

Ministry of health of Ukraine
National Pirogov Memorial Medical University

“AGREED”

at Methodical Meeting
of pediatric disciplines
protocol № 6
from 25.04.2023

Head of Methodical Meeting,
professor of HEI


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“APPROVED”

by Academic Council
National Pirogov Memorial
Medical University
protocol № 4
from 27.04.2023

Head of Academic Council,
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Instructions for station number 5

Pediatric clinical situation with a standard patient

Tasks:

1. Be able to evaluate syndrome or most possible diagnose of the disease based on received data.
2. Provide differential diagnose.
3. Be able to explain results of additional laboratory and instrumental investigations.
4. Prescribe additional laboratory and/or instrumental investigations of a patient to confirm evidence based diagnose.
5. Determine treatment strategy of the patient with estimated diagnose according to the actual algorithms and standard schemes.

Equipment of the station:

1. Clinical situation scenario.
2. Pediatric phantom.
3. Results of additional laboratory and instrumental investigations.
4. Paper A4.
5. Pen.

In the case of distance form (in the conditions of the wartime situation and in order to prevent the spread of acute respiratory disease COVID-19 caused by coronavirus SARS-CoV-2), the procedure of Objective structured practical (clinical) exam (OSP(C)E) is regulated by the Regulations on the introduction of elements of distance learning in VNPMU and will be held on the Microsoft Teams platform.

Equipment for remote form of OSP(C)E: situational tasks, data sets, virtual patients.

On the day of the exam, the secretary of the State Examination Commission join a student to the examiner's meeting accordingly to the schedule of a group that passes the exam. At the station the student must greet and introduce himself, provide a document (passport) proving his identity to the teacher. The student receives a clinical task, which include assessment of the patient's complaints, patient's history and physical examination data, interpret the results of laboratory and instrumental methods of examination of the patient, make a diagnosis, determine the tactics of the patient and prescribe treatment with naming a group of drugs and examples, students have to give a short answer to additional questions if it present in task.

The duration of passing of each station is 5-7 minutes. When the time is up the examiner will not accept the answer. Note that the teacher is an observer of your actions and does not provide instructions, comment or question.

Requirements for passing the station:

- Use a computer or laptop during the exam.
- The answer will be accepted only when camera and microphone are turned on and the student who passes the exam is clearly visible with a clear sound.
- Video is recorded at every station.

It is forbidden to use a mobile phone and other electronic gadgets, copy and take out any information related to the exam.

Part of OSP(C)E -2 for pediatric infectious diseases consists of two stations.

Station № 5 "Pediatric clinical situational task (standardized patient)"

Situational tasks from the modules of pediatric cardiology, rheumatology, pulmonology, gastroenterology, nephrology, hematology, neonatology, pediatric infectious diseases and endocrinology are presented.

An example of evaluating the response of a higher education applicant (HEA) to a practical (situational) task.

A girl of 14 years old complains of heartburn, belching with air, sometimes sour. Heartburn occurs mainly after eating fatty, fried foods, carbonated drinks. I got sick about 6 months ago when the above symptoms first appeared. The treatment did not receive.

FEGDS: hyperemia of the mucous membrane of the esophagus, there is a reflux of the stomach contents.

H. pylori - negative.

Tasks:

1. Establish a preliminary diagnosis, highlight the leading clinical syndromes.
2. Conduct a differential diagnosis.
3. Interpret the results of additional research methods.
4. Make a plan for further evaluation.
5. Make a treatment plan.

Examples of answers and scoring:

Parameters for scoring	Answer of student	Score/ traditional grade
1. Establish a preliminary diagnosis, highlight the leading clinical syndromes.	GERD with reflux esophagitis, mild. Dyspeptic syndrome.	1 («5») 0,8-0,92 («4») 0,6-0,79 («3»)
2. Conduct a differential diagnosis	Differential diagnosis: chronic gastroduodenitis, peptic ulcer of the stomach, peptic ulcer of duodenum, cholecystitis.	1 («5») 0,8-0,92 («4») 0,6-0,79 («3»)
3. Interpret the results of additional research methods	FEGDS is characterized by hyperemia of the mucous membrane of the esophagus, gastric emptying, it speaks of mucositis and the presence of reflux esophagitis. H. pylori - negative.	1 («5») 0,8-0,92 («4») 0,6-0,79 («3»)
4. Make a plan for further evaluation	Intraesophageal daily pH-metry, complete blood count, fecal occult blood test.	1 («5») 0,8-0,92 («4») 0,6-0,79 («3»)
5. Make a treatment plan	Treatment of GERD includes: recommendations for treatment, correction of the patient's nutrition. Antacids and/or alginates (aluminum phosphate, compounds of aluminum, magnesium, calcium, etc.). Prokinetics (domperidone suspension, etc.)	1 («5») 0,8-0,92 («4») 0,6-0,79 («3»)
Maximum score for each station – 5		

List of situations: various pathology of a childhood (pneumonia, bronchial asthma, cystic fibrosis, congenital heart diseases (coarctation of aorta, tetralogy of Fallot), juvenile rheumatoid (idiopathic) arthritis, reactive arthritis, IgA-associated vasculitis, urinary tract infection, acute pyelonephritis glomerulonephritis, thrombocytopenic purpura, leukemia, lymphoma, anemia, diabetes, congenital hypothyroidism, acute respiratory viral infection, duodenal ulcer, nonrheumatic carditis, hemolytic disease of newborns, hemorrhagic disease of the newborn, acute intestinal infection, scarlet fever).

SITUATION PROBLEM №1

Mother of 5 years old girls, complaints about the appearance of fever to 38.8 °C, dry cough, shortness of breath, weakness and lack of appetite in child. The disease began acutely 2 days ago.

Objectively: the general condition of the child is severe, adynamic. Body temperature 38,5 °C. The skin is pale. Cough is unproductive. RR 34 in 1 minute. Percussion above the lungs - in the lower parts from the right dulling of percussion sound; auscultation - weak breathing, fine crackles. Heart rate 135 for 1 minute. Tones of the heart are rhythmic, weakened. Changes from other organs and systems not detected.

CBC: Hb 120 g/l, RBC $3.2 \times 10^{12}/l$, CI 0.85, WBC $15.2 \times 10^9/l$, leukocytes formula: stabs 14%, segments 51%, m 2%, l 33%. ESR - 28 mm/h.

X-ray of the chest: infiltration in the projection of S₈₋₉ of the right lung.

Tasks:

1. Establish a preliminary diagnosis, select the leading clinical syndromes
2. Conduct a differential diagnosis
3. Interpret the results of additional research methods
4. Make a survey plan
5. Make a plan of treatment

SITUATION PROBLEM №2

6-year-old child, who has sensitized to domestic dust is at the outpatient. She complains on episodes of expiratory dyspnea, dry cough that appear at night and before the morning. During the last month, attacks occurred almost every day, 2-3 times a week at night.

Objectively: The skin is clean, pale. Mucous is pale pink. Tones of the heart are rhythmic, somewhat weakened. Percussion over the lungs is a boxed sound, auscultatory - hard breathing, wheezing (dry whistling wheezing), RR 32 per minute. Abdomen is soft, painless.

CBC: Hb - 128 g/l, RBC - $3.5 \times 10^{12}/l$, CI - 0.85, WBC - $8 \times 10^9/l$, leukocytes formula: stabs 3%, segments 58%, e 10%, l 21%, m 8%. ESR-5mm/hour

Tasks:

1. Establish a preliminary diagnosis, select the leading clinical syndromes
2. Conduct a differential diagnosis
3. Interpret the results of additional research methods
4. Make a survey plan
5. Make a plan of treatment

SITUATION PROBLEM №3

Parents of the 10 months old child complain on fatigue, intensification of the cyanosis and dyspnea during crying.

Objective: general condition is moderate, retardation of physical development, nails and fingers deformations 'drum sticks' and 'watch glasses'. Intense cyanosis of skin and mucous membranes is observed. BR is 64 per min, through the lungs

percussion – clear sound, auscultation – vesicular breathing are found. Pulse rate 150 per min. During auscultation of the heart - intense systolic murmur in 2 intercostal space to the left from the sternum is found. Liver is not enlarged.

Complete blood count: Hb 200 g/l, erythrocytes $6,0 \times 10^{12}/l$, CI 0,95, leucocytes $7,0 \times 10^9/l$, formula: st5%, seg 39%, e 3%, lymph 50%, m 3%. ESR 4 mm/h.

Chest X-ray pulmonary fields are observed on 1/3, heart shadow looks like a “boot shape”.

Tasks:

1. Provide primary diagnose and leading clinical syndromes.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №4

A 16-year-old girl complained on lack of appetite, nausea, and recurring burning pains in the epigastric region, which appear an hour after eating or at night. The pain is reduced if you take a forced position (lift the legs to the stomach).

Objectively: the tongue coated with white bloom. Muscle tension and pain noted in the epigastric region during palpation. Examination of the respiratory and cardiovascular systems revealed no changes. Physiological functions are not affected.

Hemogram: Hb 120 g/l, erythrocytes $3,9 \times 10^{12}/l$, CI-1.0, leukocytes $5,9 \times 10^9/l$, leukocyte formula: stabs 1%, segmental 68%, m 4%, e 3%, l 24%. ESR - 13 mm/hour.

Urinalysis: pathology not detected.

H. pylori test: positive

FEGDS: an ulcerative defect of $0,3 \times 0,2$ cm is determined on the mucous membrane of the 12-ligament.

Tasks:

1. Establish a preliminary diagnosis, highlight the leading clinical syndromes.
2. Conduct a differential diagnosis.
3. Interpret the results of additional research methods.
4. Make a plan for further evaluation.
5. Make a treatment plan.

SITUATION PROBLEM №5

6 years old girl feels dry mouth after flu A two weeks ago, along with thirst up to 2L per day, she has increased appetite, craving for sweets, weight loss, fatigue, polyuria.

On physical exam: dry skin, facial erythema, cracks in the corners of the mouth. Radial pulses 100 per minute. Regular heart rhythm. RR 20 per minute. Auscultation of lungs – vesicular sound. Tongue is dry with glossitis. Abdomen is soft, non tender on palpation. Liver + 2 cm below the costal margin.

Blood chemistries: K^+ 4.4 mmol/L, Na^+ 145 mmol/L.

Blood glucose 16.0 mmol/L.

pH of blood 7.25

Blood osmolarity – 310 MOs/L

Urinalysis: Reaction – alkaline. Specific gravity is 1013. White blood cells 2-3. Erythrocytes (negative). Renal epithelium 1-2. Urine glucose 2%, protein negative.

Tasks:

1. Make a preliminary diagnosis, main syndromes
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №6

Parents of 1-year-old girl visit the pediatrician with complaints of developmental delay and facial swelling. The child is sluggish, does not walk or talk and expresses no interest to toys.

The child was born to G2, P2, pregnancy was uncomplicated. Birth weight 4500 g. As a newborn, the baby had weak reflexes, open lateral fontanel, late bowel movements with meconium, long jaundice, late separation of the umbilical cord. After 3 month, the baby developed edema on the face and palms, flatulence, constipation. Head support was noted at 8 months.

On physical exam: skin is dry, icteric, cold to touch, with firm facial edema. Tongue is big, sticking out of the mouth, voice is harsh, saddle-shaped nose. Heart sounds are muffled, bradycardia. The abdomen is distended, constipation. Thyroid gland is not palpable.

Complete blood count: Hb 96 g/l. Erythrocytes $2.9 \times 10^{12}/l$. Color index 0.85. Leukocytes $5.1 \times 10^9/l$. Leucocytes formula: neutrophils: stabs 3%, segmented neutrophils 44%, lymphocytes 44%, eosinophils 5%, monocytes 4%, ESR 8 mm/h.

Blood chemistries: TSH 100 mU/L.

Tasks:

1. Make a preliminary diagnosis, main syndromes
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №7

A child is 10 years old complaints of general weakness, fast fatigability, bad appetite, body temperature up to 38-39°C for 2 weeks, enlarged cervical lymph nodes, pain in joints and bones, bruises on the trunk and limbs.

Objectively: the general condition is severe, pallor of the skin and mucous membranes. Polymorphic, polychromic, asymmetric rash is present on the trunk and

extremities. Cervical lymph nodes are enlarged to 1.5 -2 cm, painless. Liver +5 cm, spleen +4 cm.

Complete blood count: Hb 60 g / l, erythrocytes 2.2×10^{12} / l, CI - 0.8, leukocytes 28.1×10^9 / l, platelets - 14×10^9 / l, leukoformula: blast 64%, monocytes 4%, lymphocytes 32%, ESR 45 mm / h.

Myelogram: lymphoblasts 85%, total blast transformation of bone marrow with reduction of all cells.

Tasks:

1. What are the leading syndromes? Formulate suggested diagnosis.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №8

A 2 years old child hospitalized to the oncohematological department with complaints of pallor of the skin and mucous membranes, poor appetite, frailty of hair and nails, angular stomatitis. From the anamnesis it is known, that the child is from the third pregnancy. During pregnancy the mother suffered from anemia, wich was not treated. Feeding is mainly with cow's milk, without meat products. Childs weight is 13kg.

Objective: The skin and mucous membranes are pale. Heilitis, angular stomatitis. Lymph nodes are not enlarged. Liver +1 cm below lower costal margin, the spleen is not enlarged.

Complete blood count: Hb 82 g / l, erythrocytes 3.51×10^{12} / l, CI 0.7, leukocytes 9.5×10^9 / l, eosinophils 4%, stab neutrophyls 5%, segm. neutrophyls 30%, lymphocytes 55%, monocytes 6%, platelets 210×10^9 / l, ESR 12 mm / h.

Serum iron - 8.2 mkmol / l

Ferritin - 2 µg / l

Tasks:

1. What are the leading syndromes? Formulate suggested diagnosis
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №9

Parents of a 7 years' girl child applied to the doctor. At admission complains on pain in abdomen, fever up to 39 °C, poor appetite, and decrease activity. The child

is sick 1 day. The onset of the disease was acute. The child has no any chronic disorders. Her physical and mental development is normal.

On examination, the skin is clean, pale. The girl is non-active, has poor appetite, and does not drink fluid. Turgor of the skin was decreased. His chest auscultation is normal. The heart examination reveals normal S1 and S2 sounds without murmur. The abdomen was soft on palpation, marked tenderness and pain in the projection of the kidneys.

Complete blood count: Er $3,8 \times 10^{12}/l$. Hb 120 g/l, CI – 1,0. Leucocytes – $18,0 \times 10^9 / l$, stab neutrophils - 12%, segm. neutrophils - 70%, lymphocytes 12%, monocytes 2%, eosinophils-4%. ESR 32 mm/h.

Urinalysis: specific gravity - 1012, alkaline reaction, protein 0,66 g/l, leukocytes –all field of view (more then 100), erythrocytes 1-2.

Ultrasound of kidneys - slightly increased in size, parenchyma - 12 mm on both sides, normal size of renal pelvis.

Tasks:

1. Make a preliminary diagnosis, main syndromes.
2. Make a differential diagnosis.
3. Explain results of performed lab tests.
4. Make a plan of additional examination.
5. Make a plan of treatment

SITUATION PROBLEM №10

A 4 years old girl admitted to the department with complains on edema on face and extremities, abdominal wall and external genitalia, which appeared 1 week ago.

Objectively: the general condition is severe. The skin is pale. Edema is present on face, extremities, abdominal wall and external genitalia. During lung auscultation weak vesicular breathing in low part of lungs. RR 20. The heart examination showed weak S₁. BP is 90/50 mm.Hg. The pulse is 90 per min. Diuresis is 560 ml.

Complete blood count: Er $3,8 \times 10^{12}/l$. Hb 124 g/l, CI – 1,0. Leucocytes – $10,0 \times 10^9/l$, segm. neutrophils - 46%, lymphocytes 44%, monocytes 8%, eosinophils-2%. ESR 40 mm/h.

Biochemical parameters of blood: Total protein in blood – 42 g/l, albumin 19 g/l, hyper- α_2 -globulinemia. Blood cholesterol - 11,6 mmol / l. Urea levels 5,8 mmol/l, creatinine – 46 mkmol/l.

Urinalysis: specific gravity 1019, protein – 9,9 g/l, leukocytes 2-3, no red blood cells

Daily proteinuria – 4500 mg/day

Tasks:

1. Make a preliminary diagnosis, main syndromes.
2. Make a differential diagnosis.
3. Explain results of performed lab tests.
4. Make a plan of additional examination.
5. Make a plan of treatment

SITUATION PROBLEM №11

14 years old girl admitted to the hospital with complains on headache, edema of the face, legs, increased blood pressure and “brown urine”. Symptoms appeared 3 weeks after pharyngitis.

On physical examination she is in poor condition, afebrile, her blood pressure is 170/95 mm/ Hg, she is active and nontoxic in appearance, and she has facial edema and peripheral edema on low extremities. The heart examination reveals normal S1 and S2 sounds without murmur. His chest auscultation is normal. On abdominal examination, no tenderness or visceromegaly are detected.

Complete blood count: Hb 130 g/l, RBC $4 \times 10^{12}/l$, WBC $8 \times 10^9/L$, ESR-34 mm/h;

Urinalysis: color “brown urine”, leukocytes - 0-1 in visual field, red blood cells - the whole field of view (3+ blood); protein – 1,99 g/l.

Biochemical parameters of blood: urea: 10.3 mmol/l, creatinine 110 mkmol/l,

Daily proteinuria – 495 mg/day

Tasks:

1. Make a preliminary diagnosis, main syndromes.
2. Make a differential diagnosis.
3. Explain results of performed lab tests.
4. Make a plan of additional examination.
5. Make a plan of treatment

SITUATION PROBLEM №12

Boy of 10 years old complains on headache, dizziness, fatigue, dyspnea during physical activity.

Objectively: physical development – disproportional. Overdeveloped muscles of the upper part of the body, poor development of the muscles of lower part. Pulse is 78 per min – high and resistant on both hands and absent on a.femoris. BP on the hands is 220/120 mm Hg, on the legs – 80/50 mm Hg. Heart apex is high, resistant. Heart borders are moved to the left. Auscultation – systolic murmur in the interscapular region.

Complete blood count: Hb 120 g/l, erythrocytes $4,6 \times 10^{12}/l$, CI 0,9, leucocytes $6,1 \times 10^9/l$, formula: st 3%, seg 26%, e 1%, lymph 64%, m 6%. ESR 8 mm/h.

ECG – left ventricle hypertrophy.

Tasks:

1. Provide primary diagnose and leading clinical syndromes.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №13

Girl of 10 years age complains on fever up to 38,2°C, pain and limitation of the movements in both knee, ankles and wrists joints, morning stiffness. Objective: general condition of the girl is severe. Skin is clear, peripheral lymph nodes are not enlarged. Involved joints are sharply painful, swelled, with strictly limited volume of

movements. Over the lungs auscultation is vesicular type of breathing. HR – 94 per min. Heart tones are rhythmical. Abdomen is mild, painless during palpation. Liver +1 cm, painless, elastic. Spleen is not enlarged.

Complete blood count: Hb 110 g/l, erythrocytes $3,8 \times 10^{12}/l$, CI 1,0, leucocytes $16 \times 10^9/l$, formula: st 7%, seg 70%, e 4%, lymph 12%, m 7%. ESR 48 mm/h.

Tasks:

1. Provide primary diagnose and leading clinical syndromes.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan

SITUATION PROBLEM №14

The girl of 2 years old after the passed influenza got poor appetite, dyspnea, marble skin, swelling of the lower extremities.

Objective: general condition of the girl is severe. Skin and mucous membranes are marble, acrocyanosis, swelling of the lower extremities. Pulse - 160 per min, weak. Under the lungs during the percussion – clear sound, auscultation – rough breathing with crackles from both sides. Heart borders moved to the right and left. During the auscultation – weak I tone on the apex, III tone is present (gallop rhythm) and systolic functional murmur. Liver comes over the ribs line on 5 cm.

Complete blood count: Hb 125 g/l, erythrocytes $3,7 \times 10^{12}/l$, CI 0,9, leucocytes $18,1 \times 10^9/l$, formula: st 19%, seg 45%, e 4%, lymph 30%, m2%. ESR 24 mm/h. ECG and X-ray are attached.

Chest X-ray – cardiomegaly.

Tasks:

1. Provide primary diagnose and leading clinical syndromes.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan

SITUATION PROBLEM №15

A 5 years-old girl complaints of multiple bruises on the skin appeared after the acute respiratory infection.

Objectively: general condition is severe. On the face, trunk, limbs multiple petechias, eckhimosis are situated. Peripheral lymph nodes are not enlarged. During auscultation of lungs the breathing is vesicular. The heart sounds are rhythmic. Abdomen is soft, liver and spleen are not enlarged.

Complete blood count: Hb 127 g/l, Er $3,6 \times 10^{12}/l$, leucocytes – $5,8 \times 10^9/l$, stab neutrophyls -1%, segm. neutrophyls -53%, lymphocytes 40%, monocytes 6%, ESR 6 mm/h, platelets – $12 \times 10^9/l$.

Bleeding time (Duke test) - 7 minutes.

Myelogram: blast cells 0,6%. Hyperplasia of megakaryocytic sprout.

Tasks:

1. What are the leading syndromes? Formulate suggested diagnosis
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №16

An 8-year-old child, unvaccinated, was hospitalized with complaints of fever up to 38.9°C, dry cough, serous nasal discharge, conjunctivitis, photophobia and rash.

At objective examination: the spotty-pulse rash is visualized behind ears, on the face, a lateral surface of a neck, a trunk, with drain character, and also changes on a mucous membrane of the oral cavity in the form of white color spots, up to 1 mm in size are revealed.

Tasks:

1. Formulate a diagnosis according to the classification.
2. What is the pathognomonic symptom of this infection? When does this symptom appear?
3. What laboratory diagnostic methods are used to verify the diagnosis?
4. Make a treatment plan.
5. Specify the terms and drugs for the specific prevention of this infection.

SITUATION PROBLEM №17

The patient of 10 years old was admitted with complaints of yellowish skin and sclera.

He became acutely ill, his temperature was 38.3 ° C, his appetite decreased and he vomited again. On the 5th day from the onset of the disease appeared jaundice, fecal discoloration, dark urine. The child's condition has improved.

Objectively: the liver protrudes +2 cm from under the costal arch, painful on palpation. There have been no parenteral interventions in the last 6 months.

Biochemical blood test is presented in the table.

Indexes	Value	Reference values
Bilirubin total μmol / liter	84	8.5 - 20.5
ALT OD / l	105	4 - 36
AST OD / l	64	8 - 33
Thymol test od.	4	0 - 4

Tasks:

1. Formulate a diagnosis according to the classification.

2. With what diseases it is necessary to carry out differential diagnosis of this pathology?
3. What laboratory diagnostic methods are used to verify the diagnosis?
4. Interpret the results of additional survey methods.
5. What is the specific prevention of this disease? Specify the drug for specific prevention.

SITUATION PROBLEM №18

The mother of a 3-year-old child complains of a cough that gradually worsens. At objective examination on the 12th day of the disease: temperature 37.1°C, pale skin. The mucous membrane of the oropharynx was pale pink. On the bridge - a small ulcer on the tongue. There are bouts of coughing up to 20 times a day, characterized by a series of coughing fits, followed by wheezing, the attack ends with the discharge of vitreous sputum. Auscultatory over the lungs - hard breathing. On the chest radiography: the horizontal position of the ribs, increasing the transparency of the pulmonary fields, the expansion of the basal pattern. In the CBC: Leukocytosis - $23 \times 10^9 / l$, e. -1%, p.-3%, s-23%, l. -70%, m. -3%, ESR - 3 mm / h.

Tasks:

1. Formulate a preliminary diagnosis.
2. Indicate the causative agent of this disease and the cause of prolonged cough in this pathology
3. What are the most common complications in children in the first year of life?
4. Prescribe etiotropic therapy.
5. What is the specific prevention of this disease? Specify drugs for specific prevention and terms of vaccination.

SITUATION PROBLEM №19

The child was born from II pregnancy, II delivery at 30 weeks of gestation with body weight 1400 g. This pregnancy complicated by URTI at 26 weeks, from 28 weeks of gestation was risk of preterm delivery. Prophylaxis with dexamethasone was not performed. From the birth, the baby developed respiratory disorders, which progressed in dynamics.

Objective status: the child has cyanosis, retractions, grunts, irregular breathing with episodes of apnea. Auscultation of the respiratory system - *decreased air entry*.

Arterial blood gas tests: Pa O₂- 52 mm Hg, Pa CO₂ - 56 mm Hg, pH - 7.18.

Chest x-ray: "white" lungs, air bronchograms, the heart is not contoured.



Task:

1. Make a preliminary diagnosis, identify the main clinical syndromes
2. Conduct a differential diagnosis
3. Interpret the results of additional research methods
4. Make a plan of additional examination
5. Make a treatment plan

SITUATION PROBLEM №20

The child was transferred from the maternity hospital to the neonatal pathology department at the age of 36 hours after birth due to lethargy, poor sucking, yellowness of the sclera and skin.

From the anamnesis it is known that the girl was born from the 3 pregnancy, 2 labour. Birth weight 3000g, gestational age 39 weeks. Jaundice appeared 4 hours after birth.

On examination: hypotonia, low innate physiological reflexes. The large fontanelle does not pulsate. Jaundice spreads to the scalp, trunk, upper and lower extremities, excluding the palms and feet. The abdomen is soft on palpation, the liver protrudes from under the edge of the costal arch by 2.5 cm, the spleen - by 1.5 cm. Stool - meconium, urine - usual color.

CBC: hemoglobin 140 g/l, erythrocytes $4.6 \times 10^{12}/l$, color index 0.9, leukocytes $8.2 \times 10^9/l$, leukocyte formula: band cells 4%, segm 71%, mono 2% , lymph 23%. Reticulocytes -27%, hematocrit 0.38.

Biochemical study: total bilirubin 276 $\mu\text{mol}/l$ due to indirect, in dynamics after 4 hours - 296 $\mu\text{mol}/l$ due to indirect

Blood group of mother A (II) Rh (-), child A (II) Rh (+).

Tasks:

1. Establish a preliminary diagnosis, highlight the leading clinical syndromes
2. Conduct differential diagnostics
3. Interpret the results of additional research methods.
4. Make a follow-up examination plan
5. Make a treatment plan

SITUATION PROBLEM №21

The mother of a 4-days newborn boy complains of vomiting like "coffee grounds" after feeding, black stool.

From the anamnesis it is known that the child was born from an uncomplicated 1 pregnancy, premature birth at 35 weeks of gestation. Body weight at birth 2600 grams. Baby is breastfed.

Objectively: petechial rash on the skin of the abdomen, buttocks and lower extremities. The abdomen is soft, painless on palpation, the liver is not enlarged. The urine is yellow, the stool is melena.

CBC: Hb - 160 g/l, erythrocytes - $4.2 \times 10^{12}/l$, leukocytes - $9.0 \times 10^9/l$, hematocrit - 0.38, platelets - $220 \times 10^9/l$.

Coagulogram: fibrinogen - 3.0 g/l, prothrombin time - 28 sec., prothrombin index - 40%, coagulation time: beginning 4 minutes 35 seconds, ending 5 minutes 55 seconds.

Tasks:

1. Establish a preliminary diagnosis, highlight the leading clinical syndromes
2. Conduct differential diagnostics
3. Interpret the results of additional research methods.
4. Make a follow-up examination plan
5. Make a treatment plan

SITUATION PROBLEM №22

16 year-old girl entered the oncohematological department with complains on tumor in the neck area, nightsweating, itching of skin, weight loss. From family history it is known that the girl is sick about 6 months. She received 2 courses of antibiotic therapy, without any improvement.

Objective: Group of cervical lymph nodes on the right side up to 5 cm in diameter, dense, painless. The liver and spleen are not enlarged.

Complete blood count: Hb 102 g/L, erythrocyte $3,4 \times 10^{12}/L$, CI 0.9, leukocytes $14,1 \times 10^9/L$, platelets 72 %. Leukocyte count: band neutrophils 14%, segm. neutrophils 66%, monocytes 3%, lymphocytes 17%. Erythrocyte sedimentation rate 35 mm/h.

CT of the neck and chest: the increased cervical lymph nodes on the right side and paratracheal lymph nodes.

Histological examination of lymph nodes detected the presence of Sternberg cells.

Tasks:

1. Provide primary diagnose and leading clinical syndromes.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan

SITUATION PROBLEM №23

3 years old child admitted to hospital with complaints of constant cough with viscous sputum. Suffer from respiratory pathology from 3 months.

Objective: body temperature 37.3 °C. Retard in physical development. The skin is pale, salty taste, naso-labial triangle cyanosis. RR 42 for 1 minute. Percussion of the lungs mosaic pattern, auscultation - mixed crackles on both sides. HR 102 for 1 minute. Cardiac tones rhythmic, relaxed. Abdomen is soft, liver +2 cm. Polyexcrements, shine emptying.

Hemogram: Hb 108 g/L, erythrocytes $3.0 \times 10^{12}/L$, CI - 0.8, leukocytes $14 \times 10^9/L$, leucocyte formula: stabs 3% segments 58% e 3% m 8 % lymphocytes 28%. ESR - 19 mm/h.

Coprogram: neutral fat (++++).

X-ray of the lungs: areas of high pneumatisation alternate with infiltration.

Analysis of sputum micro flora: identified St.aureus 10^5 , sensitive to Augmentin.

Tasks:

1. Make a preliminary diagnosis, main syndromes.
2. Make a differential diagnosis.
3. Explain results of performed lab tests.
4. Make a plan of additional examination.
5. Make a plan of treatment

SITUATION PROBLEM №24

A 14-year old boy complains of sharp paroxysmal aching pain in the stomach, which occurs when fasting and after eating. Besides, nausea, sour eructation, heartburn and loss of appetite are being observed.

Observed: skin and visible mucous membranes are clean and pale. White coated tongue. Tenderness and muscle tension determined during the palpation of the epigastric region. During the examination no changes in other organs and systems were found. Bowel and bladder habits not affected.

Hemogram: Hb - 116 g/l, erythrocytes $3.8 \times 10^{12}/l$, colour index - 1.0, leukocytes $5.9 \times 10^9/l$, differential blood cell count: stab cells - 1%, segmentonuclear cells - 68%, monocytes - 4%, eosinophils - 3%, lymphocytes - 24%. ESR - 13 mm/hr.

Urine analysis: nothing abnormal detected.

pH measurement of stomach: hyperacidity.

Fiberoptic esophagogastrroduodenoscopy: smaller curvature of the stomach in the subcardial area defines an ulcer sized 0.3×0.2 cm with convergence of the mucous lining folds.

Bacteriologic culture of the stomach contents: Helicobacter pylori found.

Tasks:

1. Provide primary diagnose and leading clinical syndromes.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan

SITUATION PROBLEM №25

The boy of 8 years has complains on pain and swelling of the left knee joint, increased body temperature up to 37,6 C. From the anamnesis known that 2 weeks ago child passed enterocolitis.

Objective: the joint is enlarged, swelled and painful during the palpation, movements are limited. Skin around the joint is hot. Internal organs – without pathological findings.

CBC: Hb 124 g/l, erythrocytes $4,4 \times 10^{12}/l$, CI – 0,9, leucocytes $11,6 \times 10^9/l$. Leucocytes formula: st 7%, seg 57%, e 6%, m 6%, lymph 24%. ESR 21 mm/h.

Activity of the inflammatory process: T-ASLO 144 IU, C-reactive protein – 3,6 g/l, RF (-), circulated immune complexes – 11 IU.

USS of the left knee joint: free fluid up to 8 mm.

Tasks:

1. What are the leading syndromes. Formulate suggested diagnosis
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №26

5 years old boy complained on appearance of skin rash after the acute viral infection, swelling and pain of both knee joints.

Objective: Monomorphic, monochrome, symmetrical hemorrhagic rash noticed on the legs, thighs, above the surface of the skin, does not disappear after pressure. Swelling and pain of the knee joints. The abdomen is soft, painless, with no signs of peritoneal irritation.

Complete blood count: Hb 125 g/L, erythrocyte $3,8 \times 10^{12}/L$, CI 0.9, leukocytes $10,4 \times 10^9/L$, platelets - $186 \times 10^9/L$. Leukocyte count: st 8%, segments 60% , monocytes 5% , lymphocytes 22% . Erythrocyte sedimentation rate 28 mm/h.

The duration of bleeding by Duke: 3 minutes.

The time of blood coagulation by Burker: beginning 2'30 ", the end 3'00

Gregersen's reaction - negative.

Tasks:

1. What are the leading syndromes. Formulate diagnose.
2. Provide differential diagnose.
3. Explain results of the additional investigations.
4. Create examination plan.
5. Create treatment plan.

SITUATION PROBLEM №27

The newborn boy at the age of 5 days was admitted to the neonatal pathology department with the mother's complaints of lethargy, impaired sucking, severe jaundice.

From the anamnesis it is known that the child was born from the first pregnancy and childbirth without complications, at a gestational age of 39 weeks. During pregnancy, the woman was not registered. The score on the Apgar scale at the 1st minute was 7 points, at the 5th minute - 8 points, body weight at birth 2800 g. On the second day there was a yellowish color of the skin of the face and trunk. Discharged from the hospital on the third day at the insistence of parents.

Objectively: jaundice on the head, trunk, upper and lower extremities, palms and feet, icteric color of the mucous membranes. Congenital reflexes are weakened, sucks sluggishly, spontaneous motor activity is reduced. The abdomen is soft, the liver is + 2.0 cm. The urine and feces are yellow.

Hemogram: Hb - 142 g/l, erythrocytes - 4.2×10^{12} , Ht- 0.40, platelets - 200×10^9 , leukocytes - 8.5×10^9 , leukocyte formula: stub 5%, segm. 48%, m 3%, l 44%.

Biochemical blood test: total serum bilirubin 305 $\mu\text{mol/l}$, indirect 298 $\mu\text{mol/l}$.

Blood group: mother O (I) Rh (+), child A (II) Rh (+).

Tasks:

1. Establish a preliminary diagnosis, identify the leading clinical syndromes
2. Carry out differential diagnostics
3. Interpret the results of additional research methods
4. Make a plan for additional examination
5. Make a treatment plan

SITUATION PROBLEM №28

Anamnesis: The child was born from II pregnancy, II delivery at 36 weeks of gestation with body weight 2800 g. The mother received anticoagulation therapy during pregnancy. His Apgar scores were 7 and 9 points at 1 and 5 minutes, respectively.

Objective status: The baby is breastfed. On the 4th day: hematemesis, melena. The abdomen is soft, painless on palpation, the liver is not enlarged. The urine is yellow.

CBC: Hb - 165 g / L, Er - 4.4×10^{12} / L, WBC - 8.0×10^9 / L, Ht - 0.44, Pl - 210×10^9 / L.

Coagulation test: fibrinogen - 3.4 g / l, prothrombin time - 24 seconds, prothrombin index - 50%, clotting time: beginning - 4 minutes 35 seconds, end - 5 minutes 55 seconds.

Tasks:

1. Make a preliminary diagnosis, identify the main clinical syndromes
2. Conduct a differential diagnosis
3. Interpret the results of additional research methods
4. Make a plan of additional examination
5. Make a treatment plan

SITUATION PROBLEM №29

In a 5-year-old child attending kindergarten, the disease began acutely, with a rise in body temperature to 38.5 °C, abdominal pain, scanty stools with mucus and blood.

Objectively: t-38.7 °C, pulse 120 beats / min, respiratory rate 32 breaths / min. The condition is severe, lethargic, pale skin. The tongue is wet, covered with white plaque. The abdomen is soft, the sigmoid colon is spasmodic, painful on palpation.

Tasks:

1. Formulate a preliminary diagnosis according to the classification.
2. Indicate the type of diarrhea and the pathogenetic mechanism of its development.
3. Name the main pathogens of this disease
4. List the local complications of this infection.
5. Specify groups of drugs for etiotropic therapy.

SITUATION PROBLEM №30

A 6-year-old child complains of fever up to 38.9 °C, general malaise, sore throat, skin rash.

During examination: the mucous membrane of the oropharynx is brightly hyperemic, patches on the tonsils are determined. Submandibular lymph nodes are enlarged, elastic. The rash is pin-point and more intensified in the natural folds and on the bending surfaces of the extremities. There is pallor of the nasolabial triangle. The liver and spleen are not enlarged.

Tasks:

1. Formulate a diagnosis.
2. Name the three lines in the pathogenesis of the disease.
3. Indicate early and late complications of the disease.
4. Which laboratory diagnostic methods can be used to confirm the diagnosis?
5. Specify drugs for etiotropic therapy for management of this disease.