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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"

Pediatrics Department № 2

APPROVED

at the meeting of Pediatric Department № 2 of 26.08 2024, protocol №1

Reviewed and approved by Cycle Methodical Commission on

Pediatric Disciplines 29.08.2024 Protocol №1

Topic: Integrated management of childhood diseases

Competences.
The student should know:

- The subject field of pediatrics (prevention, diagnosis and treatment of diseases in children of various ages) and to understand professional activity (GC4): **the strategy of integrated management of children's patients (IMCP) at the stage of primary care.**
- examination methods and tactics for managing a child aged 1 week to 5 years with cough, shortness of breath, diarrhea, diarrhea, sore throat, ear problems, fever, malnutrition, iron deficiency anemia, HIV-infected; basic medicines.

to be able to:

- Collect data on the patient's complaints, medical history, life history according to the standard scheme of the patient's survey, according to the established algorithms, conduct and evaluate the results of the physical examination of children of different ages (PLO1) according to the main signs of the danger of the child's condition.
- Evaluate information about the diagnosis, using a standard procedure based on the results of laboratory and instrumental studies of children of different ages (PLO2)
- Identify the leading clinical symptom or syndrome. Establish the most likely or syndromic diagnosis of the disease. Assign a laboratory and/or instrumental examination of a sick child. Carry out differential diagnosis of diseases in children of different ages. Establish a preliminary and clinical diagnosis (PLO3)
- Determine the necessary medical nutrition in the treatment of diseases in children of different ages. (PLO5)
- Determine the principles and nature of treatment of diseases in children of different ages. (PLO6)
- Determine the tactics of providing emergency medical care based on the diagnosis of an emergency condition in children of different ages (PLO7) at the pre-hospital stage.
- Provide emergency medical care based on the diagnosis of an emergency in children of various ages (PLO8)
- Perform medical manipulations on children of different ages (PLO11)
- assess and classify a sick child, choose a priority direction of treatment and determine emergency therapy before referral to a hospital, determine treatment for patients who do not require immediate hospitalization; advise mothers and teach child care at home.

The student must be able to:
- To abstract thinking, analysis, synthesis (GC1)
- Learn and master modern knowledge (GC2)
- Apply knowledge in practical situations (GC3)
- Make informed decisions (GC6)
- Establish a preliminary and clinical diagnosis of the disease in children of various ages (PC3)
- To determine the principles and nature of treatment of diseases in children of different ages (PC6) at the pre-hospital stages in outpatient conditions.
- Diagnose emergency conditions in children of various ages (PC7)
- Determine the tactics of providing emergency medical care to children of different ages (PC8) at the pre-hospital stage.
- Perform medical manipulations (PC10).
- To observe ethical principles when working with patients (PC24).

The student must demonstrate:
- Ability to apply knowledge in practical situations (GC3). 2-3

- Ability to work in a team (GC7).
- Determination and perseverance in relation to assigned tasks and assumed responsibilities (GC12)

The student must have the skills

- - Use of information and communication technologies (GC10)
- - Collect medical information about the patient and analyze clinical data (GC1).
- - Provision of emergency medical care (GC8) in outpatient settings.
- - Performing medical manipulations (GC10)

(Note: GC – general competences PC – professional competences of the specialty

PLO - program learning outcomes)

Didactic purpose:

- To form knowledge about the main components of the IMCP strategy and its main elements.

- Monitor the degree of assimilation of the algorithm of differential diagnosis and the provision of assistance to children 1 week to 5 years old at the stage of primary care

- Form students' skills and abilities to assess the child's condition; classification of symptoms, determination of treatment tactics at the pre-hospital stage; providing assistance; parent counseling; appointment and follow-up.

Equipment: dolls, phantoms, documentation (stories of an inpatient f.003, history of child development, f.112), medicines, instructions, tools for parenteral administration of drugs, textbooks, manuals, handbooks, methodical recommendations, algorithms for performing practical skills. Academic journal, student's workbook.

Plan and organizational structure of the class

The name of the stage	**Stage description**	**Learning levels**	**Time, 5,5 ac.h**
1. Preparation	1.1. Organizational issues. 1.2. Individual oral survey. 1.3. Formation of motivations 1.4. Control of the initial level of knowledge: Testing; checking home preparation for classes, workbooks; pre-auditory independent work of students	B B	**15-20%** **40min**

2. Basic	2.1.demonstration of the thematic patient by the teacher; 2.2. independent work - curation of patients (collection of anamnesis, assessment of the condition, objective observation, identification of symptoms, formation of syndromes, putting forward and working out hypotheses regarding the preliminary diagnosis, drawing up an examination and treatment plan); 2.3. clinical examination of the patient with the participation of the teacher. Differential diagnosis, evaluation of clinical data, results of laboratory and instrumental studies, treatment. 2.4.Learning and practicing practical skills: - physical methods of cooling, -external use of medicinal agents, - parenteral administration of drugs.	C C C C, D	**60-65%** **170min**
3. The final stage	3.1. control and correction of the final level of training (situational, problematic tasks) 3.2. general evaluation of the student's educational activity, work analysis. 3.3. Informing students about the topic of the next lesson, detailing homework: repetition of topics from the subject and materials of interdisciplinary integration; tasks from the workbook for independent work.	C	**20%** **40 min**

Test tasks for independent processing of the topic

Task 1. The child is 3 years old. Sick on the 3rd day. The disease began with a dry cough and nasal congestion, low-grade fever. Currently, T is 37.8 ° C, BH is 38 in 1 minute. The child is irritable, capricious. Drink the suggested water. Vomiting, there was no trial. There is hoarseness of voice, stridor at rest, retraction of supraclavicular areas and jugular fossa on inspiration.
What doctor's tactics are correct?
A. Give first dose of an appropriate antibiotic, refer urgently to hospital
B. Soothe the throat and relieve the cough with a safe remedy
C. Introduce dexamethasone intravenously
D. Assign inhalations of salbutamol 3 times in 15 minutes, then determine tactics
E. Tactics can be determined only after pulse oximetry

Correct answer: A. The child has no general signs of danger. However, stridor at rest should be classified as a very severe disease. The appropriate tactics is: Give first dose of an appropriate antibiotic, refer urgently to hospital.

Link: Chart booklet "Integrated Management of Childhood Illness: distance learning course" p.2

Task 2. At a doctor's appointment a mother with a child of 4 years. The child is sick on the 3rd day. Complaints of cough and fever. On examination: T 38.3 ° C, no skin rash or occipital muscle rigidity. BR - 44 per minute, the child has no noisy breathing, prolonged exhalation or chest indrawing when breathing. What pathology should be considered in this case?

A. Common cold B. ARVI, laryngotracheitis C. ARVI, acute bronchitis
D. Obstructive bronchitis E. Pneumonia

Correct answer: E. The child has fast breathing for age, no other pathological signs of respiration, which in the presence of fever should be classified as pneumonia.
Link: Chart booklet "Integrated Management of Childhood Illness: distance learning course" p.2

Task 3. A 2-year-old child complains of ear pain. The doctor made an appropriate appointment for treatment at home and scheduled a re-examination in 2 days. In which case of the following should mother return immediately?

A. Ear pain persists B. Tender swelling behind the ear
C. Discharge from the ear persists D. Refusal to eat with enough to drink
E. None of the above

Correct answer: B. Tender swelling behind the ear is a sign of the mastoiditis; it is a sign of the severity of the ear problem, indications for urgent hospitalization
Link: Chart booklet "Integrated Management of Childhood Illness: distance learning course" p.5, 29

Task 4. This is 2 years 3 months old male, weight 14 kg. The mother said that the child fell ill tonight with a temperature rise to 39.2 ° C. There was no seizures or vomiting. No cough or difficulty breathing. The stool was 1 time, not liquid. The child is lethargic, moans. He refuses to drink the offered water. The skin is pale pink with elements of petechial rash on the legs. The color of the palms is pink. The child is vaccinated according to the vaccination schedule.
What antimicrobial treatment should be carried out before the hospitalization?

A. Give a dose of oral Amoxicillin
B. Give a dose of oral Ciprofloxacine
C. Give the first dose of Ampicillin intramuscular
D. Give Ampicillin and Gentamicin in usual single dose
E. Give Ampicillin in dose increased 4 times and Gentamicin

Correct answer E Child suffers from fever and refuses to drink. These should be classified as very severe febrile disease. Due to petechial rash the child is highly suspectable for meningitis. Give to children being referred urgently Ampicillin (50 mg/kg) and Gentamicin (7.5 mg/kg). Where there is a strong suspicion of meningitis, the dose of ampicillin can be increased 4 times.
Link: Chart booklet "Integrated Management of Childhood Illness: distance learning course" p.17

Task 5. A 4-month-old child, exclusively breastfed, suffers from an intestinal infection for the second day. There are no signs of dehydration. The doctor advises the mother to breastfeed frequently, increase the duration of breastfeeding, and give extra fluids as much as the baby drinks. What liquid is recommended to use in this case?

A. Rice broth B. ORS or pure water
C. Vegetable broth D. Broth of dried fruits without sugar
E. Weak tea

Correct answer B. If the child is exclusively breastfed, give ORS or clean water in addition to breast milk.
Link: Chart booklet "Integrated Management of Childhood Illness: distance learning course" p. 19

Clinical Tasks

1. Child, 3 months, 5th day from the onset of the disease. He became acutely ill: the temperature rose to 38.50C, a non-productive cough appeared, sleep was disturbed, the child refused to eat. On examination, the condition is severe, the respiratory rate is 76 per minute, shortness of breath with the predominance of the expiratory component. The skin is pale, oral and periorbital cyanosis is pronounced. Above the lungs, a box-like tone of percussion sound, breathing is hard, a large number of moist fine-bubble rales, a small number of dry whistling sounds on exhalation. Heart tones are weakened, HR-158 per minute. No focal changes were detected on the radiograph of the chest organs. Your diagnosis.

Correct answer: Acute bronchiolitis.
A child of the first half of the year, the onset of the disease with GER, severe condition, pronounced signs of respiratory failure, characteristic objective data (expiratory shortness of breath with the involvement of accessory muscles, perioral cyanosis. Respiratory rate - 76/min., percussion tone of a box-like nature; on auscultation from both sides a lot of voiceless fine-bubble wet rales are heard mainly on the back, a small number of dry whistling rales on exhalation) testifies in favor of this diagnosis.
Reference. Chart booklet "Integrated Management of Childhood Illness: distance learning course" P.1-13,28.

2. In a premature girl from the 1st pregnancy, which was complicated by the threat of termination, the 1st delivery at a gestation period of 34 weeks in a mother who has blood group A(II), Rh-positive affiliation, with a birth weight of 2000 g per second day of life, jaundice appeared on the face, which gradually progressed. The general condition of the child is not disturbed, hepatosplenomegaly is not noted, the child receives enterally the volume of milk that meets the need. On the third day of life, the level of total bilirubin was 220 μmol/l due to the indirect fraction, the general blood test corresponds to the age norm. What method of treatment should be prescribed in this case?
A. Phototherapy.
B. Blood replacement surgery.
C. Enterosorbents.
D. Glucocorticoids.
E. Phenobarbital.

Correct answer: Phototherapy.
Phototherapy is the most effective method of reducing indirect bilirubin through its photoisomerization. In this case, there are no indications for carrying out ORBT (Operation of replacement blood transfusion). The effectiveness of drug therapy (enterosorbents, glucocorticoids, phenobarbital) for indirect hyperbilirubinemia has not been proven.
Reference.: Chart booklet "Integrated Management of Childhood Illness: distance learning course" P.22.

Recommended literature.

Fundamental:

1. Nelson Textbook of Pediatrics, 2-Volume Set (Nelson Pediatrics) 21st Edition by Robert M. Kliegman MD, Joseph St. Geme MD, 2020, 5932 p.
2. Integrated Management of Childhood Illness: distance learning course. - Printed in Switzerland. - World Health Organization, 2014. - 80 p.
https://cdn.who.int/media/docs/default-source/mca-documents/child/imci-integrated-management-of-childhood-illness/imci-in-service-training/imci-chart-booklet.pdf?sfvrsn=f63af425_1

Additional:

1. Integrated Management of Childhood Illness (IMCI) - 2019 (Updated). https://www.knowledgehub.org.za/system/files/elibdownloads/2020-10/2019%20IMCI%20CHART%20BOOKLET.pdf

Questions for the lesson:

1. Identify the general signs of danger in children aged 1 week to 5 years
2. Identify the main symptoms, severity criteria, treatment tactics and follow-up of a child aged 1 week to 5 years with cough and shortness of breath.
3. Diagnosis and emergency care for a child with difficulty breathing.
4. Identify the main symptoms, severity criteria, treatment tactics and follow-up of the child with diarrhea.
5. Diagnosis and emergency care for a child with severe dehydration.
6. Identify the main symptoms, severity criteria, treatment tactics and follow-up of a child with fever.
7. Diagnosis and emergency care of a child with febrile seizures.
8. Identify the main symptoms, severity criteria, treatment tactics and follow-up of the child with ear problems.
9. Identify the main symptoms, severity criteria, treatment tactics and follow-up of a child with an eating disorder.
10. Define the principles of counseling parents on breastfeeding and breastfeeding.
11. Identify the main symptoms, criteria for the severity of the condition, tactics of treatment and follow-up of the child with anemia.
12. Identify the main symptoms, severity criteria, treatment tactics and follow-up of a child under 2 months of age with jaundice
13. Identify the main symptoms, severity criteria, treatment tactics and follow-up of a child under 2 months of age with a local bacterial infection.
14. Define the principles of counseling parents on the care of infants and sick children, depending on the nosology and condition
15. Features of dispensary observation of children from HIV-infected mothers

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