



<p> ONTÜSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ </p>		<p>  SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия» </p>
<p>Department of "Propaedeutics of Internal Diseases", "Department of Pathology and Forensic Medicine", "Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology"</p>		<p>47 / 11 1p. of 13</p>
<p>Lecture complex by discipline "Digestive and endocrine system in pathology"</p>		

LECTURE COMPLEX

Discipline:	«Digestive and endocrine system in pathology»
Discipline code:	PESP3221
Name and code of the OP:	6B10115 "Medicine"
Amount of study hours/credits:	60 hours / 2 credits
Course and semester of study:	3rd year, 5th semester
Lecture volume:	4hours

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The lecture complex was developed in accordance with the working curriculum of the discipline (syllabus) and discussed at a department meeting.

Protocol: № 11 « 26 » 06, 2025y.

Head of department, d.m.s., professor Bekmurzaeva E.K. Bekmurzaeva E.K.

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Department "Propaedeutics of Internal Diseases"

Lecture No. 1

1. Topic: Questioning, complaints, general examination of patients with pathology of the digestive and hepatobiliary system. Superficial and deep palpation of the abdomen using the Obraztsov method, percussion and palpation of the liver according to Kurlov and the pancreas, auscultation of abdominal organs: determination of the lower border of the stomach. Diagnostic value.

2. Objective: To study and determine risk factors, causes, and clinical features of gastrointestinal tract (GIT) diseases – to identify risk groups and subsequently implement a range of medical prevention measures.

3. Lecture abstracts:


Dysphagia is a disturbance in the passage of food through the esophagus. It is one of the most common symptoms in esophageal diseases. The patient feels that his esophagus is stuck (the esophagus narrows) and he is sick. Dysphagia is caused by organic or functional narrowing of the esophagus. Organic narrowing begins gradually, which increases with cancer. When cancer disintegrates, there is a feeling that the conductivity of the esophagus is restored, although temporarily. When a foreign body gets into the esophagus, as well as when the mucous membrane of the esophagus burns due to the ingress of toxic substances, dysphagia occurs instantly. It can also occur due to the fact that external bodies descend into the esophagus and squeeze it, often due to an aneurysm of the heart, a tumor of the cardiac sac. Functional narrowing of the esophagus undoubtedly occurs due to the reflexivity of the muscles of the esophagus, that is, due to a violation of innervation during neurosis, as well as due to strong narrowing and contraction of the muscles of the esophagus.

Disease (dolor) is a disease that is observed with inflammation of the mucous membrane of the esophagus, i.e. with esophagitis. When the mucous membrane of the esophagus is burned under the influence of alkalis and acids, the patient feels pain along the entire length of the esophagus. The disease of the esophagus is transmitted to the two middles of the scapula. Cardia achalasia with pain, the pain is usually transmitted to the back, upper part of the sternum, neck, under the chin, jaw.

The duration of the disease can last for several minutes or hours. A hernia of the esophageal orifice in the thoracic septum indicates that with gastroesophageal reflux disease, the pain is transmitted to the left side of the chest and is felt as a heart disease.

Vomiting (etesis, vomitus) is caused by a narrowing of the esophagus. Food accumulates above the narrowed area of the right muscle, where it expands and pushes food out as a reflex as a result of contraction of its muscles. Vomiting has several symptoms: it occurs without belching, the patient feels that the food is stagnating. When studying the composition of vomit, it is necessary to make sure whether it contains undigested food waste or hydrochloric acid, pepsin. If a putrid odor appears in the vomit, this indicates a diverticulum of the esophagus or the disintegration of a malignant neoplasm.

Return of food from the esophagus occurs because it cannot pass through a narrowed area of the esophagus. This symptom is often observed in diseases of the nervous system. At the same time, it can also be caused by a narrowing of the lower part of the esophagus. Drooling - this symptom occurs with esophagitis. Narrowing of the esophageal opening (narrowing) sometimes also occurs due to cancer.

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The feeling of a putrid smell - in esophageal cancer and achalasia cardia occurs due to the accumulation of kitchen waste and its decay. The symptom of heartburn (pygossis) - it is felt in the lower part of the sternum. This is also caused by the fact that food residues in the stomach return to the lower part of the esophagus and, as such, occur as a result of reflux esophagitis (backflow).

Bleeding. This is observed with an ulcer of the esophagus, and is also caused by trauma to the esophagus under the influence of foreign bodies, the disintegration of a malignant tumor. Sometimes an enlarged vein of the esophagus occurs due to bleeding from a blood vessel, the connection of its cream layer with the cardiac part of the esophagus and stomach, increased tension in its area, a small rupture of blood vessels (Mallory-Weiss syndrome).

Medical history.

The course of the disease is aggravated by organic damage to the esophagus and by its functional diseases (achalasia of the cardia) and can sometimes alternate, depending on mental causes. As a result of questioning the patient's life history, it is possible to determine a burn of the esophagus (alkali, acid). It is worth knowing what other disease he suffered from in the past, especially syphilis. The patient's complaint is associated with dysphagia, and sometimes with syphilitic changes. The presence of a sidewall of the esophagus may be associated with previously suffered bronchoadenitis, especially tuberculosis.

Physical research methods.

The importance of physical examination methods in diagnosing esophageal diseases is small, which is due to the anatomical and topographic location of the esophagus and the low potential for using direct examination methods. During a general examination, it may be noted that the patient is severely emaciated, since esophageal cancer and achalasia disrupt the flow of the bottom along the esophagus. When you experience prolonged esophageal narrowing, its higher part expands somewhat, which can gradually compress the lungs, causing restrictive narrowing of breathing.

Instrumental and laboratory research methods.

X-ray examination. During an X-ray examination, the patient inhales a contrast agent, and as it passes through the esophagus, the condition, motor function, position, shape, volume, and contour of the cream layer are examined. The following types of X-ray methods are currently used: contrast fluoroscopy and radiography, the double-enhanced contrast method, X-ray kymography, X-ray television, X-ray cinematography, computed tomography, pneumomediastinography, nuclear magnetic resonance, etc. X-rays, especially with changes in the patient's position under various conditions, provide a lot of information.

Esophagoscopy.

Esophagoscopy provides more data in describing cancer and ulcers of the esophagus, damage to the mucous membrane (inflammation, atrophy, hemorrhagic and erosive changes) than the X-ray method. If necessary, a biopsy is extracted from the cream layer of the esophagus, the obtained material is sent for histological and bacteriological examination.

Esophagoscopy allows for a number of therapeutic procedures: dilation (removal) of the esophagus, sclerotherapy of varicose veins, polypectomy, burning of a blood vessel with electric current.

Other research methods.

Cytological examination. This method is also used to examine esophageal cancer. The material examined is a scraping from the site of damage or suspicion of a layer of water or cream washed through the esophagus.

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Intraperitoneal pH-metry. An intraesophageal pH value below 4.0, measured for 10 seconds, is a sign that the contents of the stomach acid are constantly rising into the esophagus (gastroesophageal reflex).

Esophageal manometry. This method studies the ability of the esophageal muscles to contract. Sensors are placed at different levels of the esophagus. The patient is given a sip of water. Under normal conditions, the pressure in the lower esophageal sphincter is 20-40 mm. equal to the mercury column. With achalasia, the pressure and the ability of the sphincter to relax increase.

Ballokimographic method. This method is used to detect functional and structural changes in the esophagus. The patient inhales a balloon with a thin rubber balloon at the end, and about 100-200 ml of air is sent to it. By connecting the other end of the balloon to a recording instrument, an esophagogram is recorded. This method can be used to determine the strength, rhythm, frequency of contractions of the esophagus muscles (normally 3 times per minute), and wave contractions.

Pharmacological tests. The patient is given nitroglycerin sublingually or an atropine solution is given intramuscularly. When the functional character changes, the tone of the narrowed right muscle decreases, its conductivity improves. But with organic narrowing of the esophagus, such a phenomenon is not observed.

4. Illustrative material: presentation.

5. **Literature:** Akhmetov Kayyrgali Zhaleluly. Ishki aurular propaedeutics Panin clinic daristeri. Almaty: "Evero", 2020. – 262

6. Control questions(feedback):

1. What are the main complaints of diseases of the digestive system?
2. What should you pay attention to during a general examination of patients?
3. What types of abdominal palpation do you know?
4. What information does deep abdominal palpation provide?
5. What other physical methods are used in examining patients with gastrointestinal tract pathology?

7. Control: tasks and tests

Lecture No. 2

1. **Subject:** Leading clinical syndromes (gastric and intestinal dyspepsia) in gastroenterology. Leading clinical syndromes (jaundice and liver failure) in hepatology. Diagnostic value.


2. **Objective:** Based on the integration of fundamental and clinical disciplines, teach students the basics of clinical examination of the digestive and hepatobiliary systems in health and pathology, and diagnose pathological syndromes during physical and laboratory-instrumental examination of the patient.

3. Lecture abstracts:

Esophagitis (oerophagitis) is an inflammation of the esophagus, usually affecting its mucous membrane, but in severe cases, damage to its deeper layers is observed. Acute, subacute and chronic esophagitis are distinguished.

Cancer is one of the most common and serious diseases of the esophagus. It accounts for 20% of all malignant tumors of the digestive tract. Esophageal cancer affects mainly men, usually over 55 years of age.

A large group of stomach diseases includes developmental anomalies, various functional disorders of its motor and secretory functions (dyskinesia, functional gastric hypersecretion and

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achylia), inflammatory diseases (acute and chronic gastritis), peptic ulcer, polyps, benign and malignant tumors, gastric diverticula. Specific stomach lesions may also occur in tuberculosis and syphilis. The most common stomach diseases include gastritis, peptic ulcer, and stomach cancer.

Digestive insufficiency (impairment) syndrome (syn.: maldigestive syndrome) is a symptom complex characterized by digestive disorders in the digestive tract.

The following forms of digestive disorders are distinguished: 1) disorders of predominantly cavity digestion, which are often referred to as dyspepsia in the broad sense of the word (from the Greek dyspepsia: the prefix dys, meaning dysfunction, "difficulty", pepsio — digestion); 2) disorders of parietal intestinal digestion; 3) mixed forms.

There are also acute, subacute and chronic forms of digestive disorders (dyspepsia).

Intestinal malabsorption syndrome (syn.: malabsorption syndrome) is a symptom complex that occurs as a result of a disorder in the absorption processes in the small intestine.

Often combined with digestive insufficiency syndrome.

Duodenitis is an acute or chronic (more often) disease in which inflammation and structural reorganization of the mucous membrane of the duodenum are observed.

Chronic enteritis (enteritis ghronica) is a long-term disease in which inflammatory and degenerative changes in the mucous membrane of the small intestine are observed.

Chronic colitis (colitis chronica) is a long-term disease in which inflammatory and degenerative changes develop primarily in the mucous membrane of the colon.

Cholecystitis (cholecystitis) is an inflammation of the gallbladder. This disease is quite common, more often found in women.

Chronic cholecystitis may occur after acute cholecystitis, but more often it develops independently and gradually.

Exocrine pancreatic insufficiency is a symptom complex characterized by a disorder in the secretion of pancreatic juice containing the main digestive enzymes: trypsin, lipase, amylase, etc. (there are more than 15 of them), as well as hydrocarbonates, which provide an optimal reaction of the environment for the action of these enzymes. Exocrine pancreatic insufficiency can be primary (congenital) and secondary (acquired).

Pancreatitis (pancreatitis) is an inflammation of the pancreas. A distinction is made between acute and chronic pancreatitis.


Chronic pancreatitis (pancreatitis chronica) occurs in most cases in women aged 30-70 years. It can develop after acute pancreatitis or directly as chronic due to the same etiological factors as acute pancreatitis. In men, chronic pancreatitis is more often a consequence of chronic alcoholism.

Jaundice (icterus) is a yellowish discoloration of the skin and mucous membranes caused by an increased content of bilirubin in the tissues and blood. Blood serum taken for testing from patients with true jaundice also acquires a more or less saturated yellow color.

Jaundice is accompanied, and sometimes preceded, by changes in the color of urine, which becomes dark yellow or brown (the color of beer), and feces, which in some cases become lighter or completely discolored, and in others, acquire a rich dark brown color.

Jaundice can develop quickly, within 1-2 days, reaching a significant degree of intensity, or gradually and be not very pronounced (subicteric). Often the patients themselves (or those around them) note the appearance of a yellowish coloration of the skin, which makes them consult a doctor. In some cases, jaundice can be accompanied by excruciating skin itching, skin hemorrhagic bleeding from the nose and gastrointestinal tract.

Jaundice may occur with many diseases of the liver, bile ducts and blood system, as well as with diseases of other organs and systems, in which bilirubin metabolism is secondarily disrupted. A

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number of clinical symptoms accompanying jaundice, to some extent, allow us to assume its type and cause of occurrence in each case of the disease. Accurate diagnostics of various types of jaundice is possible with the help of special laboratory research methods.

Portal hypertension is characterized by a persistent increase in blood pressure in the portal vein and is manifested by dilation of portocaval anastomoses, ascites and enlargement of the spleen.

Portal hypertension occurs due to the disruption of blood outflow from the portal vein as a result of its compression from the outside (by a tumor, enlarged lymph nodes of the liver porta in case of cancer metastases, etc.) or obliteration of part of its intrahepatic branches in case of chronic lesions of the liver parenchyma (in cirrhosis), or thrombosis of the portal vein or its branches. In liver cirrhosis, the proliferation and subsequent scarring of connective tissue at the site of dead liver cells leads to narrowing or complete obliteration of part of the liver sinusoids and intrahepatic vessels. As a result, an obstacle to blood flow is created, portal pressure increases, and blood outflow from the abdominal organs is disrupted. Under these conditions, transudation of fluid from the vascular bed into the abdominal cavity increases and ascites is formed. In the development of ascites in liver cirrhosis, a role is also played by a decrease in the oncotic pressure of plasma as a result of a disruption in the synthesis of albumins in the liver; sodium and water retention as a result of increased production of aldosterone by the adrenal glands (secondary hyperaldosteronism) and insufficient inactivation of it and antidiuretic hormone in the liver is also important.

The time of ascites development depends on the degree of development of collateral circulation - on the number of portocaval anastomoses. Disturbances of portal circulation over a long period of time can be compensated by the fact that blood from the portal vein can flow into the superior and inferior vena cava through the anastomoses that normally exist. In portal hypertension, these anastomoses develop very strongly.

Hepatosplenic syndrome is characterized by simultaneous enlargement of the liver and spleen with primary damage to one of these organs. The general participation of these organs in pathological processes (liver diseases, blood system, some infections, intoxications) is explained by the richness of their reticuloendothelial tissue. In some cases (for example, with thrombosis of the hepatic veins), simultaneous enlargement of the liver and spleen is due to venous congestion in them. Palpation, ultrasound and scanning methods allow identifying hepatosplenic syndrome.

Liver failure syndrome (insufficiencia hepatis) is a term accepted by clinicians for liver dysfunction of varying severity. Severe acute and chronic liver diseases due to severe dystrophy and death of hepatocytes, despite the significant compensatory capabilities of this organ, are accompanied by profound impairments of its numerous and extremely important functions for the body.

Hepatic coma (coma hepatica) is an extreme degree of liver failure. The pathogenesis of hepatic coma is reduced to severe self-poisoning of the body due to almost complete cessation of liver function. Poisoning is caused by non-neutralized products of intestinal (bacterial) protein breakdown, end products of metabolism, and especially ammonia. Phenols also have a toxic effect. In liver failure, other toxic substances accumulate in the blood, electrolyte metabolism is disrupted, and in severe cases, hypokalemia and alkalosis occur.

Among liver diseases, inflammatory lesions are most common - acute and chronic hepatitis, as well as cirrhosis, hepatosis. Primary liver cancer is rare, but metastases of malignant tumors from various organs to the liver are a very common occurrence. Echinococcus is usually localized in the liver: it is also affected by opisthorchiasis and some other parasitic invasions.

4. Illustrative material: presentation.

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5. Literature: Vasilenko, V. Kh. Propaedeutics of internal diseases. T. 1.: Textbook / V. Kh. Vasilenko, V. V. Vasilenko; . - Almaty: Newbook, 2021. - 400. p.

6. Control questions(feedback):

1. What syndromes do you know that are characteristic of esophageal diseases?
2. What causes dysphagia syndrome?
3. What causes the occurrence of gastric dyspepsia syndrome?
4. What causes the occurrence of exocrine pancreatic insufficiency syndrome?
5. What syndromes do you know that are characteristic of diseases of the gallbladder and pancreas?
6. What is jaundice. Causes, symptoms and types.
7. What laboratory and instrumental diagnostic methods for jaundice do you know?
8. How does liver cell failure syndrome manifest itself? Causes, clinical symptoms.
9. What methods of laboratory and instrumental diagnostics of hepatocellular insufficiency do you know?
10. What is portal hypertension?

7. Control: tasks and tests

Lecture No. 3

1. Subject: Questioning, complaints, general examination of patients with endocrine pathology and palpation of the thyroid gland. Methods of examining patients with endocrine pathology. Diagnostic value.

2. Objective: To train the student to detail complaints, evaluate anamnestic data, give a clinical assessment based on the application of clinical research methods in combination with the use of laboratory diagnostic methods

3. Lecture abstracts:

Endocrine diseases are a group of pathologies caused by a disruption in hormone production (hypo- or hyperfunction), structural changes in the endocrine glands or their secondary dysfunction. The importance of a systemic approach when examining a patient: the impact of hormonal disorders on many organs and systems

Inquiry and complaints

Medical history:

Onset of the disease (gradual or acute).

Duration and dynamics of symptoms.

Possible connection with past stress, infections, injuries, surgeries.

Heredity, endemic factor (for example, in thyroid pathology).

Main complaints in endocrine pathology:

- Weight gain or loss.
- Changes in appetite, thirst, polyuria.
- Menstrual irregularities, libido.
- Psycho-emotional lability, irritability, depression.
- Increased fatigue, weakness, sweating.
- Thermoregulation disorders (chills, heat/cold intolerance).
- Changes in the skin (dryness, hyperpigmentation, acne, stretch marks).
- Changes in the cardiovascular system (tachycardia, hypo- or hypertension).
- Complaints associated with space-occupying lesions (feeling of a "lump" in the throat, dysphagia, hoarseness).

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General inspection

Patient Phenotype Assessment:

- Obesity (hypothyroidism, Itsenko-Cushing), thinness (hyperthyroidism, diabetes mellitus).
- Body proportions, type of obesity (central, peripheral).
- Skin color and condition: pigmentation (Addison's disease), pallor, hyperkeratosis, striae.
- Hair and nails: brittleness, alopecia, hirsutism.
- Appearance: "acromegalic", "myxedema", "cushingoid", "thyrotoxic".
- Skin temperature, sweating.
- The patient's position in bed, psycho-emotional state.
- Pulse, blood pressure, respiratory rate.

Palpation of the thyroid gland

Methodology:

- The patient's position is sitting, the doctor stands behind.
- Palpation is performed on the pharynx: we ask the patient to make a swallowing movement.
- The size of the lobes, isthmus, consistency, surface, presence of nodes, mobility, and soreness are determined.
- **Condition assessment:**
 - Enlargement: diffuse (goiter), nodular, mixed.
 - Pain: with thyroiditis.
 - Consistency: dense (fibrous goiter), soft (diffuse toxic goiter).
 - Mobility when swallowing (usually preserved, limited in cancer).

Research methods for endocrine pathology

- **Laboratory:**
 - Hormonal levels (TSH, T3, T4, cortisol, ACTH, insulin, prolactin, glucose, glycated hemoglobin, etc.).
 - Metabolic parameters (lipidogram, electrolytes, calcium, phosphorus).
 - Stimulation/inhibition tests (dexamethasone test, thyrotropin-releasing hormone, etc.).
- **Instrumental:**
 - **Thyroid ultrasound**— structure, volume, nodes.
 - **Scintigraphy**— functional activity of nodes (hot/cold).
 - **Fine needle aspiration biopsy**- assessment of node cytology.
 - **MRI/CT**— diagnostics of tumors of the pituitary gland and adrenal glands.
 - **Densitometry**- for osteoporosis.
 - **ECG, EchoCG**- if hormonally conditioned cardiovascular disorders are suspected


Conclusion

- Endocrine diseases require a comprehensive approach to diagnosis.
- The following sequential stages are important: complaints, examination, physical examination, laboratory and instrumental methods.
- Palpation of the thyroid gland is a mandatory and informative element of physical examination.

4. Illustrative material: presentation.

5. Literature: Mukhin, N.A. Ishki aurular propedeutics: okulyk. - M.: GEOTAR - Media, 2015

6. Control questions(feedback):

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1. What are the main complaints that may indicate thyroid pathology?
2. List typical complaints in hypothyroidism and hyperthyroidism.
3. What are the symptoms of Itsenko-Cushing's disease?
4. What appearance features may patients with endocrine pathology have?
5. Name the characteristic skin manifestations of Addison's disease.
6. What type of obesity is characteristic of insulin resistance?
7. **Control: tasks and tests**

Lecture No. 4

1. **Subject:** Leading clinical syndromes (hypo-, hyperthyroidism, hypo-, hyperglycemia) in endocrinology.
2. **Objective:** To teach the student to detail complaints, evaluate anamnestic data, give a clinical assessment based on the use of clinical research methods in combination with the use of laboratory diagnostic methods, identify the main clinical syndromes in hypo-hyperthyroidism and hypo-hyperglycemia.
3. **Lecture abstracts:**

Diffuse toxic goiter (syn.: Graves' disease, morbus Basedowi) is a diffuse enlargement of the thyroid gland, accompanied by increased secretion of thyroid hormones. Diffuse toxic goiter occurs in 0.2-0.5% of the population, mainly in people aged 20-50 years, and in women several times more often than in men.


Hypothyroidism is a disease characterized by hypofunction of the thyroid gland. The term "myxedema" (literally "mucous edema") is traditionally used to denote the most severe forms of hypothyroidism, which occur with widespread mucous edema. The disease is most often detected in women aged 40-60 years. Its share in the overall structure of endocrine diseases has increased significantly in recent years.

An endocrine disease characterized by chronic hyperglycemia syndrome resulting from insufficient production or action of insulin, which leads to disruption of all types of metabolism, primarily carbohydrate metabolism, vascular damage (angiopathy), the nervous system (neuropathy), and other organs and systems. There are two main types of diabetes mellitus: insulin-dependent diabetes mellitus (IDDM) or type I DM and non-insulin-dependent diabetes mellitus (NIDDM) or type II DM. With IDDM, there is a pronounced deficiency of insulin secretion by the β -cells of the islets of Langerhans (absolute insulin deficiency), patients require constant, lifelong insulin therapy, i.e. they are insulin-dependent. With NIDDM, the insufficiency of insulin action comes to the fore, and peripheral tissue resistance to insulin develops (relative insulin deficiency). Insulin replacement therapy for NIDDM is usually not performed. Patients are treated with diet and oral hypoglycemic agents. In recent years, it has been established that NIDDM is characterized by a disturbance of the early phase of insulin secretion. All symptoms of diabetes can be divided into two groups: symptoms of hyperglycemia and symptoms specific to diabetes types I or II.

Symptoms of hyperglycemia are: thirst (during the period of decompensation of diabetes, patients can drink 3-5 liters or more of liquid per day, they often drink a lot of water at night; the higher the hyperglycemia, the more pronounced the thirst), polyuria, skin itching, severe general and muscular weakness (due to insufficient formation of energy, glycogen and protein in the muscles), dry mouth (due to dehydration and decreased function of the salivary glands) and an increased susceptibility to various infections.

4. **Illustrative material:** presentation.

5. **Literature:** Makolkin, V.I. Ishki aurular : okulyk. - M.: GEOTAR - Media, 2014. - 976 bet

<p style="text-align: center;"> ONTÜSTIK-QAZAQSTAN MEDISINA AKADEMIASY «Оңтүстік Қазақстан медицина академиясы» АҚ </p>		<p style="text-align: center;">  SOUTH KAZAKHSTAN MEDICAL ACADEMY АО «Южно-Казахстанская медицинская академия» </p>
Department of "Propaedeutics of Internal Diseases", "Department of Pathology and Forensic Medicine", "Department of Pharmacology, Pharmacotherapy and Clinical Pharmacology"		47 / 11 11p. of 13
Lecture complexby discipline "Digestive and endocrine system in pathology"		

6. Control questions(feedback):

1. What is hyperthyroidism?
2. What are the characteristics of hypothyroidism?
3. What method can be used to detect hyperthyroidism?
4. What laboratory and instrumental studies are used to diagnose diffuse goiter?
5. What is hyperglycemia?
6. What are the characteristics of hypoglycemia?
7. What method can be used to detect hyperfunction of the pancreas?
8. What laboratory and instrumental studies are used to diagnose diabetes mellitus?

7. Control: tasks and tests

11. Educational resources	
Electronic resources, including but not limited to: databases, animations, simulators, professional blogs, websites, other electronic reference materials (e.g.: video, audio, digests)	Propaedeutics of internal diseases <ul style="list-style-type: none"> • Electronic library of YUKMA -https://e-lib.skma.edu.kz/genres • Republican Interuniversity Electronic Library (RIEL) – http://rmebrk.kz/ • Digital library "Aknurpress" -https://www.aknurpress.kz/ • Electronic library "Epigraph" -http://www.elib.kz/ • Epigraph – portal of multimedia textbookshttps://mbook.kz/ru/index/ • EBS IPR SMART https://www.iprbookshop.ru/auth • information and legal system "Zan» -https://zan.kz/ru • Medline Ultimate EVSCO • eBook Medical Collection EBSCO Scopus - https://www.scopus.com/
Electronic textbooks	"Propaedeutics of Internal Diseases" Internal Medicine. Vol. 1 [Electronic resource]: textbook / ed. V. S. Moiseeva. - 3rd ed., rev. and additionally - Electron. text data (66.5MB). - M.: GEOTAR - Media, 2015. – 960 Internal Medicine. Vol. 2 [Electronic resource]: textbook / ed. V. S. Moiseeva. - 3rd ed., rev. and additionally - Electron. text data (45.1MB). - M.: GEOTAR - Media, 2015. -895 Propaedeutics of Internal Diseases: Textbook. / T.S. Ryabova, E.S. Ryss, V.Ya. Plotkin, et al. - St. Petersburg: SpetsLit, 2015. - 414 p. http://rmebrk.kz/book/1174389 Internal diseases in the work of a general practitioner: Study guide. / K.Zh. Sadykova, Sh.U. Skenderova, S.K. Sattiev. - Turkestan: Turan, 2017. - 96 p. http://rmebrk.kz/book/1167635 Propaedeutics of Internal Medicine: Textbook. – 6th ed., Volume I reworked and additional – Almaty: Evero, 2020. – 400 pp. https://elib.kz/ru/search/read_book/676/ Propaedeutics of Internal Medicine: Textbook. – 6th ed., II - volume revised and supplemented (Textbook for students of medical universities). – Almaty: Evero, 2020. – 212

	<p> p.https://elib.kz/ru/search/read_book/682 Propaedeutics of Internal Medicine: Textbook. – 6th ed., III - volume revised and supplemented (Textbook for students of medical universities). – Almaty: Evero, 2020. – 208 pp. https://elib.kz/ru/search/read_book/684/ Nursultanova S.D., Bakirova R.E., Mamashalieva S.B., Bekov E.K., Madiyeva L.S. Zhurek tamyr zhuyesinin aurulary bar naukastardy tekseru әdisi zhene tekhnikasy. Oku-әdistemelik kural.- Almaty, “Evero” baspasy. - 2020. https://elib.kz/ru/search/read_book/705/ Ishki arza aurularyn propaedeutics. Okulyk Aitmbet B.11 - Almaty “Evero” 2018, -568 bet. https://elib.kz/ru/search/read_book/3086/ Stryuk, Raisa Ivanovna. InternaLEDISEASES: in 3 parts : Part 1 textbook / R. I. Stryuk, I. V. Maev; [First. Moscow State Medical University named after I. M. Sechenov]. - Almaty : Evero, 2016. - URL:http://https://elib.kz/ru/search/read_book/2766/. Stryuk, Raisa Ivanovna. InternaLEDISEASES: in 3 parts : Part 2 textbook / R. I. Stryuk, I. V. Maev - Almaty: Evero, 2016. - URL:https://elib.kz/ru/search/read_book/2767/ Stryuk, Raisa Ivanovna. InternaLEDISEASES: at 3 o'clock: Part 3 textbook / R. I. Stryuk, I. V. Maev. - Almaty: Evero, 2016. – URL:https://elib.kz/ru/search/read_book/2768/ Pimenov, Yu. S. Internal Medicine. Volume 1: study guide / Yu. S. Pimenov, I. V. Roganova, L. N. Finko. - Moscow: REAVIZ, 2008. - 146 p. / Digital educational resource IPR SMART:https://www.iprbookshop.ru/10141.html Roganova, I. V. Internal Medicine. Volume 2: study guide / I. V. Roganova, V. F. Roganov, I. O. Prokhorenko. - Moscow: REAVIZ, 2008. - 132 p. / Digital educational resource IPR SMART:https://www.iprbookshop.ru/10142.html Clinical tasks in internal medicine: a tutorial / R. I. Saifutdinov, L. K. Kozlova, O. V. Bugrova [et al.]. - Orenburg: Orenburg State Medical Academy, 2012. - 152 p. - URL:https://www.iprbookshop.ru/21817.html </p>
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	<p>Media, 2015</p> <p>Akhmetov, K. Zh. Zh. Akhmetov. - Almaty: New book, 2022. - 266 p.</p> <p>Vasilenko, V.H. Ishki aurular propaedeutics. T. 1. :okulyk / mem. tilge aud. K. Askambay. - Almaty: Evero, 2015. - 336 b. With</p> <p>Vasilenko, V.H. Ishki aurular propaedeutics. T. 2: okulyk / mem. tilge aud. K. Askambay. - Almaty: Evero, 2015. - 176 b. With</p> <p>Vasilenko, V.H. Ishki aurular propaedeutics. T. 3: okulyk / mem. tilge aud. K. Askambay. - Almaty: Evero, 2015. - 192 b. With</p> <p>Aitbembet, B.N. Ishki aurular propaedeutics: okulyk Almaty: Evero, 2014. - 568 bet.</p> <p>Makolkin, V.I. Ishki aurular: okulyk. - M.: GEOTAR - Media, 2014. - 976 bet</p> <p>Grebenev, A. L. Propaedeutics of Internal Diseases: textbook / A. L. Grebenev. - 5th ed., revised and enlarged. - Almaty: Evero, 2014. - 520 p.</p> <p>Module "Hematopoietic system": an integration textbook / S. K. Zhaugasheva [f. b.]; revised by S. B. Zhaugasheva, S. D. Nursultanova. - M.: "Litterra", 2014. - 288 bet. p.</p> <p>Additional:</p> <p>Omarov, T.R. Emergency conditions in the clinic of internal diseases: a tutorial / T. R. Omarov, V. A. Omarova. - Karaganda: AKNUR, 2019. - 518 p.</p> <p>Diagnosis of diseases internal organs. Formulation, classification: a tutorial / edited by V. A. Akhmedov. - M.: GEOTAR - Media, 2016. - 256</p> <p>Mukhin, N. A. Selected lectures on internal diseases: lecture / N. A. Mukhin. - 2nd ed. - M.: GEOTAR - Media, 2017. - 328 p.</p> <p>Ishki aurular boyinsha obyektivtendirilgen qyramdastyrylgan klinikalyk emtikhan: oku-adistemelik kural = Objective structured clinical examination in internal medicine: educational methodological manual / M. Ospanov atyndagy BKMMU; Kuras. K. Zh. Akhmetov [reinforced concrete]. - M.: "Litterra", 2016. - 368 b.</p> <p>Syrkatnama: oku-adistemelik kural / G. M. Yesenzhanova [Zh. b.] ; KR DS ZhED Minister of League. - 2-bass tolyk. zhene ond. - Karaganda: Residential complex "Aknur", 2015. - 80 s</p> <p>K. Akhmetov</p> <p>Akhmetov K. Zh. Ishki aurular propaedeutics pәniniң klinikalyk dәristeri: oku kuraly / k. Zh. Akhmetov. - Almaty: New book, 2022. - 266 p.</p> <p>Diagnosis of internal diseases by syndromes: training manual / EK Bekmurzaeva. - Almaty: Epigraph, 2022. - 128 s.</p> <p>Seydakhmetova A. A. Ishki aurular meteorology and factors of taueldiligi: monograph / A. A. Seidakhmetova. - Shymkent, 2025. - 108 b. - Matin.</p>
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