# **Endocrinology. Final tests.**

# **Variant 2**

**1. In a patient with type I diabetes, the best form of treatment would be administration of:**

A. sulfonylureas

B. metformin

C. acarbose

D. troglitazone

**E. insulin**

**2. In the United States, the most common form of diabetes is characterized by:**

A. lack of C-peptide

B. autoimmune attack on the beta cells

C. less than 50% concordance in twins

**D. obesity**

E. ketosis

**3. In a healthy person, administration of propylthiouracil (a drug that blocks thyroidal peroxidase activity) is most likely to cause:**

A. exophthalmos

**B. goiter**

C. prognathism

D. hyperthermia

E. tachycardia

**4. Which of the following is a direct effect of parathyroid hormone (PTH)?**

**A. increased osteoclast activity**

B. reduced 1-hydroxylase activity

C. increased intestinal synthesis of calcium-binding protein

D. increased renal tubular phosphate reabsorption

E. reduced 25-hydroxylase activity

5. The effects of underfunction include a decrease in endocrine gland functions and…

* 1. fatigue
  2. mood swings
  3. elephantitis
  4. **dwarfism**

6. What has the biggest effect on the hormones of the pituitary gland?

1. **Pregnancy**
2. puberty
3. fetal development
4. drug use

7. What does Luteinizing Hormone do in men and women?

1. men – supports sperm production, women – promotes egg development
2. men – promotes lutein production, women – promotes lutein production
3. **men – stimulates interstitial cells of testes to produce sex hormones, women – induces ovulation, promotes the ovarian secretion of estrogens and progestins, prepares the body for pregnancy**
4. men – promotes melanin production, women – promotes melanin production

8. What happens if there is an underfunction of the anterior pituitary gland?

1. gigantism
2. hydrocephalis
3. death
4. **dwarfism and decrease of activity in other glands**

9. Which gland is not caused to function by the anterior pituitary gland:

1. adrenal
2. ovaric
3. **bladder**
4. thyroid

10. Which section communicates largely with the hypothalamus:

1. anterior
2. superior
3. **posterior**
4. inferior

11. A patient 40 years old, having urolithiasis for 10 years, has coral calculus in right kidney and multiple calculi in left kidney. Laboratory fndings: serum calcium - 2,85 mmol/L, serum phosphate - 0,3 mmol/L, creatinine, urea are normal. **What is the diagnosis?**

1. **Primary hyperparathyroidism**
2. Secondary hyperparathyroidism
3. Tertiary hyperparathyroidism
4. Pseudohyperparathyroidism
5. Primary hypoparathyroidism

12. A patient, 52 years old, consult a doctor with complaints of general weakness, insomnia, decreasing memory, vertigo, cardiac pain, palpitation, periodic vomiting, diarrhea, following constipation, paraes-thesia, muscle fbrillations, turning to cramps in upper extremities. Cramps occur after stress, infectious diseases. There are no endocrine diseases in family history. Laboratory fndings: glycemia - 4,8 mmol/L, serum cal­cium - 2,0 mmol/L, serum phosphates - 1,1 mmol/L. ECG: prolongation of QT interval. X-ray: increased density of bones. **What is the diagnosis?**

1. **Hypoparathyroidism**
2. Pseudohypoparathyroidism
3. Insulinoma
4. Epilepsy
5. Malabsorption syndrome

13. A 38-years-old patient M. has been operated on for toxic mul­tinodular goiter, II gr. For 2 weeks after the operation cramps in upper extremities had appeared, which persisted for 1-2 min. and accompanied with numbness in face. Cramps occur 1-2 times a day, commonly at a daytime. Pulse is 82 st/min, rhythmic; blood pressure is 110/70 mmHg. Visceral organs are not damaged. Trousseau’s, Hvostek’s I symptoms are positive. **What is the diagnosis?**

1. **Post-operative hypoparathyroidism**
2. Post-operative hypothyroidism
3. Pseudohypoparathyroidism
4. Epilepsy
5. Insulinoma

14. A patient D., 38 years old, is treated for recurrent urolithiasis for 7 years. At examination increased serum calcium and urinary calcium and low serum phosphate. Serum creatinine is normal. **What is the preliminary diagnosis?**

1. **Primary hyperparathyroidism, renal form**
2. Urolithiasis, secondary hyperparathyroidism
3. Urolithiasis, threefold hyperparathyroidism
4. Pseudohyperparathyroidism
5. Primary hyperparathyroidism, bone form

15. A 7-years-old child with cramps has hypocalcemia and radio­logic signs of osteoporosis. Parathyroid hormone blood level is increased. Hyperphosphatemia is revealed. The child has signs of physical and mental retardation. A treatment with parathyroid hormone was not effective. **What is the preliminary diagnosis?**

1. **Pseudohypoparathyroidism**
2. Pseudohyperparathyroidism
3. Pseudoidiopathic hypoparathyroidism
4. Idiopathic hypoparathyroidism
5. Primary hyperparathyroidism

16. Which hormone speeds up the body’s metabolism?

1. **Triiodothyronine**
2. Calcitonin
3. Thyroxine
4. All of the Above

17. Where is the thyroid located?

* 1. lower neck
  2. below Larynx
  3. just above the Clavicle
  4. **All of the above**

18. **Treatment for prediabetes:**

1. Is unnecessary, but the patient should be warned
2. Never include medications
3. Always includes some form of medication
4. **Can delay or prevent type 2 diabetes mellitus**

19. **What is the most dangerous adverse effect following use of biguanides?**

1. Hyperglycaemia
2. Hypoglycaemia
3. Diabetic ketoacidosis
4. Hyperosmolality
5. **Lactic acidosis**

**20. Which of the following drugs may precipitate cardiovascular complications?**

1. **Glyburide**
2. Gliclazide
3. Glimepiride
4. Acarbose
5. Nateglinide

21. Patient A., 38 years old. Operated a diffuse toxic goiter. After the operation the state a patient became worse, palpitation, shortness of breath, diarrhea, fever. Objective review: fever is 38.6°С, pulse - 160 beats/min, blood pressure - 85/40***. Preliminary diagnosis***:

1. **Thyrotoxic crisis**
2. Thyrotoxic hepatitis
3. Pneumonia
4. Adrenal crisis
5. Acute pancreatitis

22. A 24 years old woman with chronic schizophrenia is referred for evaluation of abnormal thyroid function tests after experiencing an acute exacerbation of psychosis. She has no prior history of thyroid dysfunction but several family members have been affected by autoimmune thyroid disease. Over the preceding three months she has lost 8 kg and has noted insomnia, tachycardia, heat intolerance, and irregular menses. Physical examination demonstrates an anxious and restless young woman with resting tachycardia (rate 120 beats/min), tremor of extended fingers, bilateral lid lag and “stare”, warm moist skin, brisk reflexes, and an impalpable thyroid gland. Thyroid function tests are as follows: free T 4 - 4,2 ng / dL (normal 0,8 – 2,0 ng / dL), TSH < 0,01 μU / L (normal 0,4 – 4,5 μU / L), thyroglobulin – 5 ng / mL (normal < 40 ng / mL). ***Which diagnosis is most likely?***

1. Nervous exhaustion
2. Adenoma of thyroid gland
3. Struma ovarii
4. **Diffuse toxic goiter**
5. Nodular goiter

23. A previously healthy 19 year old female complains of a fast heart rate, weight loss, and fatigue over the past 2 months. Her family history is significant for a grandmother and aunt with Hashimoto thyroiditis. Objective review: temperature - 37,0° C, pulse - 110 beats/min, blood pressure - 120/50, cardiac tones normal, skin is moist, warm, a mild tremor. Thyroid gland enlarged, smooth, normal texture and homogenous. High level of T3 and T4, undetectable TSH. Thyroid stimulating immunoglobulin assay is positive. ***Your diagnosis?***

1. **Graves’ disease**
2. Hashimoto thyroiditis
3. Diffuse nontoxic goiter
4. Nodular goiter
5. Sporadic diffuse nontoxic goiter

24. Patient U., 26 years old, complains of swallowing, weakness, feeling of a “loop” round the neck. In anamnesis – 10 years ago was treatment goiter. Objective review: thyroid gland enlarged III grade, normal texture, homogenous. Periorbital puffiness, Stellwag's, Dalrymple's, Rosenbach's signs are negative. Result of ultrasound examination: a thyroid gland is increased, total size is 36 cm³, echogenicity is not changed. Level of thyroid hormones are normal. Median of iodine excretion with urine 100 mkg/l. ***Substantiate diagnosis:***

1. Nodular goiter
2. **Endemic diffuse nontoxic goiter of 3 grade**
3. Diffuse nontoxic goiter of 2 grade
4. Sporadic diffuse nontoxic goiter of 2 grade
5. Diffuse euthyroid goiter of 2 grade

25. Patient V., 26 years old, during 3 months was ill diffuse toxic goiter III, to treatment – thyrozol 30 mg per day. After grippe the patient complaints: palpitations, tremor, high fever, diarrhea. Objective review: thyroid gland enlarged, smooth, normal texture homogenous. Abdominal pain, vomiting. Tachycardia – 140 beats/min, blood pressure 140/50. Fever – 40 ° C. ***Establish your diagnosis?***

1. **Diffuse toxic goiter in decompensation. Thyrotoxic crisis.**
2. Nodular goiter Toxic goiter in pregnancy
3. Adenoma of thyroid gland
4. Diffuse toxic goiter in compensation

**26.** After having the flu, a 39-year-old male patient with a history of Addison’s disease developed a condition manifested by weakness, depression, nausea, vomiting, diarrhea, hypoglycemia. AP- 75/50 mm Hg. Blood test results: low corticosterone and cortisol, 13-oxycorticosteroids, 17-oxycorticosteroids levels. **What condition developed in the patient?**

1. **Acute adrenal insufficiency**
2. Acute gastritis
3. Acute enterocolitis
4. Collapse
5. Diabetes mellitus

**27.** A 48-year-old patient has the following symptoms: diffuse enlargement of thyroid gland, exophthalmus, weight loss up to 4 kg within 2 months, excessive sweating. Objectively: heart rate 105/min, BP - 180/70 mm Hg. Stool is normal. **What therapy is advisable in the given case?**

1. Potassium iodide
2. Propranolol
3. **Mercazolil (Thiamazole)**
4. Iodomarin
5. Thyroxin

**28.** A 14-year-old girl has been presenting with irritability and tearfulness for about a year. A year ago she was also found to have diffuse enlargement of the thyroid gland (II grade). This condition was regarded as a pubertal manifestation, the girl did not undergo any treatment. The girl’s irritability gradually gave place to a complete apathy. The girl got puffy face, soft tissues pastosity, bradycardia, constipations. Skin pallor and gland density progressed, the skin got a waxen hue. **What disease may be assumed?**

1. Diffuse toxic goiter
2. Thyroid carcinoma
3. **Autoimmune thyroiditis**
4. Subacute thyroiditis
5. Juvenile basophilism

**29.** A 32-year-old woman complains of dizziness, headache, palpitation, tremor. For the last several months she has been under outpatient monitoring for increased arterial pressure. Recently such attacks have become more frequent and severe. Objectively: skin is covered with clammy sweat, tremor of the extremities is present. Heart rate - 110/min, BP - 220/140 mm Hg. Heart sounds are weakened. In blood: WBCs - 9*,*8 · 109/l, ESR - 22 mm/h. Blood glucose - 9,8 millimole/l. **What disease is the most likely cause of this crisis?**

1. **Pheochromocytoma**
2. Essential hypertension
3. Preeclampsia
4. Primary hyperaldosteronism
5. Diabetic glomerulosclerosis

**30.** An 8-year-old boy, who has been suffering from diabetes mellitus for 3 years, was delivered to a hospital in a condition of hyperglycemic coma. **Primary dose of insulin should be prescribed basing on the following calculation**:

1. 0,05 units/kg of body mass per hour
2. 0,2-0,3 units/kg of body mass per hour
3. 0,3-0,4 units/kg of body mass per hour
4. **0,1-0,2 units/kg of body mass per hour**
5. 0,4-0,5 units/kg of body mass per hour

**31.** During examination a patient is unconscious, his skin is dry and hot, face hyperemia is present. The patient has Kussmaul’s respiration, there is also smell of acetone in the air. Symptoms of peritoneum irritation are positive. Blood sugar is 33 millimole/l. **What emergency actions should be taken?**

1. **Intravenous infusion of short-acting insulin**
2. Intravenous infusion of glucose along with insulin
3. Introduction of long-acting insulin
4. Intravenous infusion of neohaemodesum along with glutamic acid
5. Intravenous infusion of sodium chloride saline

**32.** A woman consulted a therapeutist about fatigability, significant weight loss, weakness, loss of appetite. She has been having amenorrhea for 8 months. A year ago she born a full-term child. Haemorrhage during labour made up 2 l. She got blood and blood substitute transfusions. **What is the most probable diagnosis?**

1. **Sheehan’s syndrome**
2. Stein-Leventhal syndrome
3. Shereshevsky-Turner’s syndrome
4. Homological blood syndrome
5. Vegetovascular dystonia

**33.** A 24-year-old patient complains of gaining body mass and increased appetite. Objectively: built of hypersthenic type, body mass index is 33,2 *kg/m*2, waist circumference is 100 cm. Waist to hips circumference ratio is 0,95. **What is the provisional diagnosis?**

1. Itsenko-Cushing hypothalamic obesity, II stage, gynoid type
2. **Alimentary constitutive obesity, I stage, android type**
3. Alimentary constitutive obesity, III stage, gynoid type
4. Alimentary constitutive obesity, II stage, android type
5. Itsenko-Cushing hypothalamic obesity, I stage, android type

**34.** During a surgical operation necessitated by the patient’s suffering from autoimmune thyroiditis with concomitant multinodular goiter the right lobe was removed and subtotal resection of the left lobe was performed. **What should be prescribed to the patient for postoperative hypothyroidism prevention?**

1. **L-thyroxin**
2. Mercazolil (Thiamazole)
3. Iodomarin (Potassium iodide)
4. Lithium preparations
5. Insulin

**35.** A 54-year-old patient has been suffering from diabetes mellitus for 5 years, with diet being his only treatment. Within the last half a year he lost 7 kg of body weight, complains of thirst, vertigo when raising from bed, decrease of erectile function, frequent stool, especially at night. Objectively: malnutrition, dry skin. BP in lying position is 160/90 mm Hg; BP in standing position is 170/85 mm Hg. No edemas. Fasting plasma glucose level is 12 mmol/l. Glycated hemoglobin accounts for 11%. Albumin excreted with urine is 20 mg per day. **The most likely diagnosis is:**

1. Diabetes mellitus type 1 with ketoacidosis
2. Diabetes mellitus type 1 with encephalomyelopathy
3. Diabetes mellitus type 2 with nephropathy
4. **Diabetes mellitus type 2 with visceral neuropathy**
5. Diabetes mellitus type 2 with polyneuropathy

**36.** A 35-year-old female patient has gained 20 kg weight within a year with the normal diet. She complains of chill, sleepiness, dyspnea. The patient’s mother and sister are corpulent. Objectively: height - 160 cm, weight - 92 kg, BMI - 35,9. Obesity is uniform, there are no striae. The face is amimic. The skin is dry. The tongue is thickened. Heart sounds are muffled. Heart rate - 56/min, BP - 140/100 mm Hg. The patient has constipations, amenorrhea for 5 months. TSH - 28 mkME/l (normal rate - 0,32-5). Craniogram shows no pathology. **What is the etiology of obesity?**

1. **Hypothyroid**
2. Hypo-ovarian
3. Hypothalamic-pituitary
4. Alimentary and constitutive
5. Hypercorticoid

**37.** A 40-year-old female patient complains of having a bulge on the anterior surface of neck for 5 years. Objectively: Heart rate - 72 bpm, arterial pressure - 110/70 mm Hg, in the right lobe of thyroid gland palpation reveals a mobile 4x2 cm node, the left lobe is not palpable, the basal metabolic rate is 6%. **What is the most likely diagnosis?**

1. Nodular hyperthyroid goiter
2. Riedel’s thyroiditis
3. **Nodular euthyroid goiter**
4. Mixed euthyroid goiter
5. The median cervical cyst

**38.** A 41-year-old patient with Addison’s disease had influenza. After that he developed adynamia, depression, nausea, vomiting, diarrhea and hypoglycemia. BP is 75/50 mm Hg. Blood test: decreased content of corticosterone, hydrocortisone, 13-oxycorticosteroids, 17-oxycorticosteroids. **What condition has developed in the patient?**

1. **Acute adrenal gland insufficiency**
2. Acute gastritis
3. Acute enterocolitis
4. Collapse
5. Diabetes mellitus

**39.** A 23-year-old woman after stress has developed thirst, polydipsia, polyuria, weight loss, increasing fatigue. Later she developed nausea and somnolence, lost consciousness and was hospitalised. Glycemia is 27 mmol/l, acetone in urine is sharply positive. Treatment for ketoacidotic coma was initiated. **When would it be advisable to start preventive treatment of hypoglycemia by introduction of 5% glucose solution**?

1. 2 hours after beginning of insulinotherapy
2. When patient becomes conscious
3. After glycemia rate becomes normal
4. If glycemia decreases with the rate over 5 mmol/l per hour
5. **After glycemia rate drops to 13-14 mmol/l**

**40.** A 15-year-old patient complains of excessive body weight, headache, irritability, rapid fatigability. Significant increase of body weight occurred at the age of 14. Objectively: weight is 90 kg; height is 160 sm, proportional body built. Fatty tissue is distributed evenly. There are thin pink striae (stretch marks) on the thighs, abdomen and mammary glands. BP - 145/90 mm Hg. **Provisional diagnosis is:**

1. Alimentary constitutive obesity
2. Somatoform autonomic dysfunction
3. **Pubertate dyspituitarism**
4. Itsenko-Cushing’s disease
5. Cushing’s syndrome

**41.** A 39-year-old female patient complains of dyspnea when walking, palpitation, edemata in the evening. The patient’s height is 164 cm, weight - 104 kg. Objectively: overnutrition. Heart sounds are weak, and tachycardia is present. The menstrual cycle is not broken. Blood sugar is 5,6 mmol/l, ACTH-response tests revealed no alterations. X-ray of the Turkish saddle revealed no pathology. **What disease is it?**

1. **Alimentary obesity**
2. Climax
3. Pituitary obesity
4. Diabetes mellitus
5. Cushing’s syndrome (primary hypercortisolism)

**42.** A 39-year-old female patient complains of rapid fatigability, drowsiness, dry skin, hair loss, swelling of the face. A month ago, she underwent a surgery for thyrotoxicosis. **The patient has the following gland dysfunction**:

1. Pituitary, due to a tumor
2. **Thyroid (hypothyroidism), due to inadequate operative technique**
3. Adrenal
4. Parathyroid, due to the gland removal during surgery
5. Ovarian, due to a tumor

**43.** A 25-year-old female presented to a women’s welfare clinic and reported the inability to get pregnant within 3 years of regular sexual activity. Examination revealed increased body weight, male pattern of pubic hair growth, excessive pilosis of thighs, dense enlarged ovaries, monophasic basal temperature. **What is the most likely diagnosis?**

1. **Polycystic ovarian syndrome**
2. Adnexitis
3. Adrenogenital syndrome
4. Premenstrual syndrome
5. Gonadal dysgenesis

**44.** A patient with autoimmune thyroiditis accompanied by multinodular goiter underwent the right lobe ectomy and subtotal resection of the left lobe. **What drug should be administered to prevent postoperative hypothyroidism?**

1. Merkazolil
2. Iodomarin
3. **L-thyroxine**
4. Lithium drugs
5. Insulin

**45.** A 49-year-old female patient has type 1 diabetes of moderate severity. The disease is complicated by retinopathy and polyneuropathy. Besides that, repeated analyses of the daily urinary excretion of albumin revealed microalbuminuria (200-300 mg/day). Glomerular filtration rate is 105 ml/min. Blood pressure is within normal range. **Normalization of the following indicator should be the first-priority task in the secondary prevention of diabetic nephropathy**:

1. **Glycosylated hemoglobin**
2. C-peptide
3. Blood insulin
4. Fasting glucose
5. Glycemia 2 hours after a meal
6. It is necessary to make a tracheostomy to the patients with disturbance of external respiration . Where can usually located the isthmus of the thyroid gland (level cartilaginous rings of the trachea)?
   1. **II-IV**
   2. III-I
   3. I-II
   4. IV-V
   5. V-VI
7. Under some diseases it is observed aldosteronism accompanied by hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected under aldosteronism?
   1. Testicle
   2. Ovaries
   3. **Adrenal glands**
   4. Pancreas
   5. Hypophysis
8. Some diseases reveal symptoms of aldosteronism with hypertension and edema due to sodium retention in the organism. What organ of the internal secretion is affected on aldosteronism?
9. **Adrenal glands**
10. Testicle
11. Ovaries
12. Pancreas
13. Hypophysis
14. Roentgenological examination of skull base bones revealed enlargement of sellar cavity, thinning of anterior clinoid processes, destruction of different parts, destruction of different parts of sella turcica. Such bone destruction might be caused by a tumour of the following wndocrinous gland:
15. Epiphysis
16. Thymus gland
17. Adrenal glands
18. **Hypophysis**
19. Thyroid gland
20. A patient with external respiration dysfunctions needs tracheotomy. At the level of which cartilaginous tracheal retractions is the isthmus of thyroid localized the most often?
21. I - II.
22. Ill - IV.
23. **II - IV.**
24. IV-V.
25. V-VI.