Ministry of Health of Ukraine

Bogomolets National Medical University

GUIDELINES

to practical classes for students

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

Field of knowledge: 22 "Health care"

Specialty: 222 "Medicine"

Pediatric Department № 2

Approved at the Pediatric Department meeting dated 26.08.24, protocol № 1

Reviewed and approved by: Cycle Methodical Commission on Pediatric Disciplines 29.08.2024 Protocol №1

Topic: "Emergencies of the neonatal period. Catamnetic observation of prematurely born children"

Competencies:

- carry out an assessment of the general condition of a newborn child by making a reasoned decision according to existing algorithms and standard schemes, observing the relevant ethical and legal norms;

- highlight and identify leading clinical symptoms and syndromes (asphyxia, hypoglycemia, convulsions);

- according to standard methods, using the previous data of the patient's history, the data of the patient's examination, knowledge about the person, his organs and systems, establish a preliminary clinical diagnosis of the disease (perinatal encephalopathy, intracranial birth trauma, asphyxia, hypoglycemia, aspiration);

- collect obstetric anamnesis, assess the physical development of a prematurely born child, the state of organs and systems of the body, based on the results of laboratory and instrumental studies, evaluate information regarding the diagnosis (general analysis of blood, urine, blood proteins, blood glucose, bilirubin and its fractions, electrolytes, radiography thoracic and abdominal organs, neurosonography , CT, MRI);

- establish a final clinical diagnosis by making a reasoned decision and analyzing the obtained objective data of clinical, additional examination, carrying out differential diagnosis, observing the relevant ethical and legal norms;

- determine the tactics and provide initial and resuscitation care to a newborn child, emergency medical care in emergency situations (asphyxia, hypoglycemia, convulsive syndrome, aspiration, hypothermia) in accordance with existing clinical protocols and treatment standards;

- perform medical manipulations (perform indirect heart massage, artificial respiration, install a nasogastric and orogastric tube, restore airway patency) ;

- to assess and monitor the development of prematurely born children, to provide recommendations on feeding and specifics of nutrition depending on age, prevention of the most common diseases.

Goal: Formation of professional competences; achievement of program learning outcomes in the process of discussing the topic and performing independent work on the topic; mastering practical skills and methods of providing emergency care to newborn children.

Equipment: newborn baby dummy, ventilator and oxygen therapy kit, resuscitation bag and face mask size "1", equipment for airway sanitation (rubber pears), umbilical vein catheterization kit (scalpel, ligature, tweezers, umbilical catheter, syringe for injections), neonatal stethoscope, pulse oximeter, diapers, disposable gloves, antiseptic for hand treatment.

Lesson plan and organizational structure

The name of the stage	Description of the stage	Levels of assimilation	Time
Preparatory	*Organizational issues* *Learning motivation*	Introductory	1 acad. hours

	Control of the initial level of knowledge (*test control and oral survey*): 1. At birth, a full-term girl lacks breathing and muscle tone. Actions required? A. Immediately intubate the trachea B. Start indirect heart massage CStart ventilation with a mask D. Assign a free flow of oxygen E. Ensure the correct position on the resuscitation table under the heat source and suction the contents of the upper respiratory tract. The correct answer is E 2. The drug of choice in the treatment of neonatal seizures: A. Midazolam B. Phenobarbital C. Levetiracetam D. Fosphenytoin E. Lidocaine The correct answer is B 3. What sign indicates a delay in the development of a prematurely born child? A. In the first month, he does not respond to his mother B. Does not turn over at 2 months C.In the 3month - cannot hold the toy D. At 4 months, he does not sit without support E. Does not stand with support at 10 months The correct answer is E 4. Which method of warming is forbidden to use in newborns? A. Using a heated mattress B. Skin-to-skin contact of the child with the mother C. Warming up with the help of heating pads D. A source of radiant heat E. Increasing the temperature in the incubator by 0.5 degrees The correct answer is C 5. Children with which pathology are at risk of developing hypoglycemia? A. Intrauterine development delay B. Hypoxic-ischemic encephalopathy B. Intrauterine infection G. Hemolytic disease of newborns D. Respiratory distress syndrome The correct answer is A	Reproductive	

Basic	*Performance of practical tasks* : - demonstration of a thematic patient in the neonatal intensive care unit; - study of obstetric anamnesis; - evaluation of the results of laboratory and instrumental examination methods; - on the basis of obstetric anamnesis, examination data and results of laboratory and instrumental studies, establishment of a preliminary clinical diagnosis; - determination of factors and pathogenetic mechanisms of disease development; - prescription of treatment (emergency measures, drug treatment, care features, feeding); - determination of disease prevention measures; - familiarization with the operation of the equipment - incubators, resuscitation table, phototherapy lamp, radiant heat lamp, devices for respiratory support; - practicing medical manipulations using a dummy of a newborn child.	Introductory Introductory Reconstructive Creative Reproductive Creative Creative Introductory Reconstructive	3.5acad. hours
Final	*Control of the final level of training* (*situational problems*): Task No. 1 A girl from the 1st pregnancy, 1st delivery at a gestation age of 39 weeks was born with the umbilical cord wrapped around the neck. The amniotic waters are clean. Breathing at birth is absent, muscle atony. What kind of help does the child need? Answer standard: 1. Separate the child from the mother and transfer it to the resuscitation table under a radiant heat lamp. 2. Ensure the correct position (put a roller under the shoulders). 3. Suction the contents of the upper respiratory tract (using a special balloon, first suck the contents of the oral cavity, then the nasal passages for 5 seconds). 4. Dry the skin. 5. Take away wet diapers. 6. Carry out tactile stimulation (by rubbing the back and limbs)	Creative	1acad. hours

	7. Assess the child's condition (breathing and heart rate) Task #2 The girl was born at a gestation period of 36 weeks in a satisfactory condition with a body weight of 2600 g, is with her mother. When examining the child on the 2nd day of life, muscle hypotonia, hyporeflexia, pallor of the skin, and a tendency to bradycardia are observed. The skin is cold to the touch. Body temperature is 36.0 °C. 1. Determine the preliminary diagnosis. 2. Specify the clinical signs of this pathological condition. 3. Specify the amount of emergency care. Answer standard: 1. Hypothermia in a premature baby (36 weeks gestation). 2. Body temperature 36.0 °C, muscle hypotonia, hyporeflexia, pale skin, tendency to bradycardia. 3. Start skin-to-skin contact with the mother, check the temperature in the room. In case of low temperature in the room, heat it with additional heaters. Check the child's glucose level. In case of hypoglycemia, start correcting this condition; continue breastfeeding the child. Carry out a control measurement of T body 15–30 minutes after the measures. If body T < 36.5 °C, continue warming the child and measuring body T every 15–30 min until stabilization of the child's body T and obtaining two results of measuring the child's body T > 36.5 °C. Task #3 A girl from the 1st pregnancy of the 1st birth at a gestation period of 36 weeks was born to a mother suffering from diabetes. The weight of the child at birth is 4000 g, the height is 54 cm. The Apgar score is 6-7 points. 4 hours after birth, the child developed a small tremor, accompanied by short-term respiratory arrest and tonic deviation of the eyeballs. Name the probable cause of the pathological condition. Emergency aid? Answer standard: 1. Convulsive syndrome due to metabolic disorders (hypoglycemia) 2. Glucose level control. 3. If the glucose level is ≤ 2.6 mmol/l, start immediate intravenous administration of 10% glucose solution 2 ml/kg (200 mg/kg) into a peripheral vein for 5-10 minutes, then transfer to		

	infusion of 10% glucose solution at a rate of 6-8 mg/kg/minute. 4. after 30 minutes from the beginning of hypoglycemia correction, check the glucose level. If it is >2.6 mmol/l, the infusion should be stopped and the baby should be fed. Glucose level control should be carried out until two consecutive results of blood glucose level >2.6 mmol/l are obtained with an interval of 30 minutes. *General evaluation of the student's educational activity*		

Recommended literature :

Basic:

1. Neonatology: textbook: in 3 volumes / T.K. Znamenska, Y.G. Antipkin, M.L. Aryaev, etc.; under the editorship T.K. Znamenska. – Lviv: T.V. Marchenko Publisher, 2020. – Volume 3. - pp. 118-127.
2. Unified clinical protocol "Initial, resuscitation and post-resuscitation care for newborns in Ukraine", approved by the Order of the Ministry of Health of Ukraine dated March 28, 2014 No. 225

Additional:

1. Fundamentals of pediatrics according to Nelson: in 2 volumes. Volume 1 / Karen J. Marcdante, Robert M. Kligman; translation of the 8th Eng. edition. Scientific editors of the translation V.S. Berezenko, T.V. Rest Kyiv: VSV "Medicine", 2019. T1. - pp. 259-260
2. Nelson Textbook of Pediatrics, Volume 1 of 5 volumes, 21th Edition, 2019 by Robert M. Kliegman, Nathan J. Blum, Samir S. Shah, Joseph W. ST GEME III, Robert C. Tasker, Karen M. Wilson, Richard E Behrman, P. 961-974.
3. Neonatal Guidelines 2022-24 The Bedside Clinical Guidelines Partnership in association with the West Midlands Neonatal Operational Delivery Network.

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Questions for student self-preparation for practical training:

1. Algorithm for providing initial and resuscitation care to a newborn child.
2. Causes of apnea in newborns.
3. First aid for apnea.
4. Classification of neonatal seizures.
5. Causes of convulsions in newborn children.
6. Emergency aid for convulsions.
7. Tactics in the detection of hypothermia in a newborn child.
8. Tactics in detecting hyperthermia in a newborn child.
9. Risk factors for hypoglycemia in newborns.
10. Clinical signs indicating hypoglycemia.
11. Emergency care for hypoglycemia in newborns.
12. Causes of aspiration in newborns.
13. Clinical signs of aspiration.

14. Emergency care for aspiration.
15. Risk factors of sudden infant death syndrome .
16. Methods of preventing sudden infant death syndrome.
17. The purpose of the catamnestic office
18. Children who need observation by doctors of catamnetic observation
19. Assessment of physical development
20. Prevention and treatment of iron deficiency anemia
21. Prevention and treatment of rickets
22. Vaccination of prematurely born children
23. Diagnostic assessment of child development

Methodical development is completed

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