MINISTRY OF HEALTH PROTECTION OF UKRAINE
ODESA NATIONAL MEDICAL UNIVERSITY

International faculty
Department of Internal Medicine №1

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METHODOLOGICAL DEVELOPMENT OF PRACTICAL CLASSES FROM EDUCATIONAL DISCIPLINE

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PRACTICAL LESSONS

Practical lesson

Topic 1: Management of a patient with metabolic syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with metabolic syndrome; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine a clinical diagnosis of the disease in a patient with metabolic syndrome; master the principles of treatment, recommendations for life style changes in the management of patients with metabolic syndrome; diagnose emergency conditions in patients with metabolic syndrome; master the tactics of providing emergency medical care to patients with metabolic syndrome; to be able to perform manipulations in patients with metabolic syndrome.

Key words: etiology, pathogenesis, clinical manifestations of metabolic syndrome; the tactics of conducting a patient examination according to a standard scheme with an emphasis on typical complaints, features of the anamnesis and clinical manifestations; mandatory laboratory and instrumental methods for diagnosing metabolic syndrome, as well as additional research methods; formulating a preliminary diagnosis, drawing up a patient examination plan, evaluating the results of laboratory and instrumental studies; differential diagnosis in patients with metabolic syndrome; diagnostic search algorithm for metabolic syndrome; principles of treatment.

Equipment: multimedia materials - a set of thematic slides from the department's multimedia library; screenshots of laboratory results (total blood count; total urinalysis; blood glucose level (glycemic profile) and urine (glucosuric profile); daily loss of protein in the urine; ketonemia, ketonuria; HbA1c level, C-peptide, immunoreactive insulin (IRI), leptin, adiponectin and other adipokines, cortisol, thyroid-stimulating hormone (TSH), testosterone; lipid spectrum, kidney function, liver tests) and instrumental (ultrasound of abdominal organs) studies; a set of situational problems on the subject of the lesson.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge(written work, written test, frontal survey, etc.)
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.)

The control question:

1) Definition of the metabolic syndrome. Etiological factors.
2) Clinical manifestations and significance of the metabolic syndrome. Complete and incomplete forms, early and late manifestations of the metabolic syndrome.
3) Insulin resistance and metabolic syndrome: causes, consequences. Forms of insulin deficiency. Detection of impaired glucose tolerance.
4) Hyper-, dyslipoproteinemia in the metabolic syndrome: causes, consequences, diagnosis.
5) Obesity and metabolic syndrome: options, criteria. Determination of body mass index, its value.
6) Arterial hypertension and metabolic syndrome: the criteria for diagnosis, characteristics of the course, complications.
7) Survey Program at the stage of preclinical manifestations.
8) The program of treatment of patients with metabolic syndrome. Reducing the impact of trigger factors (lifestyle change).
9) Treatment of insulin resistance and diabetes mellitus and metabolic syndrome.
10) Treatment of hypertension and metabolic syndrome.
11) Treatment of obesity and metabolic syndrome.

Tests:

1. Clinical examination of an obese 56 yo patient who has CHD: postinfarctional cardiosclerosis complicated with HF revealed hyperglycemia (fasting glucose 9 mmol/L) and hypercholesterolemia (total cholesterol 7.3 mmol/L). Patient suspected to have metabolic syndrome. What syndrome should also be present in addition to indicated above?
A. Arrhythmia.
B. Hypertension.
C. Inspiratory dyspnea.
D. Cardiodynia.
E. None of the above.

2. A 38-year-old patient complains of constant headache, thirst, fatigue, sweating, high blood pressure. Over the last 3 years, body weight increased by 46 kg. Associates his disease with an attack of influenza. On examination: height - 176 cm, weight - 143 kg, body fat distribution mainly in the torso, thighs and abdomen multiple red-colored striae. BP 180/100 mm Hg. The most likely diagnosis?
A. Pituitary Cushing's.
B. Metabolic syndrome
C. Hypothalamic obesity.
D. Alimentary constitutional obesity.
E. None of them fit.

3. What does the body mass index of 31.3 kg/m ^{2} indicate?
A. Overweight.
B. Obesity of I degree.
C. Obesity of II degree.
D. Obesity of III degree.
E. Body weight below normal.

4. A 52 yo patient complains of weakness, decrease in memory, drowsiness, weight gain and constipation. Sick for 3 years. Objective: height - 164 cm, weight - 87 kg. Skin is dry, dense, cold, uniform distribution of body fat. Pulse 58 in 1 min, BP - 165/95 mmHg. Heart sounds are muffled. What is a preliminary diagnosis?
A. Alimentary constitutional obesity.
B. Hypothalamic syndrome.
C. Hypothyroidism.
D. Pituitary Cushing's.
E. Metabolic syndrome.

5. The examination of a 46-year-old patient detected an increase in blood pressure to 150/100 mmHg. No complaints at the present time. The patient is overweight (body mass index 36.1 kg/m). Distribution of adipose tissue is uneven. How should you interpret the patient's body mass index?
A. Normal body weight.
B. Obesity of I degree.
C. Obesity of II degree
D. Obesity of III degree.
E. Underweight.

6. Patient 35 years had subtotal resection of the thyroid gland performed, no postoperative complications. 3 months later presents with complaints of weight gain, face swelling, sleepiness, sweating. The ECG reveals a decrease in the amplitude. Chose the correct pathogenetic drug to normalize the patient's condition:
A. L-Thyroxine
B. Mercazolil
C. Prednisone

D. Reserpine
E. Potassium iodide

7. 40-year-old male passes medical examination for work as a seaman. Presents no complaints. Objective: Height -178 cm, weight 106 kg, the deposition of fat mostly in the belly area. Heart rate / pulse 68 in 1 min., BP - 150/90 mm.Hg. Heart sounds of normal loudness. Total cholesterol - 5.4 mmol/L. What advice will you give to the patient?
A. A diet with reduced fat and carbohydrates.
B. Increase physical activity.
C. Statins intake
D. All of the mentioned.
E. Reduce salt consumption

8. A 24-year-old patient complained about gaining weight, limosis. Objectively: the patient's constitution is of hypersthenic type, body weight index is 33.2 kg/m2, waist circumference is 100 cm. Correlation of waist circumference to thigh circumference is 0.95. What is the most likely diagnosis?
A. Alimentary constitutional obesity of the III stage, gynoid type
B. Alimentary constitutional obesity of the I stage, abdominal type *
C. Alimentary constitutional obesity of the II stage, abdominal type
D. Hypothalamic Itsenko-Cushing obesity of the II stage, gynoid type
E. Hypothalamic Itsenko-Cushing obesity of the I stage, abdominal type

9. A healthy 75 year old woman who leads a moderately active way of life went through a preventive examination that revealed serum concentration of common cholesterol at the rate of 5.1 millimol/l and HDL (high-density lipoproteins) cholesterol at the rate of 70 mg/dl. ECG reveals no pathology. What dietary recommendation is the most adequate?
A. Decrease of carbohydrates consumption
B. Decrease of cholesterol consumption
C. Decrease of saturated fats consumption
D. Increase of cellulose consumption
E. Any dietary changes are necessary

10. What does the body mass index of 24.8 kg/m ^{2} indicate?
A. Normal weight
B. Obesity of I degree.
C. Obesity of II degree.
D. Obesity of III degree.
E. Body weight below normal.

Clinical Tasks :
Task N 1
The patient 55 years, has a history of hypertension since 5 years presents to the doctor with complaints of a headache, shortness of breath on exertion. Administration of beta-blockers, hypothiazide has ignored effect. Parents of the patient suffering from diabetes. OBJECTIVELY: Height 175 cm, weight 95 kg. Heart rate / pulse - 78 in 1 min, BP - 170/100 mmHg. Above the lung: vesicular breath. Heart sounds are rhythmic, muffled, accent 2nd ^{sound} above aorta. The abdomen is increased at the expense of the subcutaneous layer, painless. Liver from the costal arch. A small pasty legs.
The control question:
1. Explain and formulate a preliminary diagnosis.
2. Integrate risk factors for cardiovascular disease in a patient with the syndrome.
3. What is a possible pathogenetic mechanism of metabolic disorders in the patient? Diagnosis.
4. Which version of obesity can be identified? Criteria. Degree.

5. Survey Program.
6. Treatment Program (non-medicated, medication methods).

Task N 2.
A woman aged 48, cook. When dispensary examination revealed increased BP to 160/95 mmHg, waist circumference 102 cm, height 167 cm, weight 88 kg. From other organs and systems pathology was not found. Appointed studies: complete blood count, general urinalysis, fasting blood glucose, total blood cholesterol, ECG.
The control question:
1. What are the syndromes in the patient.
2. Explain and formulate a preliminary diagnosis.
3. Expected possible outcomes research.
4. The program of further examination and the expected results.
5. The risk of developing some diseases and possible complications?
6. The treatment program (drug, non-pharmacological)

Task N 3.
The patient aged 57 was delivered to the cardiology department with the diagnosis: CHD: unstable, newly diagnosed angina, metabolic syndrome.
The control question:
1. Provide clinical symptoms by which to diagnose the metabolic syndrome.
2. Features of obesity and metabolic syndrome. Diagnosis. Treatment.
3. Give the definition: Insulin resistance, impaired glucose tolerance, diabetes mellitus. Diagnosis.
4. Pathogenesis of hypertension and metabolic syndrome. Treatment.

4. Summary

5. Literature:
Basic:
1. Manual of Endocrinology and Metabolism / ed. N. Lavin. — 5th ed. — Philadelphia [etc.] : Wolters Kluwer, 2019. — XXVI, 1166 p. Section 7.
2. Endocrine Secrets / ed. MT McDermott. — 7th ed. — Missouri : Elsevier, 2020. — XIV, 577 p.
3. Harrison's Principles of Internal Medicine. Vol. 2. / J. Larry Jameson [et al.]. — 20th. ed. — New York [etc.] : McGraw-Hill, 2018. — XLI, 1648-3528, 1-214 p.
4. Kovalyova, OM Propedeutics of Internal Medicine: textbook / OM Kovalyova TV Ashcheulova. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 1 : Diagnostics = Diagnostics. — 2020. — 424 p.
5. Kovalyova OM Propedeutics of Internal Medicine [Text] : textbook / OM Kovalyova, SO Shapovalova, OO Nizhegorodtseva. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 2: Syndromes and diseases = Syndromes and diseases. — 2020. — 264 p.
Additional:
1. Springer Link [Electronic resource] / Springer International Publishing AG. – Access mode:https:link.springer.com.
2. Oxford Medicine Online [Electronic resource] / Oxford University Press. – Access mode:www.oxfordmedicine.com.
3. Oxford ACADEMIK Journals [Electronic resource] / Oxford University Press. - Access mode: http://www.oxfordjournals.org.
4. The BMJ (British Medical Journal) [Electronic resource] // Mode of access: http://www.bmj.com/archive .
5. Scopus [Electronic resource] / Mode of access: https://www.scopus.com.

Practical lesson

Topic 2: Management of a patient with chronic complications of diabetes.

Purpose: to acquire communication skills and skills of clinical examination of a patient with chronic complications of diabetes; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with chronic complications of diabetes; master the principles of treatment, recommendations for life style changes in the management of patients with chronic complications of diabetes; to diagnose emergency conditions in patients with chronic complications of diabetes; master the tactics of providing emergency medical care to patients with chronic complications of diabetes; to be able to perform therapeutic manipulations in patients with chronic complications of diabetes.

Key words: diabetes mellitus, hyperglycemia, macroangyopathy, microangyopathy, neuropathy, diabetic foot syndrome, atherosclerosis, coronary artery disease, hyperinsulinemia.

Equipment: multimedia materials - a set of thematic slides from the department's multimedia library; screenshots of laboratory results (total blood count; total urinalysis; blood glucose level (glycemic profile) and urine (glucosuric profile); daily loss of protein in the urine; ketonemia, ketonuria; HbA1c level, C-peptide, immunoreactive insulin (IRI); lipid spectrum, kidney function, liver tests) and instrumental (ultrasound, ECG, Echo) studies; a set of situational problems on the subject of the lesson.

Plan:
1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge(written work, written test, frontal survey, etc.)
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.)

Current practice of internal medicine.
The control questions:
1) Definition, risk factors, classification of diabetes mellitus (clinical classification).
2) Pathogenesis of metabolic disturbances in diabetes mellitus.
3) Diabetic nephropathy: the stage, diagnosis, complications. The program of treatment, prevention.
4) Diabetic retinopathy: the stage, diagnosis, complications. The program of treatment, prevention.
5) Diabetic neuropathy: classification, clinical presentation, diagnostics. The program of treatment, prevention.
6) The definition of "diabetic foot". Classification. The pathogenesis of neuropathic (neuropathic ulcers, osteoarthropathy, neuropathic edema of the foot), and ischemic disorders.
7) Diabetes mellitus and pregnancy. Clinical course, complications. Contraindications to maintain pregnancy.
8) Characteristics of urgent and elective surgical intervention in patients with diabetes mellitus.
9) Insulin therapy in diabetes mellitus. Indications. Methods for calculating the dose, mode of administration, combination, effectiveness criteria.
10) Complications of insulin therapy.

Tests:
1. Female 45 years noted shortness of breath, swelling, weakness, blurred vision, headache. Suffers from insulin dependent diabetes mellitus for 25 years, never reached stable compensation. Throughout the year, the daily insulin dose decreased from 60 units to 24 units due to the appearance of hypoglycemic conditions. Objective: anasarca. RR 22 in 1 min., Pulse 96 in 1 min., BP 185/110 mmHg. Heart sounds are muffled, over the apex - systolic murmur, the accent of II sound above aorta. Daily urine output - 500 ml. Blood test: Hb - 100 g/L, ESR - 30 mm/hour, Glucose - 7.5 mmol/L, urea - 9.0 mg/dL. Urine: relative density -1.025, protein - 3.3 g/l, glucose - 5%, red blood cells - 10-12, WBC - 6-7, cylinders - hyaline, granular. The main mechanism of reducing insulin amount is:
A. Reduction of blood albumin.

B. Violation of glomerular filtration.
C. Reduction of the tubular reabsorption.
D. Increase of the circulating blood volume.
E. The development of metabolic acidosis.

2. A 59 yo patient has a 3-year history of diabetes mellitus type II. He has been keeping to a diet and regularly taking glyburide. He has been delivered to a hospital on an emergency basis for acute abdomen. Objectively: the patient is of supernutrition type. The skin is dry. In the lungs vesicular breathing can be auscultated. Heart sounds are regular, 90/min. AP - 130/70 mm Hg. The symptom of "wooden belly" is visible. Blood sugar - 9.8 millimole/l. The patient has an indication for laparotomy. What is the most appropriate way of further treatment of diabetes?
A. To continue taking glyburide
B. To administer short insulin
C. To administer Semilong to be taken in the morning and insulin - in the evening
D. To administer 1 tablet of Glurenorm three times a day
E. To administer 1 tablet of Maninil three times a day

3. You examine a 40-year-old female with a history of type I diabetes mellitus complicated with diabetic retinopathy. In the last year developed resistant hypertension, edema (swelling of the ankles). Proteinuria - 8 g/day. What is the most likely cause of proteinuria?
A. Chronic pyelonephritis.
B. Chronic glomerulonephritis.
C. Amyloidosis of the kidneys.
D. Hereditary nephropathy.
E. Kimmelstiel-Wilson syndrome.

4 A 35-year-old man was operated on peptic ulcer of the stomach. Mass deficit of the body is 10 kg. The level of glucose after surgery in the blood on an empty stomach is 6.7 mmol. During repeated examination - 11.1 mmol (after meal), level of HbA1c - 10%. Could you please make an interpretation of the given data?
A. Diabetes mellitus
B. Disordered tolerance to glucose
C. Diabetes mellitus risk group
D. Norm
E. Postoperative hyperinsulinemia

5. A 28-year-old patient suffers from diabetes. Recently had a hypoglycemic state. Gets insulin "Protafan" NM 24 units in the morning, previously received 36 units. At the eye fundus: retinal vascular microaneurysms, multiple hemorrhage, macular edema, retinal neovascularization. Fasting glucose 9.5 mmol/L, aglucosuria. Eye fundus changes indicate that the patient has:
A. Diabetic angiopathy of the retina.
B. Diabetic macroangiopathies.
C. Chorioretinitis.
D. Diabetic proliferative retinopathy.
E. Macula degeneration.

6 . A 32-year-old patient complains of excessive appetite, excess weight, dyspnea during physical exertion. There are fat deposits in the area of the abdomen and shoulder girdle. The skin is pale-pink, adult male pattern of hair distribution is observed on the torso, no stretch marks. Heart rate is 90/min., BP is 120/80 mm Hg, body build index equals 35. Blood sugar is 4.9 mmol/l, cholesterol is 6.2 mmol/l. On ophthalmoscopy: fundus of the eye without changes. What provisional diagnosis can be made?
A. Primary alimentary constitutive obesity, android type
B. Primary alimentary constitutive obesity, gynoid type

C. Secondary hypothalamic obesity
D. Secondary neuroendocrine obesity
E. Secondary endocrine hypo-ovarian obesity

7 . A 54-year-old patient complains of weakness, weight loss despite the unchanged appetite, frequent urination, skin itching for six months. Some time ago the patient underwent treatment for furunculosis. She has not been examined recently. Objectively: malnutrition, dry skin with scratch marks. Small lymph nodes can be palpated in the axillary regions. Changes in the internal organs are absent. What test must be performed in the first place?
A. Fasting blood sugar
B. Complete blood count
C. Endoscopy of the stomach
D. Lymphnode biopsy
E. Blood sterility testing

8. A 56-year-old patient complains of weakness, weight loss despite the unchanged appetite, frequent urination, skin itching for six months. Some time ago the patient underwent treatment for furunculosis. She hasn't been examined recently. Objectively: malnutrition, dry skin with signs of scratching. Small lymph nodes can be palpated in the axillary regions. Changes in the internal organs are absent. What testing must be administered in the first place?
A. Endoscopy of the stomach
B. Complete blood count
C. Blood sugar test on an empty stomach
D. Lymph node biopsy
E. Blood sterility testing

9. A 9-year-old boy has been suffering from diabetes mellitus for a year. He receives insulin injections (humulin R, NPH), the dose makes up 0.4 units per 1 kg of body weight a day. Insulin is introduced subcutaneously (into the shoulder) by means of a syringe. What measures should be taken in order to prevent lipodystrophy?
A. To apply periodically other types of insulin
B. To administer antioxidants
C. To limit fats in the boy's diet
D. To reduce insulin dose
E. To change the point of introduction

10. Preventive examination of a 55-year-old patient revealed diabetes mellitus. The patient has not received treatment for it. Objectively: height is 170 cm, weight is 106 kg, skin humidity is normal. Ps is 76 bpm, rhythmic, left border of relative heart dullness is deviated by 1 cm to the left from the middle clavicular line, heart sounds are quiet, AP is 140/80 mm Hg. Glycemia on an empty stomach is 6.9 millimole/l. Glucose rate in the daily urine is 0.5%, diuresis makes up 2.5 l. What treatment tactics should be chosen?
A. To administer metformin
B. To administer repaglinide
C. To administer glibenclamide
D. To administer insulin
E. To administer dietotherapy

Clinical Tasks:
Task No. 1.
Patient 70 years old, history of 10 years with diabetes. The first 7 years of the disease were treated by a diet with restriction of carbohydrates. Last 3 years Manini takes from 2 to 4 tablets per day. A few years complaining about cold snap in the lower extremities, a feeling of intermittent claudication. 2 weeks ago got trauma of second toe on the right. The finger was blue, swollen foot.

The body temperature rose to 38 Ripple in the dorsal artery of the foot - not defined on the rear tibia - sharply weakened.

The control questions:

1. What a complication of diabetes mellitus developed in a patient?
2. Explain and formulate a preliminary diagnosis.
3. Survey Program.
4. What should be the therapeutic approach?

Task No. 2.

The patient was 67 years old admitted to the therapeutic department with complaints of weakness, nausea, decreased appetite, headache, edema. He suffers from INSD for 18 years. Last 2 years changed therapy from oral drugs to insulin. objectively: Skin pale, dry. Puffy person. Above the lung breathing hard shade, dry scattered rales. Heart rate / pulse 54 in 1 min., BP 170/120 mmHg. Heart enlarged in diameter. Tones deaf. Dry tongue, covered with white coating. Abdomen normal shape, soft, sensitive in the right hypochondrium. The liver is increased by 2 cm, edge rounded, painful. Foot and calf edematous, dry skin, signs of scratching.

The control questions:

1. Explain and formulate a diagnosis based on complications.
2. Survey Program.
3. How can you explain the bradycardia?
4. Main verified indicators developed complications?
5. Tactics and strategy of treatment.

Task No. 3.

The patient aged 52 is receiving treatment for coronary heart disease: non-Q myocardial infarction. IDDM moderate. Diabetics suffering for 12 years. Newly diagnosed CHF. OBJECTIVE: Skin normal color with xanthoma. Above the lung vesicular breath. Heart rate / pulse 78 in 1 min., BP 130/95 mmHg. Borders of the heart are not removed. Heart sounds are muffled, rhythmic activity. Language moist. The abdomen is painless, soft. Liver from the costal arch. No peripheral edema. ECG: sinus rhythm, electrical axis deviation to the left, a deep Q in III and aVF. ST segment elevation above the isoline in, III, aVF.

The control questions:

1. Justify, formulate a preliminary diagnosis.
2. What is the relationship between CHD and INSD, pathogenetic mechanisms.
3. The program of examination of the patient.
4. The treatment program.
5. Appointment of any hypoglycemic agents is undesirable.

4. Summary

5. Literature:

The main one:

1. Harrison's Principles of Internal Medicine Self-Assessment and Board Review, 20th Edition 20th Edition.- (August 13, 2021). - 736 pages
2. Oxford Textbook of Endocrinology and Diabetes 3e 3rd Edition. by John Wass (Author), WiebkeArlt (Author), Robert Semple (Author). - June 22, 2022. - 2656 pages

Additional:

- Endocrinology and Diabetes: A Problem Oriented Approach 2nd ed. 2022 Edition. - March 4, 2022. - 513 pages
- A Case-Based Guide to Clinical Endocrinology 3rd ed. 2022 Edition.by Terry F. Davies (Editor) . - January 5, 2022. - 578 pages
- Polyendocrine Disorders and Endocrine Neoplastic Syndromes (Endocrinology). – 2021. - 448 page

- Macleod's Clinical Examination /Elsevier; 14th edition (11 Jun. 2018). - 400 pages
- Current Medical Diagnosis and Treatment /McGraw-Hill Education; Updated edition (14 Sept. 2021). - 1840 pages
- Lippincott Connect Standalone Courseware for Bates' Guide to Physical Examination and History Taking 1.0 /LWW; 13th ed. edition (23 Mar. 2023).
- Step-Up to Medicine / Wolters Kluwer Health; 5th edition (8 May 2019). - 582 pages
- Goldman-Cecil Medicine, 2-Volume Set (Cecil Textbook of Medicine) / Elsevier; 26th edition (20 Dec. 2019). - 2944 pages
- The Washington Manual of Medical Therapeutics / Wolters Kluwer Health; 36th edition (6 Jun. 2019). - 1074 pages

Practical lesson.

Topic 3.Management of a patient with goiter syndrome.

Purpose: to acquire communication skills and skills of clinical examination of a patient with goitre syndrome; be able to establish a preliminary diagnosis, carryout a differential diagnosis and determine the clinical diagnosis of the disease in a patient with goitre syndrome; master the principles of treatment, recommendations for life style changes in the management of patients with goitre syndrome; to diagnose emergency conditions in patients with goitre syndrome; master the tactics of providing emergency medical care to patients with goitre syndrome; to be able to perform therapeutic manipulations in patients with goitre syndrome.

Basic concepts: etiology, pathogenesis and pathomorphology of goitre syndrome; clinical classification of diseases of the thyroid gland: nature of the course, degrees of risk, clinical and morphological characteristics of the lesion; peculiarities of pathogenesis, clinic, diagnosis and treatment of diffuse toxic goiter; features of the clinic, diagnosis and treatment of thyroiditis; features of the clinic, diagnosis and treatment of endemic goiter; peculiarities of the clinic, diagnosis and treatment of tumor lesions of the thyroid gland; the diagnostic significance of additional research methods (general clinical, biochemical, instrumental); diagnostic capabilities of ultrasound, remote and contact thermography of the thyroid gland; principles of treatment of diseases of the thyroid gland, groups of medicines used and tactics of their use.

Equipment: multimedia materials - a set of thematic slides from the department's multimedia library; screenshots of the results of laboratory (TSH, T3, T4, antibodies to TPO andthyroglobulin) and instrumental (ultrasound, scintigraphy of the thyroid gland) studies; a set of situational problems on the subject of the lesson.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge(written work, written test, frontal survey, etc.)
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.)

The control question:

1) Definition - goiter, the degree of increase of the thyroid gland.
2) Causes of enlarged thyroid gland.
3) Clinical semiology of hyperthyroidism, severity, causes.
4) Hypothyroidism, extent, causes, clinical features.
5) Graves' disease: The criteria for diagnosis. Tactics of: medication, surgery, radioiodine therapy.
6) Nodular goiter: criteria for diagnosis. Tactics of the patient.
7) Tumors of the thyroid gland: Criteria for diagnosis. Tactics of the patient. The value of puncture diagnostic methods.
8) Thyroiditis: classification, clinical features, tactics of treatment.

9) Autoimmune thyroiditis: Clinical features, Tactics of treatment..
10) Complications of resection of the thyroid gland. Tactics of patients. Features replacement therapy of thyroid hormones.

Tests :

1. A woman aged 54, living in an area endemic for goiter, has a node 1x1.4 cm detected in the right lobe of the thyroid gland 2 years ago with ultrasound . Not treated. Currently the size of the node has increased up to 2 x 3 cm without any clinical signs. Palpation: gland is tight, mobile, painless. Which tactics of treatment will be most useful?
A. Admission of thyroid hormones.
B. Admission of iodine preparations.
C. Further observation without treatment.
D. Fine-needle biopsy
E. Operative treatment.

2. A 50-year-old woman with a 2-year history of mild, diffuse, tender thyroid enlargement complains of 10 kg weight gain and fatigue, BP increased to 150/95 mm Hg. What is the most likely diagnosis?
A. Riedel's thyroiditis
B. Subacute thyroiditis
C. Papillary thyroid carcinoma
D. Suppurative thyroiditis
E. Hashimoto's thyroiditis

3. A 24-year-old patient worries about progressive weight loss despite good appetite, irritability, constant nervousness, palpitations. There has been a small constant tremor of the fingers. On examination: skin is warm and moist. The neck is somewhat thickened. Heart rate/pulse - 118 in 1 min. BP 160/50 mm. Hg. What disease will you suspect?
A. Cardioneurosis
B. Diffuse toxic goiter.
C. Lymphogranulomatosis.
D. All are suitable.
E. All do not fit.

4. A 54-year-old patient with diffuse toxic goiter has atrial fibrillation with a pulse rate of 110 bpm, arterial hypertension, BP = 165/90 mm Hg. What preparation should be administered along with mercazolil?
A. Procaine hydrochloride
B. Radioactive iodine
C. Propranolol
D. Verapamil
E. Nifedipine

5. A 56-year-old patient with diffuse toxic goiter has ciliary arrhythmia , heart rate is 110-120/min., arterial hypertension, BP is 165/90 mm Hg. What drug besides Mercazolil (Thiamazole) should be prescribed in this case?
A. Propranolol
B. Radioactiveiodine
C. Novocainamide (procainamide)
D. Verapamil
E. Corinfar

6. Generalized low voltage on an ECG (QRS deflection < 5 mm in limb leads and < 10 mm in precordial leads) may be a marker for all of the following disorders EXCEPT:

A. Amyloidosis
B. Cardiac transplant rejection
C. Coronary artery disease
D. Hyperthyroidism *
E. Pericardial effusion

7. The patient moved to live in the area endemic for goiter 4 years ago . Last year noted the increase in the thyroid gland. The examination revealed goiter of III stage, euthyroid state. Your therapeutic approach?
A. Prescribe thyrostatics.
B. Prescribe thyroxine.
C. Prescribe lithium carbonate.
D. Prescribe steroids.
E. Prescribe iodine.

8. Patient 56 years old went to a doctor because of a tumor on the anterior surface of the neck, which appeared two months ago and increased in size with time. After the doctor's inspection, a tumor of the thyroid gland was suspected. Ultrasound reveals multiple nodular structures. Which examination method would be most helpful next?
A. Determination of T4 blood level .
B. Fine-needle biopsy of the thyroid gland.
C. Radioisotope scanning of the thyroid gland.
D. Determination of T3 blood level.
E. Investigation of TSH.

9. A 26 yo male patient with postoperative hypothyroidism takes thyroxine 100 mg 2 times a day. He has developed tachycardia, sweating, irritability, sleep disorder. Determine further treatment tactics.
A. To decrease thyroxine dosage *
B. To increase thyroxine dosage
C. To administer beta blockers
D. To add mercasolil to the treatment
E. To administer sedatives

10. A 28-year-old patient, a week after the flu once more developed increased body temperature, headache, pain in the anterior surface of the neck, radiating to the ears, lower jaw. The pain gets worse when turning head, swallowing. Objective: mild tachycardia, thyroid gland tender, diffusely enlarged on palpation . Your preliminary diagnosis?
A. Aggravation of tonsillitis.
B. Autoimmune thyroiditis.
C. Fibrous thyroiditis.
D. A tumor of the thyroid gland.
E. Subacute thyroiditis

Clinical Tasks:
Task N1.
A patient 28 years old admitted to hospital because sudden increase in body temperature 39oS arose heartbeat, a feeling of suffocation in a horizontal position, unexplained agitation, profuse sweating, nausea, diarrhea. All these symptoms appeared after a visit to a dentist who made the extraction of 2 teeth. He has suffered for 3 years from paroxysmal tachycardia, was accruing temper, irritability, sweating, lost 8 kg in weight, although the appetite remains good.
OBJECTIVE: The body temperature 39. The patient is forced to a sitting position because of shortness of breath. Malnutrition. Face hyperemic. Eyes wide open, flashing a rare, pronounced sheen. Clearly visible to the isthmus of the thyroid gland. Breathe deeply, frequently. RR - 36 in 1

min .. Percussion of the lungs clear lung sounds on auscultation - vesicular breathing on the back surface - sonorous, wet and poly phonic wheezing. Heart rate / pulse of 170 in 1 min., BP - 160/50 mmHg. Heart enlarged in diameter at the expense of the left. Heart sounds sonorous. The abdomen was soft, palpable painful edge of the liver. No swelling. Experiencing rapid and erratic movements of the limbs.

The control question:

1. What are the syndromes in this case.
2. Explain and formulate a preliminary diagnosis.
3. What was the reason for the rapid and dramatic deterioration.
4. As evidenced by eye symptoms. What other eye symptoms do you know?
5. How do you assess the changes in the lung.
6. Survey Program.
7. What tests will verify the diagnosis?
8. The program of treatment.

Task N 2.

Patient 40 years old, was admitted to the therapeutic department of the district clinic complaining of severe weakness, chilliness, headache, swollen eyelids and lower extremities. She had been ill for several years, when the gradually accruing weakness, edema, lowered blood pressure. Indicates a tendency to colds, which usually occur at normal temperatures. This deterioration in ties with another cold.

OBJECTIVE: The body temperature of 35.8 oC. The patient was listless, inhibited, slow speech. Face pale, puffy. Hair rare outer third of eyebrows missing. The skin of hands, feet dry, scaly. The neck is thickened. Pulse soft, 60 to 1 min., BP - 90/60 mmHg. The size of the heart expanded in diameter, hollow tones, over the apex of the heart beat. Vesicular breathing rales are absent.. abdomen is soft and painless. Liver and spleen were not palpable. Tibiae edematous. But with pressure hole remains.

X-ray of thoracic organs: lungs showed no pathological changes, the heart enlarged left and right, small-amplitude pulsations. Blood test: Hb - 120 g / l, erythrocyte - 3.9 T / l, WBC - 4.2 g / l, ESR - 10 mm / hour.

The control question:

1. Name the syndromes that the patient has..
2. Explain and formulate a diagnosis.
3. The classification, causes of hypothyroidism.
4. Survey Program taking into account the differentiation of various forms of hypothyroidism.
5. What is the possible reason for the state first emerged in a patient?
6. The treatment program. Criteria of treatment efficacy.

Task N 3.

The patient was 32 years after the carried psychotrauma (death of her husband) has become very irritable, appeared insomnia, sensitivity to heat, the evening temperature 37.4 - 37.6 oC, thinner. Seen: malnutrition. Skin warm, moist, pink. The neck is thickened due to the increase of the thyroid gland, which is visible at a distance without throwing golovy. eyes gap wide, raised eye-shine is determined by rare flashes. RR 24 in 1 min. Above the light percussion-lung sound auscultation - vesicular breathing. Heart rate / pulse of 112 in 1 min., BP 145/60 mm. Hg. Art. Borders of the heart are not removed. Heart sounds sonorous, over all points auscultated systolic murmur. The abdomen was normal. The liver was not enlarged. The patient was appointed mercazolyl therapy at a daily dose of 30 mg. The patient's condition did not improve. It was performed strumectomy. After 2 hours after the operation the patient's condition began to deteriorate: expressed psychomotor agitation.stomachpain., Vomiting. The body temperature is 39. the face is hyperemic, masklike, with a frozen expression. The skin is hot. RR 32 in 1 min. Heart rate / pulse - 180 in 1 min, BP 160/60 mmHg. Heart sounds sonorous. Started intensive therapy.

The control question:

1. Formulate a preliminary diagnosis in connection with which the patient received Merkazolil?

2. Why mercazolil treatment was ineffective?
3. How is the operation for this disease?
4. Survey Program.
5. What postoperative complications developed?
6. Emergency.

4. Summary

5. Literature:

Basic:

1) Manual of Endocrinology and Metabolism / ed. N. Lavin. — 5th ed. — Philadelphia [etc.] : Wolters Kluwer, 2019. — XXVI, 1166 p. Section 6.
2) Endocrine Secrets / ed. MT McDermott. — 7th ed. — Missouri : Elsevier, 2020. — XIV, 577 p.
3) Harrison's Principles of Internal Medicine. Vol. 2. / J. Larry Jameson [et al.]. — 20th. ed. — New York [etc.] : McGraw-Hill, 2018. — XLI, 1648-3528, 1-214 p.
4) Kovalyova, OM Propedeutics of Internal Medicine: textbook / OM Kovalyova TV Ashcheulova. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 1 : Diagnostics = Diagnostics. — 2020. — 424 p.
5) Kovalyova OM Propedeutics of Internal Medicine [Text] : textbook / OM Kovalyova, SO Shapovalova, OO Nizhegorodtseva. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 2: Syndromes and diseases = Syndromes and diseases. — 2020. — 264 p. Chapter 6.

Additional:

1) Springer Link [Electronic resource] / Springer International Publishing AG. – Access mode:https:link.springer.com.
2) Oxford Medicine Online [Electronic resource] / Oxford University Press. – Access mode:www.oxfordmedicine.com.
3) Oxford ACADEMIK Journals [Electronic resource] / Oxford University Press. – Accessmode: http://www.oxfordjournals.org.
4) The BMJ (British Medical Journal) [Electronic resource] // Mode of access:http://www.bmj.com/archive .
5) Scopus [Electronic resource] / Mode of access: https://www.scopus.com.

Practical lesson

Topic 4.Management of a patient with hypoglycemic coma. Management of a patient with hyperglycemic (ketoacidemic) coma.

Purpose: to acquire communication skills and clinical examination skills of a patient with hypoglycemic and hyperglycemic (ketoacidemic) coma; be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with hypoglycemic and hyperglycemic (ketoacidemic) coma; master the principles of treatment, recommendations for life style changes in the management of patients with hypoglycemic and hyperglycemic (ketoacidemic) coma; learn to diagnose emergency conditions in patients with hypoglycemic and hyperglycemic (ketoacidemic) coma and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with hypoglycemic and hyperglycemic (ketoacidemic) coma.

Basic concepts: definition of coma, etiopathogens and diagnostic criteria of hypo- and hyperglycemic coma; clinical manifestations of hypoglycemia and hypoglycemic coma; tactics and methods of treatment of hypoglycemia and hypoglycemic coma in diabetes; features of the course and provision of emergency care in hypoglycemic conditions under conditions of insulinoma and paraneoplastic processes; clinical features of the course of those diseases that lead to the occurrence of such a complication; primary and secondary prevention.

Equipment: multimedia materials - a set of thematic slides from the department's multimedia library; screenshots of the results of laboratory and instrumental research methods; a set of situational problems on the subject of the lesson.

Plan:
1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge(written work, written test, frontal survey, etc.)
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.)

Control questions :
1) Define the hypoglycemic coma
2) What are the etiological factors of hypoglycemic coma development?
3) What is the pathogenesis of coma with hypoglycemia?
4) W hat blood glucose level can cause the development of hypoglycemic coma?
5) What features of precoma state due to hypoglycemia?
6) Describe the clinical manifestations of hypoglycemic coma.
7) What are the diagnostic criteria of hypoglycemic condition?
8) Describe the complications of hypoglycemia, especially in elderly patients.
9) What kind of emergency aid do patients with hypoglycemic state need at the pre – hospital stage?
10) What are methods of providing emergency assistance on in-patient phase?
11) What are the indications for immediate hospitalization of patients with hypoglycemic state?
12) What etiologic factors can result in the development of ketoacidosis?
13) What is the reason for the development of ketoacidosis in patients with diabetes?
14) What is the pathogenesis of metabolic violations which arise in the development of diabetic ketoacidic coma?
15) Give the description of the initial period of ketoacidosis.
16) What are the atypical variants of hyperglycemic coma progression?
17) What are the laboratory indices of hyperglycemic coma?
18) List the basic directions of ketoacidosis treatment.
19) What are the principles of insulin therapy for patients with a ketoacidic coma?
20) What complications can arise due to treatment of ketoacidic coma?
21) Principles of diet therapy for patients with ketoacidosis.

Tests:
1. Patient D., 27, who suffers from diabetes, was taken unconscious to a hospital ambulance. On examination: moist skin, muscle tone is high, convulsions, dilated pupils, increased tone of the eyeballs. Blood glucose - 1.3 mmol / L; aglucosuriya, the absence of acetone in the urine. What is the most likely diagnosis?
A. Acute adrenal insufficiency.
B. Hypothyroid coma.
C. Hyperlactacidemic coma.
D. Hyperosmolar coma.
E. Hypoglycemic coma.

2. Patient N., aged 22, suddenly lost consciousness. From the anamnesis (as relatives tell) he is suffering from diabetes for many years , treated with insulin. Nutrition is irregular due to frequent business trips. On examination: the skin is moist, convulsions, dilated pupils, pulse and blood pressure are normal. In additional studies: blood glucose - 1.5 mmol / L, aglu c o s uria. What urgent steps should be taken?
A. The injection of insulin.
B. Intravenous injection of 40% glucose solution.
C. Infusion of 5% isotonic glucose solution.
D. Introduction triiodothyronine.
E. Intramuscular injection of Dexamethasone

3. An unconscious patient presents with moist skin, shallow breathing. There are signs of previous injection on the shoulders and hips. BP- 110/70 mm Hg. Tonus of skeletal muscles and reflexes are increased. Cramps of muscles of the extremities are seen. What is the most likely disorder?
A. Hypoglycemic coma
B. Hyperglycemic coma
C. Hyperosmolar coma
D. Hyperlactacidotic coma
E. Stroke

4. The patient , 58 years old , is unconscious. Skin is pale and moist. The tone of the muscles is strengthened. The pupils were wide, reacting to the light. BP - 140/90 mm Hg, pulse 110 per minute. Vesicular breath ing .The abdomen is soft and painless on palpation. No specific odor from mouth. Suddenly has lost consciousness during the ultrasound examination. Ultrasound revealed a tumor-like formation of the pancreas. From the words of relatives, took no medications. What should be urgently injected to the patient with a therapeutic and diagnostic purpose?
A. Adrenaline.
B. Prednisolone.
C. Glucose.
D. Naloxone.
E. Insulin.

5. A boy , aged 7, suffers from diabetes. He is treated with short-acting insulin, 4 units before meals 4 times a day. The teacher paid attention to the unusual behavior of the child in the classroom: the child looked weakened, sweaty, refused to write, quickly took a sandwich out of the bag and ate it vigorously. A possible reason for such behavior of a boy?
A. Hypoglycemic state.
B. No breakfast in the morning.
C. Poor education at home.
D. Reinforcing appetite effect of insulin.
E. Reluctance to respond to the lesson.

6. Patient aged 42, treated with insulin. Fasting plasma glucose is 7.2 mmol/L, during the day not more than 8.0 mmol/L. Play s tennis for 45 minutes daily before dinner. Complaints of unbearable hunger immediately after exercise, increased heart rate, significant sweating, body trembling, cramps in the legs, sometimes dizziness. What could have caused such a condition?
A. Congestion during the game.
B. Autonomous diabetic neuropathy of the heart.
C. Peripheral diabetic polyneuropathy.
D. Hypoglycemia after physical work.
E. The accumulation of lactic acid in muscles during the game.

7. Patient M., aged 52, suffering from type 2 DM, treated with gl and benclamide 10 mg twice a day. He complains of restless sleep, night sweats, heart pain which wakes her up. What is the possible cause of such a state ?
A. Dysmetabolic cardiopathy.
B. Hypoglycemic episodes at night.
C. Angina at rest.
D. D iscirculatory encephalopathy.
E. Climacteric syndrome.

8. A34-year-old patient was delivered to the hospital being unconscious. Relatives say that he is suffering from insulin-dependent form of diabetes. Objective: moist skin, increased muscle tone,

blood pressure -110/70 mmHg, heart rate -108 min. What is the most informative method of diagnostics in this case?
A. Liver function tests.
B. Urates level.
C. Blood glucose.
D. Complete blood count.
E. The level of plasma TTG .

9. The woman, aged 56, who suffers from diabetes and receives insulin regularly, has acute condition deterioration after a long break between meals : weakness appeared, sweating, later - loss of consciousness. Objective: spasms of limbs and facial muscles, tone of eyeballs is normal. Tongue and skin are moist. Heart sounds are relaxed. Pulse 96 per minute, blood pressure - 170/90 mm Hg . What complication did a patient develop?
A. Hypoglycemic coma.
B. Ketoa c id ic coma
C. _ Hyperosmolar coma
D. La ctac id ic coma.
E. H emor rh agic stroke.

10. A 60 -year- old patient , suffering from diabetes for 9 years, receives combined insulin for the correction of hyperglycemia. 10 days ago began treatment of hypertension. An hour after anti - hypertensive drug intake developed hypoglycemic coma. Which of the following drugs can cause this complication?
A. Atenolol
B. Doxasosin.
C. Verapamil.
D. Captopril.
E. Nifedipine.

11. A student, aged 21, is delivered in a clinic without consciousness by an ambulance. Suffers from type 2 DM. For 2 days the patient has nausea, vomiting, diarrhea. Did not do the morning injection of insulin, because could not have a meal. Objectively: a patient without consciousness, skin and mucous membranes are dry, breathing is deep, frequent, noisy. BP 100/60 mmHg, pulse - 110/min., reflexes are reduced. What is the required first aid?
A. To begin i/v injection of plain insulin at a speed of 5 U/h.
B. To begin i/v injection of the prolonged insulin at a speed of 5 U/h.
C. To begin i/v injection of 5% glucose and NaCl isotonic solution
D. To begin i/v injection of mesatone
E. To enter i/m 2 ml of cordiamin.

12. A patient is in the soporific state. Blood glucose - 20.66 mmol/L, ketone substances - 1033 mkmol/L, alkaline reserve - 30%, standard bicarbonate - 3 mmol/L, potassium - 4 mkmol/L, sodium - 125 mmol/L, chlorides - 90 mmol /L. Glucosuria, ketonuria. Possible diagnosis is:
A. Uremic coma
B. Hyperlactacidemic coma
C. Hyperosmolar coma
D. Hypoglycemia coma
E. Hyperketonemic coma.

13. 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 a smell of acetone in the air. Symptoms of peritoneum irritation are positive. Blood sugar is at the rate of 33 millimole/l. What emergency actions should be taken?
A. Intravenous infusion of neohaemodesum along with glutamic acid

B. Intravenous infusion of sodium chloride saline
C. Intravenous infusion of glucose along with insulin
D. Intravenous infusion of short-acting insulin
E. Introduction of long-acting insulin

14. A patient T., 15 years old, developed dull pain in stomach, nausea, vomiting, temperature rise to 38 C. Felt weakness, dryness in the mouth during the last two dates, the day before had a birthday party. Hospitalized in a surgical department, appendectomy was performed. Lost consciousness in the evening. Objectively: skin is dry, pale. Breathing is noisy, tongue is dry, with stratification of brown color. Pulse – 130/min. BP - 80/40 mm Hg, on palpation: abdomen is painless. Liver +5cm, reaction of urine on acetone is prominently positive, blood glucose - 35 mmol/L. Reason for loss of consciousness?
A. Hypoglycemic coma
B. Hyperketonemic coma.
C. Hyperosmolar coma
D. Allergic reaction of slow type
E. Infectiously-toxic shock

15. Patient E., 10 years old, suffers from diabetes for 4 years. Gets 20 units of insulin a day. After the quinsy that was accompanied with loss of appetite and fasting, the patient's condition worsened in a week: thirst increased, stomach pain, nausea, vomiting appeared. Patient had lost consciousness, was hospitalized. Skin is dry, pale. Breathing is noisy, tongue is dry with stratification of brown color. Pulse of 120/min., BP 75/45 mm Hg. On palpation: the abdomen is painless. Liver + 4 cm, reaction on an acetone is prominently positive, blood glucose - 30 mmol/L. What is the preliminary diagnosis?
A. Hyperketonemic coma.
B. Hyperosmolar coma
C. Toxicoinfectious shock
D. Diabetic ketoacidosis
E. Lactacidemic coma

16. Patient C., 30 years old, was delivered unconscious to the hospital by an ambulance. It is known from relatives that for more than 10 years he suffers from diabetes, gets insulin. On examination: smell of acetone out of mouth, skin is dry, dryness of tongue, tone of eyeballs is reduced, Kussmaul breathing. On additional research: blood glucose - 27.4 mmol/L, urine acetone +++. What diagnosis is most likely?
A. Hyperlactacidemic coma
B. Hyperosmolar coma
C. Ketoacidic coma.
D. Hyperthyroid coma
E. Hypoglycemia coma

17. Patient A., 42 years old, delivered unconscious to the hospital by an ambulance. From the anamnesis collected from relatives, you know that the patient suffers from diabetes. The day before had repeated vomiting. On examination: the lines of the face are strained, the eyeballs are soft, the skin and mucous membranes are very dry, epileptic seizures, BP 70/40 mm Hg. In additional research: blood glucose - 55.5 mmol/L, glucosuria, absence of acetone in urine, blood osmolarity - 480 mosmol/L. What diagnosis is most likely?
A. Hyperosmolar coma
B. Ketoacidic coma
C. Hyperlactacidemic coma
D. Hyperketonemic precoma
E. Hypopituitary coma

18. A patient, 58 years old, hospitalized in a comatose condition. He suffers from diabetes for 6 years, additionally has chronic hepatitis. All the years - on a diet, during the last 3 months took metformin 1500 mg a day. Objectively: consciousness is absent, skin is dry, pale, with a cyanotic tint, t=35.7 C. Noisy Kussmaul breathing, BP=90/60 mm Hg, pulse - 98 min. Ultrasound of liver - fatty hepatosis. Glycemia - 9.6 mmol/L, lactate - 5.4 mmol/L, blood pH - 6.3, aglucosuria, oliguria. What is the most possible pathology which predetermines clinical presentation?
A. Kidney insufficiency (acidosis).
B. Ketoacidic diabetic coma.
C. Lactacidic diabetic coma.
D. Intoxication of salicylates.
E. Cardiogenic shock.

19. Patient with arterial hypertension and obesity of the III stage, uncontrollably took diuretics. The condition had worsened a few days ago, when thirst, mouth dryness, general weakness, somnolence appeared. The lines of the face are sharp, the eyeballs are soft, the skin and mucous membranes are dry. Dyspnea, pulse of 98/min., BP 90/50 mm Hg. Heart sounds are muffled. Osmolarity of plasma - 400 mosm/L, blood glucose of 51.0 mmol/L. Your choice of further treatment tactics?
A. Introduction of short-acting insulin.
B. Correction by biguanides.
C. Introduction of dopamine.
D. Introduction of the prolonged insulin.
E. Introduction of Ringer solution.

20. In a girl, aged 16, who suffers from type 1 DM, body temperature rose to 39°C, appetite decrease, headache, increasing weakness, nausea, vomiting, somnolence, mental confusion appeared. What could have caused such deterioration?
A. Flu infection
B. Hyperketonemic condition
C. Acute respiratory infection
D. Hypoglycemic condition
E. Hyperosmolar condition

Clinical tasks:

Task No. 1.

Patient 35 years old , suffered for 15 years, type 1 diabetes, alcohol abuse. He 's treated irregularly. After alcohol consumption appeared severe weakness, tremors in the body, sweating. OBJECTIVE: excited, heart rate - 98 per minute, blood pressure -120/70 mmHg.

Questions

1. What had caused the deterioration of the patient?
2. What emergency assistance should be provided in this case?

Task No. 2.

A girl, 16 years old, who suffers from type 1 diabetes, had increased body temperature to 39 ° C, decreased appetite, headache, increasing weakness, then nausea, vomiting, drowsiness, confusion.

Questions :

1. What determines the severity of the state?
2. What kind of emergency assistance should be provided in this case?

Task No. 3.

A man, aged 25, who suffers from diabetes for 8 years, had developed a coma. Objective: skin is dry, turgor is reduced, Kussmaul breathing. BP - 105/60 mmHg, Pulse - 116/min. the smell of acetone in the air.

Questions :

1. What kind of coma can be suspected?
2. What kind of emergency assistance should be provided in this case?

Task No.4.
On examination, the patient is unconscious, the skin is dry, hot, hyperemia of the face. Kussmaul breathing, smell of acetone in the air. Positive symptoms of peritoneum irritation. Sugar of blood - 33 mmol'/l.
Questions:
1. What condition developed in a patient? 2. What urgent measure is needed to do first?

Task #5.
On examination, the patient is unconscious, the skin is dry, hot, hyperemia of the face. Kussmaul breathing, smell of acetone in the air. Positive symptoms of peritoneum irritation. Sugar of blood - 33 mmol'/l.
Questions:
1. What is the preliminary diagnosis?
2. What urgent measures must be done first?

Task No. 6.
An 18-year-old woman suffers from diabetes for 5 years. Gets 36 units of insulin at a time. During pneumonia the state had sharply worsened: thirst increased considerably, a stomach ache appeared, nausea, vomiting, somnolence. A patient gave up a meal in the evening, did not get the next evening dose of insulin, and lost consciousness in the morning. Objectively: without consciousness, a skin is dry, turgor is reduced. Tongue is dry, breathing is noisy and deep, strong smell of acetone from mouth. Temperature of body - 36.6°C, pulse - 100/min., BP is 90/50 mm Hg. In urine: sharply positive reaction on an acetone. Glucose of blood - 33 mmol'/l.
Questions:
1. That is the reason for coma development in this case?
2. What algorithm of the first aid providing?

4. Summary

5. Literature:
Basic:
1. Endocrine Secrets / ed. MT McDermott. — 7th ed. — Missouri : Elsevier, 2020. — XIV, 577 p.
2. Emergency and Urgent Medical Care: student training manual / O. Yu. Budulev [and others]; ed. D. A. Shkurupii. — Vinnytsia: Nova Kniga, 2019. — 200 p. : ill., tab.
3. Levine Mark D. The Washington Manual of Emergency Medicine / Mark D. Levine, W. Scott Gilmore. — Philadelphia [etc.] : Wolters Kluwer, 2018. — XXII, 668 p. — (Lippincott manual).
4. Davidson's Principles and Practice of medicine / ed. Stuart H. Ralston [et al.]. — 23rd ed. — Edinburgh : Elsevier, 2018. — XX, 1417 p. : ill. — (International edition).
5. Harrison's Principles of Internal Medicine. Vol. 2. / J. Larry Jameson [et al.]. — 20th. ed. — New York [etc.] : McGraw-Hill, 2018. — XLI, 1648-3528, 1-214 p.
6. Kovalyova, OM Propedeutics of Internal Medicine: textbook / OM Kovalyova TV Ashcheulova. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 1 : Diagnostics = Diagnostics. — 2020. — 424 p.
7. Kovalyova OM Propedeutics of Internal Medicine [Text] : textbook / OM Kovalyova, SO Shapovalova, OO Nizhegorodtseva. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 2: Syndromes and diseases = Syndromes and diseases. — 2020. — 264 p.
Additional:
1. Springer Link [Electronic resource] / Springer International Publishing AG. – Access mode:https:link.springer.com.
2. Oxford Medicine Online [Electronic resource] / Oxford University Press. – Access mode:www.oxfordmedicine.com.

3. Oxford ACADEMIK Journals [Electronic resource] / Oxford University Press. – Accessmode: http://www.oxfordjournals.org.
4. The BMJ (British Medical Journal) [Electronic resource] // Mode of access:http://www.bmj.com/archive .
5. Scopus [Electronic resource] / Mode of access: https://www.scopus.com.

Practical lesson

Topic 5.Management of a patient with a thyrotoxic crisis.

Purpose: to acquire communication skills and clinical examination skills of a patient with thyrotoxic crisis; to be able to establish a preliminary diagnosis, carry out a differential diagnosis and determine the clinical diagnosis of the disease in a patient with a thyrotoxic crisis; master the principles of treatment, recommendations for life style changes in the management of patients with thyrotoxic crisis; learn to diagnose emergency conditions in patients with thyrotoxic crisis and master the tactics of providing emergency medical care; to be able to perform therapeutic manipulations in patients with thyrotoxic crisis.

Basic concepts: hormones of thyroid gland, mechanism of action, regulation of secretion; biological effect of releasing hormones of the hypothalamus and tropic hormones of the pituitary gland; modern methods of assessing the functional state of the thyroid gland; etiology and pathogenesis of primary and secondary hypothyroidism; clinical manifestations of the disease; pathogenesis of the main symptoms and syndromes of the disease; differential diagnosis; criteria for degrees of severity thyrotoxicosis; principles of pathogenetic treatment of thyrotoxicosis; principles of dispensary supervision in thyrotoxicosis; causes and pathogenesis of thyrotoxic crisis; principles of emergency care in thyrotoxic crisis.

Equipment: multimedia materials - a set of thematic slides from the department's multimedia library; screenshots of laboratory test results (general blood test, general urinalysis, coagulogram, thyroid-stimulating hormones); screenshots of instrumental research results (ECG; ultrasound of abdominal organs, chest X-ray) ; a set of situational problems on the subject of the lesson.

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).
2. Control of the reference level of knowledge(written work, written test, frontal survey, etc.)
3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.)

Control questions.

1. Give determination to thyrotoxic crisis.
2. What provoking factors can cause the development of thyrotoxic crisis?
3. What are the mechanisms of thyrotoxic crisis development?
4. Give the description of clinical manifestations of thyrotoxic crisis.
5. What are the methods of this pathology diagnosis?
6. Basic principles of thyrotoxic crisis treatment.
7. What preparations is it necessary to apply to decrease the level of thyroid hormones in blood?
8. What are the methods of acute adrenal insufficiency treatment?
9. What does efferent therapy include?
10. What is the prognosis for thyrotoxic crisis patients?

Tests:

1. Patient 20 years old, operated due to diffuse toxic goiter of the III stage. After the surgery: palpitations, sweating, sense of fear, diarrhea appeared. Skin is moist, hot to the touch, t= 40 °C.

Edema is absent. Ps - 160/min., arrhythmic, tense. BP - 170/60 mm Hg. Heart sounds are strengthened, ECG: atrial fibrillation. What complication developed in a patient?
A. Thyrotoxic crisis.
B. Anaphylactic shock.
C. Hypertensive crisis.
D. Acute respiratory viral infection.
E. Hypothyroid coma.

2. A woman, 42 years old, came to the polyclinic. On primary examination: reduced weight, exophthalmos, tremor of upper extremities. Patient is excited, dissatisfied with everything, defiantly behaved in a register office. Suddenly lost consciousness, developed tachypnea, arrhythmia. BP is 190/110 mm Hg, HR-160/min. t=38.8 ^{o}C. The most likely diagnosis is:
A. Hypertensive crisis.
B. Hypothyroid crisis.
C. Thyreotoxic crisis
D. Schizophrenia.
E. Diabetic coma.

3. In a patient with a diffuse toxic goiter the condition had worsened after an emotional stress. Complaints of headache, palpitation. Patient is excited, skin covers are hyperemic, profuse sweat, increased body temperature. BP 150/100 mm Hg, HR - 150/min. What complication developed in a patient?
A. Anaphylactic shock.
B. Thyrotoxic crisis.
C. Hypertensive crisis.
D. Acute respiratory viral infection.
E. Hypothyroid coma

4. The patient, 54 years old, with the diffuse toxic goiter of the IV stage was delivered in serious condition with complaints about the increase in body temperature to 40° C, palpitation, difficulty in breathing, nausea, vomiting, diarrhea. On examination: mask-like face, eyes wide open, skin hyperemic, moist, tachycardia to 200\min. Name the complication of diffuse toxic goiter:
A. Hypothyroid coma.
B. Vascular crisis.
C. Acute cardio-vascular insufficiency.
D. Acute psychosis.
E. Thyrotoxic crisis.

5. Patient aged 34, operated because of diffuse toxic goiter. After the surgery patient developed psychomotor excitation, tachycardia, frequent extrasystoles appeared, hyperthermia to 38°C, then decrease of BP to 60/10 mm Hg. Preparations of what group is it necessary to begin with?
A. Beta-adrenomimetics.
B. Beta-adrenoblockers.
C. Glucocorticoids.
D. Preparations of polyvinylpyrrolidone.
E. Merkasolil or its analogues.

6. A patient 47 years old, appealed for medical help with complaints about palpitation, insomnia, weight loss of 20 kg, muscular weakness, shaking of the whole body, loss of ability to work. Objectively: consciousness is changed, skin is moist, hot, temperature of 39°C. Exophthalmia. Thyroid gland increased to II st. dense-elastic, mobile. Heart: atrial fibrillation. Heart sounds sounds, systolic murmur above the apex. BP 130/40 mm. Hg. Slight tremor of hands and all the body. Blood - Hb-120g/l, Leuk: 7 x10^9/L, ESR - 12 mm/h. T3 - 9 nmol/L, TTH - not determined. What treatment must be appointed to a patient?

A. Corticosteroids, non-steroid anti-inflammatory drugs, dogoxin.
B. Antibiotics, non-steroid anti-inflammatory.
C. Corticosteroids, infusion therapy, sedatives.
D. Treatment in a neurological department.
E. Merkasolil, microdoses of iodine, corticosteroids, beta-blockers, rehydration.

7. A patient after having ARVI developed exophthalmos, sweating, nausea, abdominal pain, diarrhea and was diagnosed as having diffuse toxic goiter. HR - 120/min, BP is 170/100 mm Hg. What method of research is necessary to confirm the diagnosis?
A. Ultrasound of thyroid gland.
B. Bacteriological research of urine.
C. Coprogramm.
D. Level of T3, T4, TSH.
E. ECG.

8. A patient of 26 years old, after a surgery concerning diffuse toxic goiter developed sweating, irritability, violation of sleep, tachycardia, increased BP. Define the tactics of further treatment.
A. To appoint beta-adrenoblockers.
B. To appoint sedative preparations.
C. To appoint merkasolil.
D. To appoint all listed medications.
E. To appoint ACE-inhibitors.

9. The patient 34 years old, takes merkazolil in a dose of 30 mg a day for the diffuse toxic goiter of the II st., thyrotoxicosis of moderate severity. After the surgery of cholecystectomy there was a worsening of the patient's condition: psychomotor excitement, tachycardia, an increased BP, hyperthermia. Your further medical tactic is?
A. To add thyroxin.
B. To discontinue mercazolil.
C. To increase the dose of mercazolil.
D. To add hypotensive therapy.
E. To add glucocorticoids.

10. A patient 28 years old after a physical overstrain complains of nervousness, excitement, increase of body temperature, tachycardia, an increased BP. Objectively: tremor of hands, skin is moist, thyroid gland is diffusely extended, painless, soft, unconnected with nearby tissues. What method of diagnostics is the most informative in this case?
A. Determination of catecholamine level.
B. Blood test on T3, T4.
C. Determination of vanillyl-mandelic acid of urine.
D. Determination of level of TTH.
E. Determination of the level of glucose.

Clinical tasks:
Task N 1.
Doctor-endocrinologist was quickly called to the urology department to the patient M., 46 years old, who was delivered with an attack of kidney colic. During an instrumental examination a patient lost consciousness. BP 40/20 mm Hg. In anamnesis a long (6 years) intake of glucocorticoids in connection with rheumatoid arthritis. Gave up the intake of glucocorticoids 3 days ago. Objectively: inhibited, heart sounds are deaf, pulse - 100/min., weak filling, rhythmic. Lights and organs of the abdominal region - without features.
Questions:

1. What pathology caused such a clinical picture? 2. What first aid must be rendered to a patient?

Task N 2.
The patient 43 years old, 2 weeks ago carried the acute myocardial infarction and continues the intake of anticoagulants, the state had suddenly worsened. A patient is excited, grumbles about a stomach ache, general weakness. The symptoms of peritoneum irritation are absent. BP-70/50 mm Hg. HR-116 /1 min., T-38.2° C.
Questions:
1. What caused the deterioration of the condition? 2. What first aid must be rendered to a patient?

Task N 3.
In a patient who suffers from chronic adrenal insufficiency, after appendectomy the state had sharply worsened: progressive BP decreasing, deafness of heart sounds, tachycardia, pulse of the weak filling, acrocyanosis, "mable" skin.
Questions:
1. What complication did arise for a patient? 2. From preparations of which group is it necessary to start the first aid?

Literature:
Basic:
1) Endocrine Secrets / ed. MT McDermott. — 7th ed. — Missouri : Elsevier, 2020. — XIV, 577 p.
2) Emergency and Urgent Medical Care: student training manual / O. Yu. Budulev [and others]; ed. D. A. Shkurupii. — Vinnytsia: Nova Kniga, 2019. — 200 p. : ill., tab.
3) Levine Mark D. The Washington Manual of Emergency Medicine / Mark D. Levine, W. Scott Gilmore. — Philadelphia [etc.] : Wolters Kluwer, 2018. — XXII, 668 p. — (Lippincott manual).
4) Davidson's Principles and Practice of medicine / ed. Stuart H. Ralston [et al.]. — 23rd ed. — Edinburgh : Elsevier, 2018. — XX, 1417 p. : ill. — (International edition).
5) Harrison's Principles of Internal Medicine. Vol. 2. / J. Larry Jameson [et al.]. — 20th. ed. — New York [etc.] : McGraw-Hill, 2018. — XLI, 1648-3528, 1-214 p.
6) Kovalyova, OM Propedeutics of Internal Medicine: textbook / OM Kovalyova TV Ashcheulova. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 1 : Diagnostics = Diagnostics. — 2020. - 424 p.
7) Kovalyova OM Propedeutics of Internal Medicine [Text] : textbook / OM Kovalyova, SO Shapovalova, OO Nizhegorodtseva. — 5th ed. — Vinnytsia : Nova Knyha, 2020. Pt. 2: Syndromes and diseases = Syndromes and diseases. — 2020. — 264 p.
Additional:
1) Springer Link [Electronic resource] / Springer International Publishing AG. – Access mode:https:link.springer.com.
2) Oxford Medicine Online [Electronic resource] / Oxford University Press. – Access mode:www.oxfordmedicine.com.
3) Oxford ACADEMIK Journals [Electronic resource] / Oxford University Press. – Accessmode: http://www.oxfordjournals.org.
4) The BMJ (British Medical Journal) [Electronic resource] // Mode of access:http://www.bmj.com/archive .
5) Scopus [Electronic resource] / Mode of access: https://www.scopus.com.

Practical lesson

Topic 6.Management of a patient with acute adrenal failure

Purpose: to explain the essence of the adrenal diseases, the causes of its occurrence, the role of various factors in the etiopathogenesis, approaches to diagnosis, treatment and prevention.

Key words: adrenal diseases, acute adrenal failure, Addison crises, hypotension, hyperpigmentation.

Equipment: laptop with a presentation, a multimedia projector, individual assignments on the topic of a practical lesson

Plan:

1. Organizational measures (greetings, verification of those present, announcement of the topic, purpose of the lesson, motivation of higher education seekers to study the topic).

2. Control of the reference level of knowledge(written work, written test, frontal survey, etc.)

2.1 Questions to test basic knowledge of the topic of the lesson:

1) Determination of concept acute adrenal failure.
2) Epidemiology of acute adrenal failure.
3) Risk factors of acute adrenal failure.
4) Mechanism of hormonal and metabolic disorders at the diseases of acute adrenal failure.
5) Etiology and pathogenesis of acute adrenal failure.
6) Classification of acute adrenal failure.
7) Clinical picture of acute adrenal failure.
8) Polyorganic complications of acute adrenal failure.
9) Diagnostic criteria of acute adrenal failure.
10) Choice of method of treatment of acute adrenal failure.
11) Treatment of acute adrenal failure

3. Formation of professional abilities and skills (mastery of skills, conducting curation, determining the treatment scheme, conducting laboratory research, etc.):

3.1 task content:

1. The endocrinologist was urgently called to the urology department to a 46-year-old patient, M., who was admitted with an attack of renal colic. During the instrumental examination the patient lost consciousness. Blood pressure dropped to 40/20 mm Hg. Art. History of long-term (6 years) use of glucocorticoids in connection with rheumatoid arthritis. I stopped taking glucocorticoids 3 days ago. Objectively: inhibited, deaf heart tones, pulse - 100 / min., Weak filling, rhythmic. Lungs and organs of the abdominal cavity without features.

1.What is the most likely diagnosis?

2.Plan of investigations?

3.Treatment plan?

2. To the patient T. with disturbance of a cardial rhythm in cardiological the department is invited to consult an endocrinologist. From the anamnesis it is known that 3 months ago the patient gave birth to a full-term child. In the postpartum period there was heavy bleeding, further general concern weakness, weakness. There is no lactation. Paleness grew, appeared profuse diarrhea. She was hospitalized in the gastroenterology department, where she developed a heart rhythm disorder. During the examination: sick pale, dry skin, yellowish, swollen, cold to the touch. Language sluggish, tongue enlarged. Blood pressure - 60/40 mm Hg., bradycardia, arrhythmia.:

1. What is the most likely diagnosis?

2 Complications of this condition?

3.Pathogenetic treatment?

3.2 control materials for the final stage of the lesson:

1. Patient R., is treated for a septic condition, suddenly there was a significant weakness, adynamia, vomiting, diarrhea. Sopor. Pulse is threadlike, 110 is sutured, blood pressure is 60/40 mm Hg. On the ECG: tachycardia, a decrease in the voltage of all the teeth. Laboratory data: hyponatremia, hypochloraemia, hyperkalemia, hypoglycemia. Indicate the reason for the development of this state:

A Hypothalamic crisis

B Acute adrenal insufficiency

C Hypoglycemic coma

D Pangypopituitarism

E Acute myocardial infarction

2. Patient D., 42 years old, after physical exertion lost consciousness. BP decreased to 40/20 mm Hg. In the anamnesis, a long (5 years) use of glucocorticoids, due to the fact that he has bronchial asthma. In the last 4 days, glucocorticoids do not take. Objectively: inhibited, skin of normal color, normal humidity, heart sounds deaf, heart rate 100 per minute., Weak filling, rhythmic. The level of glucose in the blood is 3.0 mmol / l, sodium - 117 mmol / l, potassium - 6.0 mmol / l. Establish a preliminary diagnosis.
A Cardiogenic shock
B Adrenal crisis
C Acute adrenal insufficiency
D Hypovolemic shock
E Hypoglycemic coma

3. Patient K., 29, with satisfactorily compensated type 1 diabetes mellitus, developed frequent hypoglycemia, nausea, intestinal disorders, hyperpigmentation of the skin (bronze color), blood pressure - 70/50 mm Hg, Hb 100 g / l . What can cause a decrease in pressure?
A Chronic adrenal insufficiency
B Diabetic enteropathy
C Diabetic gastropathy
D Overdose of antidiabetic drugs
E Development of diabetes insipidus

4. Patient V., 18 years old, was taken to the hospital by an ambulance car without consciousness. From additional studies: increased potassium levels in the serum up to 8 mmol / l, the level of cortisol - 18 μg in 100 ml of plasma. On the ECG - high pointed tars T. At CT - signs of calcification of the adrenal glands. What is the most likely diagnosis?
A Insufficiency of the adrenal cortex
B Hyperosmolar coma
C Hyperlactacidemic coma
D Thyrotoxic crisis
E Hypoglycemic coma

5. The patient is 43, taken in serious condition. According to the man, he is sick with Addison's disease. Constantly took 5 mg of prednisolone. During the week the drug did not take, as there was pain in the stomach, appetite worsened, yesterday did not eat due to nausea and vomiting. Patient in a co-morbid state. Skin and mucous hyperpigmented. Turgor of the skin and muscles is reduced. Heart tones are muffled, accelerated, blood pressure is 60/40 mm Hg, heart rate is 96 / min. Sodium blood - 130 mmol / l, potassium - 5.5 mmol / l. What hormone deficiency plays a leading role in the development of complications?
A aldosterone
B Corticotropin (ACTH)
C Adrenaline
D Norepinephrine
E Cortisol

6. A 15-year-old patient complains of excessive body weight, headache, irritability, fatigue. A significant increase in body weight occurred at the age of 14 years. Body weight - 90 kg, height 160 cm, the correct constitution. The distribution of fatty tissue is uniform. On the hips, abdomen and mammary glands are pink thin striae. AO - 145/90 mm Hg.
Your diagnosis?
A Vegetosovascular dystonia
B Alimentary-constitutional obesity
C Pubertal-youthful dyspituitarism

D Cushing's disease
E Syndrome Cushing

7. A 37-year-old patient turned to a doctor about overweight with the goal of losing weight. Objectively: height 160 cm, weight 125 kg. The distribution of fatty tissue is uniform. Which method of treatment will be most appropriate?
A Drug therapy
B Subconscious diet
C Subcultural diet and exercise
D bariatric surgery
E Psychotherapeutic correction of eating behavior

8. Patient S., 28 years of age, complained about the lack of sexual development, decreased potency, and infertility. Objectively: body proportions are eunuchoid, height 185 cm, weight 75 kg, gynecomastia. The external genitalia are formed correctly, in size correspond to the age. Eggs are reduced in size, compacted. Genital chromatin 32%. Karyotype 47XXY / 46XY. Possible diagnosis?
A "Clean" gonadal dysgenesis
B Klinefelter's Syndrome
C Shereshevsky-Turner Syndrome
D Initial hypogonadism
E Meyer-Rokytansky-Kyustner Syndrome

9. Patient V., 20 years old, was sent to the military registration and enlistment office for ascertaining his sex. At birth, the floor was defined as male. Objectively: height 174 cm, weight 75 kg, body intersexual proportions, mammary glands developed, sexual haemorrhage by female type, high voice, regular bloody discharge from age 15, external genitalia represented by penile 5 cm, urethra opens at scrotum, which is satisfactory Is developed, in the left part of it the testicle is palpated up to 2.5 cm. With ultrasound examination of the pelvic organs, a unicorn uterus with an ovary has been found. Karyotype of 46XY / 46XX. Possible diagnosis?
A Initial hypogonadism
B "Clean" gonadal dysgenesis
C Shereshevsky-Turner Syndrome
D Oriental hermaphroditism
E Meyer-Rokytansky-Kyustner Syndrome

10. Patient V., 18 years old, was sent to the military registration and enlistment office for determining fitness for military service. Objectively: the proportions of the male body, height 175 cm, weight 105 kg, obesity, the distribution of adipose tissue is relatively uniform, with predominant fat deposition on the face, abdomen, and extremities, bilateral gynaecomastia is determined, on the skin of the thighs of the shoulders, the abdomen a significant number of pale pink stretch marks . Heart rate is 78 per min., BP - 155/90 mm Hg. Internal organs without changes. The external genitalia are correctly formed, corresponding to the age, on the roentgenogram of the Turkish saddle - without destructive changes. Prolactin, cortisol, LH, FSH, testosterone is within normal limits. What is the cause of obesity in a patient?
A Adiposo-genital dystrophy
B Prolactinoma
C Itzenko-Cushing's disease
D Alimentary-constitutional type
E Hypothalamic syndrome

4. Summary:

5. Recommended reading list

Basic:

1. Davidson's "Principles of Practice of Medicine" 20th edition 2021, Elsevier limited.
2. Harrison's "Principles of internal medicine" Volume 1,2, 2020, USA. Endocrinology
3. Williams Textbook of Endocrinology by ShlomoMelmed; Ronald Koenig; Clifford Rosen; Richard Auchus; Allison Goldfine , 2019.
4. Greenspan's Basic and Clinical Endocrinology, Tenth Edition by David Gardner; Dolores Shoback, 2018

Additional:

1.https://www.asn online.org/education/training/fellows/educationalresources.aspx#Guidelines
2. American Association of Clinical Endocrinologists and American College of Endocrinology - Clinical Practice Guidelines Comprehensive Care Plan - © 2019