BOHOMOLETS NATIONAL MEDICAL UNIVERSITY

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

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Subject of the lesson:

“Allergic diseases in children: bronchial asthma, allergic rhinitis, atopic dermatitis. Food allergy”

Competencies:

Ability to collect complaints, history of life and disease and analyze clinical data in children with allergic diseases.
The ability to distinguish and identify leading clinical symptoms and syndromes in bronchial asthma, allergic rhinitis, atopic dermatitis, food allergy.
The ability to determine the necessary list of laboratory and instrumental studies for the diagnosis of bronchial asthma and to evaluate their results.
The ability to determine the necessary list of laboratory and instrumental studies for the diagnosis of allergic rhinitis, atopic dermatitis, food allergy and to evaluate their results.
The ability to establish a preliminary and clinical diagnosis of bronchial asthma, allergic rhinitis, atopic dermatitis, food allergy.
Ability to determine the principles and nature of treatment of allergic diseases in children and prevention of these diseases.
Ability to diagnose emergency conditions – angionevrotic edema, urticaria, Stevens-Johnson syndrome, Lyell's syndrome. in children
Ability to determine tactics and provide emergency medical care in case of angionevrotic edema, urticaria, Stevens-Johnson syndrome, Lyell's syndrome. 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 bronchial asthma, allergic rhinitis, atopic dermatitis, food allergy in children.

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

Lesson plan and organizational structure

Stage name	Description of the stage	Levels of assimilation	Timing
Prepa-ratory	- Organizational issues - Learning motivation: - The frequency of allergic diseases among children is increasing all over the world. Bronchial asthma (BA) occupies a leading place in the structure of allergic and respiratory pathology and, according to the latest WHO data, 235-300 million inhabitants of the planet are diagnosed with it. There is a forecast that in 2025 this figure may reach 400 million. Atopic dermatitis, allergic rhinitis and bronchial asthma are components of the atopic march. The prevalence of food allergies in children is increasing. *Control of the initial level of knowledge - test control and oral survey.* ***Examples of test tasks:*** **1.During an attack of BA, wheezing is heard:** A. Crackling rales from 2 sides B. Big blisters on both sides on inhalation C. There are no wheezes **D. Dry whistling on both sides on exhalation** E. All answers are correct **2.For allergic rhinitis, the child's body temperature is characteristic:** A. Hyperpyretic **B. Normal** C. Subfebrile D. Febrile **4.Main groups of drugs for systemic treatment of atopic dermatitis:** A. Antihistamines B. Systemic glucocorticoids C. Cytostatic agents D. Systemic antibacterial therapy **E. All answers are correct** **4. Characteristic signs of "aspirin" bronchial asthma:** A. Nasal polyposis	Introductory Reproductive	25 min

	B. Sinusitis C. Intolerance of nonsteroidal anti-inflammatory drugs **D. All of the above** **5. Clinical criteria for the manifestation of allergic rhinitis:** A. "allergic salute" - the child constantly scratches his nose, wrinkles it B. "allergic glow" - blue and dark circles around the eyes C. significant mucous or watery discharge from the nose, difficulty in nasal breathing caused by edema of the mucous membrane D. increased sensitivity of the mucous membrane of the nose to cooling, dust, sharp smells **E. all answers are correct**		
Main	Formation of professional competences: - demonstration of a thematic patient or review of extracts from medical histories of patients with bronchial asthma, allergic rhinitis, atopic dermatitis, food allergy; - 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;	Introductive Reproductive Creative Reproductive Creative Reproductive Creative	125 min
Final	Control of the final level of preparation (Clinical cases): **Task 1.** A 10-year-old child was brought to the reception department with complaints of paroxysmal dry cough, nasal congestion, sneezing, and nighttime wheezing attacks. Objectively: the child's condition is of moderate severity. The skin is pale in color, there is perioral cyanosis, expiratory shortness of breath with the participation of auxiliary muscles. Above the lungs, a percussive box tone of the percussion sound, auscultatively hard breathing, dry whistling	Creative	30 min

	wheezing, buzzing, against the background of prolonged and difficult exhalation. Rhythmic heart sounds, tachycardia. The abdomen is soft, palpable. In the blood analysis: Hv 112 g/l, L-8.2 109/l, e-10, p-2, c-54, l-34, m-2, ESR- 10 mm/h. Determine the tactics of treatment **Answer standard** Salbutamol, topical glucocorticosteroids, oxygen therapy - because there is an attack of BA and this therapy is in accordance with the guidelines for the treatment of BA. **Task 2.** A 4-year-old and 8-month-old girl came to visit, played with a dog, suddenly began to cough and cry from a feeling of tightness in the chest. According to her mother, she could not breathe out, which made her even more worried and her condition worsened, whistling could be heard during her breathing. After the girl was taken out of the apartment, her condition improved, and after inhalation of salbutamol, given by the emergency doctor, she became completely satisfactory. From the anamnesis, it became known that the child develops a rash on the elbows and ankles, runny nose, and itchy eyes after contact with animals. During auscultation, slight dry rales are heard during exhalation. Preliminary diagnosis: mild bronchial asthma. What alternative basic therapy corresponds to step #1 in intermittent bronchial asthma? **Answer standard** The use of an inhaled short-acting beta 2-agonist, this basic therapy corresponds to step #1. **Task 3.** A 4-year-old boy was brought to the pediatrician. Existing complaints of: recurrent unproductive cough, wheezing during physical exertion, difficulty breathing and decreased activity. There are no complaints from other systems. When taking an anamnesis, it turned out that the child had atopic dermatitis, she had a food allergy to peanuts, and the mother had bronchial asthma. During auscultation, dry polyphonic		

	wheezes on exhalation were detected. There were no signs of birth defects or organic disorders of the cardiovascular and respiratory systems on the X-ray of the chest organs. A skin test showed sensitization to weed pollen. What other diagnostic measures should the doctor perform to confirm the diagnosis of bronchial asthma? ***Answer standard:*** Trial treatment lasting 2–3 months with the use of SABA as needed and low doses of ICS (this measure is a diagnostic criterion: if the patient reports an improvement in his condition, then the treatment is effective and corresponds to the disease. If the patient reports no positive effects of the treatment, then review alternative diagnoses. In the absence of confirmation of alternative diagnoses, go to the next step of bronchial asthma treatment). *General assessment of educational activity*		

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. (1169-1241)
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. 502-528) : il. ISBN 978-966-382-690-5

3. 2024 GINA MAIN REPORT. Global Strategy for Asthma Management and Prevention.
https://ginasthma.org/wp-content/uploads/2024/05/GINA-2024-Strategy-Report-24_05_22_WMS.pdf

Additional:

Asthma in children younger than 12 years: Initial evaluation and diagnosis: [Електронний ресурс]/ Gregory Sawicki, MD, MPH, Kenan Haver, MD, – 2020. – uptodate. - https://www.uptodate.com/contents/asthma-in-children-younger-than-12-years-initi

al-evaluation-and-diagnosis?search=asthma%20children&source=search_result&selectedTitle=2~150&usage_type=default&display_rank=2

Questions for student self-preparation for practical classes

1.Definition of bronchial asthma (BA)
2. Etiology, classification of BA.
3. What examination should be prescribed for BA?
4. What is the goal of BA treatment, how is step therapy applied?
5. What basic therapy is used for asthma in children?
6. Describe the clinical picture of BA.
7. What are the principles of providing emergency care for an asthma attack?
8. What are the main groups of allergens that cause the development of BA?
9. Define and describe the principles of ASIT therapy?
10. What is elimination therapy for asthma and avoiding triggers?
11. What preventive measures should be taken by a child with BA to prevent exacerbation?
12. Define allergic rhinitis
13. What is the difference between the clinical course of seasonal and year-round allergic rhinitis.
14. What examination should be prescribed for allergic rhinitis?
15. Give examples of 1st, 2nd, and 3rd generations of antihistamines, name cromons and topical steroids for the treatment of allergic rhinitis.
16. What are the principles of emergency care for urticaria and angioedema?
17. What are the main groups of allergens that cause the development of atopic dermatitis?
18. What are the principles of treatment of atopic dermatitis?

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