

CHOLECYSTITIS THE IMPORTANCE OF USING MODERN DIAGNOSTIC METHODS IN THE DIAGNOSIS OF THE DISEASE

Ubaydullaev Rustam

Assistant, Department of Clinical Pharmacology, Samarkand State Medical University

Abstract : Cholecystitis is an inflammatory process of the gallbladder, often caused by intestinal microflora damage to the organ due to stagnation of bile in the bile ducts. Cholecystitis usually occurs as a complication of gallstone disease. The gallbladder is an organ located next to the liver and plays a major role in the digestive process. Normally, bile is poured into the duodenum, in some cases, as a result of some pathology, the evacuation of bile is disturbed and it stagnates in the gallbladder. In this case, the risk of inflammation as a result of pain and infection increases. Usually, cholecystitis occurs together with cholangitis, which means that bile ducts are also inflamed. Cholecystitis is a common surgical disease, affecting more women than men, especially middle-aged and older people.

Key words: gallbladder disease, classification, origin, diagnosis, prevention.

Risk factors for cholecystitis in women

- a. Constant pressing of the gall bladder during pregnancy - cholesterol and bile acids imbalance, stagnation of bile fluid;
- b. The peculiarity of the hormonal system in women - during pregnancy and during the climax, the high secretion of the hormone progesterone also has a negative effect on the function of the gall bladder;
- c. Women adhere to the diet more, and as a result, the motility (contraction function) of the gallbladder is disturbed;
- d. Risk factors for the origin of cholecystitis in all people
- e. Intestinal and (or) liver infections;
- f. Parasitic diseases (invasion of worms and simple animals);
- g. Obstruction (clogging) of the gallbladder neck in gallstone diseases, damage to mucous membranes;
- h. In violation of the blood supply of the gall bladder wall;

All the above-mentioned reasons are related to gall bladder blockage and its motility disorders.

Classification of cholecystitis

According to etiology (origin), cholecystitis is divided into two large groups:

- a. Calculus (Latin. Calculus - stone);
- b. Noncalculosis (without stones).

On the course of cholecystitis:

- a. Sharp;
- b. Chronic.

According to the nature of inflammation:

- a. Catarrhal;
- b. Purulent;

- c. Gangrenosis;
- d. Phlegmonosis;
- e. A mix.
- f. Gangrenous and phlegmonous cholecystitis belong to the destructive form of the disease (disorder of organ structure and function).

Gallbladder and bile fluid

The gallbladder is anatomically and physiologically close to the liver. The liver has many functions, one of which is to produce bile and transport it to the duodenum. Excess bile fluid accumulates in the gallbladder and pours into the small intestine at the right time in portions.

Role of bile in digestion:

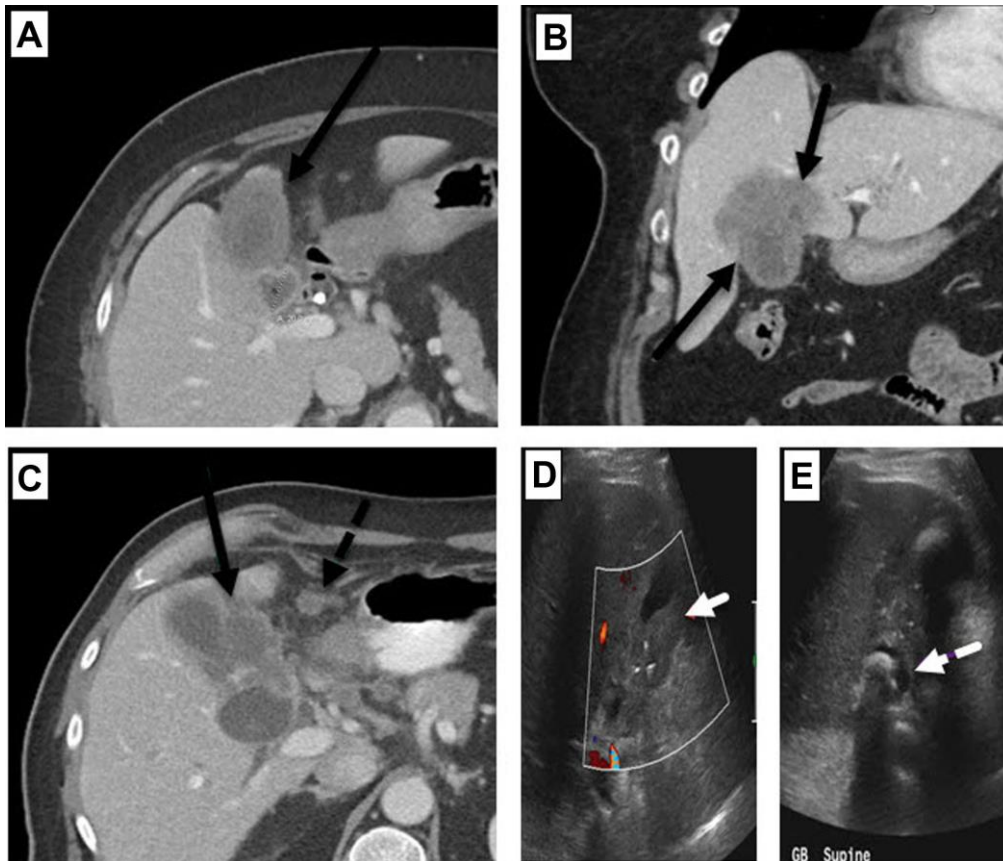
Break down processed food in gastric juice, transfer digestion from stomach type to intestinal type;

Stimulation of small intestinal peristalsis;

Activation of physiological mucus that protects the inner lining of the intestine;

Neutralization of bilirubin, cholesterol and a number of harmful substances;

Activation of enteric pancreatic enzymes;



Symptoms of cholecystitis

The initial symptoms of cholecystitis are sudden pain under the right rib. The reason for this is the blockage of the stone in the gallbladder. As a result, the gallbladder is stimulated and the inflammatory process begins. The pain goes away after a while by itself or when taking some analgesic, but then the pain gets worse and is persistent. As the disease progresses, body temperature rises, nausea and vomiting are observed, and the general condition of the patient worsens.

As a result of bile fluid not falling into the duodenum, the skin and mucous membranes begin to turn yellow. Jaundice is caused by stone blockage in the gallbladder. The severity of the pathogenesis of the



disease is determined by the patient's pulses: usually, the number of heart contractions (pulses) in this disease is from 80 to 100-130 per minute, which indicates that serious changes are taking place in the body.

In chronic forms of cholecystitis, the symptoms of the disease do not appear on the surface, they develop slowly and can even turn into an acute form. In such cases, treatment is carried out in special medical institutions.

Diagnosis of cholecystitis

To determine cholecystitis, anamnesis is collected, physical examinations (general examination and palpation), laboratory examinations and instrumental examinations are carried out.

According to the anamnesis, it is determined that the patient previously had a disease in the gastrointestinal system, liver and other organs, the nature of the pain and digestive disorders (nausea, vomiting, diarrhea, constipation, abdominal rest);

On physical examination, the presence of a white coating on the tongue indicates gallstones. There is pain in various parts of the abdomen;

In the instrumental examination, duodenal probing, UTT (UZI) and X-ray examination are performed, peristalsis of the gallbladder, ductility of the gallbladder and other functional and morphological functions are checked.

Nausea in cholecystitis is one of the main symptoms of cholecystitis. Vomiting is a reflex process that occurs with vomiting. Vomiting is the body's defense mechanism, that is, to expel toxins.

Vomiting in cholecystitis should be distinguished from vomiting caused by other diseases, for example:

- a. Appendicitis;
- b. Poisoning;
- c. Kidney attack (colic);
- d. Stomach and duodenal ulcer diseases;
- e. Intestinal mesenteric artery obstruction;
- f. Pancreatitis;
- g. Ectopic pregnancy;

To distinguish cholecystitis from these diseases:

Nausea time, what part of the day is vomiting observed;

How long does it take to feel nauseous after eating;

Duration of nausea and whether or not it ends with vomiting;

Whether or not you feel relief after withdrawal;

The composition of the vomit mass (whether there was digestion or not);

It is determined whether there is blood in the vomit.

Diarrhea is common in cholecystitis. Diarrhea, constipation, flatulence occur in diseases of the digestive organs, and at the same time in cholecystitis.

The origin of diarrhea is also characteristic of the following other diseases:

Dysbacteriosis - from taking antibiotics in the treatment of cholecystitis;

Toxic infection;

Various changes in intestinal motility;
Constipation and abdominal rest are observed in:

In intestinal paresis, severe cholecystitis, peritonitis;
Hypokinetic state (inactivity), the patient being in bed for a long time;
Long-term inflammation of the gallbladder as a result of reflex action on the intestines.

Causes of cholecystitis

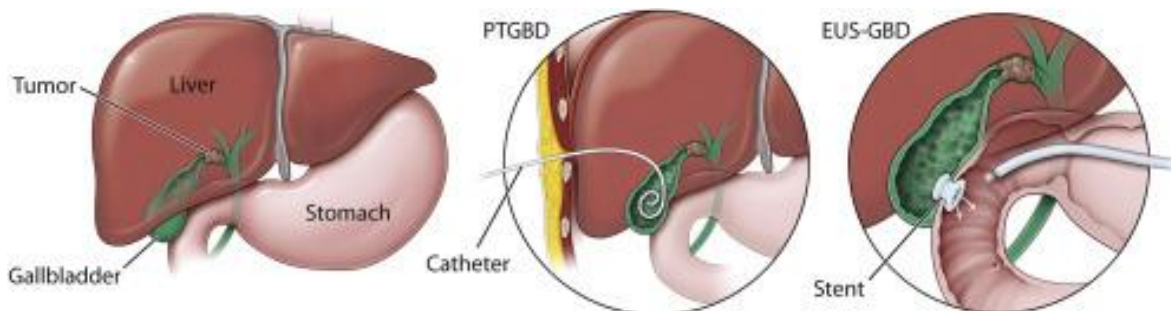
[caption id="attachment_11204" align="aligncenter" width="700"]Acute and chronic cholecystitis
Photo: Medicalnewstoday.com[/caption]

Despite the fact that the causes of cholecystitis are various, the main place is occupied by gallstone diseases. It is caused by the formation of stones in the neck, body and bile ducts of the gallbladder and blockage of the bile fluid. In addition, cholecystitis caused by various injuries, severe diseases, for example, diabetes, is secondary, that is, a complication of another disease.

The above causes are called acute cholecystitis. In chronic cholecystitis, the inflammatory process is prolonged and the gallbladder wall thickens.

Acute cholecystitis

Symptoms of acute cholecystitis, namely nausea and vomiting, begin after eating fatty foods, and pass only when taking painkillers. The acute form comes to the surface when stones are formed and blocked in the gallbladder. Another main symptom is severe pain. In addition, the following symptoms may also be observed:



Nausea, with an unpleasant taste in the mouth;

Febrile body temperature (38-39 C);

Neutrophilia, left shift in blood analysis;

Complications of acute cholecystitis

Purulent diffuse or local peritonitis;

Gallbladder rupture;

Acute pancreatitis;

Obturator (mechanical) jaundice.

Pain is the main symptom of cholecystitis and appears in the following areas:

Under the right rib;

In the epigastric area, between the bottom of the sternum and the right subcostal area;

In the area around the navel.

Pain appears in the patient - strong, sharp, dull, attacking, pressing, pulsating forms.

The following are performed in the examination of acute cholecystitis based on pain:

Ortner's symptom - severe pain under the right rib when lightly tapped or grasped with the hand;

Myusi-Georgievsky symptom - pain under the right rib when palpating the sterno-lumbar-mammary



muscle in the area of the neck below the ear;

Shetkin-Blumberg symptom - pain on deep abdominal palpation.

[caption id="attachment_11205" align="aligncenter" width="625"]about cholecystitis Photo: Healthline.com[/caption]

Chronic cholecystitis

Causes of chronic cholecystitis

Pathogenesis of the disease develops slowly;

Elongation of the acute form.

Symptoms of chronic cholecystitis

Constant feeling of heaviness in the epigastric region;

Stomach rest;

Nausea;

Bitter taste in the mouth;

Subfebrile temperature (37-38 C);

Liver enlargement (palpated from the abdominal wall);

Gallbladder wall thinning during instrumental examination;

Acute pain is not observed in chronic cholecystitis. Often, patients can feel a dull and lingering pain.

Chronic noncalculous (stoneless) cholecystitis can occur even without symptoms. The symptoms are not obvious in the examination of the disease.

Types of cholecystitis

Calculosis;

Nocalculosis;

Gallbladder cholecystitis;

Destructive cholecystitis;

Catarrhal cholecystitis;

Purulent cholecystitis.

Calculous or non-calculous types are found in chronic and acute cholecystitis. In case of calculous cholecystitis, the walls of the gall bladder are irritated, and in non-calculous cholecystitis, there is a violation of blood and nerve supply.

Calculous cholecystitis

Stone cholecystitis - occurs as a result of three pathological changes in the body, metabolic disorders, stone formation and inflammatory process.

Pathogenesis of calculous cholecystitis occurs in several stages:

Metabolic disorders - stone formation (cholelithiasis);

Damage to the mucous membrane of the gallbladder with sharp stones;

Inflammation of the mucous membrane of the gallbladder due to intestinal infections;

According to the composition of the stone, there are cholesterol, pigment (bilirubin), calcium and mixed types. Normally, excess cholesterol, bilirubin and calcium are excreted through feces.

According to the structure of stones:

Crystalline;

Amorphous;

Fibrous;



Floor floor;

Stones in calculous cholecystitis:

Primary (appears only in the sack of fire);

Secondary (occurs in the biliary and hepatic tracts);

Chronic calculous cholecystitis

This is an inflammatory disease of the gallbladder wall, which occurs in two stages:

The period of remission is a period of peace, the symptoms do not appear clearly;

Acute period - caused by secondary stone blocking the gallbladder, symptoms are similar to acute cholecystitis.

Noncalculous cholecystitis

[caption id="attachment_11207" align="aligncenter" width="610"]Cholecystitis Photo: Medicine-worlds.com[/caption]

Gallbladder inflammation without stones. This disease is often accompanied by hepatitis, pancreatitis and diseases of the biliary tract.

Causes of noncalculous cholecystitis:

Gallbladder inflammation as a result of infection;

Gallbladder wall damage caused by pancreatic enzymes;

Violation of the blood supply of the gallbladder wall.

Symptoms of noncalculous cholecystitis are typical and atypical:

In its typical form, 45-90 minutes after eating, dull pain of the same intensity begins, pain increases when sitting or lying down, hot flashes, nausea are observed;

Cardiological syndrome - chest pain, arrhythmias, extrasystoles are observed after eating;

Esophageal syndromes - severe heartburn, dull pain and sensation of a foreign substance between the chest, temporary dysphagia (difficulty swallowing);

Intestinal syndromes - abdominal rest and repeated constipation;

Chronic noncalculous cholecystitis

Chronic noncalculous cholecystitis is a disease caused by infectious inflammation of the gallbladder, thickening of the inner layer of the gallbladder, and dampness of the bile fluid. There are 3 different ways of infection in the gallbladder:

Ascending path - entry of infection from the intestine to the neck of the gallbladder and from there. In this case, due to the dysfunction of the sphincters, the liquids in the intestine return to the top;

Descending path - inflammation of the gall bladder from the circulation of the infection in the blood, i.e. hematogenous way;

Lymphogenic way - the lymphatic system has the ability to cleanse the body of infections. But as a result of severe inflammation (diseases of the urinary tract, respiratory tract, digestive system), the lymph cannot neutralize the infection, and the infection in the lymphatic tract can also damage the gallbladder.

Destructive cholecystitis

Phlegmonous and gangrenous cholecystitis belong to the same group, i.e. destructive cholecystitis. The outcome of phlegmonous cholecystitis is often good, and the outcome of gangrenous cholecystitis is more dangerous.

The main symptoms are pain, nausea, bitter taste in the mouth, abdominal rest (intestinal paresis and



atony), tachycardia (112 heart contractions in 1 minute), right-sided depression during breathing. will be added.

Gangrenous cholecystitis is a consequence of phlegmonous cholecystitis. In this case, shallow breathing, loss of consciousness, severe pain and complications of peritonitis are observed.

Catarrhal cholecystitis

Catarrh is a form of exudative inflammation. The main composition of catarrhal exudate is mucous mass. For differential diagnosis of such cholecystitis, laparoscopy is performed.

Symptoms of catarrhal cholecystitis:

Intense, paroxysmal pain under right rib;

Violent vomiting, with bile and intestinal masses;

Participation of the entire wall of the abdomen in breathing.

Purulent cholecystitis

Gallbladder empyema (purulent cholecystitis) is characterized by inflammation of the mucous membrane of the gallbladder and accumulation of pus. The reason for this is the effect of purulent microflora.

Complications of purulent cholecystitis:

Gallbladder wall thinning and sagging, wall perforation and peritonitis;

Transition of the purulent process to a destructive state, that is, a violation of its integrity;

Damage to the whole organism - sepsis.

Clinical symptoms of purulent cholecystitis are accompanied by exudation, similar to the phlegmonous form. 3 forms of exudative cholecystitis are distinguished:

Phlegmon - diffuse purulent inflammatory process;

Abscess - focal (limited) purulent inflammation;

Empyema is a complete covering of the gallbladder with pus.

In the diagnosis of purulent cholecystitis, leukocytosis, increased ECHT, high body temperature, severe intoxication and headache are important determining factors.

Cholecystitis attack

Acute cholecystitis and chronic cholecystitis attack are the same. A characteristic sign of an attack is a feeling of heaviness in the abdomen and an unpleasant taste in the mouth after eating fatty, spicy food. Pain in the right subcostal area, subfebrile and febrile body temperature disturb the patient.

How to prevent a cholecystitis attack?

Calling an ambulance;

Taking antispasmodics (papaverine, no-shpa) and analgesics (baralgin, analgin);

To reduce nausea, drink warm non-carbonated water, green tea with a sharp taste;

If vomiting is observed, the vomit mass should be taken for analysis.

Consequences of cholecystitis

If acute cholecystitis is not treated in time, it will turn into a chronic form and periodically attack, endangering human life. Treatment of chronic cholecystitis is more difficult, because other organs are involved in the process. An attack of chronic cholecystitis, if not treated, can lead to purulent, phlegmonous, gallbladder fistulas and damage the intestines, kidneys, and abdominal membranes.

The outcome of uncomplicated calculous cholecystitis is often positive. Long-term and timely treatment



gives good results. Complications of noncalculous cholecystitis are more dangerous, because the disease can progress to destructive forms.

Treatment of cholecystitis

Conservative treatment

Antibiotics;

Antipyretic drugs with spasmolytics;

Hepatoprotectors (to protect the liver);

Surgical treatment of cholecystitis

Cholecystectomy is a complete removal of the gallbladder, which is carried out immediately if there are diffuse and closed complications. In the remaining cases, a planned operation is carried out.

Cholecystitis treatment procedure is determined depending on the nature and expression of inflammation, complications requiring surgical intervention. The operation can be performed urgently or in a planned manner, with conventional and minimally invasive methods (for example, endoscopically).

If the pain is mild, the general condition of the patient is good and there are no signs of suppuration, the treatment can be carried out on an outpatient basis. Disseminated pain, increasing intoxication, and liver colic felt for several hours can be a reason to bring the patient to the surgical department immediately.

A typical treatment plan for acute cholecystitis includes:

A therapeutic diet (table No. 5a and then No. 5), fasting for the first 1-3 days in the case of expressed liver colic, can be recommended.

Spasmolytic drugs to reduce the activity of the sphincter at the neck of the gallbladder and facilitate the flow of bile.

Antibacterial agents to eliminate the infectious factor of inflammation.

Nonsteroidal anti-inflammatory drugs to reduce pain, tissue stiffness, and inflammation. They also have an antipyretic effect.

Prokinetic drugs that regulate stomach and intestinal motility and have an anti-vomiting effect.

As a symptomatic treatment during expressed pain, non-narcotic analgesics.

Enzyme preparations are prescribed to compensate for enzyme deficiency, improve digestion and assimilation of nutrients, and reduce the functional load on the pancreas.

Some types of physiotherapy, but when chronic calculous cholecystitis worsens, such procedures should be carried out very carefully.

Even after the cessation of symptoms of acute cholecystitis, it is recommended to continue the diet, not to stop taking enzyme preparations, and to complete the spasmolytic treatment course. According to the doctor's decision, expectorants, agents that increase fluid production (choleretics) or agents that help excretion may be prescribed.

After exacerbation of acute cholecystitis, the basis of treatment is diet, errors in eating and when symptoms of indigestion appear, taking enzyme preparations, using mineral waters and other water treatment methods. In the case of stones in the gall bladder, a decision is made whether to remove the bladder completely or to remove only the stones in its space, with the help of lithotripsy (non-contact crushing of stones). In the same cases, with the help of litholytic treatment, the gradual loss of gallstones is effective.

List of used literature:

<http://medicaljournals.eu/>



1. Rustamovich, A. I., Negmatovich, T. K., & Fazliddinovich, S. D. (2022). БОЛАЛИКДАН БОШ МИЯ ФАЛАЖИ ФОНИДА РИНОСИНУСИТИ БОР БЕМОРЛАРДА БУРУН БЎШЛИГИ МУКОЦИЛИАР ТРАНСПОРТИ НАЗОРАТИ ТЎҒРИСИДАГИ ЗАМОНАВИЙ ҚАРАШЛАР (адабиётлар шарҳи). JOURNAL OF BIOMEDICINE AND PRACTICE, 7(2).
2. Абдурахмонов, И. Р., & Шамсиев, Д. Ф. (2021). Эффективность применения местной антибиотикотерапии в лечении параназального синусита у детей с церебральным параличом. In НАУКА И ОБРАЗОВАНИЕ: СОХРАНЯЯ ПРОШЛОЕ, СОЗДАЁМ БУДУЩЕЕ (pp. 336-338).
3. Абдурахмонов, И. Р., & Шамсиев, Д. Ф. (2021). Болаликдан бош мия фалажи билан болалардаги ўткир ва сурункали параназал синуситларни даволашда мукорегуляр дори воситасини самарадорлигини ўрганиш. Т [a_XW [i [S US S_S^[ùe YfcS^, 58.
4. Siddikov, O., Daminova, L., Abdurakhmonov, I., Nuralieva, R., & Khaydarov, M. OPTIMIZATION OF THE USE OF ANTIBACTERIAL DRUGS DURING THE EXACERBATION OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE. Turkish Journal of Physiotherapy and Rehabilitation, 32, 2.
5. Тураев, Х. Н. (2021). Абдурахмонов Илхом Рустамович Влияние будесонида на качество жизни пациентов с бронхиальным обструктивным синдромом. Вопросы науки и образования, 7, 132.
6. Абдурахманов, И., Шамсиев, Д., & Олимжонова, Ф. (2021). Изучение эффективности мукорегулярных препаратов в лечении острого и хронического параназального синусита при детском церебральном параличе. Журнал стоматологии и краниофациальных исследований, 2(2), 18-21.
7. Абдурахмонов, И. Р., & Шамсиев, Д. Ф. (2023). БОШ МИЯ ФАЛАЖИ ФОНИДАГИ ПАРАНАЗАЛ СИНУСИТЛАРНИ ДАВОЛАШДА ЎЗИГА ХОС ЁНДАШИШ. MedUnion, 2(1), 14-26.
8. Орипов, Р. А., Абдурахмонов, И. Р., Ахмедов, Ш. К., & Тураев, Х. Н. (2021). ОСОБЕННОСТИ ПРИМЕНЕНИЕ АНТИОКСИДАНТНЫХ ПРЕПАРАТОВ В ЛЕЧЕНИИ НЕЙРОДЕРМИТА.
9. Ахмедов, Ш. К., Тураев, Х. Н., Абдурахмонов, И. Р., & Орипов, Р. А. (2021). НЕКОТОРЫЕ ОСОБЕННОСТИ ТАКТИКИ ПРОДУКТИВНОГО ЛЕЧЕНИЯ ХРОНИЧЕСКОЙ КРАПИВНИЦЫ.
10. Абдурахмонов, И. Р. (2021). Исследование мукоцилиарной транспортной функции слизистой оболочки полости носа у больных с параназальным синуситом на фоне детского церебрального паралича. In Актуальные аспекты медицинской деятельности (pp. 256-259).
11. Абдурахмонов, И. Р., & Тураев, Х. Н. (2022). ОПЫТ ПРИМЕНЕНИЯ СИНУПРЕТА С АНТИБАКТЕРИАЛЬНЫМИ ПРЕПАРАТАМИ В КОМПЛЕКСНОЙ ТЕРАПИИ РИНОСИНУСИТОВ У БОЛЬНЫХ ДЕТСКИМ ЦЕРЕБРАЛЬНЫМ ПАРАЛИЧОМ. Достижения науки и образования, (2 (82)), 88-92.
12. Abdurakhmanov, I., & Shernazarov, F. (2023). SPECIFIC ASPECTS OF TREATMENT OF CHRONIC RHINOSINUSITIS IN CHILDREN. Science and innovation, 2(D10), 164-168.
13. Andryev S. et al. Experience with the use of memantine in the treatment of cognitive disorders //Science and innovation. – 2023. – Т. 2. – №. D11. – С. 282-288.
14. Antsiborov S. et al. Association of dopaminergic receptors of peripheral blood lymphocytes with a risk of developing antipsychotic extrapyramidal diseases //Science and innovation. – 2023. – Т. 2. – №. D11. – С. 29-35.
15. Asanova R. et al. Features of the treatment of patients with mental disorders and cardiovascular pathology //Science and innovation. – 2023. – Т. 2. – №. D12. – С. 545-550.



16. Begbudiye M. et al. Integration of psychiatric care into primary care //Science and innovation. – 2023. – T. 2. – №. D12. – C. 551-557.
17. Bo'Riyev B. et al. Features of clinical and psychopathological examination of young children //Science and innovation. – 2023. – T. 2. – №. D12. – C. 558-563.
18. Borisova Y. et al. Concomitant mental disorders and social functioning of adults with high-functioning autism/asperger syndrome //Science and innovation. – 2023. – T. 2. – №. D11. – C. 36-41.
19. Ivanovich U. A. et al. Efficacy and tolerance of pharmacotherapy with antidepressants in non-psychotic depressions in combination with chronic brain ischemia //Science and Innovation. – 2023. – T. 2. – №. 12. – C. 409-414.
20. Nikolaevich R. A. et al. Comparative effectiveness of treatment of somatoform diseases in psychotherapeutic practice //Science and Innovation. – 2023. – T. 2. – №. 12. – C. 898-903.
21. Novikov A. et al. Alcohol dependence and manifestation of autoaggressive behavior in patients of different types //Science and innovation. – 2023. – T. 2. – №. D11. – C. 413-419.
22. Pachulia Y. et al. Assessment of the effect of psychopathic disorders on the dynamics of withdrawal syndrome in synthetic cannabinoid addiction //Science and innovation. – 2023. – T. 2. – №. D12. – C. 240-244.
23. Pachulia Y. et al. Neurobiological indicators of clinical status and prognosis of therapeutic response in patients with paroxysmal schizophrenia //Science and innovation. – 2023. – T. 2. – №. D12. – C. 385-391.
24. Pogosov A. et al. Multidisciplinary approach to the rehabilitation of patients with somatized personality development //Science and innovation. – 2023. – T. 2. – №. D12. – C. 245-251.
25. Pogosov A. et al. Rational choice of pharmacotherapy for senile dementia //Science and innovation. – 2023. – T. 2. – №. D12. – C. 230-235.
26. Pogosov S. et al. Gnostic disorders and their compensation in neuropsychological syndrome of vascular cognitive disorders in old age //Science and innovation. – 2023. – T. 2. – №. D12. – C. 258-264.
27. Pogosov S. et al. Prevention of adolescent drug abuse and prevention of yatrogenia during prophylaxis //Science and innovation. – 2023. – T. 2. – №. D12. – C. 392-397.
28. Pogosov S. et al. Psychogenetic properties of drug patients as risk factors for the formation of addiction //Science and innovation. – 2023. – T. 2. – №. D12. – C. 186-191.
29. Prostyakova N. et al. Changes in the postpsychotic period after acute polymorphic disorder //Science and innovation. – 2023. – T. 2. – №. D12. – C. 356-360.
30. Prostyakova N. et al. Issues of professional ethics in the treatment and management of patients with late dementia //Science and innovation. – 2023. – T. 2. – №. D12. – C. 158-165.
31. Prostyakova N. et al. Sadness and loss reactions as a risk of forming a relationship together //Science and innovation. – 2023. – T. 2. – №. D12. – C. 252-257.
32. Prostyakova N. et al. Strategy for early diagnosis with cardiovascular diseaseisomatized mental disorders //Science and innovation. – 2023. – T. 2. – №. D12. – C. 166-172.
33. Rotanov A. et al. Comparative effectiveness of treatment of somatoform diseases in psychotherapeutic practice //Science and innovation. – 2023. – T. 2. – №. D12. – C. 267-272.
34. Rotanov A. et al. Diagnosis of depressive and suicidal spectrum disorders in students of a secondary special education institution //Science and innovation. – 2023. – T. 2. – №. D11. – C. 309-315.

Rotanov A. et al. Elderly epilepsy: neurophysiological aspects of non-psychotic mental disorders //Science and innovation. – 2023. – T. 2. – №.