Lecture complex

Discipline: «Propaedeutics of pediaric diseases»
Code of discipline: PPD 3226
Name of EP: 6B10115 «Medicine»
Amount of study hours/credits: 150 hours/5 credits
Course and semester of study: 3rd year, 7 semester
Amount of lectures: 10

Shymkent 2025

Lecture complex was developed in accordance with the working curriculum of the discipline (syllabus) "Propaedeutics of childhood diseases" and discussed at a meeting of the department.

Protocol No.2 of "25" 09.2025g.

Head of the Department. PhD ass. proffesor K. S. Kemelbekov.

№1

1.Theme: Periods of child development.

2.Purpose: to master the periods of childhood, physical development, the scheme of the medical history, the principles of questioning and general examination of children of different age groups

3. Lecture theses:

Propaedeutic of children's diseases is the basic knowledge of Pediatrics, which deals with:

- age features of growth, development, formation of all systems of the child's body.
- features of the method of examination, palpation, percussion, auscultation in children.
- scope of examination of patients with diseases in childhood. semiotics of the main lesions of various systems and the body as a whole.
- clinical interpretation of the obtained data of General and additional examination of patients.
- principles of rational nutrition of children and principles of healthy lifestyle

ESTIMATION OF PHYSICAL DEVELOPMENT

Estimation of physical development has the special value in child's age. For estimation of physical development except measuring of length and mass of body, it is necessary to determine the head and chest circumference, proportions of child's body and calculate the some indexes that allow giving the objective estimation of physical development of this child.

Observation: Child's facial expression (pain), response to social overtures. Interaction with caretakers and examiner. Body position (leaning forward in sitting position; epiglottitis, pericarditis). Weak cry (serious illness), high- pitched cry (increased intracranial pressure, metabolic disorder); moaning (serious illness, meningitis), grunting (respiratory distress).

Vital Signs: Respiratory rate, blood pressure, pulse, temperature.

Measurements: Height, weight; head circumference in children 2 years; plot on growth charts and determine growth percentiles.

Skin: Cyanosis, jaundice, pallor, rashes, skin turgor, edema, hemangiomas, café au lait spots, nevi, Mongolian spots, hair distribution, capillary refill (in seconds).

Lymph Nodes: Location, size, tenderness, mobility and consistency of cervical, axillary, supraclavicular, and inguinal nodes.

Head: Size, shape, asymmetry, cephalohematoma, bossing, molding, bruits, fontanelles (size, tension), dilated veins, facial asymmetry

Eyes: Pupils equal round and reactive to light and accommodation (PERRLA); extraocular movements intact (EOMI); Brushfield's spots; epicanthic folds, discharge, conjunctiva; red reflex, corneal opacities, cataracts, fundi; strabismus (eye deviation), visual acuity.

Ears: Pinnas (position, size), tympanic membranes (landmarks, mobility, erythema, dull, shiny, bulging), hearing.

Nose: Shape, discharge, bleeding, mucosa, patency.

Mouth: Lips (thinness, downturning, fissures, cleft lip), teeth, mucus membrane color and moisture (enanthem, Epstein's pearls), tongue, cleft palate.

Throat: Tonsils (erythema, exudate), postnasal drip, hoarseness, stridor. Neck: Torticollis, lymphadenopathy, thyroid nodules, position of trachea.

Thorax: Shape, symmetry, intercostal or substemal retractions. Breasts: Turner stage, size, shape, symmetry, masses, nipple discharge, gynecomastia.

Lungs: Breathing rate, depth, expansion, prolongation of expiration, fremitus, dullness to percussion, breath sounds, crackles, wheezing, rhonchi.

Heart: Location of apical impulse. Regular rate and rhythm (RRR), first and second heart sounds (S1, S2); gallops (S3, S4), murmurs (location, position in cycle, intensity grade 1-6, pitch, effect of change of position, transmission). Comparison of brachial and femoral pulses

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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

6. Control questions (feedback):

1. List the periods of childhood.
2. Name the sections of the medical history (IB).
3. What are the rules of anamnesis.
4. What are the two groups are divided patient complaints at admission?
5. Define the main and secondary complaints.
6. List the rules of the General inspection.
7. List the sequence of the General inspection.
8. What is included in the concept of "anthropometric data"? How to calculate Quetelet index (body mass index). What are the normal Quetelet index, as well as obesity of varying degrees.

№2

1.Theme: Semiotics of nervous system damage in children

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:

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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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

№3

1.Theme: Semiotics of nervous system damage in children

2.Purpose: to master the methods of examination of the musculoskeletal system, including the specifics of collecting complaints, anamnesis, laboratory and instrumental methods of research

3.Lecture theses:

In examining the musculoskeletal system it is important to keep the concept of function in mind. Note any gross abnormalities of mechanical function beginning with the initial introduction to the patient. Continue to observe for such problems throughout the interview and the examination.

On a screening examination of a patient who has no musculoskeletal complaints and in whom no gross abnormalities have been noted in the interview and general physical examination, it is adequate to inspect the extremities and trunk for observable abnormalities and to ask the patient to perform a complete active range of motion with each joint or set of joints.

If the patient presents complaints in the musculoskeletal system or if any abnormality has been observed, it is important to do a thorough musculoskeletal examination, not only to delineate the extent of gross abnormalities but also to look closely for subtle anomalies.

To perform an examination of the muscles, bones, and joints, use the classic techniques of inspection, palpation, and manipulation. Start by dividing the musculoskeletal system into functional parts. With practice the examiner will establish an order of approach, but for the beginner it is perhaps better to begin distally with the upper extremity, working proximally through the shoulder. Then, beginning with the temporomandibular joint, pass on to the cervical spine, the thoracic spine, the lumbar and sacral spine, and the sacroiliac joints. Finally, in the lower extremity, again begin distally with the foot and proceed proximally through the hip.

Use the opposite side for comparisons: it is easier to spot subtle differences as well as identify symmetrical problems. If there is any question, use your own anatomy as a control.

Glean the maximum information from observation. Concentrating on one area at a time, inspect the area for discoloration (e.g., ecchymoses, redness), soft tissue swelling, bony enlargement, wasting, and deformity (abnormal angulation, subluxation). While noting these changes, attempt to determine whether they are limited to the joint or whether they involve the surrounding structures (e.g., tendons, muscles, bursae).

Observe the patient's eyes while palpating the joints and the surrounding structures. A patient's expression of pain depends on many factors. For this reason the verbalization of pain often does not correlate directly with the magnitude of the pain. The most objective indicator of the magnitude of tenderness produced by presence on palpation is involuntary muscle movements about the eyes. Therefore, the examiner should observe the patient's eyes while palpating the joints and surrounding structures. With practice the examiner will become skilled in evaluating the magnitude of pain produced by the examination and will be able to do a skillful evaluation without producing excessive discomfort to the patient. Note areas of tenderness to pressure, and if possible identify the anatomic structures over which the tenderness is localized.

One should also note areas of enlargement while palpating the joints and surrounding structures. By noting carefully the consistency of the enlargement and its boundaries, one can decide whether this is due to bony widening, thickening of the synovial lining of the joint, soft tissue swelling of the structure surrounding the joint, an effusion into the joint capsule, or nodule formation, which might be located in a tendon sheath, subcutaneous tissue, or other structures about the joint.

While palpating the joints, note areas of increased warmth (heat). A method for doing this that will help even the most inexperienced to perceive subtle increases in heat is to choose the most heat-sensitive portion of the hand (usually the dorsum of the fingers) and, beginning proximally, lightly pass this part of your hand over all portions of the patient's extremity several times. As you proceed from proximal to distal, the skin temperature gradually cools. If you find an area becoming slightly warmer, this represents increased heat.

Have the patient perform active movements through an entire range of motion for each joint. Defects in function can be most rapidly perceived by having the patient perform active functions with each region of the musculoskeletal system. This reduces examination time and helps the examiner to identify areas in which there is poor function for more careful evaluation.

Manipulate the joint through a passive range of motion only if the patient is unable actively to perform a full range of motion, or if there is obvious pain on active motion. In passively manipulating a joint, note whether there is a reduction in the range of motion, whether there is a pain on motion, and whether crepitus is produced when the joint is moved. Note also whether the joint is stable or whether abnormal movements may be produced.

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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO

3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

6. Control questions (feedback):

1. What are the features of the musculoskeletal system in children.
2. What are the pathological changes detected during the General examination of the child with the pathology of musculoskeletal?
3. The technique of palpation and percussion of the musculoskeletal in children.
4. The instrumental and laboratory methods of research in the pathology of the musculoskeletal system

№4

1.Theme: Methods of studying the musculoskeletal system in children.
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:

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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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.

№ 5

1.Theme: Methods of studying the respiratory system in children

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:

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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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.

№ 6

1.Theme: Methods of studying the cardiovascular system in children

2.Purpose: to master the technique of questioning and examination, palpation and percussion of sick children of different age groups with pathology of the cardiovascular system.

3.Lecture theses:

INSPECTION: usually begin from the face and neck of patient, pay attention on the color of skin - presence of cyanosis, pallor.

Examine an apex beat - the periodic rhythmical pulsation of a thorax in the field of heart apex in the moment of the heart systole. Often, especially in obese children, an apex beat can be not visible. It is well seen in children - astenics with badly advanced subcutaneous fat layer. In healthy children depending on age the apex beat may be posed in 4-th (in breast children) or in 5-th intercostals, 1-2 cm lateral to the medioclavicular line (till the age of 7 years), or on it (7-12 years), or little middle from the left mediclavicular line (after 12 years). The area of an apex beat should not exceed 1-2 cm ^{2}. A negative apex beat, which is characterized by retraction of intercostal space during a systole in the field of an apex beat, can be observed in pathology. The cardiac thrust - concussion of a thorax, which is observed in the field of the heart and spreaded on a breastbone and epigastria. It is caused by pulsation of hypertrophic heart and, mainly, adjoining to the thorax right ventricle. In healthy children the cardiac thrust is not observed.

PERCUSSION: is carried out in the vertical or horizontal position of the patient. There are distinguished immediate and mediate percussion of heart. At mediate percussion the finger-plessimeter is closely put to the chest, parallel to the determined border, on direction from a clear sound to dull one, percussion can be mean force and the most silent. An important point is drawing percussion strictly in a

direction in front to back (concerning a body of the child). Marking of the heart border is carried out on the external border of the finger-plessimeter, turned to the clear pulmonary sound. Order of percussion: right, upper, left borders of heart. In absence of pathology it is difficult to determine the borders of absolute dullness of heart for children, therefore they practically are not percussed.

Determination of the right border of relative heart dullness: the finger-plessimeter puts in the second intercostals on the right medioclavicular lines. Moving the plessimeter-finger from top to bottom on ribs and intercostals, by silent percussion one defines the lower border of lung. Then a doctor transfers the finger-plessimeter on one intercostal space above, terns it on 90 degrees, placing it parallel to right border of cardiac dullness. While making of the percussion impact of average force, one moves the finger-plessimeter on intercostals in the direction of heart before occurrence of dullness. At estimation of the right border the distance from the right border of breastbone must be specified.

Determination of upper border of relative heart dullness: the finger-plessimeter is put in the left parasternal line, starting from the first intercostal space. The doctor moves a finger consistently on ribs and intercostal spaces downward, a percussion step is equal to the width of finger. A mark of the top border make on the top edge of a finger.

Determination of the left border of relative heart dullness: find an apex beat and percuss on according intercostal, starting from a media-axillary line, the plessimeter-finger it is necessary to place parallel to determined border, and impact should make strictly in front to back direction, i.e. in sagittal planes.

4. Illustrative material: presentation in 25 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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO

3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

6. Control questions (feedback):

1. List the complaints of patients with diseases of the cardiovascular system.
2. What changes can be detected when examining the heart area?
3. Method of palpation of the apical impulse. Detailed characteristic of the apical push. What part of the heart is formed by the apical impulse? It changes with different pathologies.
4. Palpation technique of cardiac impulse. What are the reasons that led to the possibility of detecting a heart attack.
5. Palpation of the great vessels.

№ 7

1. Theme: Semiotics of CVS lesion 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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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.

№8

1.Theme: Semiotics of digestive system emptying in children
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.
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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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

№9.

1.Theme: Methods of examination of the urinary system
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.

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. 1 Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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.

№12.

1.Theme: Semiotics of blood flow and the blood-circulation system

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.
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. 1 Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO
3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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.

№10

1.Theme: Methods of studying the immune system
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. Hugo Van Bever/. Allergic Diseases In Children: The Science, The Superstition And The Stories. Singapore : World Scientific. 2009//eBook Collection EBSCO
2. Thomas J.A. Lehman. A Clinician's Guide to Rheumatic Diseases in Children. Oxford : Oxford University Press. 2009 //eBook Collection EBSCO

3. Andrew White. Pediatric Diagnostic Medicine : A Collection of Cases. Philadelphia : Wolters Kluwer Health. 2021//eBook Collection EBSCO

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.