Ministry of Health of Ukraine

O.O. Bogomolets National Medical University

GUIDELINES

to practical classes for students

Educational discipline: EQ 25 Pediatrics with children's infectious diseases

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Department of Pediatrics № 2

APPROVED at the meeting of the Department of Pediatrics No. 2 from August 28 , 2023, protocol №1

Reviewed and approved by: Center for Pediatric Disciplines

from August 28 , 2023, protocol № 1

Topic : Leukemias and lymphomas in children.

Competencies :

- assessing the general condition of the child on the basis of a reasoned decision on current algorithms and standard schemes in compliance with relevant ethical and legal standards;

- conduct and identify clinical symptoms and syndromes (anemic, hemorrhagic, hyperplastic, icteric, osteoarticular, infectious, inflammatory, febrile);

- considering standard methods, using preliminary data from the patient's history, application to the patient-examination, knowledge about the person, his organs and systems, to establish a preliminary diagnosis;

- - collect anamnesis, assess the child's physical condition, the state of organs and body systems based on the results of laboratory and other studies, evaluate the data: complete blood count, urinalysis, lactate dehydrogenase, serum iron, blood proteins, bilirubin and its fractions, inflammation markers, myelogram, cerebrospinal fluid, instrumental methods of visualization of the organs of the chest and abdominal cavity, lymph nodes);

- evaluate and monitor the child' condition , give recommendations on nursing and nutrition;

- carry out medical manipulations (determine blood group, rhesus factor, measure blood pressure, install a nasogastric and orogastric tube, administer drugs (intravenous), examination of testicules in boy to detect hyperplastic syndrome).

Equipment: mannequin of a young child, stethoscope, pulse oximeter, nasogastric and orogastric probe, syringes, catheter , IV system , disposable gloves, diapers, antiseptic for hand.

Lesson plan and organizational structure

The name of the stage	Description of the stage	Levels of conquest	Time
Preparatory	*Organizational issues* *Learning motivation:* Hemoblastoses are among the five most widespread children, they occupy 30% of neoplasms in the first 5 years of life among children. *Control of the initial level of knowledge* (*test control and oral survey*): 1. What diseases belong to the group of hemoblastoses? A. Lymphopathy. B. Kaposi's sarcoma C. **Non Hodgkin's lymphoma.** D. Fanconi's disease 2. What type of hemoblastosis is characteristic of young children A. Hodgkin's lymphoma **B. B-lymphoblastic lymphoma**	Introductory Reproductive	25 min

	C. Myeloblastic leukemia D. T-lymphoblastic leukemia E. Nehodzhyn's lymphoma 3. Which diagnostic method most accurately determines the specifics of treatment and prognosis in children with hemoblastosis. A. Myelogram B. Cytogenetic analysis C. Immunohistochemical D. Histological examination of lymph nodes **E. Flow cytometry** 4. What clinical feature is characteristic of myeloid leukemia? A. Anemia B. Hepatosplenomegaly **C. Enlargement of lymph nodes** D. Spontaneous bruising, bleeding from the venipuncture site, bleeding from the gums or prolonged epistaxis. E. Osalgia 5. Which of the following is characteristic of Hodgkin's disease? A. painful, sensitive, tight-elastic neck, fused with surrounding tissues and lymphadenopathy B. **Painless, insensitive, dense cervical or** supraclavicular, no fused with surrounding tissues and lymphadenopathy. C. Painless, tender, elastic cervical or supraclavicular lymphadenopathy		
Basic	*Performance of practical tasks* : - demonstration of a thematic patient/medical history in the pediatric department; - anamnesis study; - evaluation of the results of laboratory and instrumental examination methods; - on the basis of history, examination data and the results of laboratory and instrumental studies, a preliminary clinical diagnosis is established; - determination of factors and pathogenetic mechanisms of disease development; - stratification of patients (risk groups) - prescription of treatment (emergency measures, drug treatment, features of cytotoxic therapy, determination of complications); - determination of relapse prevention measures;	Introductory Introductory Reconstructive Creative Creative Creative	1 h 45 min

	- practicing medical manipulations using a mannequin of a young child.	Reproductive	
Final	*Control of the final level of training* (*situational problems*): 1. A boy, 10 years old, complains of pain in the neck and joints, general weakness. Hepatolienal syndrome of absence. In the blood analysis: Er $3.1 \cdot 10^{12}$/l, hemoglobin 103 g/l, platelets $52 \cdot 10^{9}$/l, leukocytes $3.3 \cdot 10^{9}$/l, eosinophils 0%, ballast cells 4%, segmented neutrophils 32%, lymphocytes 63%, monocytes 1%, ESR 52 mm/h. 1. What is the probable diagnosis ? 2. Carry out a differential diagnosis. 3. What additional studies do patients need? 4. Make a treatment plan. **Answer standard :** 1. Acute lymphoblastic leukemia. 2. Differential diagnosis with leukemic reactions, idiopathic juvenile arthritis, aplastic anemia , idiopathic thrombocytopenia. 3 **.** Myelogram, cytochemical, cytogenetic research. 4. Polychemotherapy according to the appropriate type of leukemia protocol. 2. A 15-year-old girl presented with complaints of enlarged neck lymph nodes, weakness. There is no fever. There were no oto-pharyngeal or oral diseases during the last month. It is known from the anamnesis that the girl has a kitten. During the examination, the frontal and posterior cervical lymphatics are enlarged, dense, painless, not fused to each other and to the surrounding tissues. Other groups of lymph nodes, the dimensions of the disease, the spleen are not enlarged. In the blood test, er.4.5T/l, hemoglobin 134 g/l, leukocytes 12.4 G/l, eoz 2, palich 4%, s/yad 69%, , l-25%, ESR 15 mm/h. 1. What disease is the child most likely to have? 2 . Carry out a differential diagnosis.	Creative	30 min

	3. What additional research does the patient need? 4. Make a treatment plan. **Answer standard :** 1. Nehodzhyn's lymphoma, cervical form. 1 Art. X sparrow of cat scratches (felinosis), toxoplasmosis, lymphoblastic lymphoma, Hodzhin lymphoma, lymphadenitis **.** 3. Biopsy of a lymph node with histological studies, immunological study for toxoplasmosis, felinosis, herpesviruses. 4. Polychemotherapy according to the protocol. *of the student's educational activity*		

Recommended reading :

Basic:

1. Nelson's Textbook of Pediatrics, 2 Volume Set (Nelson Pediatrics), 21st Edition
M. Kligman, MD , Joseph St. James, MD , 2020, 5932 p.
2. Fundamentals of pediatrics according to Nelson: in 2 volumes. Volume 1 / Karen J. Marcdante, Robert M. Kligman; translation of the 8th Eng. in the publication . Scientific editors of the translation V.S. Berezenko, T.V. Rest . Kyiv: VSV "Medicine", 2019. Vol. 1-378 p., Vol. 2- 426 p.
3. Pediatrics : a textbook for students. higher education institutions of the IV level of accreditation/ with a ed. Prof. O.V. Heavy .- Type. 5th amendment. and add.- Vinnytsia: Nova Kniga, 2018. -1152 p.: illustrations.

Additional information resources:

1. https://www.eu.elsevierhealth.com/nelson-textbook-of-pediatrics-2-volume-set-9781455775668.html
2. https :// www . cancer _ gov / types / leukemia / hp / child - all - treatment - pdq
3. https :// emedicine . medscape . com / article /207631- workup # c 17
4. https :// my . Cleveland Clinic . org / health / diseases /4365- leukemia

Questions for student self-preparation for practical training:

1. Etiological factors in the development of hemoblastosis
2. The main links of the pathogenesis of leukemias and lymphomas in children.
3.Classification of hemoblastosis according to morphological, cytochemical, immunophenotypic, histological and clinical criteria (WHO classification).
4. Main clinical symptoms and syndromes of leukemia and lymphoma in children.
5. Laboratory diagnosis of hemoblastosis.
6. Differential diagnosis of leukemias and lymphomas with lymphadenopathy and other hemoblastoses.
8. Cytostatic therapy, mechanism of action, complications.
9. Dynamic monitoring of children with hemoblastosis.

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