

**FEDERAL STATE BUDGET EDUCATIONAL
HIGHER EDUCATION INSTITUTION
"ROSTOV STATE MEDICAL UNIVERSITY"
MINISTRY OF HEALTH OF THE RUSSIAN FEDERATION**

FACULTY OF TREATMENT AND PREVENTION

Appraisal Fund
in the discipline "Endocrinology"

Specialty 05/31/01 General Medicine

1. List of competencies formed by the discipline (in full or partially) professional (PC)

Code and name of professional competencies	Indicator(s) of professional achievement competencies
PK-8	ability to determine tactics for managing patients with various nosological forms
PK-10	readiness To providing medical assistance with sudden acute diseases, conditions, exacerbation of chronic diseases that are not accompanied by a threat to the patient's life and do not require emergency medical care

2. Types of assessment materials in accordance with the competencies being developed

Name competencies	Types of assessment materials	number of tasks for 1 competency
PC-8	Closed tasks	25 with sample answers
	Open type tasks: Situational tasks Questions for an interview Tasks for additions (no more than 10)	75 with sample answers
PC-10	Closed tasks	25 with sample answers
	Open type tasks: Situational tasks Questions for an interview Tasks for additions (no more than 10)	75 with sample answers

OPK-8:

Closed type tasks:

Task 1. Instructions: Choose one correct answer. What causes the pathogenesis of type 2 diabetes mellitus?

1. Reversible binding of insulin circulating in plasma by antibodies
2. Increased function of the adrenal cortex
3. Violation of somatostatin secretion
4. Impaired insulin secretion and sensitivity of peripheral tissues to insulin

insulin

5. Thyroid hormone deficiency

Sample answer: 4. Impaired insulin secretion and sensitivity of peripheral tissues to insulin

Task 2. Instructions: Choose one correct answer.

Risk factors for developing type 2 diabetes mellitus include all of the following except:

1. Impaired glucose tolerance

2. Fasting hyperglycemia
3. History of gestational diabetes mellitus
4. Birth of a baby weighing 3200 g
5. High blood pressure *Sample answer:*4. Birth of a child weighing 3200 g. Task 3. Instructions: Choose one correct answer. How many carbohydrates are contained in 1 unit of bread (XE)? : 1. 10-12 g carbohydrates

- 2. 15 g carbohydrates
- 3. 8-15g carbohydrates
- 4. 2 g carbohydrates
- 5. 20 g carbohydrates

*Sample answer:*1. 10-12 g carbohydrates

Task 4. Instructions: Choose one correct answer.

In the pathogenesis of type 2 diabetes mellitus, there are main causes, except: 1. Insulin resistance

- 2. Relative insulin deficiency
- 3. Defect in insulin secretion with insulin resistance
- 4. Destruction of pancreatic cells, usually leading to absolute insulin deficiency

*Sample answer:*4. Destruction of pancreatic cells, usually leading to absolute insulin deficiency

Task 5. Instructions: Choose one correct answer. What cells produce insulin?

- 1. B cells of the islets of Langerhans
- 2. A cells of the islets of Langerhans
- 3. D cells of the islets of Langerhans
- 4. PP cells
- 5. C cells

*Sample answer:*1. B cells of the islets of Langerhans

Task 6. Instructions: Choose one correct answer.

The clinical picture of type 2 diabetes mellitus is characterized by all of the following except:

- 1. Thirst
- 2. Obesity
- 3. Increased appetite
- 4. Dry mouth
- 5. The appearance of hand tremors

*Sample answer:*5. The appearance of hand tremors

Task 7. Instructions: Choose one correct answer.

Drug of choice at the 1st stage of treatment of type 2 diabetes mellitus with an initial HbA1c of 6.5 – 7.0%:

- 1. Metformin
- 2. Short-acting insulin
- 3. Basal insulin
- 4. Human insulin analogue
- 5. Sulfonylurea drug *Sample answer:*1 Metformin

Task 8. Instructions: Choose one correct answer.

Fiber performs all of the following functions in the body, except: 1. Slowing down the absorption of glucose into the blood
2. Normalization of lipid metabolism
3. Stimulation of intestinal motility
4. Quick satiety and decreased appetite
5. Is an additional source of energy
*Sample answer:*5. Is an additional source of energy

Task 9. Instructions: Choose one correct answer. An oral glucose tolerance test (OGTT) is performed using:

1. 50 g glucose
2. 25 g glucose
3. 75 g glucose
4. 60 g glucose
5. 30 g glucose

*Sample answer:*3. 75 g glucose

Task 10. Instructions: Choose one correct answer.

Which drug does not belong to the group of dipeptidyl peptidase 4 inhibitors (DPP-4) 1.

1. Vildagliptin
2. Saxagliptin
3. Sitagliptin
4. Linagliptin
5. Repaglinide

*Sample answer:*5. Repaglinide

Task 11. Instructions: Choose one correct answer. What causes the pathogenesis of type 1 diabetes mellitus?

1. Autoimmune aggression to beta cells of the islets of Langerhans
2. Increased function of the adrenal cortex
3. Violation of somatostatin secretion
4. Impaired insulin secretion and sensitivity of peripheral tissues to insulin
5. Thyroid hormone deficiency

*Sample answer:*1. Autoimmune aggression to beta cells of the islets of Langerhans

Task 12. Instructions: Choose one correct answer. A characteristic sign of the manifestation of type 1 diabetes mellitus: 1. Increase in body weight

2. Losing body weight
3. Increased blood pressure
4. Reduced amount of urine output
5. Increased body temperature

*Sample answer:*2. Losing body weight

Task 13. Instructions: Choose one correct answer.

Which pathogenetic link relates to type 1 diabetes mellitus: 1. Insulin resistance

2. Relative insulin deficiency
3. Defective insulin secretion with insulin resistance
4. Destruction of pancreatic cells, usually leading to absolute insulin deficiency

Sample answer: 4. Destruction of pancreatic cells, usually leading to absolute insulin deficiency

Task 14. Instructions: Choose one correct answer.

Which of the following symptoms is typical in the clinic of type 1 diabetes mellitus: 1.

Thirst

2. Polyuria

3. Loss of body weight due to increased appetite

4. Dry mouth

5. All of the above

Sample answer: 5. All of the above

Task 15. Instructions: Choose one correct answer.

What is the advantage of basal insulin analogues over human basal insulins:

1. Longer action

2. Fewer side effects

3. Less variability of action

4. More pronounced hypoglycemic effect

5. Shorter half-life *Sample answer:* 3. Less

variability of action

Task 16. Instructions: Choose one correct answer.

Which complication of insulin therapy most often provokes hemorrhage in the fundus:

1. Hypoglycemia

2. Increase in body weight

3. Insulin edema

4. Lipodystrophy

Sample answer: 1. Hypoglycemia

Task 17. Instructions: Choose one correct answer. Which

variant of nodular formations is most common? 1. Follicular adenoma

2. Follicular cancer

3. Autoimmune thyroiditis

4. Nodular colloid goiter

Sample answer: 4. Nodular colloid goiter

Task 18. Instructions: Choose one correct answer.

In which type of nodular diseases of the thyroid gland is it possible to use thyreostatics?

1. Multinodular toxic goiter

2. Nodular colloid goiter with a volume of more than 3 ml

3. Retrosternal location of the node

4. Thyroid cancer

Sample answer: 4. multinodular toxic goiter

Task 19. Instructions: Choose one correct answer.

Indications for therapy with radioactive iodine for multinodular toxic goiter are all of the following, except:

1. Postoperative relapse of functional autonomy of the thyroid gland

2. Old age
- 3) Severe concomitant pathology
- 4) Multinodular toxic goiter in a pregnant woman

Sample answer: 4. Multinodular toxic goiter in a pregnant woman

Task 20. Instructions: Choose one correct answer.

What hormonal spectrum corresponds to nodular toxic goiter? 1) TSH is elevated, T3 is normal, T4 is normal

- 2) TSH decreased, T3 increased, T4 increased
- 3) TSH is decreased, T3 is decreased, T4 is decreased
- 4) TSH increased, T3 increased, T4 increased

Sample answer: 2. TSH decreased, T3 increased, T4 increased

Task 21. Instructions: Choose one correct answer.

What type of nodular disease of the thyroid gland is characterized by the development of atrial fibrillation?

1. nodular form of autoimmune thyroiditis
2. nodular colloid goiter
3. toxic thyroid adenoma
4. follicular adenoma of the thyroid gland

Sample answer: 3. toxic thyroid adenoma

Task 22. Instructions: Choose one correct answer.

What daily dose of potassium iodide is prophylactic for a healthy person? 1. 100 mcg

2. 150 mcg
3. 200 mcg
4. 300 mcg

Sample answer: 2. 150 mcg

Task 23. Instructions: Choose one correct answer.

The etiological factors of hyperosmolar coma include all of the following, except:

1. Increased lactate formation
2. Excess carbohydrate intake
3. Excessive use of diuretics
4. Vomiting, diarrhea

5. Massive bleeding

Sample answer: 2. Excess carbohydrate intake

Task 24. Instructions: Choose one correct answer.

The clinical picture of hyperosmolar coma includes all of the following, except: 1. Severe polyuria, thirst, dry mouth

2. Softness of the eyeballs upon palpation
3. The smell of acetone in the exhaled air
4. Weakness, adynamia
5. Drowsiness

Sample answer: 3. The smell of acetone in the exhaled air

Task 25. Instructions: Choose one correct answer. The classification of primary thyrotoxicosis includes all of the following except: 1. Diffuse toxic goiter

2. Thyroid cancer
3. Thyrotropinoma
4. Functional autonomy
5. Autoimmune thyroiditis *Sample answer: 3. Thyrotropinoma*

Open type tasks:

Exercise 1.

A 37-year-old patient consulted a therapist about weakness and increased blood pressure (BP) under stress up to 165/110 mmHg. and visual impairment.

Medical history: born with a body weight of 4.7 kg. The family history is burdened: the grandmother suffers from diabetes. Lately there has been frequent stress at work, programmer.

Objectively: Height - 164, weight - 86 kg. AD-145/95 mm Hg. Art. Breathing is vesicular, heart sounds are muffled, rhythmic. Pulse 89 beats per minute.

Additional research data:

Fasting glucose – 6.7 mmol/l, 2 hours after a meal – 10.2 mmol/l C-peptide – 900 pmol/l (N-150-1100). HbA1c-7.1%

- 1) Formulate a diagnosis;
- 2) plan of diagnostic measures;
- 3) principles of treatment?

Sample answer:

1) Diabetes mellitus type 2. Target HbA1c < 6.5%

Concomitant: 1st degree obesity, exogenous-constitutional, abdominal type

Arterial hypertension 2 degrees, stage 1, risk 4. CHF Ost.

2) Biochemical blood test: creatinine, urea, ALT, AST, lipidogram General urine test, assessment of albuminuria.

ECG, echocardiogram.

3) Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day. Metformin 500 mg after breakfast, 500 mg after dinner

Lisinopril 5 mg in the morning

Task 2.

Male, 62 years old.

Complaints of dry mouth, weight gain of 10 kg over the past 10 years. He fell ill 10 years ago, when a preventive examination revealed an increase in blood glucose levels to 8.2 mmol/l. I consulted an endocrinologist. He was prescribed metformin (Siofor) 500 mg after breakfast and dinner, which he took for seven years; he had no complaints during that period and did not visit a doctor.

Three years ago, due to a worsening of his condition, the patient again consulted an endocrinologist, complaining of polyuria, thirst, dry mouth, fasting glucose level 8.8 mmol/l, 2 hours after meals up to 15.0 mmol/l.

The dose of Siofor was increased to 1000 mg twice daily and glibenclamide (Maninil 1.75 mg) was added twice daily before breakfast and dinner. The condition improved, blood glucose levels decreased. However, over the past 6 months I have lost 8 kg. The fasting glucose level began to increase by more than 10 mmol/l, and during the day to 18-20 mmol/l.

Objectively: weight 84 kg, height 172 cm, blood pressure 160/80 mm Hg. (constantly takes enalapril 5 mg twice a day).

Laboratory and instrumental research
Fasting glucose - 11.5 mmol/l, 2 hours after meals - 18.2 mmol/l, HbA1c - 11.6%,
blood creatinine - 105 µmol/l

C-peptide - 424 pmol/l (normal 150-1100)

General urine test - glucose 5%, proteinuria 1.61 g/l

Formulate a diagnosis;

2) principles of treatment?

Sample answer:

1) Diabetes mellitus type 2. Target HbA1c < 6.5%

Related. Arterial hypertension stage 2, uncontrolled course. Risk
4, stage 1 CHF.

2) Treatment:

Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day. 1. Janumet
(galvusmet) 50/1000 mg after breakfast

50/1000 mg after dinner

2. Extended-acting insulin Levemir 10 units subcutaneously at 22-00

3. Lozap plus 1 tablet. long morning

Task 3.

During a medical examination, a 50-year-old woman was diagnosed with glycosuria. No complaints.
Periodically, itching of the genitals bothers me.

From the anamnesis it was revealed that the birth weight was 4700 g.

Objectively: Height - 156 cm, weight - 95 kg, BMI - 38 kg/m². The distribution of subcutaneous
fat is predominantly in the abdominal area, WC/TB - 2.0. Heart rate - 74/min, blood pressure
- 155/105 mm Hg. Art. An examination of the respiratory organs revealed no pathology. The abdomen is soft,
the liver protrudes 3 cm from under the edge of the costal arch.

Additional studies: glucose tolerance test (OGTT): 8.0 mmol/l - 12.8 mmol/l, C-
peptide - 2500 pmol/l (normal - 150 - 1100), protein in urine - 1.6 g/l. Creatinine-98
µmol/l, urea 6.8 mmol/l

1) Make a diagnosis.

2) Necessary treatment measures?

Sample answer:

1) Diabetes mellitus type 2. Target HbA1c < 6.5%

Associated: 2nd degree obesity, exogenous-constitutional, abdominal type.

Arterial hypertension stage II, degree 1, risk 4, CHF 0 degree.

Destination:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.

2. Metformin 500 mg after breakfast, 500 mg after dinner

3. Vildagliptin (galvus) - 50 mg - 1 tab in the morning, 1 tab in the evening after meals.

4. Lisinopril 5 mg 1 time per day in the morning

Task 4.

Patient N., 62 years old, has been under observation for type 2 diabetes mellitus for a IN
year. Currently he has no particular complaints.

Takes Galvusmet 50/1000 in the morning and evening after meals. Antihypertensive therapy is being
carried out (a combination of an ACE inhibitor and hypothiazide), blood pressure is 125/70 mm Hg. Went
in for a checkup.

Objectively : Height –174 cm, body weight – 96 kg. Pulse –68 per minute, rhythmic. The left border of the heart is expanded 1 cm outward from the midclavicular line. Heart sounds are muffled. The lower edge of the liver protrudes 3 cm from under the edge of the costal arch, painless.

Glycemic profile : in the morning on an empty stomach - 7.8 mmol / l., during the day 2 hours after meals 9.2 - 10.4 mmol / l. HbA1c = 7.4%. Diuresis – 2.5 l. The reaction of urine to acetone is negative. In urine - protein 2.68 g/l, glucosuria - 1%.

1. Clinical diagnosis?
2. Necessary correction of treatment measures?

Sample answer:

1) Diabetes mellitus type 2. Target HbA1c < 7.0%.

Associated: 1st degree obesity, exogenous-constitutional, abdominal type.

Arterial hypertension stage II, controlled, risk 4, CHF 0 st. Fatty hepatitis.

2) Purpose:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.
2. Galvusmet 50/1000 mg after breakfast
50/1000 mg after dinner
3. Dapagliflozin (Forxiga) - 10 mg-1 tab in the morning or empagliflozin (Jardins) - 10 mg-1 tab in the morning
4. Continue combined antihypertensive therapy.

Task 5.

Male 36 years old. I consulted a doctor with complaints about weight gain and periodic rises in blood pressure to 150-160/90-100 mm Hg.

From the anamnesis: mother of a patient with type 2 diabetes mellitus.

Objectively: body weight 96 kg, height – 170 cm, BMI – 33 kg/m². Subcutaneous fat is distributed predominantly in the abdominal area. Blood pressure 155/95 mm Hg. Heart rate = Ps = 78 beats per minute.

A glucose tolerance test was performed:

fasting blood glucose – 6.3 mmol/l,

2 hours after taking 75 g of glucose orally – 11.2 mmol/l. C-peptide = 2100 pmol/l (normal – 150 – 1100 pmol/l)

- 1) Make a diagnosis.
- 2) Necessary treatment measures?

Sample answer:

1) Diabetes mellitus type 2. Target HbA1c level < 6.5%. Related: Obesity 1st degree, exogenous-constitutional, abdominal type.

Arterial hypertension stage I, degree 2, risk 3. CHF stage 0.

Destination:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.
2. Metformin 500 mg after breakfast, 500 mg after dinner
3. Perindopril 4 mg once a day.

Task 6.

Patient N., 58 years old. Diabetes mellitus for 5 years. Takes Siofor 500 mg - 2 times a day and Maninil 1.75 mg 3 times a day

For 10 years, glycemia did not exceed 7.8 mmol/l. There was no glucose in the urine or did not exceed 0.5%. In recent years, the condition has worsened, thirst, polyuria (up to 3 liters per day), and dry skin have appeared. Follows the diet.

Objectively: height – 174 cm, body weight – 86 kg, dry skin. Pulse – 68 per minute, rhythmic. The left border of relative cardiac dullness is in the 5th intercostal space 1 cm outward from the midclavicular line. The width of the vascular bundle is 6 cm. Heart sounds are weakened, systolic murmur is at the apex. Vesicular breathing. The lower edge of the liver protrudes from under the costal arch by 3 cm, painless.

Glycemic profile: 8 hours - 8.66 mmol/l, 11 hours - 12.2 mmol/l, 14 hours - 10.8 mmol/l. Glycated hemoglobin – 8.5%.

General urine test - glucose 0.5%. 1)

Make a diagnosis.

2) Necessary treatment measures?

Sample answer:

Diabetes mellitus type 2. Target HbA1c < 7%. Fatty hepatitis.

Destination:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.

2. Galvusmet 50/1000 mg after breakfast
50/1000 mg after dinner

3. Long-acting insulin analogue (Insulin glargine 300 units/ml) Tujeo Solostar 10 units s.c. at 22-00.

Task 7.

A 46-year-old man, diabetes mellitus has been diagnosed for about 1 year. She feels satisfactory and compensates for carbohydrate metabolism only by following a diet.

Objectively: increased nutrition (height – 175 cm, body weight – 98 kg, BMI -32 kg/m²), clean skin. Heart sounds are muffled and rhythmic. BP – 150/90 mm Hg. Art. The liver protrudes from under the costal arch by 4 cm.

Additional research: fasting blood glucose – 6.6 mmol/l, 2 hours after a meal – 9.2 mmol/l, 24-hour urine – 2% sugar.

HbA1c-7.3%.

C-peptide – 2500 pmol/l (normal – 150 – 1100 pmol/l).

1) Make a diagnosis.

2) Necessary treatment measures?

Sample answer:

1) Main diagnosis: Diabetes mellitus type 2. Target HbA1c level <6.5% Ref.: Exogenous-constitutional obesity of the 1st degree.

Arterial hypertension stage 1., stage 1., risk 3, CHF stage 0.

Fatty hepatitis.

2) Purpose:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.

2. Metformin 500 mg after breakfast
500 mg after dinner

Vildagliptin (Galvus) 50 mg-1 tablet in the morning, 1 tablet in the evening

3. Perindopril 4 mg once a day.

Task 8.

Patient V., 58 years old, type 2 diabetes mellitus for about 8 years. Takes Maninil 3.5 mg 2 tablets. before breakfast and 1 tab. before dinner. Before going to bed at 21:00, administer Protafan 22 units, s.c. I went to the doctor with complaints of frequent hypoglycemic conditions in the early morning hours, during the day I was bothered by severe dry mouth, increased thirst, and numbness.

and pain in the lower extremities at rest. at home.

Glycemia measurements are carried out using a glucometer in

Objectively: height 164 cm, weight 74 kg. Distribution of subcutaneous fat uniform, turgor reduced. In the lungs, breathing is vesicular, there is no wheezing. NPV 19 per minute. Rhythmic heart sounds are muffled. Blood pressure 150/95 mm. Hg Art. The abdomen is painless on palpation.

Glycemic profile – on an empty stomach 8.9 mmol/l, 2 hours after lunch – 13.4 mmol/l. HbA1c-9%

1. Clinical diagnosis
2. Explain the cause of hypoglycemia
3. If necessary, carry out treatment adjustments and additional studies

Sample answer:

1) Main diagnosis: Diabetes mellitus type 2. Target HbA1c level < 7.0%
Concomitant: fatty liver disease.

2) Purpose:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.

2. Dapagliflozin (forxiga) - 10 mg - 1 tab in the morning

3. Metformin (glucophage long) - 1000 mg - 1 tab after dinner

4. Long-acting insulin analogue (Insulin glargine 300 units/ml) Tujeo

Solostar 10 units s.c. at 22-00.

5. Lozap 50 mg once a day.

Task 9.

Sick man, 50 years old.

Complaints: Weight gain, dizziness, weakness, fatigue. Increase in blood pressure to 155/90 mm Hg.

History of the disease: Half a year ago, while undergoing prof. examination revealed hyperglycemia and arterial hypertension. During examination, fasting glucose -7.4 mmol/l; 2 hours after eating - 9.2 mmol/l. HbA1c - 7.5%. BMI - 30 kg/m². Dyslipidemia.

Diabetes mellitus was diagnosed and the target level of HbA1c < 6.5% was determined.

Treatment prescribed: Hypocaloric diet. Counting XE 10-12 per day.

1) Metformin 2000 mg per day.

2) Alpha lipoic acid.

3) Statins

4) Enalapril 20 mg per day.

During the 1st stage of treatment, the patient's body weight decreased by 3 kg. Fasting blood glucose decreased to 7.1 mmol/l. , 2 hours after eating 9.1 mmol/l, HbA1c - 7.2%. Due to the fact that the target HbA1c level was not achieved, therapy was intensified with DPP-4 inhibitors (Janumet 50/1000 mg 2 times a day)

During the 2nd stage of treatment, body weight decreased by 4 kg, fasting glucose decreased to 6.7 mmol/l, 2 hours after a meal to 8.8 mmol/l, HbA1c - 6.8%, which nevertheless does not correspond to the target level of HbA1c.

Life history: Family history (my mother had type 2 diabetes). Works as an engineer. The level of physical activity is average.

Objective examination data: Height - 170 cm. Weight - 82 kg. BMI -28 kg/m². Heart sounds are muffled and rhythmic. The left border of the heart is 1 cm outward from the midclavicular line. Blood pressure 120/80 mm Hg.Ps – 74 beats/min. The liver protrudes 3 cm from under the edge of the costal arch.

Additional research data:

Ultrasound of the liver. The sizes are increased, diffuse changes.

ECG: El. the axis is deviated to the left, the rhythm is sinus. Rv 4 < Rv5 < Rv6.

Blood tests: C-peptide – 1850; HbA1c - 6.7%; Fasting blood glucose - 6.3 mmol/l. 2 hours after breakfast 7.2 mmol/l, lunch – 7.2 mmol/l, dinner – 8.5 mmol/l;

Lipidogram: total cholesterol - 4.3 mg/dl; LDL-2.6 mg/dl; HDL-1.2 mg/dl; Triglycerides - 2.4 mg/dl.

1) Clinical diagnosis?

2) Treatment tactics?

Sample answer:

1) Main diagnosis: Diabetes mellitus type 2. Target HbA1c level < 6.5%

Diabetic microangiopathies: retinopathy stage 1.

Sop.: Arterial hypertension 1st degree, 2nd stage, risk 4, CHF 0st degree.

Fatty hepatosis.

Destination:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.

2. Janumet 50/1000 mg after breakfast, 50/1000 mg after dinner

3. Dapagliflozin (forxiga) - 10 mg - 1 tab in the morning

4. Perindopril 4 mg 1 tab in the morning.

Task 10.

Patient Petrova N.N., 50 years old.

Complaints of excess body weight, inability to achieve the target HbA1c level.

History of the disease. The diagnosis of type 2 diabetes mellitus was made 6 months ago, when the patient contacted an endocrinologist with complaints of increased body weight (body weight 92 kg, height 168 cm, BMI 32.5 kg/m²), fatigue, dry mouth, discomfort in the legs During the study: fasting plasma glucose 9.0 mmol/l, plasma glucose 2 hours after meals 14.0 mmol/l, HbA1c 8.8%. Target HbA1c level ≤ 6.5%.

The following were prescribed: 1. Diet therapy with restriction of fats and carbohydrates (12XE), 2. moderate physical activity, 3. Janumet 50/1000 mg 2 times a day.

Within 3 months, the condition improved: the dry mouth disappeared and the pain in the legs stopped. BMI decreased to 32.2 ksh/m² (- 1 kg), fasting plasma glucose decreased to 7.0 mmol/l, plasma glucose 2 hours after meals to 10.0 mmol/l, HbA1c to 7.0%.

However, the target HbA1c level was not achieved. Diabeton MB 90 mg before breakfast was added to the therapy.

During 3 months of therapy, I lost another 1 kg, fasting plasma glucose reached 6.5 mmol/l, 2 hours after meals 9.5 mmol/l, HbA1c 7.0%, which was above the target level .

Anamnesis of life. Family history (type 2 diabetes in the father). Works as a teacher at school. Physical activity in everyday life is moderate.

Objective examination data. Body weight 90 kg, height 168 cm, BMI 32.

Blood pressure 135/85 mmHg. Heart sounds are clear, rhythmic, muffled. The borders of the heart are expanded to the left by 1 cm. Heart rate = pulse = 75 beats/min.

Data from additional studies.

Blood plasma glucose on an empty stomach is 6.5 mmol/l, 2 hours after breakfast - 9.5 mmol/l, lunch - 8.8 mmol/l, dinner - 10.2 mmol/l; HbA1c 7.0%,

Lipidogram: cholesterol 6.5 mmol/l, TG 2.5 mmol/l, LDL 4.0 mmol/l, HDL 1.2 mmol/l ECG: the electrical axis of the heart is deviated to the left, Rv 4 < Rv5 < Rv6. C - peptide: 1200.

1). Clinical diagnosis?

2). Appointment sheet?

1) Main diagnosis: Type 2 diabetes mellitus. Target HbA1c < 6.5% Fatty liver disease.

2) Purpose:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.

2. Janumet 50/1000 mg after breakfast
50/1000 mg after dinner

3. Dapagliflozin (forxiga) - 10 mg - 1 tab in the morning

4. Long-acting insulin analogue (Insulin glargine 300 units/ml) Tujeo Solostar 10 units s.c. at 22-00.

Task 11.

What are some indications for performing a glucose tolerance test? *Response standard:* 1) thirst and polyuria; 2) recurrent furunculosis; 3) obesity. Task 12.

List the characteristic clinical manifestations of thyrotoxicosis syndrome:

Response standard: 1) weight loss; 2) increased irritability; 3) persistent tachycardia.

Task 13.

For which thyroid disease is scintigraphy indicated? *Response standard:* toxic adenoma of the thyroid gland.

Task 14.

An 18-year-old patient has polyuria with low specific gravity of urine. After the fluid restriction test, the urine specific gravity did not change. What is the preliminary diagnosis?

Response standard: diabetes insipidus

Task 15.

A 32-year-old patient with type 1 diabetes mellitus, found in a comatose state through 3 hours after insulin administration. What action needs to be completed first?

Response standard: administer 40-100 ml of 40% glucose solution intravenously until consciousness is fully restored.

Task 16.

What will be your conclusion if a patient's thyroid ultrasound detects a hypoechoic structure in the left lobe with a diameter of 2 mm (the volume of the thyroid gland and levels of thyroid hormones are normal):

Response standard: variant of the norm.

Task 17

A 47-year-old woman consulted a doctor at her place of residence with complaints of weight gain (4 kg, drowsiness, weakness, constipation and dry skin). The study revealed hyporeflexia, slight enlargement of the thyroid gland upon palpation, and hypothermia. 1) What laboratory parameters need to be examined to confirm the diagnosis first? 2) What is the preliminary diagnosis?

Response standard: 1) TSH, T4free, AT-TPO.

2) Autoimmune thyroiditis. Goiter 1st degree. Primary hypothyroidism of 2nd severity.

Task 18.

A 25-year-old woman complains of a sore throat when swallowing, an increase in body temperature to 38 C. For two years she has been suffering from diffuse toxic goiter (DTG) grade 2, of moderate severity. She was treated for six months with thiamazole, starting with 40 mg with gradual

reducing the dose to 10 mg, L-thyroxine 50 mcg. A year ago, a relapse occurred; treatment with thiamazole was started at a dose of 50 mg/day. In the last three days before going to the doctor, she took metamizole sodium due to algomenorrhea. The night before, I had a sore throat and a fever. She independently took sulfodimethoxine, metamizole sodium and tetracycline without effect. Most likely diagnosis?

Response standard:

Diffuse toxic goiter of the 2nd degree, thyrotoxicosis of the 2nd degree of severity. Complication. Agranulocytosis with developing necrotizing tonsillitis.

Task 19.

A 35-year-old patient complains of a decrease in body weight of 6 kg per month with preserved appetite, palpitations, trembling in the body, a feeling of heat, weakness, irritability, and poor sleep. The skin is moist, warm, elastic, thin. The hair is soft. The palpebral fissures are widened, blinking is rare. When looking down, a white stripe appears between the upper eyelid and the iris. Convergence is impaired, eyelids are pigmented. The isthmus of the thyroid gland is palpated. Tremor of the fingers is detected. Heart sounds are rhythmic, clear, heart rate – 98 beats/min. ECG data - sinus tachycardia, nonspecific changes in the final part of the ventricular complex. 1) What is the preliminary diagnosis? 2) Additional research methods to confirm the diagnosis?

Response standard: 1) preliminary diagnosis – Diffuse toxic goiter of the 1st degree. Thyrotoxicosis grade 2.

Related. Autoimmune ophthalmopathy.

2) To confirm this diagnostic hypothesis, it is necessary to determine level of thyroid hormones (TSH, free T4, AT-TPO, AT to TSH receptors), perform an ultrasound examination of the thyroid gland to exclude toxic thyroid adenoma.

Task 20.

A 19-year-old patient complains of thirst (drinks 4–5 liters of liquid per day), excessive urination, weight loss of 10 kg over 2 months, and weakness. Reduced nutrition, skin turgor is reduced, dry skin. Smell of acetone from the mouth. The tongue is dry. Vesicular breathing. Heart sounds are rhythmic, heart rate – 86 beats/min. The abdomen is soft, painless in all parts. Blood glucose – 16 mmol/l. Urinalysis: specific gravity –1030, glucose + + + , acetone ++. 1) What is the preliminary diagnosis? 2) What insulin preparations should be prescribed?

Response standard: 1) Diabetes mellitus type 1. Target HbA1c level is less than 6.5%.

2) Ultra-fast/ultra-short-acting human insulin analogues (insulin aspart), analogs of long-acting and extra-long-acting human insulin (insulin glargine, insulin degludec).

Task 21.

A 22-year-old patient has been suffering from diabetes mellitus for 8 years and receives insulin therapy. Within 2 weeks, he developed dry mouth, thirst, drinks about 5 liters of water per day, excessive urination, severe weakness, and nausea. Today I vomited twice and had abdominal pain. State of moderate severity, inhibited. Dyspnea at rest – 26 per minute. Smell of acetone from the mouth. The skin is dry, turgor is reduced. The tongue is dry. Heart sounds are muffled. Heart rate – 90 beats/min. Blood pressure – 110/70 mm Hg. Art. Vesicular breathing. The abdomen is soft, painful in all parts. The liver protrudes from under the costal arch by 3 cm, has a dense elastic consistency, percussion dimensions are 15x12x10 cm. Glycemia is 18 mmol/l, blood pH is 7.2. Urine: acetone +++, glucose 40 g/l. The ECG shows low T waves and a U wave. What is the preliminary diagnosis?

Response standard: preliminary diagnosis - diabetes mellitus type 1, decompensation, ketoacidotic coma, I degree of severity.

Task 22.

A 75-year-old patient suffering from type 2 diabetes mellitus for a long time suffered from an acute intestinal infection. For 5 days, febrile temperature persisted, vomiting 1–2 times a day, and loose, loose stools up to 5 times a day. He received antibacterial therapy, his stool and temperature returned to normal, but his condition did not improve; thirst, polyuria, and weakness appeared. The condition is severe, inhibited, poorly oriented in time and space. There is no smell of acetone. The skin is dry, turgor is sharply reduced. The tongue is dry. Heart sounds are rhythmic and dull. Pulse thread-like, 100 beats/min. Blood pressure 90/60 mm Hg. Art. Blood glucose – 25 mmol/l, serum osmolarity – 350 mOsm/l, pH – 7.6. There is no acetone in the urine, sugar is +++.

Response standard: preliminary diagnosis - type 2 diabetes mellitus, complicated by the development of hyperosmolar coma.

Task 23.

A 35-year-old patient with type 1 diabetes mellitus, after an insulin injection, felt severe weakness, trembling in the body, profuse sweating, palpitations, dizziness, hunger, and lost consciousness. The condition is serious, unconscious. The skin is moist and pale. Convulsive twitching of arms and legs. Heart sounds are rhythmic, heart rate – 100 beats/min. Blood pressure – 170/90 mm Hg. Art. 1) What is the preliminary diagnosis? 2) Basic therapeutic measures?

Response standard: 1) Preliminary diagnosis – type 1 diabetes mellitus, complicated by hypoglycemic coma.

2) inject 40-100 ml of 40% glucose solution intravenously until complete recovery consciousness.

Task 24.

A 35-year-old patient with diabetes mellitus, after drinking alcohol (according to him, drank about 1000 ml of vodka), felt severe weakness, trembling in the body, palpitations, and a feeling of hunger. Moderate condition. Excited, tremor of fingers. The skin is pale and moist. Heart sounds are rhythmic, heart rate – 108 beats/min. Blood pressure – 180/90 mm Hg. Art. Vesicular breathing. The abdomen is soft, painless in all parts. Name the preliminary diagnosis and additional research methods to confirm the diagnosis.

Response standard: Preliminary diagnosis - type 1 diabetes mellitus, mild hypoglycemia. Determine blood glucose levels, C-peptide.

Task 25.

Patient I., 28 years old. Diabetes mellitus was diagnosed 3 years ago. Receives insulin-NPH 30 units at night and actrapid 12 units in the morning, 16 units at lunch, 16 units at dinner. The patient is worried about weakness, severe sweating, trembling in the body, restless sleep - all these symptoms occur mainly at night. Over the past 6 months, she has gained 8 kg of body weight.

The glucose content in the blood during the day fluctuates between 5.0 – 15.8 mmol/l, in the urine – 1-2%. He follows a diet, takes 16 XE per day.

Body weight 70 kg, height – 162 cm. Blood pressure 130/80 mm Hg.

The fundus picture is without significant deviations from the norm.

During the examination:

fasting blood glucose - 8.1 mmol/l, 2 hours after eating 14.6 mmol/l in urine: protein - no, glucose - 1.5%, HbA1c - 10%.

1. Clinical diagnosis?
2. Therapeutic measures?

Response standard:

1) Type 1 diabetes mellitus. Target HbA1c < 6.5%

2) Purpose:

1. Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day.
2. Tresiba 20 units in the evening.
3. Novorapid 8-10 units before breakfast, 10-12 units before lunch, 10-12 units before dinner,

PC

Task 26.

Patient I., 18 years old. Diabetes mellitus was diagnosed 4 years ago. Receives NPH insulin 16 units in the evening and actrapid 8 units before breakfast, 8 units before lunch, 8 units before dinner. I am concerned about dry mouth, thirst increases in the evening, and sometimes experiences hypoglycemic conditions at night. The glucose content in the blood (using a glucometer) during the day fluctuates between 9.0 – 15.8 mmol/l, in urine – 1-2%. He does not follow the diet regularly, his appetite is increased. Body weight 62 kg, height 160 cm.

Blood pressure 110/60 mmHg.

During the examination:

Blood glucose on an empty stomach is 8.9 mmol/l, 2 hours after eating - 13.1 mmol/l. In urine: glucose – 3%., protein in urine – no.

HbA1c = 11%.

The fundus contains single microaneurysms.

1. Make and justify the clinical diagnosis.
2. Correction of insulin therapy.

Response standard:

Diabetes mellitus type 1. Target HbA1c < 6.5%

Diabetic microangiopathies: stage 1 retinopathy (non-proliferative).

Purpose: Diet with calculation of XE.

Levemir 16 units at 22-00 s.c.

Novorapid 6-8 units before breakfast, 8-10 units before lunch, 8-10 units before dinner

Task 27.

The patient is 24 years old. She consulted a therapist about weakness, dry mouth, thirst, and copious urine output.

The onset of the disease is associated with psychotrauma, after which the above complaints appeared 2 weeks later. I lost 8 kg with a normal diet.

Anamnesis: family history, mother has diabetes mellitus from a young age. Objectively: Height - 184 cm, weight - 66 kg. Blood pressure - 105/55 mm Hg. Breathing is vesicular, heart sounds are clear and rhythmic. Pulse 89 beats per minute.

Additional research data:

Glucose on an empty stomach - 16.7 mmol/l, 2 hours after a meal - 22.4 mmol/l C-peptide - 90 pmol/l (normal - 150-1100 pmol/l). HbA1c-6.1%.

1. Clinical diagnosis?
2. Appointment sheet?

Response standard:

- 1) Diabetes mellitus type 1. Target HbA1c < 6.5%
- 2) Diet with calculation of XE (up to 20 XE per day), with subsequent correction after normalization of body weight.

Tresiba 10 units subcutaneously at 22-00.

Novorapid 6-8 units before breakfast, 8-10 units before lunch, 8-10 units before dinner, s.c.

Task 28.

Male, 22 years old.

Complaints of dry mouth, thirst, increased urine output, loss of body weight by 2-3 kg in 2 weeks.

I became acutely ill 2 weeks ago after suffering from acute respiratory viral infection.

Objectively: weight 64 kg, height 182 cm. Blood pressure 110/70 mm Hg. Reduced nutrition. The skin is dry. The liver protrudes 2 cm from under the costal arch.

Laboratory and instrumental research

Fasting glucose - 11.5 mmol/l, 2 hours after meals 18.2 mmol/l. HbA1c - 5.6% C-peptide - 42 pmol/l

Urinalysis - glucose 5%, no proteinuria, acetone ++

1. Clinical diagnosis?

2. Treatment tactics? *Response*

standard:

1. Diabetes mellitus type 1. Target HbA1c < 6.5%. Fatty hepatitis.

2. Purposes:

1. Diet with calculation of XE (up to 20 XE per day) with subsequent correction after normalization of body weight.

2. Tresiba 10 units subcutaneously at 22-00.

3. Novorapid 4-6-8 units subcutaneously before breakfast, 4-6-8 units subcutaneously before lunch, 6-8 units subcutaneously before dinner.

Task 29.

Patient N., 22 years old, has been observed for diabetes mellitus for a year. Currently he has no particular complaints.

Receives insulin Protafan 16 units at 22-00 s.c., Actrapid 6-8 units before breakfast, 6-8 units before lunch, 8-10 units before dinner. Fasting blood glucose 8-9 mmol/l, 2 hours after meals 9-12 mmol/l. Went in for a checkup.

Objectively: Height - 174 cm, body weight - 72 kg. Pulse -68 per minute, rhythmic. Heart sounds are clear and rhythmic. The lower edge of the liver protrudes 3 cm from under the edge of the costal arch along the midclavicular line and is painless.

Glycemic profile: fasting - 7.8 mmol/l., during the day 2 hours after meals 10.4 mmol/l. HbA1c - 7.4%. Diuresis - 2.5 l. The reaction of urine to acetone is negative. There is no protein in the urine, glucose is 0.5%

The fundus is without

pathology. **1. Clinical diagnosis?**

2. Necessary correction of treatment measures?

Response standard:

1. Diabetes mellitus type 1. Target HbA1c < 6.5%. Fatty hepatitis.

2. Purposes:

1. Diet with XE calculation.

2. Levemir 18 units subcutaneously at 22-00.

3. Novorapid 6-8 units subcutaneously before breakfast, 8-10 units before lunch, 8-10 units before dinner.

Task 30.

Male 26 years old. He consulted a doctor with complaints of general weakness, weight gain, hypoglycemic conditions at night and during physical activity.

Diabetes mellitus for 5 years, insulin therapy is carried out: Protafan 22 units in the evening and 22 units in the morning, Actrapid 6-8 units before breakfast, 6-8 units before lunch, 6-8 units before dinner. During the day, he eats up to 16 XE.

From the anamnesis: the patient's mother suffers from type 1 diabetes mellitus.

Objectively: body weight 66 kg, height – 180 cm, BMI – 20 kg/m². Blood pressure 125/85 mm Hg. Heart rate = Ps = 78 beats per minute.

Additional research data:

Fasting blood glucose – 7.3 mmol/l, 2 hours after meals – 12.2 mmol/l. C-peptide = 100 (N – 150 – 1100).

In general urine analysis: glucose 0.5%, protein – no.

1. Clinical diagnosis

2. Appointments.

Response standard:

1. Diabetes mellitus type 1. Target HbA1c < 6.5%

2. Purposes:

1. Low-calorie diet (exclude fats), limit carbohydrates to 14 XE per day.

2. Tresiba 20 units subcutaneously at 22-00.

3. Novorapid 8-10 units subcutaneously before breakfast, 8-10 units before lunch, 10-12 units before dinner.

Task 31.

Patient V., 38 years old, has been suffering from diabetes mellitus for 8 years. She takes insulin therapy in a basal-bolus mode: Lantus 18 units before breakfast, Novorapid 6-8 units before breakfast, 8-10 units before lunch, 8-12 units before dinner. Counts XE and regularly performs self-monitoring of glucose with a glucometer. She consulted her doctor because she was unable to achieve her fasting blood glucose target (<6.1 mmol/L), which is often above 7.5 mmol/L). Attempts to increase the dose of Lantus lead to the appearance of hypoglycemic conditions. Objectively: height 174 cm, weight 68 kg. The distribution of subcutaneous fat is uniform, turgor is normal. In the lungs, breathing is vesicular, there is no wheezing. NPV 19 per minute. Rhythmic heart sounds are muffled. Blood pressure 120/75 mm. Hg Art. On palpation, the abdomen is painless, the liver protrudes 2 cm from under the costal arch.

Glycemic profile - fasting 7.9 mmol/l, 2 hours after meals - 6.4 - 7.2 mmol/l, HbA1c = 7.1%.

Creatinine-125 µmol/l

OAM – protein 0.03; sugar – 0.5% Fundus

– single microaneurysms. 1. Formulate a clinical diagnosis.

2. Explain the cause of hypoglycemia.

3. If necessary, adjust the treatment.

Response standard:

1. Diabetes mellitus type 1. Target HbA1c level < 6.5% Diabetic microangiopathies: stage 1 retinopathy, CKD stage C3A. Fatty hepatosis.

Destination:

1. Diet with XE calculation.

2. Lantus 18 units subcutaneously at 22-00.

3. Novorapid 6-8 units subcutaneously before breakfast, 8-10 units before lunch, 10-12 units before dinner.

4. Traykor 145 mg 1 tablet. daily.

Task 32.

A 38-year-old patient was found unconscious in the ward by a nurse. The patient is being treated in the endocrinology department for type 1 diabetes mellitus, which an 18-year-old man suffers from. He was admitted to the department with complaints of a persistent increase in blood pressure, swelling of the face and lower extremities, and frequent hypoglycemic conditions. He is receiving a physiological regimen of insulin therapy; the daily dose of insulin was adjusted about 3 years ago. An hour before loss of consciousness, insulin was administered in the usual dose and the patient ate food.

Objectively: the patient is unconscious, the skin is moist, muscle hypertonicity, blood pressure – 150/100 mmHg; Heart rate – 90 beats per minute. Blood glucose – 2.9 mmol/l.

1. Clinical diagnosis?

2. Urgent treatment measures?

3. What causes the occurrence of hypoglycemic coma?

Response standard:

1. Type 1 diabetes, hypoglycemic coma.

2. 20 – 40 ml of 40% glucose solution IV in a stream + 1 ml of glucagon IM. 500 ml 10% glucose solution intravenously.

3. Insufficient amount of XE

Task 33.

A 60-year-old patient was taken to the intensive care unit unconscious.

According to his wife, he has been suffering from diabetes for 10 years. I constantly took Siofor 1000 mg - 2 times a day. 5 years ago he suffered a myocardial infarction, and during the rehabilitation process he was switched to insulin. However, after being discharged from the hospital, he returned to Siofor again.

Over the past year I have lost 10-15 kg with a good appetite. Over the past 10 days, thirst has increased, dry mouth has increased, and angina attacks have become more frequent.

On the previous afternoon, the condition progressively worsened.

Muscle pain, apathy, and drowsiness appeared.

Subsequently, abdominal pain, nausea, and vomiting appeared.

Progressive shortness of breath gave way to pathological breathing. Delirium developed and the patient fell into a coma.

Blood glucose – 16.6 mmol/l. 1.

Make and justify the diagnosis

2. Treatment tactics

3. Tactics of patient management in the future.

Response standard:

1. Type 2 diabetes mellitus, lactic acidotic coma (taking metformin as provoking factor). The diagnosis was made on the basis of myalgia, heart pain, and Kussmaul breathing.

2. Reducing lactate production (short-acting insulin (SAI) 2-5 units per hour i.v.).

Removal of excess lactate and biguanides is hemodialysis with a lactate-free buffer. In case of acute overdose of metformin, take activated carbon or another sorbent orally.

Restoration of acid-base balance - mechanical ventilation in hyperventilation mode to eliminate excess CO₂

Combating shock and hypovolemia according to the general principles of intensive care. Differential diagnosis with ACS.

3. Physiological regime of insulin administration +C – peptide.

Task 34.

Male 21 years old. Concerns: thirst, polyuria, weight loss, general weakness. I became acutely ill 2 weeks ago after suffering from an acute respiratory infection.

The general condition is relatively satisfactory. Reduced nutrition.

The skin is dry. Blood pressure – 100/70 mm Hg; Heart rate – 98 per minute. The liver protrudes from under the edge of the costal arch by 2 cm.

Fasting blood glucose level 18 mmol/l, glucosuria 4%, acetone ++. 1.

Clinical diagnosis.

2. Treatment tactics.

Response standard:

1. Type 1 diabetes, ketoacidosis

2. Elimination of insulin deficiency; Combating dehydration and hypovolemia; Restoration of electrolyte balance and acid-base balance; Identification and treatment of concomitant diseases and conditions (accompanying DKA or developing as a complication).

Task 35.

A 29-year-old patient was taken to the intensive care unit in a state of severe hypoglycemic coma. From the anamnesis – he has been suffering from diabetes mellitus for the last 15 years. According to relatives, insulin treatment was carried out regularly; Protafan insulin was taken 2 times a day (dose unknown). The coma developed while working on the plot.

After administration of 40% glucose solution in an amount of 40 ml, consciousness was not restored.

Questions and tasks:

1. Necessary emergency treatment measures.

2. What may cause the development of coma.

3. Tactics of additional research.

Response standard:

1. 50-60 ml of 40% glucose solution intravenously + 1 ml glucagon intramuscularly. 1000 ml 10% glucose solution intravenously.

2. Against the background of a non-physiological insulin therapy regimen, muscle work contributed to the development of hypoglycemic coma

3. Insulin therapy in the basal-bolus mode. The examination includes: HbA1c determination, UAC, OAM, biochemical blood test, ECG

Task 36.

Patient S., 28 years old, unconscious, was brought to the intensive care unit by ambulance.

Objectively: the skin is dry, pale gray in color. The pupils are constricted and react poorly to light. Tendon reflexes are slow. The smell of acetone in the exhaled air. Pulse is weakly filled, 96 per minute, blood pressure is 80/50 mmHg. Heart sounds are muffled, single extrasystoles are heard. Breathing is noisy (Kussmaul type), with scattered dry rales on auscultation. The abdomen is soft, the liver protrudes 4-5 cm from under the costal arch.

From a conversation with a relative, it was possible to find out that the patient has been suffering from diabetes mellitus for 10 years and constantly receives insulin. However, he did not follow a diet and periodically drinks alcohol. The deterioration of the condition occurred against the background

ARVI, which the patient fell ill with 3 days ago. The day before I had abdominal pain and vomited several times.

1. Clinical diagnosis and its rationale
2. Additional research.
3. Treatment tactics.

Response standard:

1. Diabetes mellitus type 1, ketoacidotic coma. Provoking factor – alcohol abuse, ARVI
2. Elimination of insulin deficiency; Combating dehydration and hypovolemia; Restoration of electrolyte balance and acid-base balance; Identification and treatment of concomitant diseases and conditions (accompanying DKA or developing as a complication).

Task 37.

Patient, 45 years old. Suffering from diffuse toxic goiter for 4 years. Takes maintenance therapy Tyrozol, 1 tablet 2 times a day. There was a significant deterioration about a week ago, when, after returning from a summer holiday at sea, palpitations and irregular heartbeats appeared.

Objectively: BMI 21.5 kg/m², moist skin, tremor of fingers. Heart rate=Ps=120 per minute, heart sounds are rhythmic, muffled. BP-170/70 mm Hg.

Blood glucose on an empty stomach is 7.8 mmol/l, 2 hours after eating - 10.6 mmol/l.

1. Clinical diagnosis.

2. What is the reason for the deterioration of the patient's condition?

3. Treatment tactics.

Response standard:

1. Diffuse toxic goiter of degree 2, thyrotoxicosis of degree II. Symptomatic arterial hypertension 2 degrees.
2. Increased solar insolation.
3. KBC, OAM, biochemical blood test, hormonal studies (TSH, f.T3, f.T4, Ab to TPO, Ab to TSH receptors, C-peptide), ultrasound of the thyroid gland, ECG
4. Increase the dose of thyreostatic agent (to the maximum daily dose), b-blocker, ACE inhibitor, Temporary hypoglycemic therapy - possibly sulfonylureas.

Task 38.

Patient K., 45 years old, postman, was hospitalized with complaints of shortness of breath at rest and with slight exertion, palpitations, swelling of the legs, enlarged abdomen, enlarged neck, sweating, insomnia due to shortness of breath, weight loss of 25 kg in 4 months, increased temperature body up to 37.1-37.2 C for 3 months. The condition worsened gradually and was not treated.

Objectively: the general condition is serious. The patient is malnourished, height 165 cm, weight 45 kg. The skin is hot and moist; the "telegraph pole" symptom is strongly positive. There is tremor of the eyelids and tongue. The thyroid gland is enlarged to degree 11, has a heterogeneous consistency, and moves well when swallowing; pulsation of the neck vessels is visible. Heart sounds are loud, arrhythmic, systolic murmur at the apex. Blood pressure 180/90 mm Hg. Pulse 90-100 per minute, heart rate 110-120 per minute. Moist rales are heard in the lower sections. The liver protrudes from under the edge of the costal arch by 5 cm and is dense. High edema of the lower extremities. The stool is frequent and mushy.

1. Preliminary diagnosis.
2. Additional research required.
3. Treatment tactics.

Response standard:

1. Diffuse toxic goiter of degree 2, thyrotoxicosis of degree III. Symptomatic arterial hypertension 3 degrees. CHF stage 2b. FC 3.
2. CBC, BAM, biochemical blood test, TSH, f.T3, f.T4, Ab to TPO, Ab to TSH receptors), ultrasound of the thyroid gland, ECG
3. Thyrostatics, b-blocker, ACEI, diuretics

Task 39.

Male 52 years old. Complaints of shortness of breath, palpitations, weakness.

Objectively: Height is 176 cm, body weight is 72 kg. The skin is warm, moist, fingers tremble. The thyroid gland is enlarged to degree 2, elastic, mobile, a node is palpable in the right lobe.

Heart sounds are rhythmic and dull. BP-170/90 mm Hg. art., heart rate=Ps=110 per minute.

In the lungs, in the lower sections, there are small moist rales. The liver protrudes from under the costal arch by 3 cm, peripheral edema.

Additional studies: Hb-138 g/l, leukocytes- 6.2×10^9 , cholesterol - 4.2 mmol/l. T-4 light -38 pmol/l, TSH<0.05.

A scanogram of the thyroid gland shows a palpable node that actively absorbs iodine-131, the rest of the thyroid tissue does not absorb iodine.

1. Preliminary diagnosis.
2. Additional research required.
3. Treatment tactics.

Response standard:

1. Thyrotoxic adenoma, grade 2 goiter, thyrotoxicosis grade III. CHF Stage 2b, FC 3. Symptomatic arterial hypertension of 2 degrees.
- 2 CBC, BAM, biochemical blood test, TSH, fT3, fT4, Ab to TPO, Ab to TSH receptors), ultrasound of the thyroid gland, ECG
3. Surgical treatment with intraoperative histology. In the preoperative period - thyreostatics, b-bokator, ACEI, diuretics

Task 40.

Patient D, 47 years old, complains of irritability and weight loss of 12 kg. with good appetite, weakness, sweating, palpitations. He has been ill for about 4 months and has not previously consulted a doctor.

Objectively: Height is 185 cm, body weight is 68 kg. The skin is moist, there is a slight tremor of the hands. Heart rate - 166 per minute, blood pressure - 160/70 mm Hg. Heart sounds are loud, systolic murmur over the apex of the heart. The thyroid gland is enlarged due to both lobes, elastic, mobile, and clearly visible when swallowing.

Ultrasound of the thyroid gland: diffuse decrease in tissue echogenicity, increased size.

1. Preliminary diagnosis.
2. Additional research required.
3. Treatment tactics.

Response standard:

1. Diffuse toxic goiter of degree 2, thyrotoxicosis of degree II. Symptomatic arterial hypertension 2 degrees.
2. CBC, BAM, biochemical blood test, TSH, f.T3, f.T4, Ab to TPO, Ab to TSH receptors), ultrasound of the thyroid gland, ECG
3. Thyrostatics, b-bokator, ACEI

Task 41.

Patient P., 37 years old, complains of irritability and weight loss of 10 kg. with good

appetite, sweating, palpitations. She has been ill for about 3 months and is being monitored for astheno-neurotic syndrome; there is no effect from the therapy.

Objectively: Height is 160 cm, body weight is 48 kg. The skin is moist, there is a slight tremor of the hands. Heart rate - 166 per minute, blood pressure - 180/70 mm Hg. Heart sounds are loud, systolic murmur over the apex of the heart. The thyroid gland is enlarged due to both lobes, elastic, mobile, and clearly visible when swallowing. Ultrasound: diffuse decrease in echogenicity of the gland tissue, increased size.

1. Clinical diagnosis
2. Additional research
3. Treatment tactics

Response standard:

1. Diffuse toxic goiter of degree 2, thyrotoxicosis of degree II.

Symptomatic arterial hypertension 3 degrees.

2. CBC, BAM, biochemical blood test, TSH, f.T3, f.T4, Ab to TPO, Ab to TSH receptors), ultrasound of the thyroid gland, ECG
3. Thyrostatics, b-bokator, ACEI

Task 42.

Patient, 36 years old. Complains of headaches, lack of menstruation, increased blood pressure to 180/100 mm Hg. Considers himself sick for about 6 months. Notes facial hair growth, which is noticeably progressing. After consulting a therapist, hypertension was diagnosed and therapy (enalapril, concor) was prescribed. However, despite regular use of antihypertensive drugs over the past month, blood pressure values remain stably at $\geq 180/110$ mmHg.

Objectively: BMI 33.7 kg/m², subcutaneous fat is unevenly distributed (central type). The face is round and hyperemic. There are cyanotic stretch marks on the abdomen and thighs.

Heart sounds are muffled and rhythmic. Heart rate= Ps=100 beats per minute; BP-200/120 mm Hg.

The lungs and abdominal organs are unremarkable. Additional research:

UAC, OAM - no changes; Total cholesterol - 5.8 mmol/l. Fasting blood glucose - 6.0 mmol/l, 2 hours after eating - 6.6 mmol/l. ACTH - 58.6 ng/ml (N - 5 - 46)

Cortisol - 271.9 nmol/l (N - 150 - 660)

Aldosterone - 301.5 nmol/l (N - 25 - 320)

Testosterone - 4.92 ng/ml (N <0.5 - 4.3)

MRI of the adrenal glands - MR image of a pituitary mass formation 10 x 15 mm

1. Clinical diagnosis.
2. Additional research.
3. Treatment tactics.

Response standard:

1. Itsenko-Cushing's disease. Symptomatic arterial hypertension 3 degrees. Obesity I degree. Dyslipidemia.

2. Carrying out a test with 8 mg of dexamethasone, free cortisol in daily urine, biochemical blood test, fundus examination, ECG

3. Adenomectomy, symptomatic therapy.

Task 43.

Patient G., 39 years old, turned to her local physician with complaints of rapid fatigue, increased blood pressure to 180/100 mm Hg, which is difficult to treat

antihypertensive drugs, headaches, weight gain, the appearance of vellus hair on the face, bone pain, menstrual irregularities. Over the past two weeks, the patient's condition worsened.

Objectively: general condition is relatively satisfactory. Height 167 cm, weight 96 kg, WC = 110 cm. Skin of normal color, normal humidity; There are red streaks along the front surface of the abdomen and thighs.

Heart sounds are rhythmic and muffled. Heart rate = Ps = 96 beats per minute, blood pressure 180/110 mm Hg. The liver protrudes from under the edge of the costal arch by 1.5 cm and is dense.

The lungs and abdominal organs are unremarkable.

Additional studies: CBC, TAM – no changes; total cholesterol - 6.2 mmol/l.

Blood glucose on an empty stomach is 7.8 mmol/l, 2 hours after eating - 10.6 mmol/l.

ACTH – 3 ng/ml (N – 5 - 46)

Plasma cortisol after a test with 1 mg of dexamethasone – 876.9 nmol/l (N – 150 - 660).

Aldosterone – 361.5 nmol/l (N – 25 - 320).

Testosterone – 5.22 ng/ml (N <0.5 – 4.3)

ECG – sinus tachycardia 92 beats per minute, increased R amplitude in leads V4, V5, V6.

MRI of the adrenal glands - MR image of a space-occupying lesion of the left adrenal gland 11 x 10 mm

1. Preliminary diagnosis.
2. Additional research required.
3. Treatment tactics.

Response standard:

1. ACTH is an independent form of hypercortisolism (Cushing's syndrome). Symptomatic arterial hypertension 3 degrees. Obesity I degree. Dyslipidemia.
2. Biochemical blood test, free cortisol in 24-hour urine, examination fundus, ECG.
3. Adrenalectomy with intraoperative histology, symptomatic therapy

Task 44

Male 60 years old. Complaints of shortness of breath with little physical exertion, rapid heartbeat, weakness. From the anamnesis - he has had hypertension for about 10 years; he takes antihypertensive drugs irregularly. According to the patient (according to self-monitoring), blood pressure does not decrease below 160/100 mmHg. At the appointment, the cardiologist recommended ultrasound of the adrenal glands and hormonal testing to exclude secondary forms of hypertension.

Objectively: general condition is relatively satisfactory. Height 176 cm, weight 112 kg, WC = 120 cm. Skin of normal color, normal humidity; On the anterior surface of the abdomen there are thin streaks of pale color.

Heart sounds are arrhythmic, pulse deficit is 20, blood pressure is 170/105 mm Hg. In the lungs, in the lower sections, there are small moist rales. The liver protrudes from under the costal arch by 3 cm, peripheral edema (lower third of the leg).

Additional studies: CBC, TAM – no changes; TC - 6.2 mmol/l.

HDL-C – 0.8

LDL cholesterol – 5.4

TG – 2.3

K⁺ - 3.6

Na⁺ - 152

X-ray of the skull - osteoporosis of the dorsum sellae and calvarial bones

Ultrasound of the adrenal glands - mass formation of the right adrenal gland 12 x 10 mm Fasting blood glucose - 6.8 mmol/l, 2 hours after eating - 12.9 mmol/l. ACTH – 12.6 ng/ml (N – 5 - 46)

Cortisol – 654.1 nmol/l (N – 150 - 660) 1. What is your diagnosis?

2. Additional research required.

3. Treatment tactics.

Response standard:

1. Incidentaloma of the right adrenal gland. Arterial hypertension III degree, Obesity 2 degrees. Dyslipidemia.

2. Conducting a test with 1 mg of dexamethasone, with 8 mg of dexamethasone, free cortisol in 24-hour urine, biochemical blood test, fundus examination, ECG

3. Adrenalectomy with intraoperative histology, symptomatic therapy Task 45

The patient, 24 years old, was referred by her therapist for consultation with an endocrinologist surgeon with a diagnosis of Itsenko-Cushing's disease based on the clinical picture of hypercortisolism that developed over 6 months.

Complaints of weight gain, headaches From the anamnesis - the father suffers from type 2 diabetes

Objectively: Height 165 cm, weight 89 kg, WC – 98 cm. The face is round. The skin is of normal color, normal humidity, in the peri-umbilical area there are pale pink stripes 1.0 -1.5 cm wide;

Heart sounds are rhythmic and clear. Heart rate = Ps = 76 beats per minute, blood pressure 145/90 mmHg. The lungs and abdominal organs are unremarkable.

Additional studies: CBC, TAM – no changes; TC - 5.7 mmol/l.

K⁺ - 3.6

Na⁺ - 152

MRI of the pituitary gland and adrenal glands - no pathological changes were detected

OGTT - 6.3 mmol/l - 4.9 mmol/l.

ACTH – 6.2 ng/ml (N – 5 - 46) Cortisol –

154.2 nmol/l (N – 150 - 660)

The small dexamethasone test (SDT) is positive.

1. Preliminary clinical diagnosis.

2. Additional research required.

3. Treatment tactics.

Response standard:

1. Functional hypercortisolism. Obesity I degree, abdominal type. Arterial hypertension of the 1st degree. Dyslipidemia.

2. free cortisol in 24-hour urine, biochemical blood test, examination fundus, ECG

3. Diet therapy through 3 months re-examination

Task 46

Patient P., 25 years old, was referred by a gynecologist for a consultation with an endocrinologist.

From the medical history - during the last year there was a menstrual cycle disorder, for which she received treatment with estrogen and progesterone, but there was no effect from the therapy. While taking medications, weight gain occurred, general weakness, and migraine-type headaches appeared.

From the anamnesis - he has been suffering from bronchial asthma for more than 15 years, for which he regularly

takes prednisolone as part of combination therapy

Objectively: BMI = 28.7 kg/cm. Distribution of subcutaneous fat according to the central type (face, shoulder girdle, in the area of the VII cervical vertebra, abdomen). On the mammary glands, abdomen, thighs there are bright pink stripes 1.5 cm wide, the skin above them easily gathers into a fold in the form of papyrus paper; The upper and lower limbs are thin.

Heart sounds are clear and rhythmic. Heart rate = Ps = 88 beats per minute, blood pressure 150/85 mm Hg. In the lungs - vesicular breathing, dry wheezing, mainly on exhalation. NPV = 25 per minute

The abdominal organs are unremarkable.

1. Clinical diagnosis.
2. Additional research required. *Response standard:*

1. Bronchial asthma. Iatrogenic Cushing's syndrome (iatrogenic hypercortisolism). Symptomatic arterial hypertension of the first degree. Dyslipidemia.
2. free cortisol in daily urine, biochemical blood test, examination fundus, ECG, blood for ACTH, LH, FSH, IRF-1, R-gr OGK, FVD, peak flowmetry.

Task 47

A 35-year-old man complained of constant headache, increased fatigue, decreased vision, and increased blood pressure to 150/100 mm Hg. The patient notes that over the past 2 months the shoes have become 2 sizes too small, and his facial features have also changed - his nose and chin have become larger. At night, profuse sweating, nagging pain in the right hypochondrium.

Objectively: height 185 cm, weight 82 kg. The skin is dry, pinkish in color, mucous membranes are of normal color. Blood pressure 150/100 mmHg. pulse 80 per minute.

Data from additional studies, laboratory diagnostics: increased growth hormone in the blood in the morning and after a glucose load. Instrumental - ultrasound: liver enlargement. MRI: pituitary tumor.

1. Formulate a preliminary diagnosis?
2. Treatment tactics

Response standard:

1. Acromegaly. Symptomatic arterial hypertension 1st degree
2. ECG, R-graphy of the skull, lateral projection, spine, hands, feet, CT and/or MRI of the brain and sella turcica.

OBC, OAM, biochemical blood test, hormonal studies (GH, IRF-1, prolactin)

3. Adenomectomy, symptomatic therapy

Task 47

Male 41 years old, complaints of severe headaches in the frontotemporal region, pain in the eyeballs, fatigue, excessive sweating, weight gain of 5 kg over 6 months, enlargement of the nose and hands, numbness in the fingertips, periodic pain in the area of the heart, sometimes has difficulty breathing during sleep.

Objectively: Height 190 cm, weight 97 kg, moist skin, brow ridges protruding, lower jaw pushed forward, deep nasolabial fold, blood pressure 160/90 mm Hg on the right arm, blood pressure 150/90 mm Hg on the left.

1. Formulate a preliminary diagnosis?
2. Prescribe additional research methods? *Response standard:*

1. Acromegaly. Symptomatic arterial hypertension 2nd degree
Complications: carpal tunnel syndrome.
2. ECG, R-graphy of the skull, lateral projection, spine, hands, feet, CT and/or MRI brain and area of the sella turcica.
OBC, OAM, biochemical blood test, hormonal studies (GH, IRF-1, prolactin)

Task 48

Patient, 54 years old. Complains of headaches, increased blood pressure. Considers himself sick for about 10 years, notes the appearance of complaints after the cessation of menstruation.

Life history – childbirth 30 years ago

Observed by a general practitioner at his place of residence with a diagnosis of malignant arterial hypertension, he takes enalapril, concor. However, despite regular medication use over the past month, blood pressure numbers have remained stably at $\geq 180/110$ mmHg. Referred to an endocrinologist due to a positive OGTT. There is no heredity for diabetes mellitus.

Objectively : BMI 28.7 kg/cm, subcutaneous fat is evenly distributed. The face is round and hyperemic. The facial features are slightly enlarged, the brow ridges protrude. There are pale stretch marks on the stomach and thighs.

Heart sounds are muffled and rhythmic. Heart rate = Ps = 100 beats per minute; BP - 200/120 mm Hg.

The lungs and abdominal organs are unremarkable.

Cysts and feet are enlarged.

Additional studies: CBC, TAM – no changes; OHL - 5.9 mmol/l.

Fasting blood glucose - 7 mmol/l, 2 hours after PGT - 12 mmol/l. 1.

Preliminary clinical diagnosis.

2. Additional research.

3. Therapeutic tactics.

Response standard:

1. Acromegaly. Symptomatic arterial hypertension 3 degrees. Secondary diabetes

2. ECG, R-graphy of the skull, lateral projection, spine, hands, feet, CT and/or MRI of the brain and sella turcica.

OBC, OAM, biochemical blood test, hormonal studies (GH, IRF-1, prolactin).

Task 49

Patient G., 35 years old, turned to her local physician with complaints of fatigue, increased sleepiness during the day, increased blood pressure to 180/100 mm Hg, which is not relieved by taking antihypertensive drugs, headaches, swelling of the face and hands (the wedding ring has become small), weight gain, menstrual irregularities. Over the past two weeks, the patient's condition worsened.

Life history – childbirth 12 years ago

History of the disease: 2 years ago, surgical treatment for nodular goiter (the right lobe was removed), he takes 25 mcg of L-thyroxine.

Objectively: general condition is relatively satisfactory. Height 165 cm, weight 76 kg, WC = 90 cm. Skin of normal color, normal humidity; There are pale stretch marks along the anterior surface of the abdomen. Heart sounds are rhythmic and muffled. Heart rate = Ps = 76 beats per minute, blood pressure 170/100 mm Hg.

The lungs and abdominal organs are unremarkable.

Additional studies: CBC, TAM – no changes; OHL - 6.8 mmol/l. ECG – sinus rhythm, increased R amplitude in leads V5, V6.

TSH – 4.3 nmol/l (N – 0.35 – 4.5 nmol/l)

1. Preliminary diagnosis.

2. Additional research required. *Response standard:*

1. Acromegaly. Nodular goiter Stage 0, primary hypothyroidism grade 2, drug compensation. Symptomatic arterial hypertension 3 degrees.

2. ECG, R-graphy of the skull, lateral projection, spine, hands, feet, CT and/or MRI of the brain and sella turcica.

OBC, OAM, biochemical blood test, hormonal studies (GH, IRF-1, prolactin)

Task 50.

Male 56 years old. Complaints of decreased vision, headaches, general weakness, increased sweating. About a month ago, yellowness of the skin appeared.

From the anamnesis, he has been suffering from hypertension for about 15 years and takes medications irregularly. According to the patient (according to self-monitoring), over the past year, blood pressure has not decreased below 160/100 mm Hg.

Life history – have not traveled abroad in the last month

Objectively: general condition is relatively satisfactory. Height 180 cm, weight 96 kg. Enlargement of the lips and nose is noted. There are pronounced wrinkles on the forehead. The skin is icteric in color and dry. The sclera is icteric. Heart sounds are rhythmic, muffled. Blood pressure 170/105 mm Hg. In the lungs, in the lower sections, there are small moist rales. The liver protrudes from under the costal arch by 1.5 cm, swelling of the hands and feet.

The level of calcium in the blood is 2.69 mmol/l (normal

2.1-2.55). 1. Preliminary diagnosis?

2. Necessary research.

3. Treatment tactics.

Response standard:

1. MEN-1 syndrome (hormone-active tumor of the pancreas). Syndrome jaundice.

2. ECG, R-graphy of the skull, lateral projection, spine, hands, feet, CT and/or MRI brain and area of the sella turcica, CT scan of the pancreas

CBC, TAM, biochemical blood test, hormonal studies (GH, IRF-1, prolactin), parathyroid hormone, vitamin D

3. Surgical, symptomatic treatment

Task 51.

Patient M., 29 years old, was admitted to the clinic with complaints of thickening of the neck, rapid heartbeat, increased irritability, tearfulness, sleep disturbance, general sweating, trembling of the fingers, weight loss of 6 kg over the past six months, despite an increased appetite. The above symptoms appeared a year ago after returning from the south. On examination: there is some fussiness and hasty speech. The skin is moist and hot to the touch. When examining the neck, its thickening is revealed. Stellwag's and Graefe's symptoms are positive. Severe exophthalmos. On auscultation of the heart, the first sound at the apex is loud, and there is also a gentle systolic murmur. The heart rate is 110 per minute, the heart rhythm is abnormal: atrial fibrillation, there is no pulse deficit.

1) What syndromes can be identified based on this clinical picture?

2) The presence of what disease can be assumed based on the available data?

Response standard:

- 1) Thyrotoxicosis syndrome with the formation of thyrotoxic cardiomyopathy and autoimmune ophthalmopathy.
- 2) Diffuse toxic goiter. Task 52.

Patient L., 55 years old, was admitted to the clinic with complaints of dry mouth, thirst, itching, general weakness, and produces more than 2 liters of urine per day. The above symptoms appeared 2 months ago. Upon examination, it is noteworthy that the patient has a high nutritional status. Height 165 cm, weight 95 kg. The skin is dry, flaky, pronounced rubeosis, pustular rashes. When examining blood tests: hemoglobin 120 mg%, red blood cells - $4.5 \times 10^{12}/l$, leukocytes - $6.0 \times 10^9/l$, ESR - 18 mm/hour, glucose - 12 mmol/l (240 mg%). Urinalysis: quantity - 450 ml, relative density - 1.030, protein - absent, leukocytes - 2-4 in p/zr, glucose - 0.8 g/l, ketone bodies - absent.

- 1) What disease are we talking about in this problem, and what are the clinical symptoms are the most significant for making a diagnosis?
- 2) What laboratory symptoms confirm the preliminary diagnosis?

Response standard:

- 1) Diabetes mellitus type 2, in favor of which they say: polydipsia, polyuria, cutaneous itching and skin changes, obesity
- 2) Hyperglycemia, glycosuria

Task 53.

A 25-year-old patient was brought to the hospital emergency department with complaints of severe weakness, lethargy, thirst, pain in the epigastric region, and vomiting. Deterioration of condition after acute respiratory illness. Objectively: lethargic, smell of acetone from the mouth, dry skin, tongue coated with a dirty brown coating. Pulse - 100 per minute, blood pressure - 100/60 mm Hg. Art. Palpation of the abdomen is painful in the epigastric region, there are no symptoms of peritoneal irritation.

- 1) Identify syndromes
- 2) What diagnosis can be suspected?

Response standard:

- 1) Insulin deficiency syndrome
- 2) Type 1 diabetes mellitus. Diabetic ketoacidosis

Task 54.

Patient R., 26 years old, has been suffering from diabetes since he was 16 years old. Receives insulin therapy. After intense physical activity in the morning at 11.00, weakness, hand tremors, sweating, anxiety, and inability to concentrate appeared. The patient tried to overcome the condition on his own by eating, but lost consciousness. A few minutes later he came to his senses. An ambulance was called.

- 1) What condition has developed in the patient?
- 2) Treatment plan. *Response standard:*

standard:

- 1) Hypoglycemic state
- 2) Severe hypoglycemia, characterized by impaired consciousness, requires intravenous administration of 20-100 ml of 40% glucose solution. An alternative is 1 ml of glucagon solution subcutaneously or intramuscularly.

Task 55.

The patient, 46 years old, complains of hair loss, weakness, drowsiness, swelling of the face and limbs, deepening of the voice, weight gain, constipation. On objective examination, the face is puffy and amicable. Speech is slow and sluggish. Dry skin

peeling off. The thyroid gland is compacted on palpation, not enlarged. Eye symptoms are negative. Heart rate 55 per minute. Blood pressure 100/80 mm Hg.

- 1) What syndrome do you suspect?
- 2) What is its most likely cause? *Response*

standard:

1) Hypothyroidism syndrome 2) The most common cause of hypothyroidism is autoimmune thyroiditis

Task 56.

Patient T., 16 years old, was brought to the clinic in an unconscious state. According to relatives, it was established that he has been suffering from type 1 diabetes for a year. Has a negative attitude towards insulin treatment. Two weeks before admission to the clinic, he stopped taking insulin. The patient's condition sharply worsened, thirst, polyuria, weakness increased, nausea and repeated vomiting appeared. On the day of hospitalization, he lost consciousness. Objectively: the condition is serious, unconscious. Pungent odor of acetone in exhaled air. The skin is dry, cold to the touch, turgor is reduced. The turgor of the eyeballs is reduced. Body temperature 36.0 °C. Deep noisy breathing. There is weakened breathing in the lungs. Heart sounds are muffled. The pulse is frequent, thread-like, of small filling. Blood pressure 110/60 mm Hg. Heart rate 120 per minute. The tongue is dry, coated with a dirty brown coating. The abdomen is soft, painless on palpation, the liver protrudes 2.0 cm from under the costal arch, bowel sounds are weakened. Tendon reflexes are sharply weakened. Blood test: leukocytes - 25.0×10^9 , P - 20%, C - 78%, lymphocytes - 2%. Urinalysis: specific gravity 1045, protein 0.6 g/l, sugar 8%, acetone +++++. Blood biochemistry: total protein - 78 g/l, urea - 13.5 mmol/l, blood creatinine - 140.6 $\mu\text{mol/l}$, ketone bodies - 11 mmol/l, NEFA - 2.4 mmol/l, blood sugar - 48.8 mmol/l, pH 7.02, bicarbonate - 10 mmol/l.

1. Make a diagnosis.
2. What was the cause of this condition?
3. Present the emergency care algorithm

Response standard:

1. Type 1 diabetes, ketoacidotic coma.
2. Stopping insulin administration, which led to a sharp deterioration in utilization glucose tissues, increased gluconeogenesis, lipolysis, hyperketonemia.
3. Infusion rehydration with 0.9% NaCl solution in an amount of 10% body weight in the first 12 hours at a rate of 1.0-1.5 l in the 1st hour, in the 2nd and 3rd - 0.5 l, then 0.3-0.5 l/h until the volume of blood volume is restored and normalized Blood pressure and diuresis (50-100 ml/h), insulin therapy - a mode of continuous infusion of small doses - 0.1 IU per kg of the patient's body weight, when glycemia decreases to less than 14.0 mmol/l, administration of 5% glucose solution (100-150 ml/h), correction of electrolyte disorders.

Task 57.

Patient K., 17 years old. He has been suffering from type 1 diabetes for 11 years. 3 days ago I fell ill with a sore throat, thirst began to increase, severe abdominal pain and frequent vomiting appeared. Delivered to the surgical clinic with a diagnosis of acute appendicitis. Objectively: the condition is serious. Consciousness is preserved. The skin is dry, the tongue is dry, coated with a yellowish-brown coating. Severe muscle hypotension, the smell of acetone in the exhaled air. There is weakened breathing in the lungs. Heart sounds are muffled, pulse 120 per minute, weak filling. Blood pressure 80/55 mm Hg. The abdomen is sharply painful on palpation, especially on the right in the iliac region, tense, positive Shchetkin's sign. Blood test: leukocytes - 22.0×10^9 , p.o. - 18%, p.o. - 80%, mon. - 2%. The clinic diagnosed acute appendicitis and decided to urgently operate on the patient.

1. Do you agree with the surgeon's decision?
2. What is your diagnosis?
3. What research needs to be done before deciding to operate?

sick?

Response standard:

1. The surgeon did not think about the possibility of developing a syndrome that occurs with clinical picture of a false "acute" abdomen, simulating acute appendicitis and caused by diabetic ketoacidotic coma (abdominal form of DKK), although it is known from the anamnesis that the patient suffers from type 1 diabetes.
2. Determination of glucose levels in blood plasma, glucose and acetone levels in urine.

Task 58.

Patient P., 30 years old, suddenly lost consciousness and was taken to the clinic by ambulance. The doctor found out from her relatives that the patient suffers from diabetes and constantly injects herself with insulin. Objectively: the condition is serious, unconscious. The skin is moist. Blood pressure 125/70 mm Hg. Pulse 100 per minute, satisfactory filling. There are no deviations from the internal organs. The emergency doctor assessed the patient's condition as ketoacidotic coma. An ICD was administered at a dose of 20 units subcutaneously. After this, the patient was taken to the clinic in a deep coma. Glycemia 1.1 mmol/l, sugar in urine 2%.

1. Make a diagnosis.
2. What should the emergency physician's tactics be and why?
3. Why when plasma glucose levels is sugar detected in the urine at 1.1 mmol/l?

Response standard:

Type 1 diabetes. Hypoglycemic coma.

2. It was necessary to administer not insulin, but a 40% glucose solution 40-80 ml intravenously, taking into account clinical picture of the disease and symptoms.

3. Urine that had accumulated in the bladder even before the development of coma was studied. Task 59.

Patient P., 60 years old. Has suffered from type 2 diabetes for about 15 years. For diabetes, I took Maninil. According to relatives, it was found out that the patient had been taking diuretics uncontrollably for a long time due to hypertension. 3 days before admission to the clinic, the patient developed severe thirst, polyuria, shortness of breath, and severe muscle weakness. The patient's condition worsened, and relatives brought him unconscious to the clinic. Objectively: the condition is serious, in a coma. Dry skin and mucous membranes, decreased tone of the eyeballs. The tongue is dry, there is pronounced muscle hypotonia, there is no smell of acetone in the exhaled air. Severe swelling of the lower extremities and scrotum. Heart sounds are muffled, blood pressure is 60/40 mm Hg, pulse is 120 per minute. The abdomen is soft, painless, the liver is at the costal arch. The level of glucose in the blood plasma is 50.6 mmol/l, blood pH 7.4, blood sodium 154 mmol/l, sugar in the urine 6%, no acetone.

1. Make a diagnosis.
2. What caused this condition?
3. Your treatment plan.

Response standard:

1. Type 2 diabetes, hyperosmolar coma.
2. Uncontrolled use of diuretics.
3. Infusion rehydration with a hypotonic 0.45% NaCl solution. Speed rehydration: 1st hour - 1000-1500 ml of saline solution; 2nd and 3rd hour - 500-1000 ml of saline solution; subsequent hours - 250-500 ml of saline with mandatory monitoring of central venous pressure and hourly diuresis. Insulin therapy - continuous mode

infusion of small doses of insulin - 0.05 IU per kg of patient's body weight, while glycemia should decrease by 3-4 mmol/l/h. When glycemia decreases to 12-14 mmol/l, a 5% glucose solution (150-200 ml/h) is added to the infusion. Correction of electrolyte disorders

Task 60.

Patient B., 42 years old. He was admitted to the clinic in serious condition. According to his relatives, he complained of progressive muscle weakness, dizziness, weight loss, uncontrollable vomiting, diarrhea, and decreased appetite. At the age of 30 he suffered from pulmonary tuberculosis, then was removed from the register. Objectively: low nutrition, height 176 cm. Weight 58 kg. The patient is sharply inhibited. Adynamia. Pigmentation of the skin, mucous membranes, palmar folds and nipple halo, body temperature - 35.9 °C. Heart sounds are sharply muffled, pulse 66 per minute, weak filling, blood pressure 80/40 mm Hg. (lying down). Rigidity of the anterior abdominal wall. Glycemia - 3.0 mmol/l.

1. What is your preliminary diagnosis?
2. Create a treatment algorithm.

Response standard:

1. Acute adrenal insufficiency.
2. Replacement therapy with corticosteroids: 100-150 mg is injected intravenously hydrocortisone, followed by a bolus infusion over 3-4 hours of hydrocortisone hemisuccinate 100-200 mg, dissolved in 500 ml of equal amounts of isotonic NaCl solution and 5% glucose solution. Simultaneously with the intravenous infusion, water-soluble hydrocortisone is administered intramuscularly at 50-75 mg every 4-6 hours. To combat shock - infusion of 0.9% NaCl solution and 5% glucose solution in a volume of 2.5-3.5 l on the first day, with the addition of 25-30 ml of 5% ascorbic acid solution. Correction of electrolyte disorders, hypoglycemia, elimination of cardiovascular failure

Task 61.

Patient M., 40 years old. He was admitted to the clinic with complaints of frequent headaches, fatigue, shortness of breath, attacks with a sharp increase in blood pressure, and is being treated by a therapist for hypertension. Recently the attacks have become more frequent. A hypertensive crisis developed in the clinic, which was accompanied by a severe headache, sweating, tachycardia, pale skin, nausea, vomiting, and abdominal pain. Objectively: low nutrition, cold extremities, purplish-red skin tone on the hands, forearms, and feet. The skin is moist. Pulse 98 per minute. Blood pressure 260/120 mm Hg. Clinical blood test shows leukocytosis. Blood sugar is 8.0 mmol/l, there is no sugar in the urine.

1. What is your preliminary diagnosis?
2. What studies need to be carried out to clarify the diagnosis? Which medications are necessary to relieve the crisis in this patient?

Response standard:

1. Pheochromocytoma, catecholamine crisis.
2. The most accurate diagnostic method is the determination of metanephrine and normetanephrine in daily urine. It is necessary to do a CT scan of the adrenal glands. 3. Alpha adrenolytics: intravenous bolus 1 ml of 1% solution of tropafen (Regitin) in 10 ml of 0.9% NaCl solution, repeated injections every 5 minutes until the crisis subsides. Symptomatic therapy (non-narcotic analeptics, sedative antispasmodics)

Task 62.

A 37-year-old man was hospitalized in the emergency cardiology department in a state of excessive agitation with complaints of heart pain, shortness of breath, palpitations, body tremors, and double vision. From the anamnesis it is known that in the last 2-3 months he has been bothered by causeless headaches, analgesics are ineffective. Also, periodic attacks of palpitations not associated with physical activity occur, accompanied by profuse sweating. During the same time, he notes a decrease in body weight by 4-5 kg with a normal appetite and a periodic increase in body temperature to 37.1-37.4 ° C. On the eve of the attack, I was visiting, where I ate a lot (cheese, red wine). Family history is unremarkable. On examination: pale skin, profuse sweating, widely dilated pupils, shiny eyes, tremor of hands. Body temperature 37.6 °C. The thyroid gland is not enlarged. There is no swelling. From the cardiovascular system, tachycardia is noted - 120 bpm, heart sounds are normal, blood pressure is 300/170 mm Hg. No deviations were identified from other organs and systems. Clinical blood test: leukocytosis 14.0×10⁹ g/l, hematocrit 54%, ESR 25 mm/h. The ECG reveals deep negative T waves in leads V1-4, biphasic T waves with the first positive phase in lead V5.

1. What is the likely diagnosis and emergency response?
2. What additional examinations need to be performed on the patient? Z

Response standard:

1. Pheochromocytoma, catecholamine crisis.
2. The most accurate diagnostic method is the determination of metanephrine and normetanephrine in daily urine. It is necessary to do a CT scan of the adrenal glands.

3. Alpha adrenolytics: iv bolus 1 ml of 1% solution of tropafen (Regitin) in 10 ml 0.9% NaCl solution, repeated injections every 5 minutes until the crisis stops. Symptomatic therapy (non-narcotic analeptics, sedative antispasmodics).

Task 63.

Patient N., 30 years old, came to the clinic with complaints of general weakness, dry mouth, polyuria, blurred vision, numbness, paresthesia in the lower extremities, and frequent hypoglycemic conditions (at night and during the day). I have had diabetes since I was 15 years old. Diabetes manifested itself as ketoacidosis. Receives Humulin NPH - 20 units in the morning, 18 units in the evening and Humulin regulator - 18 units/day. Leads an active lifestyle and is trained in self-control techniques. Objectively: general condition is satisfactory. Body type, male hair type. BMI - 19 kg/m². The skin is dry and clean. There are snags in the corners of the mouth. There is no peripheral edema. The thyroid gland is not enlarged, there is vesicular breathing in the lungs, there is no wheezing. Heart sounds are rhythmic, pulse is 82 beats per minute. BELL - 120/80 mm Hg. Art. The abdomen is soft and painless. The liver and spleen are not enlarged. The skin of the legs and feet is dry, there are areas of hyperkeratosis on the feet, the pulsation in the arteries of the dorsum of the foot is satisfactory. Examination results: fasting blood glucose - 10.4 mmol/l, 2 hours after eating - 14.5 mmol/l. General urine analysis: specific gravity - 1014, protein - traces; leukocytes - 1-2 in the field of view. Ophthalmologist: fundus - single microaneurysms, hard exudates, swelling of the macular area. Podiatrist: decreased vibration and tactile sensitivity.

1. Formulate a preliminary diagnosis.
2. Justify your diagnosis.
3. Draw up and justify a plan for additional examination of the patient.

Response standard:

1. Type 1 diabetes mellitus. Target level of glycosylated hemoglobin is less 6.5%. Complications: diabetic preproliferative retinopathy. Diabetic polyneuropathy sensory form.

2. The patient has type 1 diabetes mellitus (diabetes manifested as ketoacidosis at the age of 15,

receives insulin therapy). Considering the duration of the disease (more than 15 years), complaints of blurred vision, pain, numbness and paresthesia in the lower extremities, examination data from an ophthalmologist and podiatrist, the patient developed late complications of diabetes mellitus - preproliferative retinopathy, distal sensory polyneuropathy.

3. 1. Glycemic profile to assess compensation for diabetes mellitus and corrections carried out by glucose-lowering therapy. 2. Determination of glycosylated hemoglobin (assessment of compensation for diabetes mellitus, decision on the intensification of therapy). 3. Determination of urea, creatinine, serum acid phosphatase (to exclude diabetic nephropathy). 4. Determination of albumin in daily urine (to exclude diabetic nephropathy). 5. Electrocardiogram. 6. Determination of triglycerides, cholesterol, LDL, HDL. 7. Electromyography to confirm polyneuropathy. 4. Taking into account the patient's age of 30 years, life expectancy, the absence of severe vascular complications of diabetes mellitus, the target level of glycosylated hemoglobin in this case is less than 6.5%. Monitoring the level of glycosylated hemoglobin once every 3 months. 5. Considering the patient's young age of 30 years, the patient's active lifestyle, the presence of hypoglycemic conditions on insulin therapy with "Humulin", it is advisable to transfer the patient to long-acting human insulin analogues - insulin Glargine "Lantus" - 1 time per day + ultra-short-acting insulin Lizpro "Humalog" " before eating

Task 64.

Male 56 years old. On examination, he has increased nutrition (height 174 cm, weight 108 kg). He has no complaints. Fasting blood glucose levels range from 7.8-10.6 mmol/l. Arterial hypertension for 8 years. Currently, blood pressure is 140/90, 130/85 (takes enalapril). No deviations from the norm were identified from the internal organs

1. Make a diagnosis.
2. Calculate and estimate BMI.
4. What are the target blood pressure values for patients with this pathology?
5. Treatment tactics

Response standard:

1. Diabetes mellitus type 2. Target HbA1c level less than 6.5%
- Res. Obesity 1st degree. Hypertension, stage II. Risk IV. 3. BMI= 35.7, which corresponds to stage 1 obesity.
4. Below 130/80 mmHg.
5. Therapeutic tactics: diet with daily calorie restriction to 1800 kcal, due to fats of animal origin, biguanides - metformin 1,500 - 2000 mg per day + vildagliptin 50 mg - 1 tab in the morning, 1 tab in the evening

Task 65.

A 56-year-old patient consulted her local doctor with complaints of weakness, fatigue, and headaches. There was a history of 4 births, all children were born weighing 4.5-5 kg. My paternal aunt has diabetes.

Objectively: uniform obesity, height 162 cm, weight 95 kg. There is no pathology from the internal organs.

1. Formulate a presumptive diagnosis
2. Justify your assumption
3. Calculate your body mass index and evaluate the result.
4. Outline your examination plan

Response standard:

1. Obesity 2 degrees, exogenous-constitutional

2. The patient belongs to the risk group for developing diabetes mellitus, taking into account the burden of heredity, birth of large children, obesity.

3. BMI=36, which corresponds to stage II obesity.

4. In order to identify latent diabetes mellitus, it is necessary to examine sugar blood on an empty stomach, perform a glucose tolerance test (75g) of glucose.

Task 66

A 22-year-old patient complains of dry mouth, thirst, excessive urination (daily diuresis of about 6 liters), significant loss of body weight and decreased performance. The disease developed within three months after the flu. Objectively: height 178 cm, weight 62 kg. The physique is asthenic, the skin is dry, and there is superficial pyoderma in the back area. The boundaries of relative dullness of the heart are within normal limits, sonorous tones. Pulse 86 per minute, rhythmic. Blood pressure 116/80 mm Hg. Bleeding gums are determined. The edge of the liver protrudes from under the edge of the costal arch by 3 cm, painful on palpation.

1. Make a preliminary diagnosis

2. Give reasons for the diagnosis

3. Draw up an examination plan

4. Indicate the probable mechanism of disease development

5. Principles of treatment.

Response standard:

1. Diabetes mellitus type 1

2. Based on: young age, acute onset, severity of clinical manifestations, significant weight loss, association with viral infection.

3. Glycemic profile, ketone bodies, acetone in urine, K, Na, bilirubin, AST, ALT, blood creatinine.

4. Autoimmune lesion of the islets of Langerhans in the pancreas

5. Selection of insulin dose. Diet. Diabetes school education.

Task 67

A 32-year-old patient was admitted to the therapeutic department with complaints of girdle pain in the epigastric region, general weakness, and sleep disturbances. The pain intensifies after eating fatty, fried foods. The disease is associated with alcohol consumption. Objectively: the general condition is moderate, the position in bed is forced, on the left side. Height 178 cm, body weight 96 kg. When examining the circulatory and respiratory organs, there were no deviations from the norm. Pulse 86 per minute, blood pressure 110/75 mmHg. The tongue is wet and covered with a white coating. The abdomen is soft, painful in the left umbilical and hypochondrium region. The Mayo-Robson sign is positive. The edge of the liver protrudes from under the edge of the costal arch by 2 cm, painless. Kehr's and Ortner's signs are negative. Additional studies: complete blood count: leukocytes $9 \times 10^9/l$, blood glucose 14.2 mmol/l.

1. Formulate a diagnosis

2. Justify the diagnosis

3. Specify the mechanism of development of carbohydrate metabolism disorders?

4. Outline an examination plan

5. Treatment plan (sugar-lowering therapy)

Response standard:

1. Exacerbation of chronic pancreatitis. Secondary pancreatogenic sugar diabetes.

2. Based on complaints: girdling nature of pain in the epigastric region, connection pain with eating fatty, fried foods, drinking alcohol. Objectively: pain in the left umbilical and hypochondrium region, positive Mayo-Robson sign.

3. Development of exocrine pancreatic insufficiency.

4. Examination plan: detailed blood test; general blood test, urine test; amylase blood, glycemic profile, C-peptide, bilirubin, ALT, AST; feces for scatology; Ultrasound of the pancreas; blood sugar, urine acetone; for persistent pain syndrome - ERCP.

5. For the period of exacerbation - insulin therapy with short or ultra-short insulin preparations actions taking into account the level of glycemia, after stopping the exacerbation, the issue of sugar-lowering therapy is decided by the level of C-peptide, glycemic profile.

Task 68.

A 22-year-old woman with a 27-week pregnancy was referred to an endocrinologist for consultation. Complains of attacks of severe weakness, sweating, and lightheadedness. As a rule, attacks occur after physical stress. I noticed that eating food relieves attacks. Previously she was healthy. The pregnancy developed normally. The first attack occurred a month ago. From the internal organs without pathology. Blood pressure 130/80. Fasting blood sugar was checked over time: February 17 3.5 mmol/l, February 21 3.1 mmol/l, February 25 3.4 mmol/l, February 28 3.9 mmol/l. Glucosuria: February 17, diuresis 1.4 l sugar 2%, February 21 diuresis 1.9 l sugar 3.0%, February 25 diuresis 1.7 l sugar 3.8%, February 29 diuresis 2 l sugar 3.8%. General urine analysis: protein 0.23 g/l, acidic reaction, specific gravity 1021. Leukocytes 5-6 in the field of view.

1. What is your conclusion about the diagnosis?

2. Justify the diagnosis

3. Indicate a possible reason for the development of this condition in a pregnant woman.

4. Examination plan?

5. Treatment plan?

Response standard:

1. Renal glucosuria, hypoglycemic conditions.

2. Rationale for diagnosis: There is no evidence for diabetes mellitus, since the study of sugar blood dynamics revealed its trend (3.1 mmol/l). Loss of sugar through the kidneys leads to hypoglycemic conditions, as evidenced by attacks of weakness, sweating, and the positive effect of food intake.

3. Renal glucosuria in pregnant women usually occurs due to an inhibitory effect on the reabsorption of glucose, gestagens and glucocorticoids, the level of which increases in the body of pregnant women. It is possible that renal glucosuria in the patient is also provoked by incipient toxicosis of pregnancy (protein in the urine), which requires clarification.

4. Examination plan: general blood test; general urine analysis over time; glycemic and glucosuric profile; blood sugar during an attack; level of glycosylated hemoglobin; Fetal ultrasound; Ultrasound of the pancreas, kidneys. Monitoring daily diuresis and the amount of fluid drunk. Monitor blood and urine sugar throughout pregnancy

5. Treatment plan: recommend a diet high in rich foods starch (flour dishes, cereals, etc.) to prevent hypoglycemia. Explain to the patient that she is at risk for diabetes, i.e. so that after giving birth she does not overindulge in sweets and regularly (about once every 6 months) checks her blood glucose levels.

Task 69.

The patient is 56 years old, height 160 cm, weight 105 kg. He makes no complaints. Fasting blood glucose level is 5.1 mmol/l. Results of an oral glucose tolerance test (TSG): fasting blood glucose level 5.3 mmol/l, 2 hours after a load of 75 g glucose 10 mmol/l.

1. Assess your fasting blood glucose level.
2. What do the test results indicate?
3. Why was this study carried out?
4. Why is this condition dangerous?
5. What are the further tactics?

Sample answer:

1. Fasting blood glucose level 5.1 mmol/l is normal.
2. The test results indicate impaired tolerance to carbohydrates, since blood sugar after a load of 75 g of glucose is above 7.8 mmol/l and below 11.1 mmol/l.
3. This study was conducted to identify latent diabetes mellitus, since the patient belongs to a potential risk group due to existing obesity (BMI > 40 - severe obesity)
4. Development of overt diabetes mellitus and progression of cardiovascular disease disorders.
5. Further tactics: measures aimed at reducing body weight - low-calorie diet (1000 kcal) with limitation of animal fats and easily digestible carbohydrates. If ineffective, add biguanides.

Task 70.

The patient, 16 years old, has been suffering from diabetes mellitus since the age of 9. The disease began acutely: thirst, polyuria, weakness, weight loss. Insulin treatment was started immediately. While on vacation in a sanatorium, he stopped taking insulin and after a few days, decompensation of diabetes mellitus developed.

1. Determine the type of diabetes.
2. Justify the diagnosis.
3. Did the patient do the right thing by canceling insulin administration?
4. What complications can develop as a result of insulin withdrawal?
5. Is it possible to prescribe other glucose-lowering drugs?

Sample answer:

1. Type 1 diabetes mellitus.
2. Onset of the disease at the age of 9, diabetes developed acutely, pronounced diabetes symptoms, weight loss.
3. The patient acted incorrectly, since type 1 diabetes is characterized by absolute insulin deficiency and in this case insulin is administered for replacement purposes for life.
4. Diabetic ketoacidosis, coma, death.
5. No, it's impossible. Since the mechanism of action of tableted hypoglycemic drugs requires the presence of its own insulin.

Task 71.

A 15-year-old teenager presented with furunculosis. From the anamnesis: he is predisposed to colds, his older brother and father have diabetes. The teenager was actively called to the dispensary at the age of 14. Blood sugar was normal. Objectively: poor nutrition, pale, multiple boils on the skin of the torso and neck. Vesicular breathing in the lungs. Heart sounds are clear. Blood pressure 105/65 mmHg. Pulse 88 per minute. The liver is not palpable.

1. Your diagnostic guess
2. Justify this assumption.
3. Outline your examination plan
4. Name the diagnostic criteria for diabetes mellitus.

Sample answer:

1. The teenager is at risk for developing diabetes mellitus, or the condition is defined as latent diabetes mellitus
2. Taking into account the manifestations of immunodeficiency - furunculosis, frequent colds diseases, as well as a family history of diabetes mellitus and the absence of obvious clinical manifestations of diabetes characteristic of this type of diabetes.
3. In order to confirm the diagnosis, it is necessary to examine fasting blood sugar, normal or questionable values, perform a carbohydrate tolerance test with 75 g of glucose. You can also examine the patient's glycemic profile, acetone in the urine, glycosylated hemoglobin, ketone bodies, acetone in the urine.
4. Fasting ≥ 6.1 mmol/l, after a glucose load or upon random determination ≥ 11.1 mmol/l.

Task 72.

A 21-year-old man is concerned about thirst, polyuria, and weight loss. I became acutely ill two weeks ago. Fasting blood glucose level - 18 mmol/l, glucosuria - 4%, acetone (+++). The patient's condition is moderate. The smell of acetone in the exhaled air. The skin is dry to the touch and clean. In the lungs, breathing is vesicular, there is no wheezing. Cortons are clear, tachycardia up to 100 beats per minute. Blood pressure 110/70 mmHg. The abdomen is soft, painless on palpation.

1. Formulate a diagnosis.
2. Justify the diagnosis
3. Make an examination plan.
4. Treatment tactics.

Sample answer:

1. Diabetes mellitus type 1. Ketosis.
2. Based on: young age, acute onset, severe manifestations diabetic syndrome, weight loss, acetonuria.
3. Glycemic profile, ketone bodies, acetone in urine, K, Na, bilirubin, AST, ALT, blood creatinine, complete blood count, general urine test.
4. Insulin therapy: injections of short or ultra-short insulin for sugar blood every 2 hours with determination of the daily insulin requirement until ketosis is relieved; then transfer to intensive insulin therapy. Rehydration therapy (saline NaCl solution up to 4-6 liters per day). Fighting hypokalemia.

Task 73.

A 54-year-old patient has been suffering from arterial hypertension for 5 years old, suffered transmural myocardial infarction. On examination: height 176 cm, body weight 104 kg. Waist circumference - 126 cm, hip circumference - 108 cm. Heart rate 88 per minute, blood pressure 180/100 mm Hg. Art. When registering for a sanatorium-resort card, the following changes were revealed: fasting glycemia 7.9 mmol/l, total cholesterol - 8.6 mmol/l, LDL cholesterol - 5.4 mmol/l, triglycerides - 3.8 mmol/l. ECG: signs of left ventricular hypertrophy, focal changes bottom walls.

1. Formulate a diagnosis.
2. Make an examination plan.

3. Which drugs should be prescribed first, name the group belonging?

4. Describe the mechanism of action of these drugs.

Sample answer:

1. Type 2 diabetes mellitus, target HbA1c level less than 7%. Obesity 1st degree. IBS. Post-infarction atherosclerosis. Dyslipidemia. Hypertension stage III, degree 3, risk 4.

2. Echocardiography, coronary angiography to clarify the state of the cardiovascular systems. To identify complications of diabetes mellitus: examination of the fundus, detection of microalbuminuria or proteinuria, level of urea, creatinine. 3. Biguanides-metformin. iDPP-4 - vildagliptin.

4. Biguanides eliminate peripheral insulin resistance, increase receptor sensitivity to insulin at the level of adipose, muscle tissue, and liver. Biguanides reduce the production of glucose by the liver and reduce the absorption of glucose in the intestine.

Task 74.

Patient T., 58 years old, diabetes mellitus for 15 years, has been on therapy with oral hypoglycemic drugs for a long time, glycated hemoglobin 10.5%. 3 months ago he was transferred to an intensive insulin therapy regimen. I consulted an ophthalmologist with complaints of decreased vision over the last month, blurred contours, lack of clarity.

1. Formulate a diagnosis.

2. Assess the level of glycated hemoglobin.

3. Justify the proposed target HbA1c level

4. What could have contributed to the decrease in vision? What changes in the fundus possible for the patient?

5. Adjust sugar-lowering therapy.

Sample answer:

1. Type 2 diabetes mellitus. Target HbA1c level is less than 7%.

2. Glycated hemoglobin 10.5% above the target level for this patient - below 7%, which indicates decompensation of diabetes mellitus.

3. So the patient is 56 years old, therefore a high life expectancy, in the anamnesis There is no data on cardiovascular pathology.

4. Intensive administration of insulin to a patient with type 2 diabetes led to hypoglycemic conditions, which resulted in retinal hypoxia, hemorrhage, and hemorrhage.

5. The patient should be switched to human insulin analogues (Aspart Glargine, degludec).

Task 75.

The patient, 49 years old, has been suffering from type 1 diabetes since he was 19 years old. Several years ago he developed proliferative retinopathy, which required laser therapy. The treatment was successful, the patient's vision returned to normal. Subsequently, the patient visited a diabetologist irregularly and lived for several years without the supervision of a specialist. A month ago, while walking, the patient tripped over a stone and, in his own words, felt "something giving way in the left ankle joint." He felt no pain and continued walking. Then the patient realized that something was wrong and went to the emergency room at his place of residence. There he was examined, but no specific damage was detected and the patient was sent home. A few days later, the patient returned to the emergency room with a swollen ankle that was hot to the touch. With X-ray

The examination revealed changes similar to osteomyelitis. The patient was admitted to the hospital and treatment was started with intravenous antibiotics. The swelling of the foot decreased and after some time he was discharged with a recommendation to continue the prescribed treatment for three months. After a few weeks, the ankle became deformed and the joint stopped performing its function. Eventually the joint became immobile. The patient subsequently developed a large ulcer on the middle third of the arch of the foot, which has now flattened and become arched. Over the next 5 years, the patient repeatedly developed infected ulcers on his foot, which ultimately necessitated below-the-knee amputation.

Sample answer:

1. Was the initial diagnosis of osteomyelitis correct?
2. If not, what is the possible diagnosis?
3. Specify the reason for the development of this complication. What is the mechanism for the development of this state?
4. Treatment for this condition?
5. Prevention of this condition?

Sample answer:

1. The initial diagnosis was completely wrong.
2. The patient has developed neuroarthropathy or Charcot joint.

OPK-10:

Closed type tasks:

Task 1. Instructions: Choose one correct answer. The main reason for the development of diabetic ketoacidosis is: 1) excessive physical activity

- 2) violation of insulin therapy regimen
- 3) diarrhea
- 4) adherence to diet

Sample answer: 2. violation of insulin therapy regimen

Task 2. Instructions: Choose one correct answer. The main cause of the hypoglycemic state is: 1) the prescription of glucocorticosteroids

- 2) pain syndrome
- 3) excessive physical activity
- 4) hypertensive crisis

Sample answer: 3. excess physical activity

Task 3. Instructions: Choose one correct answer. Clinical manifestations of hypoglycemia are characterized by: 1) thirst and polyuria

- 2) nausea and vomiting
- 3) decreased muscle tone and dry skin
- 4) increased muscle tone and skin moisture

Sample answer: 4. increased muscle tone and skin moisture

Task 4. Instructions: Choose one correct answer. Adrenergic symptoms during the development of hypoglycemia include:

- 1) bradycardia
- 2) anxiety, aggressiveness
- 3) pallor of the skin

4) hyperemia of the mucous membranes

*Sample answer:*2. anxiety, aggressiveness

Task 5. Instructions: Choose one correct answer. Neuroglucopenic symptoms with the development of hypoglycemia include: 1) abdominal pain

2) dry mouth

3) dry skin

4) convulsions, transient paresis, impaired consciousness

*Sample answer:*4. convulsions, transient paresis, impaired consciousness

Task 6. Instructions: Choose one correct answer.

Treatment for hypoglycemic coma includes:

1) prescription of insulin therapy;

2) prescription of loop diuretics

3) intravenous administration of 40% glucose solution up to 100 ml

4) intravenous administration of 5% glucose solution

*Sample answer:*3. intravenous administration of 40% glucose solution up to 100 ml

Task 7. Instructions: Choose one correct answer

Clinical manifestations of a hyperglycemic ketoacidotic state are characterized by:

1) decreased muscle tone, nausea and vomiting

2) aggressive, agitated behavior

3) stool disorder

4) increased muscle tone

*Sample answer:*1. decreased muscle tone, nausea and vomiting

Task 8. Instructions: Choose one correct answer

Cardiac manifestations of ketoacidosis in diabetes mellitus include: 1) bradycardia

2) ECG – signs of acute myocardial infarction

3) arterial hypertension

4) severe chest pain

*Sample answer:*2. ECG – signs of acute myocardial infarction

Task 9. Instructions: Choose one correct answer

Laboratory signs of diabetic ketoacidosis include:

1) hyperglycemia, leukocytosis, hypokalemia, hyponatremia, ketonemia

2) hyperglycemia, hyperkalemia, hypermagnesemia, hyperchloremia, ketonemia,

3) leukocytosis, hypokalemia, hyponatremia, ketonemia, hypoinsulemia

4) hyperglycemia, azotemia, hypernatremia, hyperinsulinemia

*Sample answer:*1. hyperglycemia, leukocytosis, hypokalemia, hyponatremia, ketonemia

Task 10. Instructions: Choose one correct answer. Principles of therapeutic measures for diabetic ketoacidotic coma:

hyperglycemic

- 1) rehydration and insulin therapy
 - 2) radiation therapy
 - 3) administration of glucagon
 - 4) administration of diuretics
- Sample answer:*1. rehydration and insulin therapy

Task 11. Instructions: Choose one correct answer. The causes of death in diabetic ketoacidosis are: 1) insulin resistance and hyperinsulinemia

- 2) acute adrenal insufficiency
 - 3) lactic acidosis
 - 4) cardiac arrest due to hypokalemia and hypovolemic shock
- Sample answer:*4. cardiac arrest due to hypokalemia and hypovolemic shock

Task 12. Instructions: Choose one correct answer. Hyperosmolar coma develops more often:

- 1) in young patients with type 1 diabetes
 - 2) with gestational diabetes mellitus
 - 3) in elderly patients with type 2 diabetes
 - 4) in patients with primary hyperaldosteronism
- Sample answer:*3. in elderly patients with type 2 diabetes

Task 13. Instructions: Choose one correct answer. Hyperosmolar coma in diabetes mellitus is characterized by:

- 1) hypoglycemia;
 - 2) absence of ketosis and acidosis;
 - 3) ketoacidosis;
 - 4) profuse salivation.
- Sample answer:*2 lack of ketosis and acidosis.

Task 14. Instructions: Choose one correct answer. Therapeutic tactics for hyperosmolar coma include rehydration therapy, insulin therapy, and also:

- 1) correction of electrolyte disturbances;
 - 2) correction of dyslipidemia;
 - 3) administration of glucagon;
 - 4) administration of diuretics
- Sample answer:*1. correction of electrolyte disturbances;

Task 15. Instructions: Choose one correct answer

The reasons for the development of lactic acidosis in diabetes mellitus: 1) osteoporosis;

- 2) treatment with mineralocorticoids;
- 3) chronic hypoxia with respiratory and heart failure;
- 4) inadequate compensation for diabetes mellitus:

*Sample answer:*3. chronic hypoxia in respiratory and heart failure;

Task 16. Instructions: Choose one correct answer

Clinical manifestations of lactic acidosis include the following: 1) constipation;

2) arterial hypertension;

3) bradycardia;

4) nausea, vomiting, muscle pain;

*Sample answer:*4. nausea, vomiting, muscle pain;

Task 17. Instructions: Choose one correct answer

Therapeutic tactics for lactic acidemia coma include the use of: 1) rehydration and insulin therapy

2) gastric lavage and insulin therapy

3) forced diuresis, insulin therapy, artificial ventilation

4) administration of glucagon;

*Sample answer:*3. forced diuresis, insulin therapy, artificial ventilation

Task 18. Instructions: Choose one correct answer

Non-hormonal laboratory signs of acute adrenal insufficiency: 1) leukopenia, hyperglycemia, hypokalemia

2) hyperkalemia, hypoglycemia, increased creatinine levels

3) leukocytosis, hypokalemia, hypernatremia

4) anemia, leukopenia, hypochloremia, hyponatremia, hyperglycemia *Sample*

*answer:*2. hyperkalemia, hypoglycemia, increased creatinine levels

Task 19. Instructions: Choose one correct answer Causes of acute adrenal insufficiency: 1) hemorrhages in the adrenal glands;

2) autoimmune process;

3) adrenal adenoma;

4) long-term use of antihypertensive drugs; *Sample*

*answer:*1. hemorrhages in the adrenal glands

Task 20. Instructions: Choose one correct answer

Therapeutic tactics for the development of acute adrenal insufficiency: 1) administration of dexamethasone;

2) prescription of hydrocortisone;

3) prescription of adrenaline and methylprednisolone;

4) administration of adrenaline;

*Sample answer:*2. prescription of hydrocortisone.

Task 21. Instructions: Choose one correct answer

The main clinical manifestations of thyrotoxic crisis: 1) dry skin, constipation;

2) chilliness, decreased blood pressure;

3) rapid heartbeat, arrhythmias, fever up to 40-41C, agitation;

4) bradycardia, decreased blood pressure.

Sample answer: 3. rapid heartbeat, arrhythmias, increased temperature to 40-41°C, agitation.

Task 22. Instructions: Choose one correct answer

Treatment tactics for thyrotoxic crisis:

- 1) prescription of thyreostatic drugs and glucocorticoids;
- 2) rehydration and insulin therapy;
- 3) prescription of loop diuretics
- 4) intravenous administration of levothyroxine sodium.

Sample answer: 1. prescription of thyreostatic drugs and glucocorticoids

Task 23. Instructions: Choose one correct answer.

Which pathogenetic link relates to type 1 diabetes mellitus: 1. Insulin resistance

2. Relative insulin deficiency
3. Defect in insulin secretion with insulin resistance
4. Destruction of pancreatic cells, usually leading to absolute insulin deficiency

Sample answer: 4. Destruction of pancreatic cells, usually leading to absolute insulin deficiency

Task 24. Instructions: Choose one correct answer.

Which of the following symptoms is typical in the clinic of type 1 diabetes mellitus: 1. Thirst

2. Polyuria
3. Loss of body weight due to increased appetite
4. Dry mouth
5. All of the above

Sample answer: 5. All of the above

Task 25. Instructions: Choose one correct answer.

What is the advantage of basal insulin analogues over human basal insulins:

1. Longer action
2. Fewer side effects
3. Less variability of action
4. More pronounced hypoglycemic effect
5. Shorter half-life *Sample answer:* 3. Less variability of action

Open type tasks:

Exercise 1

Male 56 years old. On examination, he has increased nutrition (height 174 cm, weight 108 kg). He has no complaints. Fasting blood glucose levels range from 7.8-10.6 mmol/l. Arterial hypertension for 8 years. Currently blood pressure is 140/90, 130/85 mm Hg. Art. (takes enalapril). No deviations from the norm were identified from the internal organs.

1. Make a diagnosis.
2. Calculate and estimate BMI.
3. Treatment tactics

Sample answer:

1. Type 2 diabetes mellitus. Target HbA1c level is less than 6.5%. Sop. Obesity 1st degree. Hypertension stage I Risk 3. 2. BMI = 34 kg/m², which corresponds to stage 1 obesity.
3. Therapeutic tactics: diet with daily calorie restriction to 1800 kcal, due to fats of animal origin, biguanides - metformin 1,500 - 2000 mg per day + DPP-4 (vildagliptin 50 mg - 1 tablet in the morning, 1 tablet in the evening).

Task 2

A 56-year-old patient consulted her local doctor with complaints of weakness, fatigue, and headaches. There was a history of 4 births, all children were born weighing 4.5-5 kg. My paternal uncle has diabetes.

Objectively: uniform obesity, height 162 cm, weight 95 kg. There is no pathology from the internal organs.

1. Formulate a preliminary diagnosis *Sample answer:*

1. Obesity 2 degrees, exogenous-constitutional Task 3.

A 24-year-old patient complains of dry mouth, thirst, excessive urination (daily diuresis of about 6 liters), a significant decrease in body weight and decreased performance. The disease developed within three months after the flu. Objectively: height 178 cm, weight 62 kg. The physique is asthenic, the skin is dry, and there is superficial pyoderma in the back area. The boundaries of relative dullness of the heart are within normal limits, sonorous tones. Pulse 86 per minute, rhythmic. Blood pressure 116/80 mm Hg. Bleeding gums are determined. The edge of the liver protrudes from under the edge of the costal arch by 3 cm, painful on palpation.

1. Make a preliminary diagnosis
2. Give reasons for the diagnosis
3. Draw up an examination plan
4. Indicate the probable mechanism of disease development
5. Principles of treatment.

Sample answer:

1. Diabetes mellitus type 1, target HbA1c level less than 6.5%
2. Based on: young age, acute onset, severity of clinical manifestations, significant weight loss, association with viral infection.
3. Glycemic profile, ketone bodies, acetone in urine, K, Na, bilirubin, AST, ALT, blood creatinine.
4. Autoimmune lesion of the islets of Langerhans in the pancreas
5. Selection of insulin dose. Diet. Diabetes school education.

Task 4.

A 33-year-old patient was admitted to the therapeutic department with complaints of girdle pain in the epigastric region, general weakness, and sleep disturbances. The pain intensifies after eating fatty, fried foods. The disease is associated with alcohol consumption. Objectively: the general condition is moderate, the position in bed is forced, on the left side. Height 178 cm, body weight 96 kg. When examining the circulatory and respiratory organs, there were no deviations from the norm. Pulse 86 per minute, blood pressure 110/75 mm Hg. The tongue is wet and covered with a white coating. The abdomen is soft, painful in the left umbilical and hypochondrium region. The Mayo-Robson sign is positive. The edge of the liver protrudes from under the edge of the costal arch by 2 cm, painless. Kehr's and Ortner's signs are negative. Additional studies: complete blood count: leukocytes $9 \times 10^9/l$, blood glucose 14.2 mmol/l.

1. Formulate a diagnosis

2. Justify the diagnosis
3. Specify the mechanism of development of carbohydrate metabolism disorders?
4. Outline an examination plan
5. Treatment plan (sugar-lowering therapy)

Sample answer:

1 Exacerbation of chronic pancreatitis. Secondary pancreatogenic diabetes mellitus. 2. Based on complaints: girdling nature of pain in the epigastric region, connection pain with eating fatty, fried foods, drinking alcohol. Objectively: pain in the left umbilical and hypochondrium region, positive Mayo-Robson sign.

3. Development of exocrine pancreatic insufficiency.

4. Examination plan: detailed blood test; general blood test, urine test; amylase blood, glycemic profile, C-peptide, bilirubin, ALT, AST; feces for scatology; Ultrasound of the pancreas; blood sugar, urine acetone; for persistent pain syndrome - ERCP.

5. For the period of exacerbation - insulin therapy with short or ultra-short insulin preparations regarding blood sugar, after the exacerbation has stopped, the issue of sugar-lowering therapy is decided by the level of C-peptide and glycemic profile.

Task 5.

A 26-year-old woman with a 27-week pregnancy was referred to an endocrinologist for consultation. Complains of attacks of severe weakness and sweating. As a rule, attacks occur after physical stress. I noticed that eating food relieves attacks. Previously she was healthy. The pregnancy developed normally. The first attack occurred a month ago. From the internal organs without pathology. Blood pressure 130/80. Fasting blood sugar was checked over time: February 17 3.5 mmol/l, February 21 3.1 mmol/l, February 25 3.4 mmol/l, February 28 3.9 mmol/l. Glucosuria: February 17 diuresis 1.4 l blood sugar 2%, February 21 diuresis 1.9 l sugar 3.0%, February 25 diuresis 1.7 l sugar 3.8%, February 29 diuresis 2 l sugar 3.8%. General urine analysis: protein 0.23 g/l, acidic reaction, specific gravity 1021. Leukocytes 5-6 in the field of view.

1. What is your conclusion about the diagnosis? *Sample answer:*

1. Renal glycosuria, hypoglycemic conditions. Task 6.

The patient is 57 years old, height 160 cm, weight 105 kg. He makes no complaints. Fasting blood glucose level is 5.1 mmol/l. Results of an oral glucose tolerance test (OGTT): fasting blood glucose level 5.3 mmol/l, 2 hours after a load of 75 g of glucose 9.5 mmol/l.

1. Assess your fasting blood glucose level.
2. What do the test results indicate?
3. Why was this study carried out?
4. Why is this condition dangerous?
5. What are the further tactics?

Sample answer:

1. Fasting blood glucose level 5.1 mmol/l is normal.
2. The test results indicate impaired tolerance to carbohydrates, since blood sugar after a load of 75 g of glucose is above 7.8 mmol/l and below 11.1 mmol/l.
3. This study was conducted to identify latent diabetes mellitus, since the patient belongs to a potential risk group due to existing obesity (BMI > 40 - severe obesity)
4. Development of overt diabetes mellitus and progression of cardiovascular disease disorders.

5. Further tactics: measures aimed at reducing body weight - low-calorie diet (1000 kcal) with limitation of animal fats and easily digestible carbohydrates. Biguanides-metformin 2000 mg per day.

Task 7.

The patient, 18 years old, has been suffering from diabetes mellitus since the age of 9. The disease began acutely: thirst, polyuria, weakness, weight loss. Insulin treatment was started immediately. While on vacation in a sanatorium, he stopped taking insulin and after a few days, decompensation of diabetes mellitus developed.

1. Determine the type of diabetes.
2. Justify the diagnosis.
3. Did the patient do the right thing by stopping insulin administration?
4. What complications can develop as a result of insulin withdrawal?
5. Is it possible to prescribe other glucose-lowering drugs?

Sample answer:

1. Type 1 diabetes mellitus.
2. Onset of the disease at the age of 9, diabetes developed acutely, pronounced diabetes symptoms, weight loss.
3. The patient acted incorrectly, since type 1 diabetes is characterized by absolute insulin deficiency and in this case insulin is administered for replacement purposes for life.
4. Diabetic ketoacidosis, coma, death.
5. No, it's impossible. Since the mechanism of action of tableted hypoglycemic drugs requires the presence of its own insulin.

Task 8.

Patient L, 18 years old, presented with furunculosis. From the anamnesis: he is predisposed to colds, his older brother and father have diabetes. The man actively volunteered at the dispensary at the age of 14. Blood sugar was normal. Objectively: poor nutrition, pale, multiple boils on the skin of the torso and neck. Vesicular breathing in the lungs. Heart sounds are clear. Blood pressure 105/65 mm Hg. Pulse 88 per minute. The liver is not palpable.

1. Your diagnostic guess
2. Justify this assumption.
3. Outline your examination plan
4. Activities and recommendations
 1. The patient is at risk for developing diabetes mellitus,
 2. Considering the manifestations of immunodeficiency - furunculosis, frequent colds diseases, as well as a family history of diabetes mellitus and the absence of obvious clinical manifestations of diabetes characteristic of this type of diabetes.
 3. In order to confirm the diagnosis, it is necessary to examine fasting blood sugar, normal or questionable values, perform a carbohydrate tolerance test with 75 g of glucose. You can also examine the patient's glycemic profile, acetone in the urine, glycosylated hemoglobin, ketone bodies, C-peptide.
 4. When diagnosing impaired glucose tolerance (blood sugar 2 hours after glucose load more than 7.8 mmol/l and less than 11.1 mmol/l) - a diet with the exception of easily digestible carbohydrates, if ineffective - insulin in a selected dose.

Task 9.

A 23-year-old man is concerned about thirst, polyuria, and weight loss. I became acutely ill two weeks ago. Fasting blood glucose level - 18 mmol/l, glucosuria - 4%, acetone (+++). The patient's condition is moderate. The smell of acetone in the exhaled air. The skin is dry to the touch and clean. In the lungs, breathing is vesicular, there is no wheezing. Cor-

clear tones, tachycardia up to 100 beats per minute. Blood pressure 110/70 mm Hg. The abdomen is soft, painless on palpation.

1. Formulate a diagnosis.
2. Justify the diagnosis
3. Make an examination plan.
4. Treatment tactics.

Sample answer:

1. Diabetes mellitus type 1. Ketosis.
2. Based on: young age, acute onset, severe manifestations diabetic syndrome, weight loss, acetonuria.
3. Glycemic profile, ketone bodies, acetone in urine, K, Na, bilirubin, AST, ALT, blood creatinine, complete blood count, urinalysis, C-peptide.
4. Insulin therapy: injections of short or ultra-short insulin for sugar blood every 2 hours with determination of the daily insulin requirement until ketosis is relieved; then transfer to intensive insulin therapy. Rehydration therapy (saline NaCl solution up to 4-6 liters per day). Fighting hypokalemia.

Task 10.

A 56-year-old patient has suffered from arterial hypertension for 6 years and suffered a transmural myocardial infarction. On examination: height 176 cm, body weight 104 kg. Waist circumference - 126 cm, hip circumference - 108 cm. Heart rate 86 per minute, blood pressure 185/105 mm Hg. Art. When registering for a sanatorium-resort card, the following changes were revealed: fasting glycemia 7.9 mmol/l, total cholesterol - 8.6 mmol/l, LDL cholesterol - 5.4 mmol/l, triglycerides - 3.8 mmol/l. ECG: signs of left ventricular hypertrophy, focal changes in the lower wall.

1. Formulate a diagnosis.
2. Make an examination plan.
3. Which drugs should be prescribed first, name the group belonging?

Sample answer:

1. Type 2 diabetes mellitus, target HbA1c level less than 7%. Obesity 1st degree. IBS. Post-infarction atherosclerosis. Dyslipidemia. Hypertension stage III, risk IV. CHF 1 st.

2. Echocardiography, coronary angiography to clarify the state of the cardiovascular systems. To identify complications of diabetes mellitus: examination of the fundus, detection of microalbuminuria or proteinuria, level of urea, creatinine. Biguanides - metformin.

3. Biguanides-metformin. and SGLT-2-dapagliflozin.

Task 11.

A 49-year-old patient complains of a constant headache, at the height of which nausea and vomiting occurs, severe thirst (drinks 8-10 liters of water per day), and excessive frequent urination. She considers herself sick for a year. Objectively: height 162 cm; body weight 58 kg. There are no deviations in the objective status. When examining the visual fields, their narrowing was revealed, and in the fundus there were initial signs of optic nerve atrophy. X-ray of the skull: increased vascular pattern, dimensions of the sella turcica 16x14 mm, the back and wall are thinned, the sphenoid processes are straightened.

1. What disease should you think about first?
2. Evaluate the results of skull radiography.
3. What research should be performed to clarify the diagnosis?
4. What are the treatment tactics?
5. What is the prognosis for life?

Sample answer:

1. Diabetes insipidus, central form.

2. Presence of pituitary adenoma
3. To clarify, an MRI of the pituitary gland should be performed.
4. Taking into account the presence of macroadenoma and symptoms of compression of the optic nerve, it is indicated surgical treatment.

5. If surgical treatment is successful, task 12 is favorable.

A 40-year-old man complained of severe thirst (up to 8 liters per day), including at night, and frequent urination. These symptoms appeared about 6 months ago and gradually increased. From the anamnesis it was found that about a year ago he was in a car accident, after which he was diagnosed with a brain contusion. When performing a standard glucose tolerance test: fasting glucose level 3.8 mmol/l; 2 hours after taking 75 g of glucose – 4.5 mmol/l. When examining urine: protein - negative, density 1001-1002, leuk. – 1-0-1, eryth. – units in p/z. Blood tests showed no abnormalities, and skull x-rays showed no abnormalities.

1. What disease should you think about first?
2. Evaluate the survey results.
3. What can this disease be differentiated from?
4. What other research is needed?
5. Prescribe treatment.

Sample answer:

1. Diabetes insipidus
2. Carbohydrate metabolism is not impaired, diabetes mellitus is excluded, decreased density urine, which indicates the possible presence of diabetes insipidus.

3. With diabetes mellitus, psychogenic polydipsia, compensatory polyuria in azotemic stage of chronic glomerulonephritis and nephrosclerosis. Nephrogenic diabetes insipidus is differentiated from polyuria that occurs with primary aldosteronism, hyperparathyroidism with nephrocalcinosis, and malabsorption syndrome in the intestine.

4. MRI or CT scan of the brain with the pituitary gland, urine sample according to Zimnitsky.
5. Minirin 0.2 1-2 times a day under the control of diuresis and relative density of urine.

Task 13.

Patient M., 45 years old, consulted a doctor about accidentally recorded high blood glucose levels of up to 8.2 mmol/l. The doctor drew attention to the unusual appearance: unevenly enlarged brow ridges, lower jaw, large hands. A detailed survey revealed that in recent years there has been an increase in the sizes of shoes and hats. Objectively: the skin is dense, with deep folds, especially on the scalp. Height - 182 cm, body weight 93 kg (BMI - 28 kg/m²). Fat deposition is uniform - with a predominant distribution in the abdomen and thighs. The thyroid gland is not enlarged, its function is not impaired. Pulse 82 per minute. rhythmic, satisfactory filling and tension. The boundaries of the heart are not changed. Heart sounds are muffled. Blood pressure 150/90 mmHg. Additional research: 1). Standard glucose tolerance test: fasting glucose level 6.5 - mmol/l; 2 hours after taking 75 g of glucose – 12.4 mmol/l. 2) On the X-ray of the head in the lateral projection, there is a "dual contour" of the sella turcica

1. Formulate a diagnosis
2. What other research methods need to be carried out?
3. What systems and organs can be affected by this disease?
4. Indicate possible treatment methods.
5. What will be the further management of such patients?

Sample answer:

1. Acromegaly, active stage. Pituitary macroadenoma (somatotropinoma). Diabetes mellitus due to acromegaly, newly diagnosed, decompensation. Hypertensive syndrome.

2. The optimal diagnostic method is magnetic resonance imaging

(MRI) – detection of a space-occupying tumor of the pituitary gland.

3. Skeletal system: frontal hyperostosis, temporomandibular diseases joint, osteoarthritis, dorsal kyphosis. Skin: hirsutism, seborrhea, hidradenitis. Endocrine system and metabolic disorders: menstrual irregularities, decreased libido and potency, lactorrhea with or without hyperprolactinemia, thyroid nodules with or without dysfunction, hypertriglyceridemia, impaired glucose tolerance and diabetes, hypercalcaemia with urolithiasis, cholelithiasis. Central and peripheral nervous system: narrowing of visual fields, narrowing of visual fields, carpal tunnel syndrome, proximal myopathy. Cardiovascular system: arterial hypertension, cardiomyopathy (left ventricular hypertrophy, cardiac arrhythmia: A-V protein, branch block, etc.), coronary artery disease, cerebrovascular accident. Respiratory system: night apnea (obstructive and central).

4. -Surgical (transcranial and transsphenoidal adenectomy)

- Radiation (external gamma therapy and proton therapy)

- Medicinal (somatostatin analogues, dopamine agonists)

5. Annual clinical, instrumental (radiography of the lungs, MRI of the pituitary gland, Ultrasound of the thyroid gland, echocardiography, colonoscopy, mammography, ophthalmoscopy) and laboratory (determination of GH levels, IGF) examination.

Task 14.

Patient K., 30 years old, complained of headache, enlargement of the brow ridges, soft parts of the face, enlargement of the joints of the hands, and an increase in shoe size by 2 units. During an MRI examination of the pituitary gland, a pituitary adenoma (somatotropinoma) was detected with a suprasellar growth of 1.4 * 1.9 cm, STH 100 nmol/l (N up to 20), prolactin 194 mIU/ml (N 60-450), TSH 1.4 mKed/ml (normal 0.25-4.5) on ultrasound of the thyroid gland - volume 50 ml, in the right lobe the formation is 0.9 * 1.1 cm, with a thin hypoechoic rim.

1. Give a diagnosis?

2. Localization of the pathological process. The production of which hormone causes this clinical picture?

3. What additional research methods are needed to clarify the diagnosis?

4. Treatment tactics?

Sample answer:

1. Acromegaly, active stage. Pituitary macroadenoma (somatotropinoma). Nodal

goiter, stage I

2. The process is caused by excess production of growth hormone by the tumor, located in the anterior lobe of the pituitary gland.

3. The optimal diagnostic method is magnetic resonance imaging

(MRI) – detection of a space-occupying tumor of the pituitary gland.

- study of the daily rhythm of growth hormone secretion, IGF-1.

4. -Surgical (transcranial and transsphenoidal adenectomy)

- Radiation (external gamma therapy and proton therapy)

- Medicinal (somatostatin analogues, dopamine agonists)

Task 15.

Patient L., 49 years old, twelve years ago, based on a clinical and laboratory examination, a pituitary adenoma (somatoprolactinoma) was diagnosed; in the same year, a course of gamma therapy was carried out, followed by long-term remission. Two years ago, my health deteriorated, headache, enlargement of the nose and joints of the fingers and toes.

Increase in basal growth hormone to 26 nmol/l (No. 0-20), prolactin 800 mIU/ml (N60-450). An MRI of the pituitary gland revealed a microadenoma. Severe general weakness, blood pressure 155/95 mmHg.

1. What is your diagnosis?

2. What additional research methods are needed to clarify the diagnosis?

3. What conditions can this disease be differentiated from?

4. Treatment tactics?

Sample answer:

1. Recurrence of pituitary microadenoma (somatotropinoma). Acromegaly, active stage. Hypertensive syndrome.

2. The optimal diagnostic method is magnetic resonance imaging

(MRI) – detection of a space-occupying tumor of the pituitary gland.

- study of the daily rhythm of secretion of growth hormone, IGF-1 (insulin-like growth factor-1).

3. Differentiate with acromegaloid conditions (pachydermoperiostosis, disease Paget's syndrome, Marie-Bamberger syndrome).

4. -Surgical (transcranial and transphenoidal adenectomy)

- Radiation (external gamma therapy and proton therapy)

- Medicinal (somatostatin analogues, dopamine agonists)

Task 16.

Patient N, 45 years old, was diagnosed with a closed craniocerebral injury (hit by a motorcycle). After 4 months, thirst appeared up to 5 liters/day, polyuria, and a decrease in body weight by 3 kg. Objectively: The skin is pale, turgor is reduced. In the lungs, breathing is vesicular. Heart rate 96 blood pressure 110/60. The tongue is dry and covered with a white coating. The abdomen is soft and painless. During an MRI examination of the pituitary gland, no space-occupying formations were detected. Blood sugar 3.6-3.9-4.2 mmol/l, specific gravity in urine 1004, no sugar or protein detected.

1. Formulate a diagnosis?

2. Rationale for diagnosis

3. What hormone deficiency determines the development of this disease?

4. Order additional studies?

5. Treatment tactics?

Sample answer:

1. Diabetes insipidus. Central form.

2. History of trauma, thirst up to 5 liters per day, polyuria, decreased skin turgor, low specific gravity of urine.

3. Vasopressin (antidiuretic hormone)

4. MRI or CT scan of the brain with the pituitary gland, urine sample according to Zimnitsky. Sample with dry eating.

5. Minirin 0.2 1-2 times a day under the control of diuresis and relative density of urine.

Task 17.

A 35-year-old patient, after a severe traumatic brain injury, noted increasing polyuria, indomitable thirst, and lost 9 kg. On examination, dry skin, moderate tachycardia, blood pressure 90/60 mm Hg are noted. Art. The thyroid gland is soft, both lobes are 2 x 2.5 cm. Examinations were carried out: General blood test: Hb.160 g/l, L.-9.2x10⁹, ESR 22mm/hour. General urine analysis: beat. weight -1003, protein, glucose, acetone - negative, single leukocytes in the field of view.

1. What disease should you think about first?

2. What could have influenced the development of this disease?

3. Make an examination plan.

4. Which group of drugs should be prescribed?

5. What clinical and laboratory data will be criteria effectiveness of treatment?

Sample answer:

1. Diabetes insipidus.
2. Traumatic brain injury
3. Urinalysis according to Zimnitsky, computed tomography of the sella region
4. Vasopressin analogue.
5. Daily diuresis, amount of fluid drunk, fluctuations in the specific gravity of urine.

Task 18.

Patient A, 28 years old, was admitted to the neuroendocrinology department with complaints of changes in appearance, enlargement of limbs, frequent headaches, hirsutism, irregular menstruation and infertility.

1. What diseases can you think about if you have these symptoms?
2. Make a plan for the initial examination of the patient.
3. What causes infertility?
4. Treatment methods for

acromegaly. *Sample answer:*

1. About acromegaly, hypothyroidism, prolactinoma.
2. STH, IGF-1, TSH, free T4, free T3, prolactin, MRI of the pituitary gland.
3. Excessive influence of growth hormone, which suppresses the production of FSH. LDH.
4. Surgical (transcranial and transphenoidal adenectomy)
 - Radiation (external gamma therapy and proton therapy)
 - Medication (somatostatin analogues, dopamine agonists)

Task 19.

Patient B., 19 years old, was admitted to the neuroendocrinology department with complaints of absence of menstruation for two years, discharge from the mammary glands, dry mouth, constant thirst - she drinks up to 4 liters of liquid per day; periodic headache, more in the eye sockets, infertility for 2 years, weight gain - about 7 kg in two years. Three years ago, dry mouth and thirst appeared simultaneously, and menstruation stopped. She was treated by a gynecologist, progesterone was prescribed intramuscularly, then parlodel - 5 mg per day, narcolut, microfollin, against the background of which menstruation came for two months. An X-ray of the skull revealed no pathology; according to a CT scan of the brain, there was an endosellar adenoma. Urinalysis according to Zimnitsky - diuresis - 2250 ml, specific gravity - 1000 in all portions, except from 5 to 8 hours - 1014 (1 drop of adiuretin at night). Study of hormones in the blood: prolactin - 2524 mU/l (normal - 41-613), LH - 1.5 U/l (normal - 3.0-12), FSH - <1.5 U/l (normal - 1,6-6.6), estradiol - 135 pmol/l (normal - 110-550), testosterone - 0.8 (0.8-2.7).

1. Identify the leading manifestations of the disease
2. What determines the development of these manifestations?
3. Give an interpretation of urine analysis according to Zimnitsky
4. Treatment tactics
5. What diseases should diabetes insipidus be differentiated from?

Sample answer:

1. Hyperprolactinemia, hypogonadism, diabetes insipidus
2. Pituitary adenoma
3. Hypoisostenuria
4. Dopamine antagonists, vasopressin analogues, if ineffective - surgical

removal of the tumor.

5. With diabetes mellitus, psychogenic polydipsia, compensatory polyuria in azotemic stage of chronic glomerulonephritis and nephrosclerosis. Nephrogenic diabetes insipidus is differentiated from polyuria that occurs during primary

aldosteronism, hyperparathyroidism with nephrocalcinosis, intestinal malabsorption syndrome.

Task 20.

Patient M., 45 years old, complained of an increase in the size of the hands and feet, enlargement of facial features, over the past five years, he also noted headaches, pain in the joints, and decreased vision. Laboratory tests revealed: STH level 0.6 ng/ml; IGF 315 ng/ml (normal 101-267). According to MRI: pituitary macroadenoma. History of hypertension for 10 years. The patient underwent OGTT, against which the GH concentration was 1.5 ng/ml.

1. Make a diagnosis
2. Criteria characteristic of the active stage?
3. What are the indications for hospitalization for this pathology?
4. What other additional examination methods can be carried out?
5. Treatment tactics

Sample answer:

1. Acromegaly, active stage. Pituitary macroadenoma.
2. Clinical signs of activity; minimum GH level against the background of OGTT more than 1 ng/ml; increased level of IGF.
3. Active stage of acromegaly; long-term drug treatment (1 time per year); severe form of acromegaly.
4. X-ray of hands and feet, lateral craniography, ophthalmological research, echocardiography.
5. -Surgical (transcranial and transsphenoidal adenectomy)
 - Radiation (external gamma therapy and proton therapy)
 - Medicinal (somatostatin analogues, dopamine agonists)

Task 21.

Patient S., 25 years old. Complaints of general weakness, increased fatigue, especially towards the end of the day, loss of appetite, emaciation, periodic aching pain in the epigastric region. At times, he experiences fainting, often dizziness, and "spots" flashing before the eyes. She has been ill for about two years. At the age of 23 years, there was a birth complicated by massive bleeding, no menstruation. Objectively. Height - 169 cm, body weight - 58 kg. Skin of normal color. Dry. Hair loss in the armpits, pubic area. Pulse - 68 per minute, blood pressure - 90/55 mm Hg. The boundaries of the heart are normal, the sounds are weakened. The abdomen is soft, moderately painful in the epigastrium. Kehr's, Ortner's, and Murphy's symptoms are negative. The liver is not enlarged. General blood and urine analysis without deviations from the norm. Additional research. TSH: 3.6-3.4 mmol/l;

1. Probable diagnosis.
2. Suspected source of damage?
3. What additional diagnostic measures need to be carried out to

clarification of the diagnosis.

4. What diseases can this condition be differentiated from?
5. Prescribe treatment.

Sample answer:

1. Chronic adrenal insufficiency. Given the lack of hyperpigmentation, amenorrhea, bleeding during childbirth - secondary.
2. Pituitary gland
3. Examine the level of ACTH, cortisol, TSH, LH, FSH. Conduct a review of R-graphy skull, MRI - pituitary gland.

4. Neurocirculatory dystonia, essential arterial hypotension, peptic ulcer, chronic enterocolitis and pancreatitis, anorexia nervosa, oncological process, dermatomyositis, pellagra, scleroderma.

5. The prescription of glucocorticosteroids is indicated, the need for prescription. There are no mineralocorticoids for secondary adrenal insufficiency.

Task 22.

Patient L, 58 years old, complains of weight loss, general weakness, especially muscle weakness, loss of appetite, nausea, aching pain in the epigastric region without a clear connection with the nature of food taken, darkening of the skin, especially of the face and hands. In the past he suffered from pulmonary tuberculosis. From the age of 45 he suffered from obesity and hypertension (BP 200-220/120-130 mmHg). took clonidine, hypothiazide. Severe general weakness, including muscle weakness, and progressive emaciation appeared 2 years ago. His blood pressure has dropped to normal, and therefore he practically does not take antihypertensive drugs. Objectively. Height - 170cm, body weight - 64.5kg. The skin is dark, tan-colored, pigmentation is more pronounced on exposed areas of the body. Slate-gray spots on the mucous membrane of the lips. Pulse - 68 per minute, rhythmic, of medium size. Blood pressure - 145/80 mm Hg. the left border of relative cardiac dullness in the 5th intercostal space 1.5 cm outward from the midclavicular line. The width of the vascular bundle is 6 cm, weakened heart sounds, systolic murmur above the apex, increased P tone above the aorta. Vesicular breathing. The abdomen is soft, moderately painful in the epigastric region. Additional studies: general blood and urine analysis without deviations from the norm, fasting blood glucose - 4.55 mmol/l. ECG - sinus rhythm, regular, decrease in wave voltage.

1. Make a diagnosis

2. Justify the diagnosis.

3. Explain the probable reason for the normalization of blood pressure.

4. Plan additional research to support the final

diagnosis.

5. What information can be obtained from echography of the adrenal glands?

Sample answer:

1. Chronic adrenal insufficiency, primary, probably tuberculous etiology.

2. Muscle weakness, dyspepsia, darkening of the skin, especially the face and hands, tuberculosis

in the anamnesis.

3. Deficiency of cortisol and aldosterone.

4. Clinical diagnosis (based on the clinical picture data, one can think about the presence of adrenal insufficiency, primary). Laboratory confirmation of hypocortisolism syndrome (determination of blood cortisol levels, daily urinary cortisol excretion. Blood electrolytes, blood glycemia, glucose tolerance test. Etiological diagnosis (confirmation of tuberculosis genesis: R-logical examination of the chest organs, Mantoux test, urine and sputum culture to detect mycobacteria tuberculosis, echography and CT scan of the adrenal glands.

5. The echographic picture may vary depending on how long ago it was tuberculosis process. At the onset of the disease, the adrenal glands can be 2-3 times enlarged and asymmetrical. If it lasts for a long time, it becomes atrophic with areas of necrosis and calcification.

Task 23.

A 42-year-old patient was admitted to the clinic with complaints of significant muscle weakness, dizziness, weight loss, and decreased appetite. Considers himself sick for about 6 months after hepatitis. He is receiving treatment for autoimmune thyroiditis. Objectively: low nutrition, height - 176 cm, weight - 61 kg. Tan-colored skin, in the area of the anterior surface of the chest, on the back there are non-pigmented spots. The nipples, folds on the neck, and elbows are pigmented. When examining the neck area, the thyroid gland

enlarged, with palpation of an uneven structure, painless, mobile when swallowing. Pulse 66 per minute, blood pressure - 85/60 mm Hg. Art. Glucose tolerance test on an empty stomach: - 3.6 mmol/l, after 2 hours - 3.0 mmol/l. The volume of the thyroid gland according to ultrasound is 48 ml.

1. What is the preliminary diagnosis?
2. Etiology of the disease? How can I confirm it?
3. Why pigmentation of the skin develops, flat glycemic curve, blood pressure decreases?
4. What medications should be prescribed to the patient?
5. What information can be obtained from echography of the adrenal glands?

Sample answer:

1. Chronic adrenal insufficiency, given the presence hyperpigmentation, primary.

2. Adrenal insufficiency of autoimmune origin, to confirm

It is necessary to study antibodies to the enzyme of adrenal steroidogenesis (p450c21).

3. Hyperpigmentation develops due to hypersecretion of the ACTH precursor (POMC - proopiomelanocortin), from which melanocyte-stimulating hormone is also formed in excess. Due to a deficiency of cortisol and aldosterone, hypoglycemia and low blood pressure develop.

4. Gluco- and mineralocorticoids.

5. In autoimmune Addison's disease, bilateral adrenal atrophy.

Task 24.

Patient N., 30 years old, has been suffering from Addison's disease for 13 years, constantly takes 5 mg of prednisolone in the morning, and follows a diet. Adds 10 g of salt to food. Four days ago I fell ill with the flu with a high fever (39.8 C), took aspirin 0.5 3 times a day. The body temperature dropped, but the condition worsened significantly: nausea, sharp abdominal pain, and frequent vomiting appeared, which did not bring relief. She was taken to the hospital in serious condition. Objectively: consciousness is darkened, the skin is hyperpigmented with intensification characteristic of Addison's disease, dry, cold. Pulse 56 per minute, thread-like, blood pressure 60/20 mm Hg. Heart sounds are sharply weakened, the abdomen participates in the act of breathing, is soft, painful on palpation.

1. Make and justify the diagnosis.
2. Specify the form of this complication
3. Indicate what studies urgently need to be carried out to confirm diagnosis
4. What diseases can this condition be differentiated from?
5. What emergency medical care should be provided to the patient?

Sample answer:

1. Primary Addison's disease. Acute adrenal insufficiency against the background flu

2. Gastrointestinal and cardiovascular.

3. Level of potassium, sodium, blood sugar (danger of hypoglycemia)

4. Any acute condition accompanied by shock and collapse.

5. 1) Massive corticosteroid therapy: 100 - 150 mg hydrocortisone succinate IV bolus, then a constant IV infusion of 50-100 mg every 4-6 hours. After the patient is brought out of collapse and blood pressure rises above 100 mm Hg. Art. It is possible to switch to intramuscular administration of 50-75 mg every 4-6 hours. The total dose of hydrocortisone for the 1st day is usually 400-600 mg, but may exceed 1000 mg. The administration of hydrocortisone should be combined with intramuscular injections of DOXA 5 mg (1 ml) of a 0.5% solution 1-2 times a day.

2) Combating dehydration and shock: the volume of fluid administered per day is 2.5-3.5 l. Solutions of sodium chloride, glucose, polyglucin are administered in a dose of 400 ml or

plasma. For intractable vomiting, intravenously - 5-10 ml of 10% sodium chloride solution. In cases of cerebral edema, mannitol is transfused and diuretics are prescribed.

3) Etiotropic therapy: eliminating the cause of adrenal insufficiency (antibacterial therapy, antitoxic, hemostatic).

Task 25

A patient suffering from Addison's disease constantly takes prednisolone 10 mg per day and Cortinef 1 tablet in the morning. Within a week, heartburn appeared, hunger pains in the epigastric region, and duodenal ulcer was diagnosed, the development of which was probably facilitated by taking prednisolone. She independently discontinued prednisolone, after which general weakness appeared and began to increase, hypotension up to 80/40 mmHg, nausea, bloating, diarrhea, and hyperpigmentation of the skin and mucous membranes increased. Taking antiulcer drugs (gastric secretion blockers and antacids) did not alleviate the condition, weakness reached the level of adynamia, and collapse developed. Delivered to hospital.

1. What condition should you think about?
2. What caused this condition?
3. What are the main directions of diagnostic research?
4. Main directions of therapy.
5. How should the patient be treated to prevent this condition? *Sample answer:*

1. Acute adrenal insufficiency.
2. Cancellation of replacement therapy.
3. Determine the level of hematocrit, potassium, sodium, glucose, creatinine. At aggravation of abdominal symptoms - FGS to exclude gastrointestinal bleeding. Determining cortisol levels is not mandatory.
4. Massive corticosteroid therapy - hydrocortisone hemisuccinate 200-300 mg/day IV bolus, then every 4-6 hours for 1 day. Infusion therapy - intravenous administration of at least 4 liters of liquid - isotonic solution, 5-10% glucose solution, protein preparations. Cortinef is administered when the dose of hydrocortisone is reduced to less than 100 mg/day. Treatment is carried out for the disease that provoked acute adrenal insufficiency and symptomatic therapy. The administration of potassium and diuretics is contraindicated.
5. The dose of prednisolone should have been increased, administered intramuscularly or in tablets in combination with antacids and enveloping drugs.

Task 26

A 34-year-old patient has been receiving corticosteroids since childhood for severe bronchial asthma (minimum daily dose of 1.5 prednisolone tablets). Over the years, Cushingoid syndrome, steroid diabetes and osteoporosis have developed. He was taken to the surgical department with abdominal pain. According to vital indications, an appendectomy was performed. The patient did not take prednisolone. In the postoperative period, the patient developed symptoms of vascular collapse, impaired consciousness with neurological symptoms. Antibacterial and infusion therapy and the introduction of pressor amines are being carried out, but no positive dynamics have been noted.

1. What condition should you think about?
2. What caused this condition?
3. Directions for diagnostic research?
4. Prescribe treatment.
5. What is the prognosis for this condition?

Sample answer:

1. Acute adrenal insufficiency due to withdrawal syndrome corticosteroids.
2. Level of hematocrit, potassium, sodium, glucose, creatinine.

3. Cancellation of prednisolone therapy in the postoperative period.
4. Systemic glucocorticosteroids (hydrocortisone 100-150 mg IV infusion, then each 50-75 mg every 4-6 hours during the first 24 hours). Infusion therapy – intravenous administration of at least 4 liters of liquid (isotonic solution, glucose solution, protein preparations). Antibacterial therapy taking into account the underlying disease (appendicitis) and symptomatic therapy. The administration of potassium and diuretics is contraindicated.
5. Unfavorable. Mortality reaches 40-50%. Task 27

Patient P., 50 years old, has been suffering from Addison's disease for 8 years, has been receiving HRT, and over the past week she has begun to notice that her appetite has decreased, skin pigmentation has increased, joints have begun to ache, headaches and epigastric pain have appeared. Objectively: severe condition, acrocyanosis, severe hypotension, nausea, vomiting, dry skin, reduced turgor.

1. Make a presumptive diagnosis
2. What research methods are needed to confirm the diagnosis?
3. What emergency care should be provided to the patient?
4. What are the main preventive measures to prevent this condition?
5. Tactics for further management of patients.

Sample answer:

1. Primary Addison's disease. Acute adrenal insufficiency.
2. General clinical research methods, blood cortisol concentration, renin plasma, ACTH level; ECG, abdominal ultrasound, CT or MRI of the brain.
3. 1) Massive corticosteroid therapy: 100 - 150 mg hydrocortisone succinate IV bolus, then a constant IV infusion of 50-100 mg every 4-6 hours. After the patient is brought out of collapse and blood pressure rises above 100 mm Hg. Art. It is possible to switch to intramuscular administration of 50-75 mg every 4-6 hours. The total dose of hydrocortisone for the 1st day is usually 400-600 mg, but may exceed 1000 mg. The administration of hydrocortisone should be combined with intramuscular injections of DOXA 5 mg (1 ml) of a 0.5% solution 1-2 times a day.
- 2) Combating dehydration and shock: the volume of fluid administered per day is 2.5-3.5 l. Solutions of sodium chloride, glucose, polyglucin in a dose of 400 ml or plasma are administered. For indomitable vomiting, intravenously - 5-10 ml of 10% sodium chloride solution. In cases of cerebral edema, mannitol is transfused and diuretics are prescribed. 3) Etiotropic therapy: eliminating the cause of adrenal insufficiency (antibacterial therapy, antitoxic, hemostatic).

4. Early diagnosis and proper management of patients with CNN; training of patients with congenital indigestion rules for changing the dose of the HRT drug for intercurrent diseases, injuries and other situations; timely diagnosis and treatment of diseases leading to the development of ONN.

5. After stabilizing the patient's condition and reducing the daily dose of hydrocortisone less than 100 mg per day, the patient is transferred to constant HRT with hydrocortisone tablets.

Task 28

A 19-year-old patient consulted a doctor with complaints of severe fatigue, muscle weakness, sweating, especially towards the end of the day, sometimes dizziness, and headache. Appetite is reduced, sometimes there is nausea, vomiting, and epigastric pain, not related to the nature of the food taken. Considers himself sick for 3-4 months. During her illness, she lost 3 kg. History includes frequent acute respiratory infections, exacerbation of chronic tonsillitis. On examination: Height 165 cm, weight 47 kg. The skin is dry, there is hyperpigmentation of the areola of the mammary glands, the area of the interphalangeal joints of the hands, a symptom of "dirty" elbows, knees, and "dirty" neck. Reduced nutrition. Borders of the heart within the age norm, tones

rhythmic, somewhat weakened, pulse - 88 per minute, small, blood pressure - 70\40 mmHg. The thyroid gland is not enlarged. The abdomen is soft, painful in the epigastric region, the liver is not enlarged. The stool is irregular, with a tendency to diarrhea. Ionogram: potassium - 5.8 mmol/l, sodium - 115 nmol/l, calcium - 2.2 mmol/l. Glucose tolerance test: 3.2 - 4.0 - 3.3 mmol/l. Cortisol level at 8.00 - 70 mmol/l.

1. Make a diagnosis
2. Justify the diagnosis
3. What additional diagnostic measures need to be carried out?
4. What are the main goals of treatment for this disease?
5. Treatment tactics

Sample answer:

1. Primary chronic adrenal insufficiency, moderate severity.
2. Muscle weakness, sweating, decreased appetite, sometimes nausea, vomiting, hyperpigmentation of the areola of the mammary glands, the area of the interphalangeal joints of the hands, a symptom of "dirty" elbows, knees, "dirty" neck.

3. Determination of daily urinary cortisol excretion, study of basal

ACTH concentrations, ultrasound of the adrenal glands, CT/MRI of the adrenal glands.

4. Compensation for the lack of vital hormones of the adrenal cortex; liquidation causes of adrenal damage.

5. gluco- and mineralocorticoids.

Task 29

Patient K., 30 years old. Complaints of general weakness, increased fatigue, decreased appetite, lost 4 kg, periodic aching pain in the epigastric region, not associated with eating. Dizziness is common. She has been sick for about a year. At the age of 28 years, there was a birth complicated by massive bleeding. Objectively. Skin of normal color. Dry. Hair loss in the armpits, pubic area. Pulse - 68 per minute, blood pressure - 90/50 mm Hg. The boundaries of the heart are normal, the sounds are weakened. The abdomen is soft, moderately painful in the epigastrium. Kehr's, Ortner's, and Murphy's symptoms are negative. The liver is not enlarged. General blood and urine analysis without deviations from the norm.

Additional studies: daily urinary excretion of 17-OKS - 4.3 μ mol, 17-KS 2.5 μ mol.

1. Probable diagnosis.
2. Suspected source of damage?
3. What additional diagnostic measures need to be carried out to

clarification of the diagnosis.

4. What diseases can this condition be differentiated from?

5. Prescribe treatment.

Sample answer:

1. Chronic adrenal insufficiency. Given the lack hyperpigmentation, bleeding during childbirth - secondary.

2. Pituitary gland

3. Examine the level of ACTH, cortisol, TSH, LH, FSH. Conduct a review of R-graphy skull, MRI - pituitary gland.

4. Neurocirculatory dystonia, essential arterial hypotension, peptic ulcer, chronic enterocolitis and pancreatitis, anorexia nervosa, oncological process, dermatomyositis, pellagra, scleroderma.

5. The prescription of glucocorticosteroids is indicated, the need for prescription There are no mineralocorticoids for secondary adrenal insufficiency.

Task 30

Patient T, 49 years old, complains of weight loss, general weakness, loss of appetite, nausea, darkening of the skin, especially the face and hands. In the past he suffered from pulmonary tuberculosis. Severe general weakness, including muscle weakness, and progressive emaciation appeared 1.5 years ago. Objectively. Height - 175cm, body weight - 65kg. Dark skin

pigmentation is more pronounced on exposed areas of the body. Pulse - 68 per minute, rhythmic, of medium size. Blood pressure - 100/60 mm Hg. Heart sounds are weakened, systolic murmur above the apex. Vesicular breathing. The abdomen is soft, moderately painful in the epigastric region. Additional studies: general blood and urine analysis without deviations from the norm, fasting blood glucose - 4.55 mmol/l. ECG - sinus rhythm, regular, decrease in wave voltage.

1. Make a diagnosis
2. Justify the diagnosis.
3. Explain the probable reason for the normalization of blood pressure.
4. Plan additional research to support the final

diagnosis.

5. What information can be obtained from echography of the adrenal glands?

Sample answer:

1. Chronic adrenal insufficiency, primary, probably tuberculous etiology.

2. Muscle weakness, dyspepsia, darkening of the skin, especially the face and hands, tuberculosis

in the anamnesis.

3. Deficiency of cortisol and aldosterone.

4. Clinical diagnosis (based on the clinical picture data, one can think about the presence of adrenal insufficiency, primary). Laboratory confirmation of hypocortisolism syndrome (determination of blood cortisol levels, daily urinary excretion of cortisol. Blood electrolytes, blood glycemia, glucose tolerance test. Etiological diagnosis (confirmation of tuberculosis genesis: R-logical examination of the chest organs, Mantoux test, urine and sputum culture detection of Mycobacterium tuberculosis, echography and CT scan of the adrenal glands.

5. The echographic picture may vary depending on how long ago it was tuberculosis process. At the onset of the disease, the adrenal glands can be 2-3 times enlarged and asymmetrical. If it lasts for a long time, it becomes atrophic with areas of necrosis and calcification.

Task 31.

Male 58 years old. Complaints of decreased vision, headaches, general weakness, increased sweating. About a month ago, yellowness of the skin appeared.

From the anamnesis, he has been suffering from hypertension for about 18 years and takes medications irregularly. According to the patient (according to self-monitoring), blood pressure has not decreased below 165/100 mmHg over the past year.

Life history – have not traveled abroad in the last month

Objectively: general condition is relatively satisfactory. Height 182 cm, weight 98 kg. Enlargement of the lips and nose is noted. There are pronounced wrinkles on the forehead. The skin is icteric in color and dry. The sclera is icteric. Heart sounds are rhythmic, muffled. Blood pressure 175/100 mm Hg. In the lungs, in the lower sections, there are small moist rales. The liver protrudes from under the costal arch by 1.5 cm, swelling of the hands and feet.

The level of calcium in the blood is 2.77 mmol/l (normal

2.1-2.55). 2. Preliminary diagnosis?

2. Necessary research.

3. Treatment tactics.

Response standard:

4. MEN-1 syndrome (hormone-active tumor of the pancreas). Syndrome jaundice.

5. ECG, R-graphy of the skull, lateral projection, spine, hands, feet, CT and/or MRI brain and area of the sella turcica, CT scan of the pancreas

CBC, TAM, biochemical blood test, hormonal studies (GH, IRF-1, prolactin), parathyroid hormone, vitamin D

6. Surgical, symptomatic treatment

Task 32.

Patient M., 28 years old, was admitted to the clinic with complaints of thickening of the neck, rapid heartbeat, increased irritability, tearfulness, sleep disturbance, general sweating, trembling of the fingers, weight loss of 6 kg over the past six months, despite an increased appetite. The above symptoms appeared a year ago after returning from the south. On examination: there is some fussiness and hasty speech. The skin is moist and hot to the touch. When examining the neck, its thickening is revealed. Stellwag's and Graefe's symptoms are positive. Severe exophthalmos. On auscultation of the heart, the first sound at the apex is loud, and there is also a gentle systolic murmur. Heart rate is 115 per minute, the heart rhythm is abnormal: atrial fibrillation, there is no pulse deficit.

1) What syndromes can be identified based on this clinical picture?

2) The presence of what disease can be assumed based on the available data? *Response standard:*

1) Thyrotoxicosis syndrome with the formation of thyrotoxic cardiomyopathy and autoimmune ophthalmopathy.

2) Diffuse toxic goiter. Task

33.

Patient M., 58 years old, was admitted to the clinic with complaints of dry mouth, thirst, itching, general weakness, and produces more than 3 liters of urine per day. The above symptoms appeared 2 months ago. Upon examination, it is noteworthy that the patient has a high nutritional status. Height 165 cm, weight 95 kg. The skin is dry, flaky, pronounced rubeosis, pustular rashes. When examining blood tests: hemoglobin 120 mg%, red blood cells - $4.5 \times 10^{12}/l$, leukocytes - $6.0 \times 10^9/l$, ESR - 18 mm/hour, glucose - 14 mmol/l. Urinalysis: quantity - 550 ml, relative density - 1.039, protein - absent, leukocytes - 2-4 in p/zr, glucosuria, ketone bodies - absent.

1) What disease are we talking about in this problem, and what are the clinical symptoms are the most significant for making a diagnosis?

2) What laboratory symptoms confirm the preliminary diagnosis?

Response standard:

1) Diabetes mellitus type 2, in favor of which they say: polydipsia, polyuria, cutaneous itching and skin changes, obesity 2) Hyperglycemia, glycosuria

Task 34.

A 26-year-old patient was admitted to the hospital emergency department with complaints of severe weakness, lethargy, thirst, pain in the epigastric region, and vomiting. Deterioration of condition after acute respiratory illness. Objectively: lethargic, lethargic, smell of acetone from the mouth, dry skin, tongue coated with a dirty brown coating. Pulse - 105 per minute, blood pressure - 100/55 mm Hg. Art. Palpation of the abdomen is painful in the epigastric region, there are no symptoms of peritoneal irritation.

1) Identify syndromes

2) What diagnosis can be suspected?

Response standard:

1) Insulin deficiency syndrome 2) Type 1 diabetes mellitus. Diabetic ketoacidosis

Task 35.

Patient L., 22 years old, has been suffering from diabetes mellitus since the age of 16. Receives insulin therapy.

After intense physical activity in the morning at 10.00, weakness, hand tremors, sweating, anxiety, and inability to concentrate appeared. The patient tried to overcome the condition on his own by eating, but lost consciousness. A few minutes later he came to his senses. An ambulance was called.

1) What condition has developed in the patient?

2) Treatment plan. *Response standard:*

1) Hypoglycemic state 2) Severe hypoglycemia, characterized by impaired consciousness, requires intravenous administration of 20-100 ml of 40% glucose solution. An alternative is 1 ml of glucagon solution subcutaneously or intramuscularly.

Task 36.

The patient, 45 years old, complains of hair loss, weakness, drowsiness, swelling of the face and limbs, deepening of the voice, weight gain, constipation. On objective examination, the face is puffy and amicable. Speech is slow and sluggish. The skin is dry and flaky. The thyroid gland is compacted on palpation, not enlarged. Eye symptoms are negative. Heart rate 57 per minute. Blood pressure 100/75 mm Hg.

1) What syndrome do you suspect?

2) What is its most likely cause? *Response standard:*

1) Hypothyroidism syndrome 2) The most common cause of hypothyroidism is autoimmune thyroiditis

Task 37.

Patient T., 18 years old, was brought to the clinic in an unconscious state. According to relatives, it was established that he has been suffering from type 1 diabetes for a year. Has a negative attitude towards insulin treatment. Two weeks before admission to the clinic, he stopped taking insulin. The patient's condition sharply worsened, thirst, polyuria, weakness increased, nausea and repeated vomiting appeared. On the day of hospitalization, he lost consciousness. Objectively: the condition is serious, unconscious. Pungent odor of acetone in exhaled air. The skin is dry, cold to the touch, turgor is reduced. The turgor of the eyeballs is reduced. Body temperature 36.0 °C. Deep noisy breathing. There is weakened breathing in the lungs. Heart sounds are muffled. The pulse is frequent, thread-like, of small filling. Blood pressure 110/60 mm Hg. Heart rate 120 per minute. The tongue is dry, coated with a dirty brown coating. The abdomen is soft, painless on palpation, the liver protrudes 2.0 cm from under the costal arch, bowel sounds are weakened. Tendon reflexes are sharply weakened. Blood test: leukocytes - 25.0×10^9 , P - 20%, C - 78%, lymphocytes - 2%. Urinalysis: specific gravity 1045, protein 0.6 g/l, sugar 8%, acetone +++++. Blood biochemistry: total protein - 78 g/l, urea - 13.5 mmol/l, blood creatinine - 140.6 μ mol/l, ketone bodies - 11 mmol/l, NEFA - 2.4 mmol/l, blood sugar - 48.8 mmol/l, pH 7.02, bicarbonate - 10 mmol/l.

4. Make a diagnosis.

5. What was the cause of this condition?

6. Present the emergency care algorithm

Response standard:

1. Type 1 diabetes, ketoacidotic coma.

2. Stopping insulin administration, which led to a sharp deterioration in utilization glucose tissues, increased gluconeogenesis, lipolysis, hyperketonemia.

3. Infusion rehydration with 0.9% NaCl solution in an amount of 10% body weight in the first 12 hours at a rate of 1.0-1.5 l in the 1st hour, in the 2nd and 3rd - 0.5 l, then 0.3-0.5 l/h until the volume of blood volume is restored and normalized Blood pressure and diuresis (50-100 ml/h), insulin therapy - regimen

continuous infusion of small doses - 0.1 IU per kg of the patient's body weight, when glycemia decreases to less than 14.0 mmol/l, administration of 5% glucose solution (100-150 ml/h), correction of electrolyte disorders.

Task 38.

Patient K., 18 years old. He has been suffering from type 1 diabetes for 11 years. 4 days ago I fell ill with a sore throat, thirst began to increase, severe abdominal pain and frequent vomiting appeared. Delivered to the surgical clinic with a diagnosis of acute appendicitis. Objectively: the condition is serious. Consciousness is preserved. The skin is dry, the tongue is dry, coated with a yellowish-brown coating. Severe muscle hypotension, the smell of acetone in the exhaled air. There is weakened breathing in the lungs. Heart sounds are muffled, pulse 120 per minute, weak filling. Blood pressure 90/60 mm Hg. The abdomen is sharply painful on palpation, especially on the right in the iliac region, tense, positive Shchetkin's sign. Blood test: leukocytes - 22.0×10^9 , p.o. - 18%, p.o. - 80%, mon. - 2%. The clinic diagnosed acute appendicitis and decided to urgently operate on the patient.

4. Do you agree with the surgeon's decision?

5. What is your diagnosis?

6. What research needs to be done before deciding to operate?
sick?

Response standard:

1. The surgeon did not think about the possibility of developing a syndrome that occurs with clinical picture of a false "acute" abdomen, simulating acute appendicitis and caused by diabetic ketoacidotic coma (abdominal form of DKK), although it is known from the anamnesis that the patient suffers from type 1 diabetes.

2. Determination of glucose levels in blood plasma, glucose and acetone levels in urine.

Task 39.

Patient M., 32 years old, suddenly lost consciousness and was taken to the clinic by ambulance. The doctor found out from her relatives that the patient suffers from diabetes and constantly injects herself with insulin. Objectively: the condition is serious, unconscious. The skin is moist. Blood pressure 125/70 mm Hg. Pulse 100 per minute, satisfactory filling. There are no deviations from the internal organs. The emergency doctor assessed the patient's condition as ketoacidotic coma. An ICD was administered at a dose of 20 units subcutaneously. After this, the patient was taken to the clinic in a deep coma. Glycemia 1.1 mmol/l, sugar in urine 2%.

4. Make a diagnosis.

5. What should the emergency physician's tactics be and why?

6. Why when plasma glucose levels are sugar detected in the urine at 1.1 mmol/l?

Response standard:

Type 1 diabetes. Hypoglycemic coma.

2. It was necessary to administer not insulin, but a 40% glucose solution 40-80 ml intravenously, taking into account clinical picture of the disease and symptoms.

3. Urine that had accumulated in the bladder even before the development of coma was studied. Task 40.

Patient A., 63 years old. Has suffered from type 2 diabetes for about 10 years. For diabetes, I took Maninil. According to relatives, it was found out that the patient had been taking diuretics uncontrollably for a long time due to hypertension. 3 days before admission to the clinic, the patient developed severe thirst, polyuria, shortness of breath, and severe muscle weakness. The patient's condition worsened, and relatives brought him unconscious to the clinic. Objectively: the condition is serious, in a coma. Dry skin and mucous membranes, decreased tone of the eyeballs. Dry tongue, severe muscle hypotonia,

There is no smell of acetone in the exhaled air. Severe swelling of the lower extremities and scrotum. Heart sounds are muffled, blood pressure is 60/40 mm Hg, pulse is 120 per minute. The abdomen is soft, painless, the liver is at the costal arch. The level of glucose in the blood plasma is 50.6 mmol/l, blood pH 7.4, blood sodium 154 mmol/l, sugar in the urine 6%, no acetone.

4. Make a diagnosis.
5. What caused this condition?
6. Your treatment plan.

Response standard:

1. Type 2 diabetes, hyperosmolar coma.
2. Uncontrolled use of diuretics.
3. Infusion rehydration with a hypotonic 0.45% NaCl solution. Speed rehydration: 1st hour - 1000-1500 ml of saline solution; 2nd and 3rd hour - 500-1000 ml of saline solution; subsequent hours - 250-500 ml of saline with mandatory monitoring of central venous pressure and hourly diuresis. Insulin therapy is a regime of continuous infusion of small doses of insulin - 0.05 IU per kg of the patient's body weight, while glycemia should decrease by 3-4 mmol/l/h. When glycemia decreases to 12-14 mmol/l, a 5% glucose solution (150-200 ml/h) is added to the infusion. Correction of electrolyte disorders

Task 41.

Patient J., 44 years old. He was admitted to the clinic in serious condition. According to his relatives, he complained of progressive muscle weakness, dizziness, weight loss, uncontrollable vomiting, diarrhea, and decreased appetite. At the age of 30 he suffered from pulmonary tuberculosis, then was removed from the register. Objectively: low nutrition, height 176 cm. Weight 58 kg. The patient is sharply inhibited. Adynamia. Pigmentation of the skin, mucous membranes, palmar folds and nipple halo, body temperature - 35.9 °C. Heart sounds are sharply muffled, pulse 66 per minute, weak filling, blood pressure 80/40 mm Hg. (lying down). Rigidity of the anterior abdominal wall. Glycemia - 3.0 mmol/l.

3. What is your preliminary diagnosis?
4. Create a treatment algorithm.

Response standard:

3. Acute adrenal insufficiency.
4. Corticosteroid replacement therapy: 100-150 mg is injected intravenously hydrocortisone, followed by a bolus infusion over 3-4 hours of hydrocortisone hemisuccinate 100-200 mg, dissolved in 500 ml of equal amounts of isotonic NaCl solution and 5% glucose solution. Simultaneously with the intravenous infusion, water-soluble hydrocortisone is administered intramuscularly at 50-75 mg every 4-6 hours. To combat shock - infusion of 0.9% NaCl solution and 5% glucose solution in a volume of 2.5-3.5 l on the first day, with the addition of 25-30 ml of 5% ascorbic acid solution. Correction of electrolyte disorders, hypoglycemia, elimination of cardiovascular failure

Task 42.

Patient Ivanov A.I., 52 years old.

Complaints of excess body weight, inability to achieve the target HbA1c level.

History of the disease. The diagnosis of type 2 diabetes mellitus was made 6 months ago, when the patient contacted an endocrinologist with complaints of increased body weight (body weight 92 kg, height 168 cm, BMI 32.5 kg/m²), fatigue, dry mouth, discomfort in the legs During the study: fasting plasma glucose 9.0 mmol/l, plasma glucose 2 hours after meals 14.0 mmol/l, HbA1c 8.8%. Target HbA1c level ≤ 6.5%.

Patient, 35 years old, with type 1 diabetes mellitus, found in a comatose state through 4 hours after insulin administration. What action needs to be completed first?

Response standard: administer 40-100 ml of 40% glucose solution intravenously until consciousness is fully restored.

Task 48.

What will be your conclusion if a patient's thyroid ultrasound detects a hypoechoic structure in the left lobe with a diameter of 2 mm (the volume of the thyroid gland and levels of thyroid hormones are normal):

Response standard: variant of the norm.

Task 49

A 49-year-old man consulted a doctor at his place of residence with complaints of weight gain (4 kg, drowsiness, weakness, constipation and dry skin). The study revealed hyporeflexia, slight enlargement of the thyroid gland upon palpation, and hypothermia. 1) What laboratory parameters need to be examined to confirm the diagnosis first? 2) What is the preliminary diagnosis?

Response standard: 1) TSH, T4 free, AT-TPO.

2) Autoimmune thyroiditis. Goiter 1st degree. Primary hypothyroidism of 2nd severity.

Task 50.

A 28-year-old woman complains of a sore throat when swallowing, an increase in body temperature to 39 C. For two years she has been suffering from diffuse toxic goiter (DTG) grade 2, of moderate severity. She was treated for six months with thiamazole, starting with 40 mg with a gradual reduction in dose to 10 mg, L-thyroxine 50 mcg. A year ago, a relapse occurred; treatment with thiamazole was started at a dose of 50 mg/day. In the last three days before going to the doctor, she took metamizole sodium due to algomenorrhea. The night before, I had a sore throat and a fever. She independently took sulfodimethoxine, metamizole sodium and tetracycline without effect. Most likely diagnosis?

Response standard:

Diffuse toxic goiter of the 2nd degree, thyrotoxicosis of the 2nd degree of severity. Complication. Agranulocytosis with developing necrotizing tonsillitis.

Task 51.

A 38-year-old patient complains of a 5 kg decrease in body weight over a month with preserved appetite, palpitations, trembling in the body, a feeling of heat, weakness, irritability, and poor sleep. The skin is moist, warm, elastic, thin. The hair is soft. The palpebral fissures are widened, blinking is rare. When looking down, a white stripe appears between the upper eyelid and the iris. Convergence is impaired, eyelids are pigmented. The isthmus of the thyroid gland is palpated. Tremor of the fingers is detected. Heart sounds are rhythmic, clear, heart rate – 95 beats/min. ECG data - sinus tachycardia, nonspecific changes in the final part of the ventricular complex. 1) What is the preliminary diagnosis? 2) Additional research methods to confirm the diagnosis?

Response standard: 1) preliminary diagnosis – Diffuse toxic goiter of the 1st degree. Thyrotoxicosis grade 2.

Related. Autoimmune ophthalmopathy.

2) To confirm this diagnostic hypothesis, it is necessary to determine level of thyroid hormones (TSH, free T4, AT-TPO, AT to TSH receptors), perform an ultrasound examination of the thyroid gland to exclude toxic thyroid adenoma.

Task 52.

A 20-year-old patient complains of thirst (drinks 6 liters of liquid per day), excessive urination, weight loss of 15 kg over 2 months, and weakness. Reduced nutrition, skin turgor is reduced, dry skin. Smell of acetone from the mouth. The tongue is dry. Vesicular breathing. Heart sounds are rhythmic, heart rate – 86 beats/min. The abdomen is soft, painless in all parts. Blood glucose – 18 mmol/l. Urinalysis: specific gravity –1032, glucose + + + , acetone ++. 1) What is the preliminary diagnosis? 2) What insulin preparations should be prescribed?

Response standard: 1) Diabetes mellitus type 1. Target HbA1c level is less than 6.5%.
2) Ultra-fast/ultra-short-acting human insulin analogues (insulin aspart), analogs of long-acting and extra-long-acting human insulin (insulin glargine, insulin degludec).

Task 53.

A 24-year-old patient has been suffering from diabetes mellitus for 7 years and receives insulin therapy. Within 3 weeks, he developed dry mouth, thirst, drinks about 6 liters of water per day, excessive urination, severe weakness, and nausea. Today I vomited twice and had abdominal pain. State of moderate severity, inhibited. Dyspnea at rest – 27 per minute. Smell of acetone from the mouth. The skin is dry, turgor is reduced. The tongue is dry. Heart sounds are muffled. Heart rate – 95 beats/min. Blood pressure – 110/75 mm Hg. Art. Vesicular breathing. The abdomen is soft, painful in all parts. The liver protrudes from under the costal arch by 3 cm, has a dense elastic consistency, percussion dimensions are 15x12x10 cm. Glycemia is 19 mmol/l, blood pH is 7.2. Urine: acetone +++, glucose 40 g/l. The ECG shows low T waves and a U wave. What is the preliminary diagnosis?

Response standard: preliminary diagnosis - diabetes mellitus type 1, decompensation, ketoacidotic coma, I degree of severity.

Task 54.

A 74-year-old patient, suffering from type 2 diabetes mellitus for a long time, suffered an acute intestinal infection. For 6 days, the febrile temperature persisted, vomiting 1–2 times a day, and loose loose stools up to 5 times a day. He received antibacterial therapy, his stool and temperature returned to normal, but his condition did not improve; thirst, polyuria, and weakness appeared. The condition is severe, inhibited, poorly oriented in time and space. There is no smell of acetone. The skin is dry, turgor is sharply reduced. The tongue is dry. Heart sounds are rhythmic and dull. Pulse thread-like, 100 beats/min. Blood pressure 90/60 mm Hg. Art. Blood glucose – 25 mmol/l, serum osmolarity – 350 mOsm/l, pH – 7.6. There is no acetone in the urine, sugar is +++. Give a preliminary diagnosis.

Response standard: preliminary diagnosis - type 2 diabetes mellitus, complicated by the development of hyperosmolar coma.

Task 55.

A 38-year-old patient with type 1 diabetes mellitus, after an insulin injection, felt severe weakness, trembling in the body, profuse sweating, palpitations, dizziness, hunger, and lost consciousness. The condition is serious, unconscious. The skin is moist and pale. Convulsive twitching of arms and legs. Heart sounds are rhythmic, heart rate – 100 beats/min. Blood pressure – 175/95 mm Hg. Art. 1) What is the preliminary diagnosis? 2) Basic therapeutic measures?

Response standard: 1) Preliminary diagnosis – type 1 diabetes mellitus, complicated by hypoglycemic coma.

2) inject 40-100 ml of 40% glucose solution intravenously until complete recovery consciousness.

Task 56

A 32-year-old patient with diabetes mellitus felt severe weakness, body tremors, palpitations, and a feeling of hunger after drinking alcohol. Moderate condition.

Excited, tremor of fingers. The skin is pale and moist. Heart sounds are rhythmic, heart rate – 110 beats/min. Blood pressure – 185/90 mm Hg. Art. Vesicular breathing. The abdomen is soft, painless in all parts. Name the preliminary diagnosis and additional research methods to confirm the diagnosis.

Response standard: Preliminary diagnosis - type 1 diabetes mellitus, mild hypoglycemia. Determine blood glucose levels, C-peptide.

Task 57.

Patient I., 24 years old. Diabetes mellitus was diagnosed 2 years ago. Receives insulin-NPH 32 units at night and actrapid 10 units in the morning, 14 units at lunch, 14 units at dinner. The patient is worried about weakness, severe sweating, trembling in the body, restless sleep - all these symptoms occur mainly at night. Over the past 6 months, she has gained 8 kg of body weight.

The glucose content in the blood during the day fluctuates between 4.0 – 17 mmol/l, in the urine – 1-2%. He follows a diet, takes 16 XE per day.

Body weight 72 kg, height – 164 cm. Blood pressure 130/80 mm Hg.

The fundus picture is without significant deviations from the norm. During the examination:

fasting blood glucose - 8.1 mmol/l, 2 hours after eating 14.6 mmol/l in urine: protein - no, glucose - 1.5%., HbA1c - 10%.

1. Clinical diagnosis?
2. Therapeutic measures?

Response standard:

1. Type 1 diabetes mellitus. Target HbA1c < 6.5%

Low-calorie diet (exclude fats), limit carbohydrates to 12 XE per day. Tresiba 20 units in the evening.

Novorapid 8-10 units before breakfast, 10-12 units before lunch, 10-12 units before dinner, s.c.

Task 58

Patient P., 20 years old. Diabetes mellitus was diagnosed 3 years ago. Receives NPH insulin 18 units in the evening and actrapid 10 units before breakfast, 10 units before lunch, 8 units before dinner. I am concerned about dry mouth, thirst increases in the evening, and sometimes experiences hypoglycemic conditions at night. The glucose content in the blood (using a glucometer) during the day fluctuates between 9.0 – 15.8 mmol/l, in urine – 1-2%. He does not follow the diet regularly, his appetite is increased. Body weight 62 kg, height 160 cm.

Blood pressure 110/60 mmHg.

During the examination:

Blood glucose on an empty stomach is 8.9 mmol/l, 2 hours after eating - 13.1 mmol/l. In urine: glucose – 3%., protein in urine – no.

HbA1c = 11%.

The fundus contains single microaneurysms.

1. Make and justify the clinical diagnosis.
2. Correction of insulin therapy.

Response standard:

Diabetes mellitus type 1. Target HbA1c < 6.5%

Diabetic microangiopathies: stage 1 retinopathy (non-proliferative).

Purpose: Diet with calculation of XE.

Levemir 16 units at 22-00 s.c.

Novorapid 6-8 units before breakfast, 8-10 units before lunch, 8-10 units before dinner

Task 59

The patient is 28 years old. She consulted a therapist about weakness, dry mouth, thirst, and copious urine output.

The onset of the disease is associated with psychotrauma, after which the above complaints appeared 2 weeks later. I lost 7 kg with a normal diet.

Anamnesis: family history, mother has diabetes mellitus from a young age. Objectively: Height - 184 cm, weight - 64 kg. Blood pressure - 110/60 mm Hg. Breathing is vesicular, heart sounds are clear and rhythmic. Pulse 89 beats per minute.

Additional research data:

Glucose on an empty stomach - 17 mmol/l, 2 hours after a meal - 22.4 mmol/l C-peptide - 98 pmol/l (normal - 150-1100 pmol/l). HbA1c-6.1%.

3. Clinical diagnosis?

4. Appointment sheet?

Response standard:

3) Diabetes mellitus type 1. Target HbA1c < 6.5%

4) Diet with calculation of XE (up to 20 XE per day), with subsequent correction after normalization of body weight.

Tresiba 10 units subcutaneously at 22-00.

Novorapid 6-8 units before breakfast, 8-10 units before lunch, 8-10 units before dinner, s.c.

Task 60

Male, 25 years old.

Complaints of dry mouth, thirst, increased urine output, loss of body weight by 2-3 kg in 2 weeks.

I became acutely ill 2 weeks ago after suffering from acute respiratory viral infection.

Objectively: weight 64 kg, height 182 cm. Blood pressure 110/70 mm Hg. Reduced nutrition. The skin is dry. The liver protrudes 2 cm from under the costal arch.

Laboratory and instrumental research

Fasting glucose - 10 mmol/l, 2 hours after eating 19 mmol/l. HbA1c - 5.6% C-peptide - 48 pmol/l

Urinalysis - glucose 5%, no proteinuria, acetone ++

3. Clinical diagnosis?

4. Treatment tactics? *Response*

standard:

3. Diabetes mellitus type 1. Target HbA1c < 6.5%. Fatty hepatosis.

4. Purposes:

4. Diet with calculation of XE (up to 20 XE per day) with subsequent correction after normalization of body weight.

5. Tresiba 10 units subcutaneously at 22-00.

6. Novorapid 4-6-8 units subcutaneously before breakfast, 4-6-8 units subcutaneously before lunch, 6-8 units subcutaneously before dinner.

Task 61.

Patient S., 27 years old, has been observed for diabetes mellitus for a year. Currently he has no particular complaints.

Receives insulin Protafan 18 units at 22-00 s.c., Actrapid 8-10 units before breakfast, 6-8 units before lunch, 8 units before dinner. Fasting blood glucose 8-9 mmol/l, 2 hours after meals 9-12 mmol/l. Went in for a checkup.

Objectively: Height – 174 cm, body weight – 72 kg. Pulse –68 per minute, rhythmic. Heart sounds are clear and rhythmic. The lower edge of the liver protrudes 3 cm from under the edge of the costal arch along the midclavicular line and is painless.

Glycemic profile: fasting – 7.8 mmol/l., during the day 2 hours after meals 10.4 mmol/l. HbA1c - 7.4%. Diuresis – 2.5 l. The reaction of urine to acetone is negative. There is no protein in the urine, glucose is 0.5%

The fundus is without pathology. 1. Clinical diagnosis?
2. Necessary correction of treatment measures?

Response standard:

3. Diabetes mellitus type 1. Target HbA1c < 6.5%. Fatty hepatosis.

4. Purposes:

4. Diet with XE calculation.

5. Levemir 18 units subcutaneously at 22-00.

6. Novorapid 6-8 units subcutaneously before breakfast, 8-10 units before lunch, 8-10 units before dinner.

Task 62.

Male 28 years old. He consulted a doctor with complaints of general weakness, weight gain, hypoglycemic conditions at night and during physical activity.

Diabetes mellitus for 5 years, insulin therapy is carried out: Protafan 20 units in the evening and 20 units in the morning, Actrapid 6-8 units before breakfast, 6-8 units before lunch, 6-8 units before dinner. During the day, he eats up to 16 XE.

From the anamnesis: the patient's mother suffers from type 1 diabetes mellitus.

Objectively: body weight 66 kg, height – 180 cm, BMI – 20 kg/m². Blood pressure 125/85 mm Hg. Heart rate = Ps = 78 beats per minute.

Additional research data:

Fasting blood glucose – 7.3 mmol/l, 2 hours after meals – 12.2 mmol/l. C-peptide = 100 (N – 150 – 1100).

In general urine analysis: glucose 0.5%, protein – no.

1. Clinical diagnosis

2. Appointments.

Response standard:

3. Diabetes mellitus type 1. Target HbA1c < 6.5%

4. Purposes:

4. Low-calorie diet (exclude fats), limit carbohydrates to 14 XE per day.

5. Tresiba 20 units subcutaneously at 22-00.

6. Novorapid 8-10 units subcutaneously before breakfast, 8-10 units before lunch, 10-12 units before dinner.

Task 63.

A 58-year-old patient was admitted to the clinic with complaints of swelling on the face and lower extremities and lethargy. Weakness, fatigue, frequent dizziness, squeezing pain in the heart area during physical activity, which quickly disappears from taking nitroglycerin. The patient lives in an endemic area. Since childhood, he has noticed an enlargement of the thyroid gland. Regularly takes antistrumin. A year ago, the size of the thyroid gland began to increase, weakness began to progress, and swelling appeared. She repeatedly consulted doctors and was treated with coronary lytics, cardiac glycosides, and diuretics. There was no effect.

Objectively: the patient is lethargic, very pale, answers questions slowly, her speech is scanned. There is swelling on the skin of the face and legs; a hole does not remain when pressed. The skin of the hands is thick, rough, cold, pigmented,

the crease does not gather. The thyroid gland is enlarged, dense, diffuse, mobile. Respiratory organs without pathology. The heart is enlarged to the left. Heart sounds are muffled and rhythmic. Pulse 52 beats per minute, blood pressure 100/60 mmHg. the tongue is thickened with facets from the teeth. The liver and spleen are not enlarged.

1. Formulate the most likely diagnoses for this clinic.
2. Outline a plan to clarify the diagnosis.

Response standard:

1. Endemic goiter, stage II. hypothyroidism, moderate severity. Sop. IBS. Angina pectoris voltage II f. Class. IHD, atherosclerosis of coronary vessels, angina pectoris, atherosclerotic cardiosclerosis, HF II A. Chronic glomerulonephritis.

2. T3sv; T4sv; TSH; Ultrasound of the thyroid gland. Cholesterol, complete blood count, general urinalysis, daily loss of protein in urine, glomerular filtration, urea, creatinine, ECG, echocardiography.

Task 64

A 40-year-old patient was admitted to the clinic with complaints of swelling in the legs and arms, weakness, fatigue, and drowsiness. I have been sick for a year, I went to the doctors for the first time. Objectively: the patient is pale, flaccid, the thyroid gland is stage II, diffuse. The skin of the extremities is dry and cold. In the area of the legs and shoulders, dense swelling is palpable; the skin above it does not fold into a fold and is pigmented. Respiratory organs without pathology. There is moderate bradycardia and hypotension. The liver and spleen are not enlarged. Lymph nodes are not palpable.

1. Between what diseases should a differential diagnosis be carried out?
2. Outline a plan to clarify the diagnosis.
3. Treatment?

Response standard:

1. AIT. Hypothyroidism syndrome and chronic glomerulonephritis.

2. T3sv; T4sv; TSH; AT-TPO; Ultrasound of the thyroid gland; detailed blood test; general urine analysis; urea; creatinine; glomerular filtration; cholesterol.

3. Selection of the dose of replacement therapy with L-thyroxine.

Task 65.

A 40-year-old patient came to the clinic with complaints of weakness, fatigue, chilliness, and swelling on the face. Ill for a year after strumectomy. Not treated. Objectively: the patient is lethargic, adynamic, his face is swollen and pale. The tongue is thick with facets from teeth. Pulse 50 beats per minute, blood pressure 100/60 mmHg, skin is dry, cold, flaky, gland tissue is not detectable.

1. Your preliminary diagnosis.
2. Draw up an examination plan.
3. Make a treatment plan.

Response standard:

1. Postoperative hypothyroidism, moderate severity.

2. T3sv; T4sv; TSH;

3. Selection of the dose of L - thyroxine. Task 66.

A patient came to the appointment with complaints of an enlarged thyroid gland. Lives in an area where many people have goiters. I noticed an enlargement of the gland 2 years ago, the size does not increase. Objectively: the thyroid gland is enlarged by eye, the isthmus and lobes are evenly palpated. The skin is normal, there is no tremor. Pulse 72 per minute, blood pressure 120/70 mmHg. internal organs without pathology. The eyes are normal, there are no ocular symptoms.

1. Formulate a diagnosis.

Response standard:

1. Endemic goiter, stage II, euthyroidism.

Task 67.

A 33-year-old woman, six months after strumectomy, developed weakness, apathy, drowsiness, constipation, and menstrual irregularities. Objectively: obesity. The outer eyebrow hairs have fallen out. Pulse 56 beats/min. The skin is dry, the hair is brittle. Blood pressure 100/60 mm Hg. Heart sounds are weakened.

1. Formulate a diagnosis
2. Outline an examination plan.
3. Treatment plan.

Response standard:

1. Postoperative hypothyroidism of moderate severity.
2. T3sv; T4sv; TSH; Ultrasound of the neck
3. Selection of the dose of replacement therapy with L-thyroxine.

Task 68.

A 43-year-old patient complains of weakness, drowsiness, chilliness, swelling of the face and limbs, constipation, and weight gain. History of subtotal strumectomy 10 years ago. On examination, the patient is apathetic and slow, with swelling of the face and limbs. The skin is dry, cold, flaky, swelling is dense. Heart sounds are muffled, bradycardia up to 50 beats/min. Blood cholesterol 8.6 mmol/liter.

1. Formulate a diagnosis
2. Outline an examination plan.

Response standard:

1. Postoperative hypothyroidism of moderate severity.
2. T3sv; T4c; TSH; Ultrasound of the thyroid gland.

Task 69.

A 39-year-old patient was operated on six months ago for diffuse toxic goiter. He noted the appearance of chilliness, daytime drowsiness, and constipation. On examination, the skin is pale, with a jaundiced tint. Heart sounds are muffled. Heart rate 52 beats/min. On the ECG, the voltage is preserved. Blood cholesterol 10.9 mmol/liter.

1. Formulate a diagnosis
2. Outline an examination plan.

Response standard:

1. Postoperative hypothyroidism of moderate severity.
2. T3sv; T4sv; TSH; Ultrasound of the thyroid gland. Task 70.

A 40-year-old patient has a lumpy, dense thyroid gland that is palpable. According to ultrasound, the volume is 42 ml, the structure is represented by areas of reduced echogenicity. T4sv - 4 nmol/liter, TSH - 14.9 mIU/ml. Antibody titer 283.

1. Make a preliminary diagnosis.
2. Prescribe treatment.

Response standard:

1. Moderate hypothyroidism due to autoimmune thyroiditis, hypertrophic form
2. Treatment with thyroxine to reduce the size of the goiter and normalize TSH.

Task 71.

Patient P., 58 years old, consulted a doctor with complaints of lethargy, chilliness, drowsiness, and weight gain. On examination, the patient is apathetic and slow, with swelling of the face and limbs. The skin is dry, cold, flaky, swelling is dense. Heart sounds are muffled, bradycardia up to 50 beats/min. Blood pressure 100/60 mmHg. Blood cholesterol 7.9 mmol/liter.

1. Formulate a diagnosis.

2. Outline an examination plan.

Response standard:

1. Moderate hypothyroidism.

2. T3sv; T4sv; TSH; AT-TPO; Ultrasound of the thyroid gland. Task 72.

Patient D., 56 years old. Came to the appointment with complaints of swelling on the face and lower extremities, lethargy. Weakness, fatigue, frequent dizziness. From the anamnesis it is known that the patient lives in an endemic area and has noticed an enlargement of the thyroid gland since childhood. Over the past 4 months, the patient has noted an increase in the size of the thyroid gland, increasing weakness and the appearance of edema. Objectively: the patient is lethargic, apathetic, answers questions slowly. There is swelling on the skin of the face and legs; a hole does not remain when pressed. The skin of the hands is thick, rough, cold, pigmented, and does not fold. The thyroid gland is enlarged, dense, diffuse, mobile. The boundaries of relative dullness of the heart are expanded to the left. Heart sounds are muffled and rhythmic. Heart rate 50 beats per minute, blood pressure 100/60 mm Hg. the tongue is thickened with facets from the teeth.

1. Preliminary diagnosis.

2. Treatment plan.

Response standard:

1. Endemic goiter, stage II. hypothyroidism, moderate severity.

4. Replacement therapy with L-thyroxine.

Task 72

Patient V., 30 years old, works as a teacher. I went to the therapist with complaints of general weakness, thirst, increased appetite, weight loss of 10 kg in 2 months, palpitations, irritability, trembling of the whole body, lacrimation. Ill for more than 2 months. A month ago I suffered from follicular tonsillitis.

Objectively: general condition is satisfactory. Body temperature is 37.2 C. The patient is fussy, there is a slight tremor of the fingers of outstretched arms, glittering eyes, rare blinking. When you look down, a strip of sclera is visible between the upper eyelid and the iris. Mood lability is noted. The skin of the hands is moist and warm. The thyroid gland is slightly enlarged, soft, and painless. The boundaries of the heart are within normal limits, heart sounds are increased, tachycardia up to 126 per minute. Blood pressure - 160/50 mm Hg. Art. Vesicular breathing in the lungs. The abdomen is soft and painless. The liver, gall bladder, and spleen are not enlarged. Loose stools, up to 5 times a day. Urination 4-5 times a day, painless. There have been no menses for the last 2 months.

1. Establish a preliminary diagnosis.

2. Outline a plan for additional examination.

3. What diseases need differential diagnosis.

4. Determine treatment tactics.

5. Forecast of working capacity.

Response standard:

1. Diagnosis: diffuse toxic goiter of degree II, moderate thyrotoxicosis gravity.

2. Diagnostics: T3, T4, TSH; general blood test; Ultrasound of the thyroid gland; radioisotope scan of the thyroid gland

3. Differential diagnosis with neurocirculatory dystonia, hypertensive illness.

4. Treatment: conservative therapy, thyreostatics (Mercazolil) - beta blockers - sedatives

5. Unable to work during therapy until a euthyroid state is achieved (3-5 weeks). Maintenance therapy on an outpatient basis - 1.5 - 2 years.

Task 73.

A 40-year-old patient was admitted to the clinic with complaints of sudden weight loss, irritability, tearfulness, palpitations, and irregularities in the heart area. 10 years ago she was operated on for diffuse toxic goiter. I felt healthy for 9 years. A year ago, after severe pneumonia, the above complaints appeared. Objectively: the patient has low nutrition, the skin is hot and moist. There is a scar on the neck after a strumectomy. Gland tissue is palpated in the area of the isthmus and left lobe. The heart is enlarged to the left, the tones are loud. Atrial fibrillation. Heart rate=120/min. Pulse deficit 25/min, blood pressure 130/60 mm Hg. the liver is not enlarged, there is no edema.

1. Formulate a preliminary diagnosis.
2. Resolve questions about indications for strumectomy.
3. Drug treatment.

Response standard:

1. Relapse of diffuse – toxic goiter, stage II, severe. Donkey Thyrotoxic heart. Atrial fibrillation, tachyform.
2. Repeated strumectomy is indicated after achieving euthyroidism because occurs relapse of DTZ; atrial fibrillation.
3. Treatment with thyreostatics until euthyroidism is achieved. Task 74.

Patient K., 34 years old, complains of pain in the heart area, palpitations, shortness of breath, which appears during fast walking, physical. stress, thickening of the neck (appeared in the last 6 months), irritability, tearfulness. Notes weight loss of up to 10 kg. Considers himself sick for 7 years. She was treated for heart disease and neurasthenia. Objectively: the patient has low nutrition with an expression of “frozen fear” on her face. Pulse 120 beats/min, blood pressure 130/70 mm Hg. Exophthalmos. The thyroid gland is enlarged evenly with a smooth surface, soft-elastic consistency, painless, displaced when swallowing.

1. Make a preliminary diagnosis.
2. What special studies are needed to confirm the diagnosis and

Expected results?

Response standard:

1. Diffuse toxic goiter of the 2nd degree. Thyrotoxicosis of moderate severity.
2. Ultrasound – diffuse enlargement of the gland, uneven contours, hypervascularization.
 - Chest X-ray - may be an aberrant goiter
 - Study of thyroid hormones - increasing the level of hormones T3, T4sv, decrease in thyroid-stimulating hormone levels.

Task 75.

A 24-year-old patient consulted a doctor with signs of thyrotoxicosis; she was worried about irritability, sweating, weakness, and palpitations. Ill for 2 years. The thyroid gland is not enlarged. A physical examination of the patient did not reveal any pathology. An X-ray examination of the chest cavity organs in the anterior mediastinum at the level of the 2nd rib on the right reveals a rounded formation measuring 5x5 cm with clear boundaries. Lung tissue without pathology.

1. What disease can be suspected in the patient?
2. What diseases need to be differentiated? diagnosis?

Response standard:

1. Aberrant thyrotoxic goiter.
2. Mediastinal cyst; mediastinal tumor.

CRITERIA for assessing competencies and rating scales

Grade "unsatisfactory" (not accepted) or absence formation competencies	Grade "satisfactorily" (passed) or satisfactory (threshold) level of development competencies	Rated "good" (passed) or sufficient level development competencies	Excellent rating (passed) or high level development competencies
failure to student on one's own demonstrate knowledge when solving assignments, lack independence in application of skills. Absence availability confirmation formation competencies indicates negative development results academic discipline	student demonstrates independence in application of knowledge skills and abilities to solve educational tasks in full According to sample given teacher, by tasks, solution of which there were shown teacher, it should be considered that competence formed on satisfactory level.	student demonstrates independent application of knowledge, skills and abilities when deciding tasks, tasks similar samples that confirms Availability formed competencies for higher level. Availability such competence on sufficient level indicates sustainable fixed practical skill	student demonstrates ability to full independence in choosing a method solutions non-standard assignments within disciplines with using knowledge, skills and skills, received as in development progress of this discipline, and adjacent disciplines should count competence formed on high level.

Criteria for assessing test control:

percentage of correct answers	Marks
91-100	Great
81-90	Fine
70-80	satisfactorily
Less than 70	unsatisfactory

When grading tasks with multiple correct answers, one error is allowed.

Interview assessment criteria:

Mark	Descriptors		
	strength of knowledge	ability to explain (introduce) the essence of phenomena, processes, do conclusions	logic and subsequence answer
Great	strength of knowledge, knowledge of basic processes subject matter being studied areas, the answer is different	high skill explain the essence phenomena, processes, events, draw conclusions	high logic and subsequence answer

	depth and completeness disclosure of the topic; possession terminological apparatus; logic and consistency answer	and generalizations, give reasoned answers, give examples	
Fine	solid knowledge of the basic processes of the studied subject area, differs in depth and completeness of the topic; possession terminological apparatus; free mastery of monologue speech, but one or two inaccuracies in the answer are allowed	ability to explain essence, phenomena, processes, events, draw conclusions and generalizations, give reasoned answers, give examples; however one or two inaccuracies in the answer are allowed	logic and subsequence answer
satisfactory really	satisfactory process knowledge subject matter being studied areas, answer, different insufficient depth and completeness of the topic; knowledge of basic theoretical issues. Several are allowed errors in content answer	satisfactory ability to give reasoned answers and provide examples; satisfactorily formed analysis skills phenomena, processes. Several are allowed errors in content answer	satisfactory logic and subsequence answer
will not satisfy really	poor knowledge of the subject area being studied, shallow opening Topics; poor knowledge basic theoretical issues, poor analysis skills phenomena, processes. Serious errors in content answer	inability to give reasoned answers	absence logic and sequences answer

Criteria for assessing situational tasks:

Mark	Descriptors			
	understanding Problems	analysis situations	skills solutions situations	professional thinking
Great	complete implication problems. All requirements, submitted to	high benefit analyze situation, draw conclusions	high benefit select method solutions problems,	high level professional thoughts

	adania, completed		faithful solution skills situation	
Fine	complete implication problems. All requirements, submitted to adania, completed	benefit analyze situation, draw conclusions	benefit select method solutions problems faithful solution skills situation	residual level professional thoughts. drops one or two precision in the answer
satisfactory really	astastic implication problems. majority requirements declared to adania, completed	satisfactory 1st ability analyze situation, draw conclusions	satisfactory e skills solutions situations, falsity with choosing a method solutions to the problem	residual level professional thoughts. falls more a bunch of inaccuracies in answer or there is an error in the sequence solutions
will not satisfy really	misunderstanding problems. legs requirements, submitted to I hope not completed. No Tveta. Did not have experiments to solve hello	izkaya benefit analyze situation	insufficient solution skills situation	missing