

C ourse
tital:hematology
(MLT 2nd semester)

instructor:

ADNAN AHMAD

“Final term assignment”

Section “B”

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QUESTION NO.1: Discus
developmental stage of
erythropoiesis?

Ans:in normal state the balance
of production and destruction
is maintained at remarkably
constant rate.

Both exocrine and endocrine
harmones makes important
contribution to this dynamic
well balance mechanism.the
earliest recognizable erthroid
precursor seen the boon
marrow is large basophilic
staining cell, 15-20um.

CANTAINED A SINGLE LARGE
DEFINED ROUNDED NUCLEUS ,
RIBOSOMES,MITOCHONDRIA
AND GOLGI APPARATUS.

=at the early precursor cell
matures ,its nuleus increases in
size .as maturation goes on cell
become smaller and more
eosinophilic indicating
haemoglobin.

=during intermediate stage of
maturation, cytoplasm
becomes polychromatic
indicating mixture basophilic
proteins and eosinophilic
haemoglobin.

=further
maturation,haemoglobin
synthesis continue and
cytoplasm become entirely
easinophilic.

=last stage of
maturation,haemoglobin is
abundant,few mitochondria
and ribosome are
present,nuleus is small dense
and well circumscribed.

QUESTION NO.2:enlist common causes of poor blood film (blood smear)?

Ans: =drop of blood too large or too small.

=spreader slide pushed across the slide in a jerky manner.

=failure to keep the entire edge of the spreader slide against the slide while making the smear.

=failure to keep the spreader slide at a 30 degree angle with a slide.

Failure to keep the push the spreader slide completely across the slide.

=irregular spread with ridges and long tail edge of spreader dirty or chipped dirty slide.

=holes in film slide contaminated with fat or grease.

=**cellular degenerative changes:**delay in fixing inadequate fixing time or methanol contaminated with water.

QUESTION NO.3: briefly explain granulopoiesis in detail?

ANS: (1) myeloblast

An early precursor cell, diameter 15-20µm, lower nuclear cytoplasmic ratio, No cytoplasmic granules.

(2) promyelocytes

Is the next stage of maturation, similar in size and appearance to myeloblast.

=during this stage primary granules are formed. this stage exists for all granulocytes.

=has numerous azurophilic primary granules in cytoplasm, that contain variety of enzymes.

(3) myelocyte

= secondary granules become apparent.

= Increased size and smaller primary granules.

= secondary granules have several bactericidal enzymes.

= nucleus becomes indented.

(4) metamyelocyte

Metamyelocyte is a cell having more granules.

(5) mature neutrophils

Arise from stem cell in approx 10 days. remain viable in systemic circulation for 8 to 12 hours.

QUESTION NO.4: what is iron deficiency anemia? Also discuss its causes.

Ans: Iron deficiency anemia is the most common type of anemia, and it occurs when your body does not have enough of the mineral iron. A condition in which blood lacks adequate healthy red blood cells. Red blood cells carry oxygen to the body tissues as the name implies, iron deficiency anemia is due to insufficient iron.

Causes

= chronic blood loss

= uterine

= gastrointestinal, e.g. peptic ulcer, esophageal varices, aspirin (or other non-steroidal anti-inflammatory drugs) ingestion, partial gastrectomy, carcinoma of the stomach, colon or rectum, hookworm, angiodysplasia, colitis, piles, diverticulosis rarely, haematuria, haemoglobinuria, pulmonary haemosiderosis, self-inflicted blood loss.

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OWNER

QUESTION NO.5: Classify anemia on the basis of morphology with example.

ANS: classify in to the following:

“Micro hypochromia anemia”

In this type of anemia individual RBC are smaller in size than normal and contain a sub normal amount of haemoglobin. All absolute value (MCV, HCV, and MCHC) are below normal.

Example

- Iron deficiency anemia
- Thalassemia
- Sideroblastic
- Anemia of chronic disorder

“Macrocytic anemia”

in this type of anemia individual RBC are larger than normal, But the amount haemoglobin in each cell is usually below MCV with usually normal MCH/MCHC.

Example

- Megaloblastic anemia
- Aplastic anemia
- Liver disease
- Myxoedema
- Haemolytic anemia
- Hypopituitarism
- Alcoholism

“Normocytic normochromic anemia”

Although the haemoglobin concentrations in the blood is reduced, the individual RBC appears normal and absolute values are also within normal limits.

Example

- Acute blood loss
- Leukaemia
- Bone marrow infiltration
- Chronic renal failure
- Chronic infections (chronic disorders)

Paper ended

