BLOOD. PLASMA. RED BLOOD CELLS

A patient's blood taken for analysis shows that 30% of the red blood cells are irregular in shape. What is the condition?

A \*Pathologic poikylocytosis

B Anisocytosis

C Physiological poikylocytosis

D Macrocytosis

E Міcrocytosis

After a victim was poisoned, we observe a violation of the respiratory function of the blood following a blockage of the connection of haemoglobin with Oxygen. Violation of the formation of what substance caused the respiratory failure phenomenon development?

A \*Oxyhaemoglobin

B Karbgemoglobin

C Carboxyhaemoglobin

D HbA

E HbF

In patients with haemoglobinopathy, we observe the phenomenon of development of tissue acidosis (PH decrease) following disturbances of the bonds of haemoglobin with Carbon dioxide. Violation of the formation of what substance caused the tissue acidosis development?

A \* Karbgemoglobin

B Carboxyhaemoglobin

C Oxyhaemoglobin

D HbA

E HbF

BLOOD. LYMPH. WHITE BLOOD CELLS.

Recovery of an organism from an infectious disease is accompanied by neutralization of antigens by specific antibodies. What cells produce them?

A. \* Plasmocytes

B. Fibroblasts

C. Tissue basophils

D. Eosinophils

E. T-lymphocytes

Plasma cell produces specific antibody for specific antigen. During injection of antigen quantity of plasma cell increased. At the expense of what blood cells occurred increasing of plasma cells quantity?

A. \*B lymphocytes

B. Eosinophils

C. Basophils

D. T lymphocytes

E. Monocytes

After investigation laboratory doctor has made an additional conclusion that blood belongs to a woman. Peculiarities of which formed elements helped him to make this suggestion?

A. \*Neutrophils

B. Erythrocytes

C. Lymphocytes

D. Monocytes

E. Basophils

In the blood of a patient with infection small amount of specific antibodies were revealed. Function of which cells of connective tissue is depressed?

A. \*Plasma cells

B. Lymphocytes

C. Macrophages

D. Neutrophils

E. Mast cells

The helminthosis was detected at the child (10 years). What changes in the leukogram can be expected?

A \*Number of eosinophils will increase

B Number of platelets will increase

C Number of red blood cells will increase

D Number of segmented neutrophils will increase

E Number of basophils will increase

The cells with the histamine and heparin granules in the cytoplasm were defined in the blood smear. What is the kind of the cell?

A \*Basophils

B Neutrophils

C Eosinophils

D Monocytes

E Erythrocytes

During investigation of the patient blood smear in the neutrophils were revealed bacteria. How did they appear their?

A. \*Phagocytosis

B. Passive transport

C. Active transport

D. Excretion

E. Pinocytosis

During tooth extraction patient has longer bleeding from the wound compared with normal. Insufficient amount of what formed elements of the blood caused increasing time of bleeding?

A. \*Platelets

B. Erythrocytes

C. Monocytes

D

E. Neutrophils

6 years old child has hospital treatment with diagnosis allergic rhinitis. Changes in the leukocytic formula have been found. Amount of what cells among leucocytes can be enlarged?

A. \*Eosinophils

B. T lymphocytes

C. B lymphocytes

D. Basophils

E. Neutrophils

Inflammatory process in the tissues and organs is accompanied with hyperemia and edema. What connective tissue leucocytes are causing these changes?

A \*Basophils

B Eosinophils

C Neutrophils

D Lymphocytes

E Monocytes

5 years old child has helminthes invasion, which caused organism sensibilization. What changes in the leukocytic formula can be expected?

A \*Increasing of the eosinophils number

B Increasing of the neutrophils number

C Reducing the eosinophils number

D Increasing of the monocytes number

E Increasing of the lymphocytes number

Filopodia of megakaryocytes enter lumen of the vessels through sinusoidal capillaries fenestrae of red bone marrow and become fragmented in smaller parts. What formed elements of the blood will be formed in this way?

A. \*Platelets

B. Erythrocytes

C. Lymphocytes

D. Reticulocytes

E. Monocytes

The large cells with low-basophilic cytoplasm and bean-shaped nucleus were founded in a blood smear. The cell is the largest from visible in the visual field. What are the cells?

A \*Monocytes

B Macrophages

C Plasmocytes

D Middle lymphocytes

E Small lymphocytes

The rounded cells with the segmented nuclei are predominating from the leukocytes in the smear of peripheral blood. The granules of their cytoplasm stained both acidic and basic dyes. What are these cells?

A \*Segmented neutrophils

B Basophils

C Eosinophils

D Young neutrophils

E Monocytes

The cells, which accounts for 0,5% of the total leukocytes number with the S-shaped curved nucleus and metachromatic colored granules in the cytoplasm, were founded in the patient's blood smear. What are these cells?

A \*Basophils

B Neutrophils

C Eosinophils

D Monocytes

E Lymphocytes

In the red bone marrow specimen conglomerates of giant cells in tight connections with sinusoidal capillaries are revealed. Call formed elements of the blood which will be formed from these cells.

A. \*Platelets

B.Erythrocytes

C.Leucocytes

D. Monocytes

E. Lymphocytes

During checking of WBC, a 10 year old child with suspected helminthiasis, reveals a sharp increase in the number of a particular type of white blood cells. Which white blood cells are these?

A \*Еosinophils

B Basophils

C Monocytes

D Lymphocytes

E Monocytes

In a blood smear of a person suffering from allergy, one can observe a large number of cells of spherical form with segmented nucleus and with large bright pink granules in the cytoplasm. Which blood cells are these?

A \*Еosinophils

B Neutrophils

C Monocytes

D Basophils

E Lymphocytes

HEMOPOIESIS

During postembryonal haemopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate a gradual decrease in cytoplasm basophilia as well as an increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following haemopoiesis type:

A \*Erythropoiesis

B Lymphopoiesis

C Neutrophil cytopoiesis

D Eosinophil cytopoiesis

E Basophil cytopoiesis

As a result of expression of induvidual components of the genome, cells acquire characteristics for their morphological, biochemical and functional features. What is this process called?

A \*Differentiation

B Capacitation

C Reception

D Determination

E Adhesion

In the experiment ribosomes of the poly chromatophil erythroblasts were destroyed in the human red bone marrow. Synthesis of what specific protein will be disordered?

A. \*Globin

B. Fibrinogen

C. Collagen

D. Elastin

E. Laminine

The cells of granulocytic series were revealed at the biopsy material of red bone marrow. Specify what changes occur in the nucleus during the differentiation of these cells?

A \*Segmentation

B Polyploidisation

C Pyknosis

D Enucleation

E Increasing the size

A blood test was done in a patient after few days of stopping of bleeding. What changes occured in the compositions of the patients blood?

A \*Increase of reticulocytes

B Increased erythrocytes

C Decreased monocytes

D Decreased lymphocytes

E Increase of neutrophils with segmented nucleus

A new born baby has an under developed thymus. What type of haematopoiesis was disordered?

A \*Lymphopoiesis

B Monocytopoiesis

C Erythropoiesis

D Granulocytopoiesis

E Thrombopoiesis

BLOOD

BLOOD. RED BLOOD CELLS.

18% of erythrocytes of the spherical, flattened, globular and spinous forms were revealed in the

blood of a 26 years old man. Other erythrocytes were in the form of the biconcave disks. How is this phenomenon called?

A. Physiological poikylocytosis

B. Pathological poikilocytosis

C. Physiological anisocytosis

D. Pathological anisocytosis

E. Erythrocytosis

The patient blood was taken for analysis. The 30% of red blood cells with an irregular shape were found. Clinically, this phenomenon is described as:

A \* Pathological poikylocytosis

B Anisocytosis

C Physiological poikylocytosis

D Macrocytosis

E Microcytosis

The acute decline of the hemoglobin was revealed in the patient's blood during the examination at the clinic. What function of the blood will be disordered?

A \* Respiratory

B Humoral

C Homeostatic

D Protective

E Trophic

The anemia developed in a 50-year-old patient with chronic nephritis. What was the most likely cause of the anemia at this patient?

A \* Decreasing of erythropoietin production

B Absence of gland

C Lack of vitamin B12

D Disorders of porphyrin synthesis

E Immunological damage cells - precursors of erythropoiesis

The reduced hemoglobin amount was revealed in the blood test. What function of the blood will be disordered?

A \* Transport of gases

B Transport of hormones

C Providing immunity

D Clotting

E Transport of nutrients

It was revealed 18% of erythrocytes of the spherical, ball-shaped, flat and thorn-like shape in the blood of a 26-year-old man. Other erythrocytes were in the form of the biconcave disks. How is such phenomenon called?

A \*Physiological poikylocytosis

B Pathological poikylocytosis

C Physiological anisocytosis

D Pathological anisocytosis

E Erythrocytosis

The 12,5% erythrocytes with diameter greater than 8 microns and 12.5% erythrocytes with diameter less than 6 microns were revealed in the patient's blood. The rest of the red blood cells have a diameter of 7,1–7,9 microns. What is the name of this phenomenon?

A \* Physiological anisocytosis

B Pathological anisocytosis

C Physiological poikylocytosis

D Pathological poikylocytosis

E Erythrocytosis

Transfusion of Rh-positive blood to Rh-negative patient results in the formation of Rh antibodies and hemolysis. What blood cells are the carriers of Rh factor?

A \*Erythrocytes

B Platelets

C Lymphocytes

D Monocytes

E Neutrophils

LYMPH. WHITE BLOOD CELLS. PLATELETS.

The signs of inflammation: pain, redness, edema as signs of immediate hypersensitivity were revealed at the child around the skin wound. Which blood cells do these changes cause?

A \* Basophils

B Eosinophils

C Neutrophils

D Lymphocytes

E Monocytes

The forensic pathologist determined that it was female blood according to results of the blood stains studying at the crime scene. What signs were present on the ground of this conclusion?

A \* Presence of the satellite in the neutrophils nuclei

B Presence of the microcytes and macrocytes

C Poikylocytosis

D Presence of the eosinophils specific granules

E According to the number of red blood cells

The cells with the histamine and heparin granules in the cytoplasm were defined in the blood smear. What kind of cell is this?

A \* Basophils

B Neutrophils

C Eosinophils

D Monocytes

E Erythrocytes

The cells, which accounts for 0,5% of the total leukocytes number with the S-shaped curved nucleus and metachromatic colored granules in the cytoplasm, were founded in the patient's blood smear. What are these cells?

A \* Basophils

B Neutrophils

C Eosinophils

D Monocytes

E Lymphocytes

The numerous plasma cells plasmocytes were revealed in the blood of a 16 years old girl with autoimmune inflammation of the thyroid gland. With the proliferation and differentiation of what blood cells the increase of the plasmocytes number is associated?

A \* B-lymphocytes

B T-helper

C Tissue basophils

D T-killer

E T-suppressor

The B-lymphocytes were marked with the tracer in the experiment. The foreign protein was injected under the skin of the animal. Which cells will this tracer contain in the connective tissue?

A \* Plasmocytes

B T-lymphocytes

C Macrophages

D Tissue basophils

E Fibroblasts

One of the blood cells populations was selectively stimulated in the experiment. Permeability of blood vessels was significantly increased as result of it. That leads to edema of perivascular tissue end deceleration of the blood clotting. Which blood cells were stimulated?

A \* Basophils

B Erythrocytes

C Platelets

D Eosinophils

E Lymphocytes

The rounded cells with the segmented nuclei are predominating of the leucocytes in the smear of peripheral blood. The granules of their cytoplasm stained with both acidic and basic dyes. What are these cells?

A \* Segmented neutrophils

B Basophils

C Eosinophils

D Young neutrophils

E Monocytes

The large cells with low-basophilic cytoplasm and bean-shaped nucleus were found in a blood smear. The cell is the largest from visible in the visual field. What are the cells?

A \* Monocytes

B Macrophages

C Plasmocytes

D Middle lymphocytes

E Small lymphocytes

A specimen of the human red bone marrow smear revealed accumulation of gigantic cells located near sinusoidal capillaries. Name formed elements of blood which formed from these cells.

A. \*Platelets

B. Red blood cells

C. White blood cells

D. Lymphocytes

E. Monocytes

To determine the functional activity of blood cells the suspension of the microorganisms was introduced into a test tube containing leukocyte mass. Inside of what cells will the phagocytized bacteria be detected?

A \* Neutrophils and monocytes

B Lymphocytes and basophils

C Lymphocytes and eosinophils

D Monocytes and lymphocytes

E Lymphocytes and neutrophils

The neutrophils were defined during the study of the connective tissue slide. What is the function of these cells in the tissues?

A \* Phagocytosis of microorganisms

B Trophic

C Support function

D Regulation of the smooth muscle cells contraction

E Dilatation of the blood vessels.

It is known that plasmocytes produce specific antibodies against the antigen. The number of plasmocytes increases after the antigen introduction. At the expense of which blood cells will the plasmocytes number be increased?

A \* B-lymphocytes

B T-lymphocytes

C Monocytes

D Basophils

E Eosinophil

The increasing of the total leukocytes number was revealed in the general blood analysis of a patient with pneumonia. What is the name of this phenomenon?

A \* Leukocytosis

B Anemia

C Leukopenia

D Anisocytosis

E Poikylocytosis

The chromatin of one of the neutrophils nucleus segments is forming the drumstick. What is the name of this structural formation?

A \* Barr's body

B Lyon’s body

C Decondensed chromatin

D Euchromatin

E Pacinian corpuscles

The helminthiasis was diagnosed at the 6-year-old child. What changes of the leukogram (WBC) can be expected?

A \* Increasing of the eosinophils number

B Increasing of the neutrophils number

C Reducing the eosinophils number

D Increasing of the monocytes number

E Increasing of the lymphocytes number

The nurse complains about hands injury that resembles the eczema. She said that after streptomycin injection (she makes it to the patient) the skin itching is increased and the vesicles with the watery fluid appear on the skin. The symptoms disappear during the holidays. The blood test was made on suspicion of allergic reaction. Increased number of what blood cells can be detected?

A \* Eosinophilic leukocytes

B Basophilic leukocytes

C Monocytes

D Neutrophilic leukocytes

E Lymphocytes

The 20% large (diameter 20 mm), rounded cells with low-basophilic cytoplasm and bean-shaped nucleus were found in a blood smear. Clinically, this phenomenon is described as:

A \* Monocytosis

B Lymphocytosis

C Leukopenia

D Neutrophilia

E Reticulocytosis

The cells, which make up 0.5% of the total white blood cells number, were revealed at the patient's blood smear. They have S-shaped nucleus and metachromatic colored granules in the cytoplasm. What are these cells?

A \*Basophils

B Neutrophils

C Eosinophils

D Monocytes

E Lymphocytes

The helminthiasis was detected at the child (10 years). What changes can be expected in the leukogram (WBC)?

A \* Number of eosinophils will increase

B Number of platelets will increase

C Number of red blood cells will increase

D Number of segmented neutrophils will increase

E Number of basophils will increase

In the analysis the laboratory assistant made an additional conclusion that the blood belongs to the female. Specific features of what cells structure enable us to conclusion?

A \* Neutrophilic leukocytes

B Erythrocytes

C Lymphocytes

D Monocytes

E Basophilic leukocytes

Blood analysis is recommended to be performed on an empty stomach and in the morning. What changes in the blood composition can occur if to perform blood test after food intake?

A \*Increased contents of leukocytes

B Increased contents of erythrocytes

C Increased plasma proteins

D Reduced contents of thrombocytes

E Reduced contents of erythrocytes

Plasma cell produces specific antibody for specific antigen. During injection of antigen quantity of plasma cell increased. At the expense of what blood cells occurred increasing of plasma cells quantity?

A. \*B lymphocytes

B. Eosinophils

C. Basophils

D. T lymphocytes

E. Monocytes

A large number of rounded cells with segmented nucleus (three or more segments) and small pink-purple granules in the cytoplasm were revealed in a blood smear of patient with pneumonia. What is this cell?

A \*Neutrophils

B Monocytes

C Eosinophilic granulocytes

D Basophilic granulocytes

E Lymphocytes

General blood test of a child found the percentage of lymphocytes and neutrophils in the ratio of 45:45. Which age may correspond to a physiological crossroads?

A \* 5 days and 5 years

B 14 years

C 1 day and 3 years

D 1 year

E 1 day

Presence of inflammation in the kidney observed at a patient. Blood test was made. There was observed a large number of cells with following cell morphology: nucleus with 2 - 5 segments, pink – purple granules in the cytoplasm. What is this cell?

A \*Neutrophilic granulocytes segmented

B Monocytes

C Lymphocytes

D Acidophilic granulocytes

E Basophilic granulocytes

A blood test was made to a patient with allergic rhinitis. In the blood was observed a large number of cells with following cell morphology: nucleus with 2 - 3 segments, oxyphilic cytoplasm filled with bright pink large granules. What cell is this?

A \*Acidophilic granulocytes

B Lymphocytes

C Monocytes

D Basophilic granulocytes

E Neutrophils

Among of blood cells there are cells whose number is 3-11% of the total number of leukocytes. The main characteristic of these cells is to converse into a macrophagic system cells and phagocytosis. What are these cells?

A \*Monocytes

B Basophils

C Eosinophils

D Lymphocytes

E Neutrophils

A blood test made to a patient with pneumonia. The blood test reveals increased number of the cells that have bean-shaped and rod-shaped nucleus, small granules, some of which are dyed basophilic other oxyphilic. Name such changes of leukogram (WBC).

A. \*Leukocyte formula shift to the left

B. Leukocyte formula shift to the right

C. Neuthrocytopenia

D. Neuthrocytosis

E. Lymphocytosis

Philopodium of megakaryocytes are going through the pores of red bone marrow sinusoidal capillaries into the lumen of blood vessels, where they are fragmenting into individual plates. What blood cells are formed in this way?

A \* Platelets

B Erythrocytes

C Lymphocytes

D Reticulocytes

E Monocytes

In blood was observed a large number of cells with following cell morphology: nucleus with 2 - 3 segments, a cytoplasm filled with large granules that at staining showing metachromasia. What are these cells?

A. \*Basophils

B. Neutrophils

C Eosinophils

D. Monocytes

E. Red blood cells

One of the blood cells populations was selectively stimulated. As a result of it the process of blood clotting was significantly slowed. Which blood cells subjected to stimulation?

A. \*Basophils

B. Platelets

C. Monocytes

D. Eosinophils

E. Neutrophils

16% rounded cells with sizes 4.5-7 mm, having a large spherical nucleus, basophilic cytoplasm forming a narrow border around the nucleus were detected in a blood smear of a patient after suffering from flu. What state of blood do they describe?

A. \* Lymphocytopenia

B. Monocytosis

C. Neuthrocytosis

D. Lymphocytosis

E. Monocytopenia

HEMATOPOIESIS.

During postembryonic hematopoiesis in the red bone marrow the cells of one of the cellular differons demonstrate gradual decrease in cytoplasmic basophilia as well as increase in oxyphilia, the nucleus is being forced out. Such morphological changes are typical for the following hematopoietic type:

A. Erythropoiesis

B. Lymphopoiesis

C. Neutrophil cytopoiesis

D. Eosinophil cytopoiesis

E. Basophil cytopoiesis

The significant reduction of megakaryocytes was found during the histological investigation of the red bone marrow punctate of a 35-year-old patient. How will the correlation of blood cells change in this case?

A \* Number of platelets will decrease

B Number of red blood cells will decrease

C Number of eosinophils will decrease

D Number of neutrophils will decrease

E Number of B-lymphocytes will decrease

It is known that megalocytes can be present in the peripheral blood of human. When can these cells be present in the peripheral blood in normal condition?

A \*In the embryogenesis

B Till the age 1 year

C At the age from 1 to 30

D At the old age

E During the pregnancy

The megakaryocyte with demarcation channels in the peripheral part of the cytoplasm was determined at the electron microphotograph of the red bone marrow. What is the function of these structures?

A \* Formation of platelets

B Increasing of the cell surface

C Increase of the ion channels number

D Cell division

E Cell destruction

The cells of granulocytic series were revealed at the biopsy material of the red bone marrow. Specify what changes do in the nucleus occur during the differentiation of these cells?

A \* Segmentation

B Polyploidisation

C Pyknosis

D Enucleation

E Increasing the size

The cells, differentiation of which is characterized by pycnosis and nucleus removing, were revealed in the myeloid tissue punctate of a 6-year-old child. What kind of hematopoiesis is characterized by such morphological changes?

A \* Erythropoiesis

B Thrombocytopoiesis

C Lymphocytopoiesis

D Granulocytopoiesis

E Monocytopoiesis

A newborn baby has disorder of the thymus development. What type of the hematopoiesis will be disordered?

A \* Lymphocytopoiesis

B Monocytopoiesis

C Erythropoiesis

D Granulocytopoiesis

E Thrombocytopoiesis

In course of an experiment, a big number of stem cells of the red bone marrow were in some way destruct. What cell population regeneration in the loose connective tissue will be inhibited?

A \*Of macrophages

B Of fibroblasts

C Of pigment cells

D Of lipocytes

E Of pericytes

Clusters of developing erythrocytes surround and receive iron from some cell in groupings called erythroblastic islands. Identify this cell.

A \*Macrophage

B Fibroblasts

C Endothelial

D Lipocyte

E Pericyte

The least differentiated cells that are forming populations and characterized by self-inducing differentiation in several ways through the progenitor cells into functionally mature cells, are present at every tissue during the human life (or were present in embryogenesis). What are these cells?

A \* Stem cells

B Specialized cells

C Multifunction cells

D Cells of histogenesis

E Blastomere

The cells that characterized by polychromatophilia, appears of meshwork (remnants of granular endoplasmic reticulum and free ribosomes) in the cytoplasm present in the blood smear. Their number is normally 1-5% of the total number of red blood cells. Increased number of them is diagnostic feature of enhanced hematopoiesis. What are these cells?

A \* Reticulocytes

B Erythroblasts

C Erythroblasts polychromatophilic

D Basophilic erythroblast

E Pre-erythroblast

A significant number of hematopoietic cells were died after the massive exposure of the mice in the laboratory condition. There were a rapid renewal of the stem cells and all committed progenitor cells after a while. At the level of which class of the blood cell lineages the hormonal regulation of the process of hematopoiesis by hemopoietin’s is happened?

A. \*Ш class – unipotential progenitor cells

B. ІІ class – polypotential partially determinate progenitor cells

C. І class – polypotential blood stem cells

D. V class – maturing cells

E. VI class – mature cells