Ministry of Health of the Republic of Belarus

Educational Establishment

«Vitebsk State Order of Peoples` Friendship Medical University»

Chair of Propedeutics of Internal Diseases

It predicated on meeting

of the chair from

Protocol № \_\_ "\_\_\_" \_\_\_\_\_\_\_\_\_20\_\_\_yr

**METHODOLOGICAL RECOMMENDATIONS FOR LEARNERS N13**

for practical training

on Propaedeutics of Internal Diseases

for specialty 7-07-0911-01 “General Medicine”

2nd year of medical faculty

full-time higher education

**Theme:** Laboratory methods of examination: complete blood count and biochemical blood tests

**Time:** 3 hours

Compiled by: V.A. Pryshchepenka, associate professor.

Vitebsk, 2025П

**Motivational characteristics of the necessity to study the topic** Mastery of the techniques of assessment of laboratory test allows the doctor to assess the state of different systems. CBC and biochemestry are stndart tests for patients with any disease.

**Goals and objectives of the lesson.**

*Teaching goals:* to familiarize students with the complete blood count and biochemical blood test.

*Development goals:* to develop students' attentiveness, observation skills (during the practical lesson), and independence (when preparing for practical lessons).

*Educational goals:* to study and observe the basic principles of medical ethics and deontology, a sense of mutual assistance, subordination, responsibility, diligence, accuracy, understanding the importance of the profession, and observing safety precautions when communicating with other students, medical staff, and patients.

**During the study of the topic, the student should:**

**study:**

normal and pathological results of CBC and biochemical blood test (diagnostic value)

**learn to:**

master the techniques of the CBC and biochemical blood.

interpret the results of the CBC and biochemical blood.

**practice:**

the methodology of laboratory examination methods.

**Practical skills developed during the study of the topic:**

1. Interpretation of the complete blood count: study of erythrocytes, reticulocytes, hemoglobin, color index, ESR Morphologic changes in erythrocytes. Diagnostic value.
2. Interpretation of the complete blood count: study of leukocytes and leukocyte formula (differential blood count). Morphological changes in leukocytes. The study of platelets. Diagnostic value.
3. Interpretation of complete blood count and biochemical blood analysis in myocardial infarction. Diagnostic value.
4. Interpretation of complete blood count and biochemical blood analysis in acute rheumatic fever. Diagnostic value.
5. Interpretation of complete blood count and biochemical blood analysis in patients with pathology of kidneys and urinary tract. Diagnostic value.
6. Interpretation of biochemical blood analysis: signs of syndromes of cytolysis, cholestasis, and hepatic cellular insufficiency. Diagnostic value.

**Material and technical equipment.**

1. Methodological guide "Clinical examination of patients in a therapeutic clinic".
2. Educational Laboratory cards.

**Interdisciplinary and intradisciplinary connections** The study of this topic is closely related to and serves as preparation for the study of disciplines at the following departments: Department of Faculty Therapy and Cardiology with a course of advanced training, Department of General Medical Practice, Department of Phthisiopulmonology with a course of advanced training, Department of Dermatovenereology and Cosmetology, Department of Neurology and Neurosurgery.

**Theoretical part**

In preparation for the lessons learners should pay attention to:

- “Methodological guidelines for the organization of independent work of learners”;

- information block of the lesson topic on the SIW (supervised independent work of learners) in the theoretical section of the course.

**Questions for classroom control of knowledge.:**

1. Complete blood count: normal values. Interpretation of changes in the number of erythrocytes, reticulocytes. Morphologic changes in erythrocytes. Interpretation of changes in hemoglobin, color index, ESR, platelets. Diagnostic value.

2. Complete blood count: normal values. Interpretation of changes in the number of leukocytes (including leukocyte formula). Morphologic changes in leukocytes. Diagnostic value.

3. Biochemical blood tests: normal values. Diagnostic value.

**Practical part:** when preparing for the lesson, pay attention to the information block of the SIW and the attached literature, training videos presented in the theoretical section on the course SIW.

**Tasks and questions for the control learning of the topic**

1. Complete blood count: normal values. Interpretation of changes in the number of erythrocytes, reticulocytes. Interpretation of changes in hemoglobin, color index, ESR, platelets. Diagnostic value.

2. Complete blood count: normal values. Interpretation of changes in the number of leukocytes (including leukocyte formula). Diagnostic value.

3. Biochemical blood tests: normal values. Diagnostic value.

**Questions for supervised independent work (SIW).**

*SIW is not applicable*

**Assignments for supervised independent work (SIW).**

*SIW is not applicable*

**Deadline for completion of supervised independent work (SIW).**

*SIW is not applicable*

**Forms of control of supervised independent work (SIW).**

*SIW is not applicable*

**Literature**

**Basic:**

1. Пропедевтика внутренних болезней = Propaedeutics of Internal Diseases : учеб. пособие на англ. яз. : для иностр. студентов учреждений высш. образования по специальности "Лечебное дело" : [в 2 ч.]. Ч. 2 : : Обследование органов систем пищеварения, мочевыделения, желез внутренней секреции, крови и опорно-двигательного аппарата / Л. М. Немцов, В. А. Прищепенко, Ю. Г. Юпатов ; М-во образования Республики Беларусь, УО "Витебский гос. мед. ун-т". - Витебск : [ВГМУ], 2023. - 423 с. : ил.

**Additional:**

1. Немцов Л.М. General propedeutics of internal diseases: Lecture course (Общая пропедевтика внутренних болезней: Курс лекций (на английском языке), 2-е издание / Л.М. Немцов. – Витебск: ВГМУ, 2016. – 175 с. – 310 экз.
2. Current Medical Diagnosis & Treatment / edited by Maxine A. Papadakis, Stephen J. McPhee, Michael W. Rabow ; associate ed. Kenneth R. McQuaid. - 61st ed. - New York [etc.] : McGraw-Hill, 2022. -– 1840 pp. – 1 экз.

4. Доценко, Э.А. Методы исследования в клинике внутренних болезней = Diagnostic methods in the internal medicine : практикум для студентов стоматол. фак. на англ. яз. / Э. А. Доценко [и др.] ; М-во здравоохранения Республики Беларусь, Белорус. гос. мед. ун-т, Каф. пропедевтики внутрен. болезней. - 2-е изд. - Минск: БГМУ, 2023. – 73 с. – 1 экз