

**GUIDELINES
for practical classes
for students**

Educational discipline: Pediatrics, including medical practice (professional training) childhood diseases

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 on August 26, 2024, protocol No. 1

Considered and approved by: Cyclic methodological commission for pediatric disciplines

dated August 29, 2024, protocol No 1

Subject of the lesson:

“Acute bronchitis and pneumonia in children”

Competencies:

Ability to collect complaints, history of life and disease and analyze clinical data in children with bronchitis, pneumonia.

The ability to distinguish and identify leading clinical symptoms and syndromes in acute bronchitis, obstructive bronchitis, recurrent bronchitis, bronchiolitis, pneumonia.

The ability to determine the necessary list of laboratory and instrumental studies for the diagnosis of pneumonia and to evaluate their results.

The ability to determine the necessary list of laboratory and instrumental studies for the diagnosis acute bronchitis, obstructive bronchitis, recurrent bronchitis, bronchiolitis and to evaluate their results.

The ability to establish a preliminary and clinical diagnosis of acute bronchitis, obstructive bronchitis, recurrent bronchitis, bronchiolitis, pneumonia.

Ability to determine the principles and nature of treatment of bronchitis and pneumonia in children and prevention of these diseases.

Ability to diagnose emergency conditions – emergency care for respiratory failure in children

Ability to determine tactics and provide emergency medical care in case of respiratory failure in children.

Ability to abstract thinking, analysis.

The ability to master and process modern knowledge.

Understanding the peculiarities of working with children of different ages.

The ability to make decisions when studying the discipline "Pediatrics, including medical practice (professional training) childhood diseases"

The purpose of practical class

Formation of students' professional competencies for achieving program learning outcomes by controlling the initial level of knowledge in the process of discussing theoretical issues and testing, performing practical tasks and conducting control of the final level of training in solving situational problems on diagnosis, treatment and prevention of bronchitis and pneumonia in children.

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

Lesson plan and organizational structure

	<p>C. Hardening of children D. Sanatorium-resort treatment E. Appointment of vitamin and trace element complexes</p> <p>5. What pneumonia is characterized by infiltrative shadows measuring 0.5-2.5 cm on an X-ray?</p> <p>A. Focal B. Segmental C. Interstitial D. Lobar E. Atypical</p>		
Main	<p>Formation of professional competences:</p> <ul style="list-style-type: none"> - demonstration of a thematic patient or review of extracts from medical histories of patients with acute bronchitis, obstructive bronchitis, bronchiolitis, recurrent bronchitis, pneumonia; - evaluation of the results of laboratory studies; - on the basis of anamnesis, data of a clinical examination and the results of laboratory studies, the establishment of a preliminary clinical diagnosis - determining of factors and pathogenetic mechanisms of disease development; - appointment of treatment and management of the disease; 	<p>Introductive</p> <p>Reproductive Creative</p> <p>Reproductive Creative</p> <p>Reproductive Creative</p>	125 min
Final	<p>Control of the final level of preparation (Clinical cases):</p> <p>Task 1. A 9-year-old child was admitted to the clinic complaining of pain in the right half of the abdomen, high body temperature, vomiting, cough. She has been sick for 2 days, she was not treated at home. On examination, the child's condition is severe, the right half of the chest lags behind the left during breathing, dyspnea of a mixed type, respiratory rate - per 1 minute. With percussion on the right, below the angle of the scapula - a dull sound, in the same place - breathing is not heard. On the left - bronchial breathing. Pulse 120 beats per minute. The borders</p>	Creative	30 min

of the heart are slightly shifted to the left. Heart sounds are slightly muffled. Abdomen is soft, painless. The liver protrudes from under the ribs by 1 cm. The stool is unremarkable. 1. Make a diagnosis 2. Assign the necessary examinations to confirm the diagnosis 3. The consultation of which specialists is necessary? 4. In which specialized department should the patient be treated? 5. Principles of patient treatment.

Answer standard:

1. Pneumonia, exudative pleurisy. 2. General blood test, X-ray of chest organs in two projections, pleural puncture. 3. Consultation of a pediatric surgeon. 4. In thoracic surgery. 5. Antibacterial therapy according to the etiology of the causative agent and sensitivity of the microorganism to antibacterial agents, oxygen therapy.

Task 2. A 2-year-old child was hospitalized for cough, fever, general weakness. Sick for 2 weeks. All this time, a steady increase in body temperature up to 39C was observed. The cough is rare. treatment at home had no effect. The condition is severe. The skin and visible mucous membranes are pale. When percussing the chest, there is a dulling of the percussion sound from the lower corner of the scapula on the left, which turns into dullness below; during auscultation, breathing is weakened in the same areas, in others it is hard, isolated dry wheezes. BR - 36 in 1 min., HR - 110 in 1 min. Limits of relative cardiac dullness are normal, heart sounds are muffled. The abdomen is soft, the liver protrudes from under the edge of the costal arch by 4 cm. According to the radiograph of the chest organs: the left lung from the VI rib is unevenly intensely darkened, against the background of the darkening, a round air cavity up to 3 cm in diameter and a second oval cavity are slightly smaller sizes. Blood analysis: Hb – 100 g/l, er. – 3.51 T/l, lake. – 14.8 G/l, e. – 0%, p.- 15%, s.- 38%, lymph. - 43%, m. - 4%, ESR - 20 mm/h. 1. Make a diagnosis. 2. On the basis of what is this assumption made?

Answer standard:

1. Staphylococcal pneumonia. 2. The severity and duration of the course, the massiveness of the lesion, the presence of bullae in the lungs.

Task 3. The child is 9 years old. Complaints about cough, temperature, weakness. Cough with a small amount of sputum, paroxysmal. The temperature rises in the afternoon to 37.5-38°C. At home, he took ampicillin for 7 days, his condition did not improve. The child is under dispensary supervision for scoliosis of the 2nd degree, studies in a special boarding school, where children cough for a long time. Condition of medium severity. Shortness of breath during slight physical exertion. The cough is unproductive, frequent, sputum is mucous, in the morning with a small amount of pus. Nasal breathing is free. The pharynx is hyperemic, especially the back wall with hypertrophied follicles. Tonsils are enlarged to the first degree without pathological secretion. Submandibular and cervical lymph nodes are enlarged, painless, mobile. No significant changes were noted during bronchophonia. Percussionally there is no blunting zone. Auscultation reveals in a small number of fine rales. CBC: Er-4.0x10¹²/l, Nv - 129 g/l, L-8.0x10⁹/l, e-1%, p-12%, sgm.-57%, L-22%, m-9 %, ESR-24 mm/h. X-ray: shadows of small foci of infiltration with uneven edges are asymmetrically defined in the lower parts of both lungs against the background of an intensified, "heavy" pattern. The roots are non-structural. 1. Make a diagnosis. 2. What is the probable etiology of the disease. 3. What additional methods do you prescribe? 4. Prescribe treatment.

Answer standard:

1. Bronchopneumonia, acute course, out-of-hospital interstitial bilateral, lower lobe, medium severity, uncomplicated. RF 2.

	<p>2. Persistent, paroxysmal cough, features of the epidemiological history (close contact with children who cough for a long time), lymphadenopathy of the cervical group, moderate clinical manifestations of intoxication syndrome, lack of physical data, typical pneumonia in the presence of RF and laboratory signs of bacterial inflammation, and bright diagnostic radiological data of interstitial pneumonia with small foci of infiltrates are characteristic of atypical pneumonia, which is probably caused by Chlamydia pneumoniae.</p> <p>3. Isolation of the pathogen from respiratory tract secretions by IFA, PCR, determination of antigen, antibodies in blood serum by ELISA, PCR.</p> <p>4. Etiotropic therapy - macrolides - 10 mg/kg, clarithromycin 15 mg/kg).</p> <p><i>General assessment of educational activity</i></p>		
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Recommended Books

1. Nelson textbook 21th Edition by Robert M. Kliegman, MD, Joseph St. Geme, Nathan J. Blum, Samair S. Shan, Robert C. Tasker, Karen M. Wilson, Richard E. Behrman Издавецтво: Elsevier, 2020.
2. Paediatrics Lecture Notes 10th Edition Jonathan C. Darling, Publisher:Wiley-Blackwell; 10th edition (October 21, 2021)
3. Illustrated Textbook of Paediatrics 6th Edition by Tom Lissauer MB BChir FRCPC (Editor), Will Carroll MD (Editor) Publisher : Elsevier; 6th edition (September 21, 2021)

Additional

1. Patrick L Carolan, Girish D Sharma / Pediatric Bronchitis [Электронный ресурс] - Medscape (2023). Режим доступу: <https://emedicine.medscape.com/article/1001332-overview>
2. Muhammad Waseem, Russell W Steele / Pediatric Pneumonia [Электронный ресурс] - Medscape (2024). Режим доступу: <https://emedicine.medscape.com/article/967822-overview>

Questions for student self-preparation for practical classes

1. What anatomical and physiological features of the respiratory system of children affect the course of bronchitis.
2. Etiology and pathogenesis of acute bronchitis in children.

3. Clinic and diagnosis of acute bronchitis in children.
4. Treatment of acute bronchitis in children.
5. Define acute obstructive bronchitis.
6. Etiology and pathogenesis of acute obstructive bronchitis in children.
7. Treatment of acute obstructive bronchitis.
8. Define acute bronchiolitis.
9. Etiology and pathogenesis of acute bronchiolitis in children.
10. Treatment of acute bronchiolitis in children.
11. Etiology, pathogenesis, diagnostic criteria of recurrent bronchitis.
12. Definition of pneumonia.
13. Etiopathogenesis of pneumonia.
14. Classification of pneumonia.
15. List the main syndromes observed in pneumonia in children.
16. Pneumonia Severity Index and Pneumonia Severity Scale
17. Features of the course of various forms of pneumonia.
18. Diagnosis of pneumonia.
19. List the main groups of antibacterial drugs used in the treatment of community-acquired pneumonia in children.
20. Complications and prognosis of pneumonia
21. Prevention of pneumonia.
22. Definition and classification of respiratory failure in children.
23. Emergency care for respiratory failure in children

Methodical guidelines have been as.prof. Iemets O.V.