

MINISTRY OF HEALTH OF UKRAINE
NATIONAL O.O. BOHOMOLOTS MEDICAL UNIVERSITY

GUIDELINES
for practical classes
for students

Educational discipline: Pediatrics with children's infectious diseases (mandatory component 25)

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Department of Pediatrics No 2

APPROVED at the meeting of the Department of Pediatrics No. 2 from August 27, 2026, protocol №1

Reviewed and approved by: Center for Pediatric Disciplines

from August 28, 2026, protocol № 1

Lesson topic:" Intrauterine infections of the newborn"

Competencies:

- 1 Ability to collect complaints, life, and disease history, analyze and determine etiological and pathogenetic risk factors for intrauterine infections (IUI) of the newborn.
2. The ability to classify and analyze a typical clinical picture of BUI.
3. The ability to determine the necessary list of laboratory tests and evaluate their results in case of IUI in newborns.
4. The ability to establish a preliminary and clinical diagnosis in newborn children with manifestations of IUI.
5. The ability to determine the principles and nature of treatment and prevention of IUI in newborns.

The purpose of practical class

Formation of professional competences to achieve the program results of training on diagnosis, treatment, and prevention of IUI of the newborn.

Equipment: PC with appropriate information support, reference materials, methodological recommendations, extracts from medical histories, a set of laboratory test results, situational tasks.

Lesson plan and organizational structure

Stage name	Description of the stage	Levels of assimilation	Timing
Preparatory	- Organizational issues - Learning motivation: Neonatal IUIs, also known as TORCH infections, are a group of diseases that are transmitted from mother to child through the placenta during pregnancy, or through vaginal secretions or blood during delivery, and can manifest both at birth and later. Depending on the nature of the causative agent, the term and massiveness of the infection, the manifestations differ significantly - from the absence of clinical signs of the disease to extremely severe manifestations of the infectious process (formation of congenital malformations or death of the fetus). According to the WHO, at least 10% of children are infected in utero. Depending on the causative agent, from 5 to 50% of infected children have clinical manifestations, which are often nonspecific or are not detected immediately after birth. In many cases, timely diagnosis and appropriate treatment tactics prevent	Introductory	25 min

	further development or reduce the consequences of IUI in children. - Control of the initial level of knowledge - test control and oral survey. Examples of test tasks: 1. 1. The girl was born at the 33rd week of gestation, small for age, with manifestations of significant microcephaly, agenesis of the middle toe of the right foot, hepatosplenomegaly. Congenital CMV infection was confirmed by serology. What changes on MRI of the brain are typical for this disease? A. Diffuse calcifications in the substance of the brain B. Thickening of the meninges, expansion of the interhemispheric fissure C. Expansion of the ventricles, periventricular calcifications D. Diffuse leukomalacia E. Foci of necrosis without clear boundaries 2. On the 7th day of life, a newborn boy developed conjunctivitis with significant hyperemia and abundant serous-purulent discharge. What is the most likely etiology of the disease? A. Staph. Aureus B. Chlamydia trachomatis C. Neisseria gonorrhea D. Herpes simplex E. CMV 3. The child was born to a mother who was diagnosed with syphilis during pregnancy and treated according to the protocol. The child has no clinical manifestations of congenital infection, the titer of the non-treponemal test is equal to the mother's one. Which tactic is correct for a newborn? A. Ceftriaxone once as an intramuscular B. Benzathine penicillin G once as an intramuscular C. Does not require observation and treatment D. It is necessary to observe, to enter benzathine penicillin G in case of seroconversion E. Penicillin G for a course of 7 days as an intramuscular 4. Toxoplasmosis was detected in a previously non-immune pregnant woman at 12 weeks of gestation. What drug should be prescribed to prevent damage to the fetus? A. Pyrimethamine B. Sulfadimezin	Reproductive	
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	C. Spiramycine D. Azithromycin E. Clindamycin 5. In a full-term boy, on the 12th day of life, grouped bubbles of 2-3 mm in size with serous content appeared on the skin around the mouth, which later opened with the formation of erosions. Individual ones dry out. The general condition of the child is not impaired. It is known that in the last weeks of pregnancy, the mother had symptoms of colpitis. What research method should be used to find out the etiology of the disease in this case? A. Virological study of the material from the bottom of the blister B. Virological research of saliva C. Serological determination of IgM to HSV D. Microscopy of material from the bottom of the blister E. Examination of plasma by the PCR method		
Main	Performance of practical tasks: - demonstration of a thematic patient or review of extracts from medical histories of newborns with IUI; - determination of risk factors for the occurrence of IUI; - analysis of the clinical manifestations of IUI - evaluation of the results of laboratory studies; - establishment of a preliminary clinical diagnosis on the basis of anamnesis, clinical examination data and laboratory test results; - determination of the tactics and nature of treatment for IUI in newborns; - determination of preventive measures for IUI in newborns;	Introductive Reproductive Reproductive Reproductive Creative Creative Creative	120 min
Final	Control of the final level of preparation (Clinical cases): 1. A baby girl from the 1st pregnancy, the 1st delivery was born at the 40th week of gestation with a weight of 2550 g, a body length of 49 cm, an Apgar score of 7–8 points. The mother was not observed in the women's consultation. In the maternity hospital, the mother's HIV-positive status was established before the birth of the child. 1. Determine the preliminary diagnosis 2. Determine the doctor's tactics Answer standard:	Creative	35 min

	1. Asymmetric delay in fetal development. Risk of HIV infection. 2. Refusal of breastfeeding. For post-contact prevention of HIV infection, the child is prescribed Zidovudine 4 mg/kg and Lamivudine 2 mg/kg every 12 hours for 4 weeks orally. Nevirapine for 2 weeks every 24 hours 2 mg/kg the first week, 4 mg/kg the second week orally. At the end of post-contact prophylaxis, trimethoprim-sulfamethoxazole is prescribed to prevent pneumocystis pneumonia. 3. On the 2nd or 3rd day of life, determination of HIV DNA by PCR. Repeat examinations at 4-6 weeks and 3-4 months of life. 2. A newborn baby from the 1st pregnancy, the 1st delivery at 38-39 GW. The course of pregnancy was burdened by the manifestation of lymphadenopathy without obvious reasons at 32-33 GW, the birthweight is 2800.0 g, body length is 49 cm, head circumference is 34 cm, chest circumference is 32 cm, Apgar score is 5-6 points. On examination, maculopapular exanthema all over the body, hepatosplenomegaly. Jaundice is rapidly increasing, petechial rash, edema appeared. CBC revealed lymphocytosis, anemia, thrombocytopenia. 1. Determine the preliminary diagnosis 2. Determine the survey plan. 3. Determine treatment tactics Answer standard: 1. Congenital toxoplasmosis. Moderate asphyxia. 2. Determination of specific IgM and IgG; PCR; microscopy of smears of peripheral blood, urine, cerebrospinal fluid. The level of glucose, proteins, bilirubin, ALT, AST; CT scan of the brain, consultation of an ophthalmologist, audiography. 3. Pyrimethamine - 2 mg/kg/day in 2 doses for 2 days, from the 3rd day 1 mg/kg/day from 2 to 6 months, then 1 mg/kg/day 3 times a week up to 1 year; sulfadimezin - 100 mg/kg/day in 2 doses; and leucovorin - 5-10 mg 3 times a week or more often depending on the number of neutrophils. Prednisone 1 mg/kg/day in 2 doses for chorioretinitis with macular damage. - General evaluation of the student's educational activity during the class	Reconstructive and creative	
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Recommended Books

1. Nelson Textbook of Pediatrics, 2-Volume set, 21-th edition. By Robert M. Kliegman, Bonita M.D. Stanton, Joseph St. Geme and Nina F Schor. – Philadelphia, PA : Elsevier Inc., 2020 - 4264 p. (pp. 996-1005, 1008–1013, 1462–1465, 1478–1484, 1592–1599, 1616–1618, 1676–1680, 1701–1708, 1718–1723 1865–1877)

ISBN-10 : 032352950X ISBN-13 : 978-0323529501

2. Pediatrics : textbook / O. V. Tiazhka, T. V. Pochinok, A. M. Antoshkina [et al.] ; edited by O. Tiazhka. – 3 rd edition, reprint. – Vinnytsia : Nova Knyha, 2018. – 544 pp. (pp.132–151) : il. ISBN 978-966-382-690-5

Information sources:

1. Viral Infections and Pregnancy
<https://emedicine.medscape.com/article/235213-overview>
2. MSD manual for the professional: Overview of Neonatal Infections
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/overview-of-neonatal-infections>
3. MSD manual for the professional: Congenital Rubella
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/congenital-rubella>
4. MSD manual for the professional: Congenital Toxoplasmosis
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/congenital-toxoplasmosis>
5. MSD manual for the professional: Congenital Syphilis
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/congenital-syphilis>
6. MSD manual for the professional: Neonatal Herpes Simplex Virus (HSV) Infection
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/neonatal-herpes-simplex-virus-hsv-infection>
7. MSD manual for the professional: Congenital and Perinatal Cytomegalovirus Infection (CMV)
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/congenital-and-perinatal-cytomegalovirus-infection-cmv>
8. MSD manual for the professional: Neonatal Hepatitis B Virus (HBV) Infection
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/neonatal-hepatitis-b-virus-hbv-infection>
9. MSD manual for the professional: Neonatal Listeriosis
<https://www.msdmanuals.com/professional/pediatrics/infections-in-neonates/neonatal-listeriosis>
10. Recommendations for the Use of Antiretroviral Drugs During Pregnancy and Interventions to Reduce Perinatal HIV Transmission in the United States
<https://clinicalinfo.hiv.gov/en/guidelines/perinatal/antiretroviral-management-newborns-perinatal-hiv-exposure-or-hiv-infection>
11. Pediatrics (neonatology, hematology, endocrinology): Teaching and methodological manual / Edited by O.P. Volosovets. – Kyiv: MEDPRINT, 2023. – 410 p.

Questions for student self-preparation for practical classes

- 1 Definition of the term "TORCH infection".
2. Risk factors for the development of IUI.
3. The nature of the lesion in IUI depending on the term and route of infection of the fetus.

4. Methods of early diagnosis and prevention of IUI
5. Congenital toxoplasmosis: clinical manifestations, diagnosis, treatment.
6. Congenital cytomegalovirus infection: clinical manifestations, diagnosis, treatment.
7. Neonatal herpes infection: clinical manifestations, diagnosis, treatment.
8. Congenital rubella: clinical manifestations, diagnosis, treatment.
9. Chlamydial infection of a newborn: clinical manifestations, diagnosis, treatment.
10. Congenital syphilis: clinical manifestations, diagnosis, treatment.
11. Congenital listeriosis: clinical manifestations, diagnosis, treatment.

Methodical guidelines have been created

Associate professor of Pediatric Department No 2

O.F. Chernii