Osh State University

Medical Faculty

Department "Biochemistry, Pathophysiology and Pharmacology"

**APPROVED**

Head. chair of MD, PhD Muratov JK

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GUIDELINES FOR TRAINEES

TO EXTRACURRICULAR WORK INDEPENDENTLY

SECTION: **PATHOPHYSIOLOGY OF BLOOD.**

TOPIC: **Leukocytosis.** **LEUKOPENIA.**

Developed: teacher Ismailov IJ.

Methodical instructions approved at a meeting of the department

\_\_\_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_ 20\_\_. Protocol number \_\_\_\_

OSH

**Study subject:** Pathology of the blood system. Leukocytosis, leukopenia.

**Aim of the lesson**: to study main causes and mechanisms of leukocytosis

and leucopenia development.

**Format:** Preparing for the practical exercises.

**Questions for self-study:**

1. Leukocytes. Stages of leucopoiesis. Leukocyte’s description at different stages of leucopoiesis.

2. Functions of leukocytes (neutrophils, eosinophils, basophils, monocytes, lymphocytes).

3. Leukocyte formula. Leukocyte formula in children.

4. Clinical importance of calculation of leukocyte formula.

5. Leukocytosis. Categorization.

6. Causes of different leukocytosis: neutrophilic, eosinophilic, basophilic, monocytic, lymphocytic.

7. Nuclear shift in leukocyte formula. Types (to-left, to-right).

8. Leucopenia. Categorization. Causes and outcomes of neutropenia, lymphopenia.

9. Agranulocytosis. Outcomes.

10. Leukemoid reaction: causes and mechanisms of development, the blood picture.

**List of practical skills**

1. Be able to determine the kind of shift leukocyte by its index.

2. Be able to identify the type of leukemoid reaction.

**Recommendations to UIRS:**

1. Making the album with the relevant tasks relating to using and learning about the meth-period literature.

2. Master the techniques of creative use of the program material on the subject of the claim with the help of problem solving.

**Self-control on test tasks:**

*1. Children have the following peculiarities of leukocyte formula:*

a) lymphocytes predominate at birth

b) neutrophils predominate on the 5th year

c) leukocyte formula is the same as in adults on the 5th day of life

d) lymphocytes predominate at 2 years old

*12. Physiologic leukocytosis occurs:*

a) in administration of glucocorticoids

b) after food intake

c) in physical activity

d) in sleep

*13. The causes of relative leukocytosis are:*

a) pregnancy

b) hemorrhage

c) fever

d) food intake

*14. Acute purulent inflammatory processes lead to:*

a) eosinophilia

b) lymphocytosis

c) neutrophilic leukocytosis

*15. What type of leukocytes increase in allergic reactions more often?*

a) eosinophils

b) neutrophils

c) lymphocytes

*16. What type of leukocytosis appears in chronic inflammatory processes very often?*

a) eosinophilic

b) basophilic

c) neutrophilic

d) monocytic

*17. Index of the nuclear shift is relation:*

a) of the count of inmature forms of neutrophyls to mature ones;

b) of granulocytes and nongranilocytes;

c) of the count of granulocytes to band forms;

d) of myeloblasts to myelocytes.

*18. The types of nuclear shift to the left are:*

a) myelocytic

b) degenerative

c) monocytic

d) leukemoid

*19. The nuclear shift to the right is the increase of the:*

a) common count of leukocytes

b) percent of the mature neutrophils

c) percent of the lymphocytes

d) count of granular leukocytes

*20. The nuclear shift to the left is:*

a) decrease the mature leucocytes from common count of leucocytes

b) increase the count of immature neutrophils

c) increase percent of the lymphocytes

d) decrease the count of granular leukocytes

LITERATURE:

1. Lecture material.

2. General and clinical pathophysiology / Ed. by A. V. Kubyshkin – Vinnytsa: Nova Knyha Publishers. – 2011. – P. 410-421.

3. Pathology / ed. by E. Rubin and J.L. Farber. – 2nd ed. – 1994. – P.1030–1043.

4. Pathophysiology of disease: an introduction to clinical medicine / ed. By S. J. McPhee, W. F. Ganong. – 2006. – P.118 –119, 124-125.

5. Internal medicine / ed. by Harrisons. – 17th edition. – N. Y. – 2008. – P. 375–377.