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Diploma in Pharmacy 2nd Year
Biochemistry & Clinical Pathology
Important Questions
Chapter 13 : Introduction to Pathology of Blood and Urine

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Chapter 13
Introduction to Pathology of Blood and Urine
IMPORTANT Questions

Q1. Write a note on Lymphocytes.

Ans.

Lymphocytes

- Lymphocytes are a type of WBC and a part of immune system . they are found in lymph that is why they are called lymphocytes,
- They are 20 - 30 % of WBCs.
- There are two main types of lymphocytes B lymphocytes (B-Cells) and t - lymphocytes (T - Cells)
    - B- lymphocytes produces antibodies that attack invading bacteria , viruses and toxins
    - t- cells destroy infected body' s cells (host cells) destroy tumor cells and activate other immune sales
- Count of lymphocytes
    - B- lymphocytes : 100-600 cells / µL of blood.
    - T- lymphocytes : 500-1200 cells / mm3 (Cubic milliliter)

Functions

- They Help immune system
- They produce antibodies
- They fight against foreign substances (bacteria , viruses etc.)
- They destroy infected cells
- They kill tumor cells

Abnormal Lymphocyte

- Count an increase in lymphocyte count more than (4000 / µ L) in an adult , it is called lymphocytiosis.
- High Lymphocyte count indicates any of following condition :
    - Infection
    - Cancer of lymphocytes (Lymphocytic leukemia)
    - Autoimmune disorder

Q2. Define term platelets ? Write the Role of Platelets.

Ans.

Platelets

→ Platelets or thrombocytes are small and colourless blood cells. They are formed by bone marrow, They mainly promote blood clotting and stop bleeding.

Role of platelets

- **Vasoconstriction :** They secrete serotonin which causes constriction of blood vessels.
- **Blood Coagulation :** It plays an important role in blood clotting.
- **Fibrinolysis :** Platelets help in breakdown of the clot and healing of damage blood vessels.

Abnormal Platelets Count

- Blood Platelet count below normal range is called Thrombocytopenia when high level is called Thrombocythemia .
- Low level leads to
    - Improper blood clotting
    - Prolonged bleeding from cuts
    - Usually heavy menstrual flows
    - Blood in urine or stools
    - Fatigue
    - Bleeding from gums or nose
- High level of platelets can cause dangerous clots in blood vessels , increasing risk of stroke or heart attack.

Q3. Write a Normal Constituents of Urine.

Ans.

Normal Constituents of Urine

- Urine is an aqueous solution , a by-product of the body, formed by the kidneys and excreted out through urethra by a process called micturition.
- Normal urine have 95% of water and 5% of other constituents.
- Normal constituents of Urine
    - urea (9.3 gm / lt)
    - Chloride (1.87 gm /L)
    - Sodium (1.17 gm /L)
    - Potassium (0.750 gm /L)
    - Creatinine (0.670 gm / L)
    - Some dissolved ions and other compounds (hormones , oxalic acid , hippuric acid etc.)

Abnormal constituents of urine and their significance

Abnormal Constituents	Significance diseases
Proteins	Proteinuria
Sugar	Glycosuria
Ketone bodies	Ketonuria
Bile pigments and salts	Jaundice
Blood	Haematuria

Q4. Write the Significance of Erythrocytes ?

Ans.

Significance of Erythrocytes

- Transport of Oxygen from lungs to tissues.
- Transport of carbon dioxide from tissues to lungs.
- Transport of wastes from tissues to kidney.
- Dilation of blood vessels : It release the ATP which cause relaxation of vessels
- Immunity : when bacteria break the haemoglobin it release free radicals that rupture the bacterial cell wall and membrane which causes death of bacteria.

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