Lecture complex

Name of discipline: «Propaedeutics of childhood diseases-2»
Code of discipline: PChD-3205-2
Name of EP: 6B10101 «General Medicine»
Amount of study hours/credits: 120 hours (4 credits)
Course and semester of study: 3rd year,VI semester
Amount of lectures: 15

Shymkent 2023 y.

Lecture complex is designed in accordance with the Modular curriculum for EP 6B10101 "General Medicine" and discussed at the meeting of the Department of Pediatrics -1.

Protokol № 11 of 23.06.2023y.

Head of the Department, PhD **K.S. Kemelbekov**

№1

1.Theme: Clinical syndromes in pediatric neurology.
2.Purpose: to study main clinical syndromes of the pediatric neurology.
3. Lecture theses:
The term “neurologic disorder” applies to any condition that is caused by a dysfunction in part of the brain or nervous system, resulting in physical and/or psychological symptoms.The development of the human brain begins during pregnancy and continues through infancy, childhood and adolescence. Most brain cells are formed before birth but the trillions of connections between these nerve cells (neurons) are not developed until infancy.The brain is composed of gray matter (neurons and interconnections) and white matter (axons surrounded by a myelin sheath). A motor neuron (above) carries impulses away from the brain.The brain is self-organizing. It selects information to forward its growth and development. It also adapts to the environment. Experience of the environment through the senses of touch, smell, sight, taste and hearing produces connections in the brain.All neurologic disorders involve the brain, spinal column or nerves. Symptoms depend on where damage occurs. Areas that control movement, communication, vision, hearing or thinking can be affected.Neurologic disorders are wide ranging. They have various causes, complications and outcomes. Many result in additional needs requiring life-long management.Symptoms of neurologic disorders vary. Physical, cognitive (or thinking), emotional and behavioral symptoms may be present, with specific disorders having combinations or clusters of these symptoms. For example, cerebral palsy tends to have more physical symptoms whereas ADHD tends to have greater effects on behavior.Many neurologic disorders emerge during the early years of development and may be diagnosed at birth. Some are diagnosed later because symptoms only appear when:
A child misses developmental milestones or has developmental difficulties (e.g. autism).
- A damaging infection occurs (e.g. meningitis).
- An accident causes brain injury (stroke, trauma, hypoxia).

Causes of Neurologic Disorders
Many neurologic disorders are “congenital,” meaning they were present at birth. But some of the disorders are “acquired,” which signifies that they developed after birth. Those with an unknown cause are termed “idiopathic.”
Congenital Causes (present at birth)
Genetic factors can influence the development of a variety of neurologic disorders that are typically inherited from parents through genes and chromosomes.Chromosomes are long strands of DNA supported by protein that are found in the nuclei of human cells.Sections of DNA called genes carry the chemical code which makes us who we are. Chromosomes are composed of thousands of genes.A human body cell normally contains 46 (23 pairs) of chromosomes, half inherited from the mother and half from the father.
- **Gene abnormalities**

Genes are responsible for determining characteristics. Changes in genes (called mutations) therefore change characteristics. Some mutations cause abnormalities that are damaging to individuals (for example, cystic fibrosis). Mutations can be passed on to offspring affecting their characteristics.
- **Chromosome abnormalities**

Changes in chromosomes, whether in number or in structure, have large effects on characteristics because they contain large numbers of genes.
- **Change in chromosome number**

The term monosomy refers to a loss of one chromosome out of a pair (for example, Turner syndrome). In trisomy, an extra chromosome has been gained by a pair (for example, Down syndrome).

- **Change in chromosome structure**

Microdeletions result in a loss of genes (fragments of DNA) from a chromosome. Microduplications occur when genes (fragments of DNA) are gained. Examples of such genetic conditions include cri-du-chat, Prader-Willi, and Angelman syndromes.

- **Metabolic disorders**

Metabolism refers to the chemical processes that occur in the body. Metabolic disorders can cause lasting damage and must be identified as early as possible (for example, through blood or urine tests). Examples of metabolic disorders include phenylketonuria (PKU) and homocystinuria. PKU is an inherited disorder where phenylalanine (present in food) can reach high concentration in blood serum. This causes damage to brain cells and to intellectual ability. Many metabolic disorders are detected at birth as blood samples are sent for 'universal newborn screening'. In the United States, each state has its own guidelines as to what screening testing is done and not all countries have such screening programs

- **Congenital malformation**

Congenital 'defects' are believed to be the result of complex interactions between genes, environment and behaviors. An example is tuberous sclerosis, a condition where children have growths in regions such as the brain, heart, eyes, skin, kidneys and lungs. They may also experience epilepsy, learning difficulties/impairments and autism.

4. Illustrative material:presentation in 24 slides

5. Literature:

Basic:

1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
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6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson "Essential of Pediatrics" 7th edition 2015.
2.Joseph J.Zorc Schwartz`s " Clinical Handbook of Pediatrics" fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson "Essential of Pediatrics" 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. What clinical neurological syndromes are relevant in childhood?
2. Methods of studying the neurological status in children.
3. CNS lesions in newborns and children of the first year of life.
4. Syndromes of impaired consciousness, sleep in children
5. Hemorrhagic and ischemic stroke syndrome in children of different age groups.
6. Convulsive syndrome (epilepsy) clinical picture and laboratory diagnostics
7. Meningeal syndrome (meningitis), clinical picture and laboratory diagnostics.

8. Assessment of the level of neuropsychic development of the child according to age, assessment of consciousness

№2

1.Theme: Pathological syndromes in pediatric pulmonology

2.Purpose: to study main clinical syndromes of the respiratory system in children. Bronchial obstruction and respiratory distress syndrome in children of different age groups.

3. Lecture theses:

The main clinical syndromes of the respiratory system include:

1. Syndrome of inflammatory infiltration of lung tissue
2. Air cavity syndrome in the lung
3. Syndrome violation of bronchial patency
4. Syndrome increased airiness lung tissue
5. Syndrome of fluid accumulation in the pleural cavity
6. Syndrome of air accumulation in the pleural cavity
7. Atelectasis syndrome
8. Respiratory failure
9. Respiratory Distress Syndrome in Children

Syndrome of bronchial obstruction- this is a pathological condition of the body due to a violation of bronchial patency. The etiology of the bronchial obstruction can be primary and secondary (symptomatic), and the nature of the course can be paroxysmal (paroxysmal) and chronic.

***Clinic*.** Attacks of suffocation, more often of an expiratory character. A choking fit develops suddenly or within a short time. Dyspnea is usually expiratory, but may be inspiratory or mixed. Breathing is noisy, wheezing, audible in the distance. Cough with bronchial obstruction may be dry and wet. Productive cough is observed in diseases involving hypersecretion of bronchial mucus, the formation of exudate, transudate or fluid (for example, the breakthrough of a parasitic cyst).

Examination of the chest is an objective confirmation of the syndrome of primary bronchial obstruction. The chest is in the position of inhalation, its excursion is insignificant.

Palpation. The chest stiffness is revealed, which indicates the development of increased airiness (emphysema) of the lung tissue. In primary syndrome, the voice wasps is weakened symmetrically.

In secondary bronchial obstruction, vocal tremor on the side of the conductive bronchus obstruction is weakened or absent.

Percussion. Topographic percussion during an attack of asthma allows detecting a lowering of the lower boundaries of the lungs and a decrease in the excursion of the lower pulmonary margin. With comparative percussion above the lungs, a boxed sound is detected. Percussion during secondary bronchial obstruction - dull or dull (with full airless) sound.

Auscultation. Weakened vesicular respiration is determined in patients with both widespread (diffuse) narrowing of the airways (with bronchial asthma) and with obstruction of a separate bronchus on the affected side. When a trachea or a large bronchus is narrowed over the stenosis area, stenotic bronchial respiration is heard.

The most characteristic dry rales, which are formed in the bronchi with their narrowing, the presence of a viscous secretion during inhalation and especially on the exhale. If low bass rales are heard, the obstructive process is localized in the large and medium bronchi, if ringing, whistling - in the small bronchi and bronchioles.

Radiographically, during an attack of asphyxiation, acute emphysema of the lungs is detected - increased transparency of the lung fields, horizontal position of the ribs, expansion of the intercostal spaces, low standing of the diaphragm.

Respiratory failure (RF)- is a pathological condition of the body, in which either the normal gas composition of the blood is not maintained, or it is achieved by the increased work of the respiratory apparatus**.**

Mechanisms of development of respiratory failure: a violation of the processes of ventilation of the alveoli, diffusion of molecular oxygen and carbon dioxide through the alveolocapillary membrane, violation of blood perfusion through the pulmonary capillaries.

Disruption of the ventilation of the alveoli, depending on the mechanisms causing these disorders, is divided into obstructive, restrictive and mixed.

Classification of respiratory failure (A.G. Dembo, 1962)

1.By an etiological basis: primary and secondary.

2. According to the rate of formation of clinical and pathophysiological manifestations: acute and chronic.

3. On changes in blood gas composition: latent, partial, global

The main manifestation of respiratory failure is shortness of breath - a feeling of lack of air and the associated need to increase breathing. Objectively, shortness of breath is accompanied by a change in the frequency, depth, respiratory rhythm, as well as the duration of inhalation and exhalation.

The second important clinical sign of respiratory failure is central cyanosis - bluish coloration of the skin and mucous membranes, due to the high content of restored hemoglobin in the blood (more than 50g / l, at a rate of 30g / l). For a central (pulmonary) cyanosis, a diffuse ash-gray skin tint is characteristic (detected during a private examination), while the skin is warm on palpation. In acute respiratory failure, cyanosis can develop in a few seconds or minutes; in chronic respiratory failure, cyanosis develops gradually.

4. Illustrative material:presentation in 24 slides

5. Literature:

Basic:

9. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p

10. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.

11. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.

12. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.

13. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p

14. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.

15. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.

16. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.

2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):
1. What are the cynical syndromes of the respiratory system?
2. What diseases are observed primary broncho-obstructive syndrome?
3. Methods for the study of bronchial obstruction.
4. Stages (degrees) of chronic (acute) respiratory failure and their diagnosis.
5. Tell the change in laboratory parameters in respiratory failure.
6. Instrumental research methods and their importance for the diagnosis of acute and chronic respiratory failure.

№ 3

1.Theme: Pathological syndromes in pediatric pulmonology
2.Purpose: to study main clinical syndromes of the respiratory system in children acute and chronic respiratory failure in children of different age groups.
3. Lecture theses:
Inability to meet one's need for tissue oxygenation and elimination of CO2, often but not always associated with distress.
Will focus on Pulmonary aspects of this process.
50% of pediatric ICU admissions. Produced by a wide variety of diseas
Clinical ARDS is characterized by hypoxemic respiratory failure that is refractory and life-threatening. Once thought to be primarily an adult condition, it is now recognized as a syndrome in all age groups. ARDS closely resembles, but should not be confused with Infant Respiratory Distress Syndrome, a condition due to surfactant deficiency in premature infants.
Profound hypoxia is the hallmark and the severity at presentation is a predictor of mortality in children. It can be caused by direct injury to the lungs such as a pneumonic infection or inhalation injury, or indirectly from a systemic inflammatory condition such as septic shock or trauma.
The most common trigger is infection, notably of the lower respiratory tract. Management is primarily supportive care, mechanical ventilation and treatment of the underlying cause. A low tidal volume ventilator strategy with pressure limited ventilation (6 ml/kg of predicted body weight, aiming for a plateau pressure of <30 cm of water) is the only ventilation strategy shown to improve outcomes to date. High PEEP, lung recruitment maneuvers and prone positioning have been shown to improve oxygenation but not long-term survival. High Frequency Ventilation (HFOV) can be safely employed when a patient is failing conventional ventilation but there is no data to show that it independently improves outcomes.
Improvements in ventilator strategy, monitoring devices, fluid and nutritional support, sepsis management and nosocomial preventive measures may have contributed to the recent decline in the pediatric ARDS mortality rate which is now reported as low as 29%.
Clinical features
ARDS is a rapidly progressive condition characterized by the acute onset of tachypnea, dyspnea, and hypoxia within 24 to 72 hours of an inciting event. The physical exam typically reveals tachycardia, tachypnea, cyanosis and diffuse rales.
The condition rapidly progresses to profound hypoxemia with bilateral pulmonary infiltrates on CXR and almost invariably requires mechanical ventilation. Usually these patients reflect the clinical findings of the inciting illness such as septic shock or trauma. As a consequence, these children will have varying

degrees of multi-organ dysfunction or failure including DIC, liver failure, and renal insufficiency. It is not uncommon to need continuous venovenous hemofiltration or dialysis.
Patients with ARDS tend to progress through three distinct stages with different clinical, radiographic, and histopathological manifestations. The initial acute or exudative phase occurs during the first week and is characterized by a rapid onset of respiratory failure requiring aggressive mechanical ventilation. During this phase the patients are at risk for ventilator induced lung injury from high inspiratory pressures, high tidal volume, or oxygen toxicity. Ongoing alveolar damage combined with ventilatory pressures and tidal volumes can result in air leak into the chest and mediastinum.
The subacute or proliferative phase usually begins after the first week of therapy and is manifested by persistent hypoxemia, progressive hypercarbia due to an increase in alveolar dead space, and further decrease in pulmonary compliance with progression of lung restriction. Secretions become problematic, and air leak and ventilator associated pneumonia are potential complications.
The recovery phase follows approximately 2 or more weeks out from onset of the illness and is characterized by the gradual resolution of hypoxemia and radiographic abnormalities, and improved lung compliance. Patients are at risk for complications of prolonged illness and bed rest such as musculoskeletal weakness, nosocomial infections, deep venous thrombosis, and decubitus injury. Gastrointestinal bleeding from stress ulcers also occurs in this phase.

4. Illustrative material:presentation in 24 slides

5. Literature:

Basic:

17. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
18. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
19. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
20. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
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22. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
23. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
24. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

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1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. Which clinical syndromes include respiratory system damage syndromes?
2. What diseases are there primary bronchoobstructive syndrome?
3. Methods of research bronchoobstructive syndrome.
4. Stages (degrees) of chronic (acute) respiratory failure and their diagnosis.
5. The main symptoms and causes of inflammatory lesions of the trachea, bronchi, bronchioles in children.
6. The main symptoms and causes of inflammatory lesions of the lung parenchyma and pleura in children.

7. Respiratory failure syndrome in children. Causes, severity, clinical, laboratory and instrumental manifestations.
8. Diagnostic capabilities of instrumental and functional methods for the study of respiratory organs in children.

№ 4.

1. Theme: Features of clinical manifestations of cardiac valvular disorders in children.
2. Purpose: to study the main syndromes of the cardiovascular system in children.
3. Lecture theses:
The main syndromes in cardiology:
1. Coronary insufficiency
2. Arterial hypertension
3. Heart failure
4. Vascular insufficiency
5. Heart rhythm disorders (arrhythmias)

Myocarditis is a lesion of the heart muscle, mainly of an inflammatory nature. The cause of myocarditis may be viral (most often) and bacterial infection, protozoal or parasitic invasion, the influence of physical and chemical factors.

Congenital (intrauterine) myocarditis may occur in the first hours, days, or weeks. Acquired myocarditis in young children can manifest lethargy, loss of appetite, regurgitation, vomiting, pallor, bouts of cyanosis, shortness of breath, tachycardia, increasing heart (mainly left ventricular) insufficiency.

Infective endocarditis is an inflammatory disease of the endocardium of infectious etiology, caused by the localization of the pathogen on the valve structures, endocardium, endothelium of the great vessels.

For the left overload syndrome (with aortic stenosis, coarctation of the aorta), an increased apical impulse and displacement of the borders of relative cardiac dullness to the left are inherent.

The overload syndrome of the right heart (pulmonary artery stenosis, interatrial septal defect, Fallout's tetrad, transposition of the great vessels) is characterized by a pulsation of the epigastric region, increased cardiac impulse, right ventricular enlargement and atria.

Stenosis syndrome is manifested by pain in the region of the heart, systolic tremor, systolic murmur of a certain location, an increase in the corresponding ventricle.

Congenital heart defects can be divided into 3 groups: defects with discharge of blood from left to right, defects with venous-arterial discharge and arterial hypoxemia, defects with obstruction of blood flow.

The defect of the interventricular septum is determined by a pathological left-right-sided discharge of blood, an increase in blood flow through the pulmonary circulation, and an overload of both ventricles.

Atrial defect. With a slight arterio-venous discharge, patients develop normally. In 2/3 of children with this defect repeated bronchopulmonary diseases are noted.

The open arterial duct (OAD) is a vessel that connects the aorta and the pulmonary artery.

Fallot's tetrad - narrowing of the pulmonary artery, the defect of the interventricular septum, aortic dextraction, right ventricular hypertrophy. The prognosis is determined by the degree of stenosis of the pulmonary artery. Transposition of the great vessels - is characterized by general cyanosis from birth, has a high lethality at 1 year, life is possible if there are compensatory shunts - OAP, the defect of the interventricular septum, the defect of the inter atrial septum. Enlarged right heart. Systolic murmur can be heard with concomitant septal defect or stenosis of the pulmonary artery.

Isolated pulmonary stenosis - occurs in 4 variants: valvular, subvalvular, supravalvular, pulmonary atresia; possible combination of options. The main complaint is dyspnea on exertion, there may be acrocyanosis with a crimson hue.

Heart failure (HF) is the failure of the heart to provide blood circulation that meets the body's metabolic needs, or which makes it impossible to transfer the venous tide to adequate cardiac emissions, which lead to a deficiency in blood supply to organs and tissues in the presence of normal or increased venous return. This clinical syndrome is caused by a decrease in myocardial contractility and a weakening of the peripheral vascular tone in cardiovascular diseases and is indicative of the state of decompensation in the body.

There are clinical variants of heart failure: left ventricular, right ventricular, arrhythmogenic, total.

The main symptoms are shortness of breath, feeling of squeezing behind the sternum, pain in the heart, severe weakness, central cyanosis, cold sweat, swelling of the neck veins, liver enlargement, tachycardia, shifting the boundaries of relative cardiac dullness to the right, weakening of the heart tones, accent II of the pulmonary artery.

4. Illustrative material:presentation in 28 slides

5. Literature:

Basic:

1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
5. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson "Essential of Pediatrics" 7th edition 2015.
2.Joseph J.Zorc Schwartz`s " Clinical Handbook of Pediatrics" fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson "Essential of Pediatrics" 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. What are the syndromes related syndromes of the cardiovascular system?
2. What diseases lead to the development of heart failure syndrome?
3. Clinical manifestations of heart failure syndrome
4. Classification of congenital heart defects.

№ 5.

1. Theme: Syndromes of the most common congenital heart defects.
2. Purpose: to study the main syndromes of the cardiovascular system in children.
3. Lecture theses:
Congenital heart disease is an abnormality or structural problem of the heart or circulatory system that an infant is born with. Congenital heart defects can involve the walls of the heart, the valves and the arteries, or veins near the heart. These defects occur during fetal development, and some can be detected while fetuses are still in the womb with ultrasound and fetal echocardiogram. Other types of heart defects are detected at birth if a baby is born with symptoms like blue coloring or through a simple screening
When prenatal or early screenings catch a congenital heart defect, physicians can act quickly to keep the baby safe and healthy.
Congenital heart defects affect close to 1% of births each year in the U.S. – that's close to 40,000 children born with a congenital heart defect annually.
"Of all the congenital defects and disorders that children are both with, congenital heart disease is the most common."
Because diagnostics and treatments for heart defects have greatly improved over the years, more and more children are growing up to live a long, healthy life. There are approximately 3 million children and adults living with congenital heart disease.
There are many different types of congenital heart defects. Congenital heart defects can be broken down into common categories, such as: cyanotic congenital heart disease, ductal dependent congenital heart disease, critical congenital heart disease, and other acyanotic or less acute congenital heart defects.
Cyanotic congenital heart disease
These types of congenital heart defects cause a baby to appear blue at birth (called cyanosis). The blue color occurs because deoxygenated blood flows out into the body. Common cyanotic heart defects include:

- Tetralogy of Fallot
- Transposition of great arteries
- Tricuspid atresia
- Total anomalous pulmonary venous return
- Truncus arteriosus
- Hypoplastic left heart syndrome

All of these conditions require surgery within the first year of life. They may even require multiple surgeries to allow for healthy heart function.
Ductal dependent congenital heart disease
All babies are born with a small hole in the heart called ductus arteriosus. During the first few days of life, the hole usually closes on its own. However, in some children the hole doesn't close on its own (called patent ductus arteriosus, or PDA). Children with a ductal dependent congenital heart defect will experience cardiovascular collapse when the PDA closes. Prostaglandins, a type of medicine, help keep the ductus arteriosus open until children can undergo surgery or catheterization to fix their congenital heart defect.
Critical congenital heart disease
About 25% of all congenital heart defects are considered critical, meaning they will require surgery or a procedure within a baby's first year of life.
Hypoplastic left heart syndrome is the most involved and complex of all congenital heart diseases.
Acyanotic or less acute congenital heart defects

These heart defects may be less dangerous, though they can still affect a child's health. They can include ventricular septal defects, atrial septal defects and minor valve defects like bicuspid aortic valves. These types of defects may heal on their own or with limited interventions, and require no surgery within a baby's first year of life.

What are the most common congenital heart defects?

The most common congenital heart defect is a bicuspid aortic valve (BAV). The aortic valve opens and shuts to allow blood flow from the heart to the aorta. The aorta is the major blood vessel bringing oxygen-rich blood to the body. This defect occurs when there are only two leaflets instead of three within the valve. About 2% of all people have a bicuspid aortic valve, but they may not know it.

Other common heart defects in infants include:

- **Ventricular septal defects (VSD):** Occurs when a hole is present in the heart's lower septum (the divide between the left and right side)
- **Atrial septal defects (ASD):** Occur when a hole is present in the heart's upper septum (the divide between the left and right sides of the heart)

Thanks to advances in detection and treatment, there is hope for a healthy childhood for almost all children with a congenital heart defect.

4. Illustrative material:presentation in 26 slides

5. Literature: basic and additional

Basic:

1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
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8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. Classification of hypertension in children of different age groups.
2. The main symptoms of hypertension.
3. The concept of vascular insufficiency syndrome.
4. Clinical picture primary arterial hypertension in children.
5. ECG signs of hypertension.
6. The concept of hypertensive crisis

№ 6.

1. Theme: Diagnosis of acute and chronic heart failure in children. Kawasaki syndrome in COVID-19
2. Purpose: to study the main syndromes of the cardiovascular system in children.
3. Lecture theses:
***Heart failure (CH)* –** failure of the heart to provide blood circulation, which meets the metabolic needs of the body, or in which there is an inability to translate the venous tide in adequate cardiac emissions, which lead to a shortage of blood supply organs and tissues in the presence of normal or increased venous return. This clinical syndrome is due to a decrease in myocardial contractility and weakening of peripheral vascular tone in CVS diseases and indicates a state of decompensation in the body.
There are clinical variants of heart failure: left ventricular, right ventricular, arrhythmogenic, total.
The main symptoms: shortness of breath, a feeling of compression behind the sternum, heart pain, severe weakness, Central cyanosis, cold sweat, swelling of the cervical veins, liver enlargement, tachycardia, displacement of the boundaries of relative cardiac dullness to the right, weakening of heart tones, accent II tone over the pulmonary artery.
Chronic heart failure in children is a clinical and pathophysiological syndrome that leads to dysfunction of the ventricles of the heart due to overload (volume/pressure), as a result, changes in hemodynamics, neurohormonal systems occur and metabolic needs of tissues are not provided.
Clinic: complaints-fatigue, sweating decreased appetite feeling of lack of air, shortness of breath (during exercise, then at rest, increasing in a horizontal position), tachycardia, bradycardia possible, sleep disturbance (due to shortness of breath), decreased motor activity, cough dry/wet (with the separation of mucous sputum, more often during exercise and at night), hemoptysis and pulmonary bleeding (rarely).
On examination, the patient: the position of orthopnea (semi-sitting, with associated increased shortness of breath in a horizontal position), the voltage and nasal flaring, retraction of compliant places of a thorax (because of participation in the act of respiration auxiliary muscles), tachypnea, rarely dyspnoea (breathing difficulty and lengthening of exhalation due to rigidity of the lungs), pallor, peripheral cyanosis, Central cyanosis (for patients with CHD, a pressure increase in the right chambers of the heart and discharge of blood from right to left), swelling of veins, especially the jugular.
Palpation: cardiac hump, apical impulse, resembling as ball under palpating fingers (observed in a significant hypertrophy of the left ventricle). At a percussion: the expansion of borders of relative cardiac dullness to the left.
Auscultation: voiceless heart tones (by reducing myocardial contractility), III protodiastolic tone (due to higher pressure in the left departments of heart and decreasing myocardial tone), IV presystolic tone (due to higher pressure in the left atrium becomes audible systole of the Atria), accent II tone of the pulmonary artery (characteristic of pulmonary hypertension), gallop rhythm (because the third and fourth tones at the apex of the heart are often merged), the noise over the region of the heart (often associated with valvular pathology or intracardiac shunting of blood), wet uneven wheezing in the lungs (first in the lower lateral parts of the lungs and / or mainly on the left due to compression of the left lung by an enlarged heart, then over the entire surface of the lungs).
4. Illustrative material:presentation in 24 slides
5. Literature:
Basic:
1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.

3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
5. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. The main symptoms of heart failure in children.
2. Clinical manifestations of acute heart failure
3. Questioning and examination of a sick child or parent, myocardial diseases and heart failure in children of different age groups.
4. Classification of heart failure.
5. Signs of acute circulatory failure in children of different age groups

№7.

1.Theme: Clinical syndromes of the digestive system in children of different age groups
2.Purpose: to study the main syndromes and semiotics lesions of the digestive system in children.
3.Lecture theses:
The main syndromes of the digestive organs:
Acute abdomen syndrome. This symptom complex occurs with injuries and acute diseases of the abdominal organs and retroperitoneal space, which require urgent medical (often surgical) care.
The leading symptom of an acute abdomen is abdominal pain, which may be accompanied by shock, frequent vomiting, delayed stool and flatulence, rarely diarrhea, melena.
The position of the patient is usually sedentary, often in a certain position (with the legs extended to the stomach). Belly retracted (less swollen). As a rule, symptoms of intoxication and dehydration are expressed. Palpation of the abdomen is sharply painful, the muscles of the anterior abdominal wall are tense, there is a symptom of Shchetkin-Blumberg.
Acute gastroenterocolitis in children is most often infectious (this is a coli-infection, food toxicoinfection, salmonellosis, typhoid fever, dysentery, etc.), less often occurs due to gross nutritional errors.
Clinically, it is manifested by vomiting (often repeated, rarely single), diarrhea, toxicosis syndrome. In children of the first year of life, due to repeated vomiting and diarrhea, dehydration syndrome develops rapidly. There is a rapid decrease in body weight, dry skin and mucous membranes develop.
The syndrome of malabsorption is manifested by diarrhea with polyfecalia, increasing exhaustion of the patient. As a rule, during the examination, an abdominal enlarged volume is detected due to accumulation of food chyme in the intestinal lumen, flatulence.

More often, malabsorption syndrome is observed with fermentopathies (lactase deficiency, gluten, etc.), but can occur after operations on the intestines, with severe forms of pancreatitis, Crohn's disease.
Functional dyspepsia is a symptom complex in children older than one year, including pain, discomfort or a feeling of overflow in the epigastric region, associated or not associated with eating or exercise, early saturation, bloating, nausea, regurgitation, intolerance to fatty foods, etc., lasting at least 3 months over the past 6 months, in which the examination process fails to identify any organic disease.
Physical examination*:* overlaid tongue, palpation pain in epigastrium, navel and pyloroduodenal zone, right upper quadrant, left upper quadrant, dyspeptic manifestations, absence of symptoms of "anxiety" (unexplained weight loss, repeated vomiting, progressive dysphagia, gastrointestinal bleeding), vegetative dystonia syndrome (hyperhidrosis of the palm and feet, persistent red dermography, hypotension).
Diagnosis: biochemical blood test (ALT, AST, thymol test, bilirubin), non-invasive diagnosis of H. pylori, fecal examination for protozoa and helminths, fecal examination (coprogram), ultrasound of the abdominal cavity, EFGDS.
4. Illustrative material:presentation in 28 slides
5. Literature:
Basic:
1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
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6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.
Additional:
1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.
Electronic resources:
1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).
6. Control questions (feedback):
1. What syndromes are the main syndromes of the digestive organs?
2. Syndrome of an acute abdomen. Clinic.
3. Syndrome malabsorption. Clinic.
4. Clinical manifestations of disorders of secretory function of the digestive system

№8

1.Theme: Clinical syndromes of the hepatobiliary system in children of different age groups.
2.Purpose: to study the main syndromes and semiotics lesions of the hepatobiliary system in children.
3.Lecture theses:

Jaundice syndrome. Jaundice - staining yellow mucous membranes, sclera and skin. First of all, the sclera, the lower surface of the tongue, the sky, and the skin of the face are stained.
In mild cases, only the sclera icterus is noted. The intensity of jaundice is usually higher, the more hyperbilirubinemia. Yellowness is better detected with natural light and more difficult with electric light. There are three main types of true jaundice: parenchymal, mechanical and hemolytic.
Liver failure syndrome. This syndrome means deep violations of numerous and extremely important functions of the liver. Typically, liver failure develops with 75–80% lesion of the parenchyma. There are acute and chronic forms.
The acute form develops more often in young children with serum hepatitis B, poisoning with hepatotropic poisons (for example, fungi — pale toadstool, stitches, fly-agaric, etc.).
Chronic liver failure is the terminal outcome of chronic liver diseases (for example, liver cirrhosis) and, unlike acute, develops gradually.
Clinical manifestations-the initial 1-5 days correspond to the disease or condition that led to AHF. Recovery of kidney function 1-3 weeks (average days). Oligo-anuria, gipergidratace, hypertension, azotemia, dyselectrolytemia, disorders of acid-base balance, anemia, polyuria, dehydration, dyselectrolytemia, violations ABB.
Manifested by changes in the behavior of the patient in the form of adynamia, apathy, drowsiness, rarely, on the contrary, excitement, anxiety. Jaundice increases, hemorrhagic syndrome develops in the form of bleeding from the mucous membranes and hemorrhages into the skin, tenderness in the right upper quadrant of the abdomen (a non-permanent sign), a decrease in the size of the liver indicates a significant loss of organ volume due to necrosis, liver enlargement may also be associated with heart failure, viral hepatitis or Budd-Chiari syndrome, the development of brain edema can ultimately lead to the manifestation of increased intracranial pressure and, including edema of the optic disc, hypertension and bradycardia . The rapid development of ascites, especially if observed in patients with fulminant liver failure, is accompanied by abdominal pain and suggests the possibility of hepatic vein thrombosis (Budd-Chiari syndrome). Bloody vomiting or melena resulting from portal hypertension (gastrointestinal bleeding from the upper gastrointestinal tract) can complicate fulminant liver failure. As a rule, patients have arterial hypotension and tachycardia as a result of a decrease in total peripheral vascular resistance (with fulminant form of alcoholic liver failure). In this case, it is necessary to further consider the possibility of layering of the infection (especially spontaneous bacterial peritonitis), which can cause similar hemodynamic disturbances due to the development of septic shock.
4. Illustrative material:presentation in 30 slides
5. Literature:
Basic:
1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
5. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.
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1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. Types of jaundice.
2. Laboratory indicators of jaundice
3. Clinical manifestations of hepatosplenomegaly in children of different age groups.
4. Laboratory methods for the study of liver failure syndrome.

№9.

1.Theme: Diagnosis of major syndromes in diseases of the urinary system in children.
2.Purpose: to study the main syndromes of the urinary system in children.
3.Lecture theses:
The main syndromes of the urinary system:
Nephrotic syndrome - simtomokompleks, which belong to proteinuria (more than 8 g per day), hypoproteinemia, dysproteinemia, hyper-cholesterolemia, severe edema. This syndrome is characteristic of nephrosis, nephritis.
Nephritic syndrome - simtomokomleks, which include mild edema, hematuria, arterial hypertension. Characteristic of nephrite.
Dysuric syndrome - a complex of symptoms that indicate the pathological nature of the act of urination.
It combines the following symptoms:
• *urinary incontinence* - urine excretion without prior urination;
• *enuresis* - urine excretion without prior urge to urinate at night;
• *urinary incontinence* - urine excretion after a preliminary imperative urge to urinate;
• *stranguria* - pain when urinating;
• *ishuria (urinary retention)* - the absence of urine after the urge to urinate in the presence of urine in the cavity of the bladder;
• *pollakiuria* - increased urination;
• *oliguria* - reduction of diuresis (daily amount of urine) up to 20 - 80% of the norm;
• *anuria* - reduction of diuresis to B-7% of the norm;
• *polyuria* - an increase in diuresis by 1.5 times from the norm;
• *nocturia* - the predominance of the amount of urine released at night, followed by the amount of urine released during the day.
Urinary syndrome - any changes in the qualitative and quantitative composition of urine, detected during laboratory research. This syndrome is represented by gross hematuria, microhematuria, leukocyturia, bacteriuria, proteinuria, cylindruria, crystalluria, glycosuria, ketonuria, changes in urine pH and other manifestations.
Proteinuria. In normal urine traces of protein are found (up to 0.033 g / l). In pathological conditions, there is a change in the glomerular
permeability, the kidney begins to secrete whey proteins (albumin and globulins).
Pyuria. In normal microscopic examination, the urine contains no more than 5–6 leukocytes in boys and up to 10 pockets.

Hematuria. Normal with normal microscopy in the urine can occur
single red blood cells in the preparation. In the study by the Addis method
Up to 1 million erythrocytes per day or up to 1000 per minute is allocated to the Kakovsky hospital (Amburzha method).
Cylindruria. Cylinders with conventional microscopy are not detected, but when examined in daily urine, up to 2,000 hyaline cylinders are secreted.
Intoxication syndrome **-** lethargy, general weakness, weakening of appetite, possible increase in body temperature.
Pain syndrome **-** pain in the abdomen, in the lumbar, suprapubic areas.
Typical symptoms of diseases of the urinary system:
lower back pain
abdomen and also when urinating
swelling
urination disorder
high blood pressure
changes in urine
4. Illustrative material:presentation in 28 slides
5. Literature:
Basic:
1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
5. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.
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1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.
Electronic resources:
1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).
6. Control questions (feedback):
1. What syndromes are the syndromes of the urinary system?
2. Nephrotic and nephritic syndrome. Laboratory indicators.
3. What are the symptoms related to dysuric syndrome?
4. Urinary syndrome. Laboratory indicators.

№10.

1.Theme: Diagnosis of major syndromes in diseases of the endocrine system in children.
2.Purpose: to study the main syndromes of the endocrine systems in children.
3.Lecture theses:
Main endocrinological syndromes:
Hyperthyroid syndrome is caused by an excess of thyroid hormones in the body. Observed with diffuse toxic goiter, thyroiditis (inflammation of the thyroid gland), etc. Main symptoms: 1) weight loss, 2) muscle weakness, 3) increased nervous irritability, irritability, tearfulness; 4) tachycardia, 5) feeling of heat, 6) sweating, 7) diarrhea.
Hypothyroid syndrome is caused by a lack of thyroid hormones in the body. Observed with iodine deficiency in food, with thyroid gland malformations, with endemic goiter, thyroid cancer, autoimmune thyroiditis, etc. The main symptoms are: 1) weight gain, 2) lethargy and drowsiness, 3) fatigue, apathy, lethargy; 4) loss of memory, concentration; 5) chilliness, 6) constipation, 7) slowing down speech, 8) bradycardia.
Hyperparathyroid syndrome is due to increased production of parathyroid hormone hyperplastic or tumor-modified parathyroid glands and an increase in serum calcium levels. The main symptoms are: 1) pain in the bones, 2) weakness of the muscles in the limbs, 3) development of urolithiasis.
Hypoparathyroid syndrome is caused by parathyroid hormone deficiency and reduced serum calcium. Occurs when removing the parathyroid glands, after treatment with radioactive iodine, with parathyroid tumors, lack of vitamin D (rickets). The main symptoms are: 1) convulsive contractions of the muscles — tetany (upper limbs — hand of an obstetrician, lower limbs — horse foot, painful cramps of the facial muscles), 2) pathological bone fractures, 3) vegetative manifestations (sweating).
4. Illustrative material:presentation in 26 slides
5. Literature:
Basic:
1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
3. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
4. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
5. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
6. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
7. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.
Additional:
1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013y.
Electronic resources:
1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).
6. Control questions (feedback):
1. What syndromes include endocrine system syndromes?
2. Hyperglycemic syndrome. Laboratory indicators.

3. The degree of obesity in children.
4. The main laboratory indicators of hypo and hyperthyroid syndrome in children.

№11.

1.Theme: Diagnosis of major syndromes in diseases of the endocrine system in children.
2.Purpose: to study the main syndromes of the endocrine systems in children.
3.Lecture theses:
Main endocrinological syndromes:
Hypersomatotropic syndrome develops with excessive production of somatotropic hormone (growth hormone) due to adenohypophysis tumor, and craniocerebral injuries. Manifested in children and adolescents by increased growth of the bone skeleton, soft tissues, internal organs - gigantism, in adults - acromegaly (disproportionate growth of the bones of the facial skeleton, hands, feet).
Hyposomatotropic syndrome develops due to a decrease or cessation of the production of somatotropic hormone, manifested dwarfism (small growth).
Hypercorticoid syndrome is caused by hyperfunction of the adrenal cortex (an excess of glucocorticosteroids) caused by damage to the pituitary gland, hypothalamus, or a tumor of the adrenal cortex. Occurs in case of illness or Itsenko-Cushing syndrome. Main symptoms: 1) fat deposition on the face (moon face), on the stomach; 2) decrease in sexual activity and increase in mammary glands in men; 3) the cessation of the menstrual cycle, the development of infertility, male type hair growth (hirsutism) in women; 4) arterial hypertension.
Hypocorticoid syndrome is caused by an insufficient amount of adrenal cortex hormones (glucocorticosteroids). It occurs in Addison's disease. The main symptoms are: 1) progressive muscle weakness, weakness; 2) slow speech, loss of voice; 3) weight loss, 4) hyperpigmentation of the skin, 5) decrease in blood pressure, 6) dysfunction of the gastrointestinal tract (constipation, diarrhea), 7) decrease in memory and attention.
Obesity is a syndrome caused by a metabolic disorder in the body and manifested by excessive deposition of adipose tissue in the subcutaneous tissue and in all physiological stores of fat, as well as fatty infiltration of internal organs. The main symptoms are: 1) overweight, 2) drowsiness, lethargy, apathy; 3) sweating, 4) increase in blood pressure, 5) shortness of breath at rest and walking.
Depletion (cachexia) is a syndrome that develops when insufficient nutrients enter the body or if they are not absorbed. It happens with diabetes, hyperthyroidism, etc.
4. Illustrative material:presentation in 26 slides
5. Literature:
Basic:
9. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
10. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
11. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
12. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
13. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
14. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
15. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.

16. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013y.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. What syndromes include endocrine system syndromes?
2. Hyperglycemic syndrome. Laboratory indicators.
3. The degree of obesity in children.
4. The main laboratory indicators of hypo and hyperthyroid syndrome in children.

№12.

1.Theme: Features of manifestations of the main disorders of the hematopoietic system in children. Hematological syndrome in COVID-19.

2.**Purpose:** to study the main syndromes of the hematopoietic systems in children.

3.Lecture theses:

The main syndromes of the blood system:

Anemia syndrome. Anemia is understood to mean a decrease in the amount of hemoglobin (less than 110 g/l) or the number of red blood cells (less than 4 x 10*12 g/l). Clinically, anemia is manifested by varying degrees of pallor of the skin, mucous membranes.

The clinical manifestations of IDA are a combination of two syndromes: sideropenic and anemic.

The following symptoms are characteristic of sideropenic syndrome: skin changes: dryness, the appearance of small age spots of the color "coffee with milk", changes in the mucous membranes: "jams" in the corner of the mouth, glossitis, atrophic gastritis and esophagitis, dyspeptic symptoms from the gastrointestinal tract, hair changes - bifurcation of the tip, brittleness and prolapse up to alopecia areata, changes in the nails - transverse striation of the nails of the thumbs (in severe cases and toes), brittleness, delamination into plates, change in the sense of smell - addiction to pain Foot to sharp smell of lacquer, paint acetone, vehicle exhaust gases, the concentrated perfume, flavor changes - patient addicted to clay, chalk, raw meat, dough, pain in the calf muscles.

Hemolysis syndrome is observed with red blood cells, which are based on a decrease in the activity of enzymes in red blood cells.

Leukocytosis and *leukopenia syndromes* are expressed both in an increase in leukocytes (> 10 x 10*9 / L - leukocytosis) and in their decrease (<5 x 10*9 / L - leukopenia).

Hemorrhagic syndrome involves increased bleeding: bleeding from the mucous membranes of the nose, hemorrhages in the skin and joints, gastrointestinal bleeding.

With an objective study, it is necessary to determine the type of bleeding

STI Z.S. Barkagan (1988, 2005) distinguishes five types of bleeding:

1 The hematoma type is characterized by the appearance, even after very small bruises, of intense, extremely painful hemorrhages in the tissue, in the joint cavity, under the fascia and aponeurosis, in the retroperitoneal space and in the abdomen. In childhood, the first manifestations of bleeding can occur with teething, parenteral administration of vaccines.

2 Microcirculatory (petechial-spotted, bruising) type of bleeding is characterized by a slight appearance of petechiae (spots on the skin 1–2 mm due to capillary hemorrhage) and almost painless bruises

(ecchymoses) on the skin of the limbs and trunk, less often in the neck and face, as well as tendency to menorrhagia, nosebleeds, hematuria.

3 Mixed (microcirculatory-hematoma) type. Microcirculatory hemorrhages predominate, but hematomic hemorrhages, heavy spontaneous and postoperative bleeding periodically overlap them.

4. The vasculitis-purple type of bleeding is characterized by symmetric inflammatory-hemorrhagic rashes on the skin of the limbs and lower body.

5. An angiomatous type of bleeding is usually associated with a genetically determined or secondary telangiectasia, in which small angiomas in the form of vascular nodules, loops, or "spiders" are detected in various parts of the skin or lips, gums, nasal mucosa.

4. Illustrative material:presentation in 26 slides

5. Literature:

Basic:

1. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
2. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
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8. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. What syndromes are syndromes affecting the blood system?
2. The main laboratory indicators of anemic syndrome in children
3. Hemolysis syndrome. Laboratory indicators.
4. The concept of the syndrome of bone marrow hematopoiesis in children.

№13.

1.Theme: Diagnosis of the main disorders of the hematopoietic system in children

2.**Purpose:** to study the main syndromes of the hematopoietic systems in children.

3.Lecture theses:

Lymphoproliferative disorders (LPDs) refer to a specific class of diagnoses, comprising a group of several conditions, in which lymphocytes are produced in excessive quantities. These disorders primarily present in patients who have a compromised immune system. Due to this factor, there are instances of these conditions being equated with "immunoproliferative disorders"; although, in terms

of nomenclature, lymphoproliferative disorders are a subclass of immunoproliferative disorders—along with hypergammaglobulinemia and paraproteinemias.

Types

Lymphoproliferative disorders are a set of disorders characterized by the abnormal proliferation of lymphocytes into a monoclonal lymphocytosis. The two major types of lymphocytes are B cells and T cells, which are derived from pluripotent hematopoietic stem cells in the bone marrow. Individuals who have some sort of dysfunction with their immune system are susceptible to develop a lymphoproliferative disorder because when any of the numerous control points of the immune system become dysfunctional, immunodeficiency or deregulation of lymphocytes is more likely to occur. There are several inherited gene mutations that have been identified to cause lymphoproliferative disorders; however, there are also acquired and iatrogenic causes. X-linked Lymphoproliferative disorder. A mutation on the X chromosome is associated with a T cell and natural killer cell lymphoproliferative disorder.[citation needed] Autoimmune lymphoproliferative disorder.

Some children with autoimmune lymphoproliferative disorders are heterozygous for a mutation in the gene that codes for the Fas receptor, which is located on the long arm of chromosome 10 at position 24.1, denoted 10q24.1. This gene is member 6 of the TNF-receptor superfamily (TNFRSF6). The Fas receptor contains a death domain and has been shown to play a central role in the physiological regulation of programmed cell death. Normally, stimulation of recently activated T cells by antigen leads to coexpression of Fas and Fas receptor on the T cell surface. The engagement of Fas by Fas receptor results in apoptosis of the cell and is important for eliminating T cells that are repeatedly stimulated by antigens. As a result of the mutation in the Fas receptor gene, there is no recognition of Fas by Fas receptor, leading to a primitive population of T cells that proliferates in an uncontrolled manner

Other inherited causes

Boys with X-linked immunodeficiency syndrome are at a higher risk of mortality associated with Epstein–Barr virus infections, and are predisposed to develop a lymphoproliferative disorder or lymphoma.[citation needed]

Children with common variable immunodeficiency (CVID) are also at a higher risk of developing a lymphoproliferative disorder

Some disorders that predispose a person to lymphoproliferative disorders are severe combined immunodeficiency (SCID), Chédiak–Higashi syndrome, Wiskott–Aldrich syndrome (an X-linked recessive disorder), and ataxia–telangiectasia

Even though ataxia telangiectasia is an autosomal recessive disorder, people who are heterozygotes for this still have an increased risk of developing a lymphoproliferative disorder.

Acquired causes

Viral infection is a very common cause of lymphoproliferative disorders. In children, the most common is believed to be congenital HIV infection because it is highly associated with acquired immunodeficiency, which often leads to lymphoproliferative disorders.

Iatrogenic causes

There are many lymphoproliferative disorders that are associated with organ transplantation and immunosuppressant therapies. In most reported cases, these cause B cell lymphoproliferative disorders; however, some T cell variations have been described. The T cell variations are usually caused by the prolonged use of T cell suppressant drugs, such as sirolimus, tacrolimus, or ciclosporin. The Epstein-Barr virus, which infects >90% of the world population, is also a common cause of these disorders, being responsible for a wide range of non-malignant, pre-malignant, and malignant Epstein-Barr virus-associated lymphoproliferative diseases

4. Illustrative material:presentation in 26 slides

5. Literature:

Basic:

9. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
10. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
11. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
12. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
13. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
14. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
15. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
16. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. What syndromes are syndromes affecting the blood system?
2. The main laboratory indicators of anemic syndrome in children
3. Hemolysis syndrome. Laboratory indicators.
4. The concept of the syndrome of bone marrow hematopoiesis in children.

№14.

1.Theme: Clinical disorders of the musculoskeletal system in children.

2.**Purpose:** study the main clinical disorders of the musculoskeletal system in children

3.Lecture theses:

Nursemaid’s Elbow • Evaluation: • Characteristic history and examination • Clinical diagnosis • X-ray usually not needed • Management: • Reduction Maneuver – either hyper-pronation method or supination/flexion method (see procedure handout) • Hyper-pronation – Support child’s arm at the elbow, place moderate pressure with a finger on the radial head, examiner grips distal forearm with the other hand and hyper-pronates forearm until click felt over the radial head when reduced. • Supination/flexion – Support child’s arm at the elbow, exerts moderate pressure on the radial head, apply gentle traction, supinate forearm fully and flex elbow.

Scoliosis

• Key characteristics:
• Non-structural vs structural
• Lateral curvature of the spine associated with rotational deformity of the vertebrae and ribs
• Infantile (ages 0-3 years)
• Juvenile (ages 4-9 years)

• Adolescent (ages > 10 years; most common)
• S/S:
• Differences in shoulder or scapula height
• Waist, truncal or rib asymmetry
• Asymmetry in distance that arms hang
• S- or C- shape curve of spine
Evaluation:
• Evaluate with minimal clothing
• Adams forward bend test
• Scoliometer - > 5-7° need further evaluation
• Radiographs – Cobb angle > 10°
• Management:
• Based on skeletal maturity
• Observation – Cobb angle
• Red flags and complications
• Cutaneous lesion over the spine
• Weakness, atrophy, abnormal reflexes – NOT TYPICAL
• Progressively worsening low back pain
• Untreated scoliosiscardiopulmonary compromise

4. Illustrative material:presentation in 26 slides

5. Literature:

Basic:

17. Mazurin, A. V. Propaedeutics of childhood diseases. 1 volume [: textbook / - Almaty: "Evero" , 2017. - 144 p
18. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
19. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
20. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
21. Issayeva, L. A. Childhood diseases. I part [: textbook / - Almaty : "Evero" , 2017. - 144 p
22. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
23. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
24. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.

Additional:

1.Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015.
2.Joseph J.Zorc Schwartz`s “ Clinical Handbook of Pediatrics” fifth edition 2013.

Electronic resources:

1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):

1. Predisposing factors and causes leading to the development of the musculoskeletal system in children of different age groups.
2. Clinical manifestations of disorders of the musculoskeletal system in children.
3. Inflammatory and dystrophic diseases of the musculoskeletal system in children of different age groups.
4. Rickets. Clinical symptomatology, diagnostics.

5. Arthritis and arthrosis. Clinical symptomatology, diagnostics.
6. Laboratory and instrumental diagnostics of the musculoskeletal system in children of different age groups.

№15.

1.Theme: Features of the structure of the skin and their appendages in children. Skin research methodology. Semiotics of skin lesions.
2.**Purpose:** to study the main syndromes of skin and their appendages in children.
3.Lecture theses:
Research Methodology skin includes collecting complaints and life history of the disease, physical examination (inspection, palpation), if necessary - additional laboratory and instrumental investigations. An objective study of skin pay attention to the change in its coloring properties of hair, nails, capillaries, sensitivity, humidity, presence of rash, pruritus.
Changes in skin color • pallor may occur with anemia, renal disease, acute pain. • pale skin in healthy children have constitutional hypopigmentation in total cover or in deep placement of skin capillaries in the skin, putting off excess fat, skin vasospasm. • Redness of the skin may be physiological and pathological.
Newborn physiological colour of the skin associated with significant cutaneous capillary diameter, very thin epidermis and transient hypererytremie. • Redness observed after exposure to heat, UV, when used vasodilatators, resulting in anxiety, crying, agitation. • In polycythemia due to a significant increase in the number of erythrocytes and Hb content of the skin becomes blue and purple.
Icteric skin color • can occur in healthy children by eating excessive amounts of fruits and vegetables that contain useful substances (carrots, tomatoes, oranges, tangerines). • This is called jaundice karotene because the skin is delayed carotene (mainly on the face, palms, soles). Mucous membranes and urine while preserving normal color. • Jaundice is the hallmark of a number of diseases: hepatitis, bile duct atresia, hemolytic anemia, jaundice conjugation.
Jaundice of newborn
cyanosis • fingertips, earlobes, lips mucosa observed in the pathology of the cardiovascular system. • In general cyanosis should think about the acute respiratory disorders. • Superficial veins are elevated in rickets, hydrocephalus, portal hypertension.
acrocyanosis
Increased moisture of the skin observed in influenza, tuberculosis intoxication, brucellosis, malaria, pneumonia during the height of the disease. • Dry skin is characteristic of hypovitaminosis, cachexia, hypothyroidism, diabetes.
When the dehydration that occurs in malnutrition, diabetes insipidus, some intestinal infections detected decrease or loss of skin elasticity.
rash • • - A local inflammation of the epidermis and dermis of color changes and swelling of the skin as a manifestation of reaction to the causative agent or its toxic products.
• The rash can uniformly cover all the skin (rare); • may be in the area of natural folds, ankle around or near the joints, extensor surfaces of the arms, legs, etc.
• Form rash: round or oval, irregular (stellate or cobweb). • The edges of rash may be clear or unclear. • The color rashes are pink, red, dark-red
Meningococcemia

Primary elements rash • Roseola - pale - pink spot diameter of 1-5 mm round or oval, that does not rise above the surface of the skin. • When stretching the skin roseola disappears. • Observed in typhoid and typhus, paratyphoid, scarlet fever.

Scarlet fever

• Spot (macula) is different from roseola size: • small eruptions at their diameter is 5-10 mm; • and big - 11-20 mm; • are of irregular shape and a constant symptom of rubella, measles, drug allergies.

Measles

• Erythema - a large area (20 mm) hyperemic skin irregular shape.. • Papules (papula) - limited slightly raised above the skin formation with a flat or domed surface. Formed by exudation and local infiltration of the skin cellular elements, ranging in size from 1 to 20 mm. Erythema

Depending on the size papules are miliary(1-2 mm in diameter), lenticular papules to 5 mm in diameter and nummaliary papules measuring 10-20 mm in diameter. • Papules large size (20 mm) are called plaques. Papules leaving some pigmentation, peeling. • There are these elements in the cyrus, rubella, hemorrhagic vasculitis and others.

Hemorrhagic vasculitis

Rubella

Tubercle (tuberculum) - limited dense without cavity element above the surface of the skin and is formed by the inflammatory infiltration of the deeper layers of the dermis. Clinically similar to papules. At the back of necrosis is subject to the development of ulcers and eventually scar. These lesions characteristic of tuberculosis broomrape, leprosy, fungal skin lesions.

Knot (nodus) - dense, protruding above the skin (or is in its thickness) and the creation of 10 mm or more • Formed in the cluster cell infiltrate in the subcutaneous tissue and dermis. • In the process of evolution may turn into ulcers.

• urtica – acute inflammatory element that occurs as a result of limited edema of the papillary layer of the skin, increases above the surface of the skin, has a rounded shape, size 20 mm or more. This element is evolving quickly, leaving behind a trail. The appearance of urtica accompanied by itching. Urticaria rash characteristic of allergies, dermatitis.

Allergic lesion

• vesicula - superficial, slightly protruding on the surface of the skin, filled with serous fluid, establishment size 1-5 mm, which is in the process of evolution may be to dry to form a transparent or brown crust, at break exposing limited weeping erosion. • After falling crust is temporary hyperpigmentation (or depigmentation) or disappears without a trace.

Chickenpox

• With the accumulation of leukocytes in vesicula (accession infection) it turns into pustules. • Pustules can form and initially, mostly in the area of hair follicles. • Pustula is a characteristic element of vesicular herpes, eczema, chickenpox and smallpox.

Bubble (bulla) - element similar to vesicula, but far exceeds its size (3-15 mm or more). Placed in the upper layers of the epidermis and beneath it filled with serous, purulent or blood content. Can form a crust. Leaves behind an unstable pigmentation. There are at acute dermatitis, dermatitis herpetiformis Duhring.

Dermatitis herpetiformis Duhring

Secondary elements rash. - Scales (squama) can be of various sizes, from 1 to 5 mm (plastynchate peeling) is less; more than 5 mm (lystovydne peeling). - The color they are yellowish or grayish. - Appearance of scales observed after measles, scarlet fever rashes, psoriasis, seborrhea.

4. Illustrative material:presentation in 26 slides

5. Literature:

Basic:
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26. Mazurin, A. V. Propaedeutics of childhood diseases. 2 volume] : textbook / - Almaty: "Evero" , 2017. - 172 p.
27. Mazurin, A. V. Propaedeuutics of childhood diseases. 3 volume [: textbook / - Almaty: "Evero" , 2017. - 140 p.
28. Mazurin, A. V. Propaedeutics of childhood diseases. 4 volume: textbook / - Almaty: "Evero" , 2017. - 120 p.
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30. Issayeva, L. A. Childhood diseases. II part] : textbook / - Almaty : "Evero" , 2017. - 170 p.
31. Issayeva, L. A. Childhood diseases. III part [: textbook / - Almaty : "Evero" , 2017. - 140 p.
32. Issayeva, L. A. Childhood diseases. IV part [: textbook / - Almaty : "Evero" , 2017. - 185 p.
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Electronic resources:
1. Karen J. marcdante. Robert M. Kligeman. Nelson “Essential of Pediatrics” 7th edition 2015. el disc (CD-ROM).

6. Control questions (feedback):
1. What are the syndromes of skin lesions?
2. Skin lesions in newborns and children of the first year of life.
3. Semiotics of skin color change in children
4. Semiotics of skin pigmentation changes in children
5. Semiotics of the appearance of rashes in children
6. Semiotics of rashes of non-infectious origin.