 10%.
   - Having no spleenomagely
   - No Anemia
   - Thrombocytosis
   - The duration is variable in chronic phase
   - May it progress to an accelerated phase
2. **Accelerated Phase:**
   - 10-19% of blast are in the blood or blood marrow.
   - The basophils is greater than 20% in the blood or bone marrow.
   - The platelets count is less than 100000 which is unrelated to therapy.

- The platelets count is greater than 100000 which is unresponsive to therapy.
- Chromosomal abnormalities may be present.
- The marked spleenomagely and increasing white blood cells which is unresponsive to therapy.

3. **Blast Crisis:**
    - It is the final phase in the evolution of CML.
    - It behaves like acute leukaemia.
    - Rapid progression and short survival.
    - The diagnosis based on presence of ::
    - Greater than 20% myeloblast or lymphoblast in the blood or in bone marrow.
    - The large cluster of blast in the bone marrow or biopsy.
    - All the developments of chroma (Solid focus of leukaemia outside of bone marrow).

Ans No.6

CHRONIC MYLOID LEUKAEMIA.

Whether leukaemia is myloid or lymphoblastic depends on which bone cancer start in.

- Also known is mylocytic ,mylogenus or non lymphocytic leukaemia.
- The leukaemia start in early myloid cells. That cell becomes lymphocytes and then becomes WBC.
- This type of leukaemia is not common type of cancer of bone marrow.
- The spongy tissue which is inside of bone marrow where blood cells are made .Cml increased the number of WBC in the blood.

SYMPTOMS.

The chronic mylogenouis leukaemia mostly does not cause and symptoms.
But can be detect during in blood test.
The following symptoms are present.

- Pain in bone
- Very easy bleeding
- No appetite
- Feeling tired
- Fever
- Loss of appetite
- Pain below the ribs on left side
- Night sweating.

COUSES::

The chronic mylogenouis leukaemia occurred due to genetic changed in the bone marrow cells.
It should note that there is no basic information about the initiation of process but doctors have discovered the causes of leukaemia.

AN ABNORMAL CHROMOSOME DEVELOPS.

In the human cells having normally 23 pairs of chromosomes. The chromosomes having DNA. The DNA is made of genes that control every activities of cells .but in people having the chronic mylogenouis leukaemia the chromosomes in blood cells swap section with each others.

A section of chromosomes of a switches places with section of the chromosomes 22,creating in extra short chromosome 22 and extra long chromosome. The extra short chromosome is called Philadelphia chromosomes because named for the where it was discovered the Philadelphia chromosomes are present in 90 percent of people which having chronic mylogenouis leukaemia.

Ans No.5

RAI Classification of Chronic lymphocytic leukaemia

- The survival of two series of CLL patients (99 from a retrospective series) and 196 from a perspective series were studied separately.
- The three main System for classification are (RAI ,BINET, RUNDLES) are agreed well.
- The author performed a cox multivariate analysis of survival in order to separate the important prognostic factors is diagnosis and to use them to made three systems classification.
- The Anemia and thrompenia are appeared the most important factors .
- Among the non Anemia and non thrombopenic patients. The numbers of involved areas was clearly related to prognosis in the authors to purpose new classification.

The new classification are mainly classified into three prognostic groups.

1.Group c.

Anemia (HB<10g).and or thrombocytopenia (platelets <100000/nm3):about 15 percent of the patients was of median 2 years .

2.Group B.

No Anemia, no thrombopenia three or more involved areas (which is counted is one each of the following .

AXILLARY, cervical ,inguvinal ,lymph nodes whether the bilateral and unilateral spleen and liver.

- About 30 percent of patients are median if seven years.

3.GROUP A.

- No Anemia, no thrombopenia less than three in involved areas.
  About 55 percent of the patients.
- The survival of the French population if the same age .
- It short note that the three stages in classification required the clinical examination and routine hemogram.