Ministry of health of Ukraine
National Pirogov Memorial Medical University

Instructions for station number 3

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.

List of situations: various pathology of a childhood (pneumonia, bronchial asthma, congenital heart diseases (coarctation of aorta, tetralogy of Fallot), juvenile rheumatoid (idiopathic) arthritis, urinary tract infection, glomerulonephritis, thrombocytopenic purpura, leukemia, anemia, diabetes, congenital hypothyroidism, acute respiratory viral infection, duodenal ulcer, GERD, nonrheumatic carditis, hemolytic disease of newborns, acute pyelonephritis).

SITUATION PROBLEM

Male newborn at the age of 5 days was admitted to the neonatal pathology department. The mother reported that her baby had severe jaundice discoloration, sucking poorly and has been less active.

From anamnesis it is known that the child was born from the first uncomplicated pregnancy and delivery with gestational age of 39 weeks. The infant has Apgar scores of 7 at 1 minutes and 8 at 5 minutes, body weight at birth was 3250 grams. On the second day, the icteric color of the face and trunk appeared. He is discharged home at the age 3 days from maternity hospital, breastfed.

Physical examination: jaundice of the head, trunk, upper and lower extremities, palms and feet, including scleral and mucous membranes icterus. Congenital reflexes and sucking are depressed, spontaneous motor activity is decreased. Abdomen is soft, liver + 2,0 cm. Urine and stool – yellow.

CBC: Hb – 142 g/l, RBC – 4,2 x 10^{12}/L, hematocrit – 0,40, platelets – 200 x 10^{9}/L, leukocytes – 8,5 x 10^{9}/L, differential count: band – 5%, neutrophyl – 48%, monocytes – 3%, lymphocytes – 44%.

Total serum bilirubin is 305 μmol/l, indirect 298 μmol/l.
Mother's blood type is group O (I) Rh-positive, baby's blood type is A (II) Rh-positive.

Tasks:

1. Put preliminary diagnosis, assess a degree of jaundice by the Cramer's scale.
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

A mother with a child of 7 months turned to the emergency department of a children's hospital with complaints about an increase in body temperature up to 39°C, capriciousness, nasal breathing, while sucking the breast, the child becomes restless, cries, refusal of feeding.

From the anamnesis it is known that the child is ill for the fourth day. The disease began acutely with the violation of nasal breathing and mucous discharge from the nose, coughing, temperature increase to 37,5°C. Mother treated her own child – antipyretic drugs. The condition of the child has deteriorated.

Objectively: the skin is clean, pale pink. Nasal breathing is impaired. The back wall of the pharynx is hyperemic. Positive trestle symptom on the right. Above the lungs is percutaneously clear pulmonary sound, auscultative vesicular respiration, BH – 30/min. Heart sounds are clear, rhythmic. Abdomen is soft, painless. Stool, urination is normal.

Complete blood count: Hb 126 g/l, erythrocytes 3,7×10^{12}/л, CI 1,0, leukocytes – 12,8×10^{12}/l. Leukocyte formula: stab 9%, segmental 60%, monocytes 2%, lymphocytes 29%. ESR 22 mm/hour.

Examination otorhinolaryngologist – when otoscopy the drum partition on the right is retracted, hyperemic.

Tasks:
1. To make a preliminary diagnosis, to name the leading clinical syndromes.
2. Conduct a differential diagnosis.
3. Interpret the results of additional survey methods.
4. Make a plan for further evaluation.
5. Make a treatment plan.

SITUATION PROBLEM

Parents of a 7 years' girl child applied to the doctor. At admission complains on pain in abdomen, fever up to 39 ^{o}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 $3{,}8\times10^{12}$/l. Hb 120 g/l, CI – 1,0. Leucocytes – $18{,}0\times10^{9}$ / l, stab neutrophils - 12%, segm. neutrophyls - 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

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 $S_{1.}$ BP is 90/50 mm.Hg. The pulse is 90 per min. Diuresis is 560 ml.

Complete blood count: Er $3{,}8\times10^{12}$/l. Hb 124 g/l, CI – 1,0. Leucocytes – $10{,}0\times10^{9}$/l, segm. neutrophyls - 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

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 8×10^9/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

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 – 12×10^9/л.

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

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

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 $9,5\times 10^{9}$ / 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.