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COMPLEX VISUAL ASSESSMENT OF STRUCTURAL CHANGES IN THE PANCREAS IN PATIENTS WITH CHRONIC PANCREATITIS

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Chronic inflammatory process of the pancreas, specifically chronic pancreatitis, is considered to be one of the most complex polyetiologic and multimorbid disorders. In different countries, the prevalence rate of this disease ranges in the area of 0,2%-0,7%, while, in patients with gastroenterological disorders, prevalence estimates range from 6,0 to 9,0% [3]. Physicians specializing in a variety of fields consider the pancreas to be quite a mysterious organ having both endocrine and exocrine functions. Patients with functional changes in the pancreas associate pancreatic diseases with extensive, though often non-informative, diagnostic tests as well as extended treatment interventions that often tend to be ineffective despite being quite costly [4,8].

Latest advances in health and medical practices are contributing to an expansion of a range of diagnostic procedures in the diagnosis of chronic pancreatitis; however, in spite of this, the instrumental method for the examination of patients with the pancreas diseases remains quite complicated when compared with diagnosis of disorders involving other organs of the gastrointestinal system. This can be attributed to the anatomical location of the pancreas, meteorism that often accompanies chronic pancreatitis and excessive subcutaneous adipose tissue in some patients. All of this decreases the diagnostic value of the most widely available and used diagnostic methods such as ultrasound examination and X-ray examination [2].

The least studied aspects of acute and chronic pancreatitis remain the ones involving combined pathology of pancreaticoduodenal organs. To get a deeper insight into the pathologic processes it is crucial to keep a record of intraorgan and inter-organ relationships within the pancreas and duodenum that form a well-integrated system which ensures the adaptation of the motor and secretory function of the digestive system to food quality and quantity [4].

In chronic pancreatitis, structural and morphological analysis of the main parts of the pancreas and duodenum can reveal a wide range of structural and functional changes and contribute to a better understanding of the essence of the multiple organ pathological process and compensatory reactions in the digestive system. This requires a multimodal approach with the use of the up-to-date imaging methods (in order to assess changes in pancreatic ducts).

Endoscopic retrograde cholangiopancreatography (ERCP) has gained considerable ground as a diagnostic procedure. It is this diagnostic test that is used to detect changes in the pancreatic ducts. Based on the findings of ERCP, ultrasound examination or computer tomography, several classifications are used in order to identify the degree of severity of chronic pancreatitis. However, the Cambridge classification of chronic pancreatitis remains the most widely used one [6].

Apart from determining the degree of severity of chronic pancreatitis, findings of ERCP allow identifying two types of chronic pancreatitis [7]:

- type 1 is a "small duct" disease with the main pancreatic duct diameter ranging from 4 to 7 mm;
- type 2 is a "large duct" disease with the main pancreatic duct diameter being over 7 mm.

The aim of this study was to investigate and analyse structural changes in the pancreas in chronic pancreatitis in the anamnestic and clinical dimensions.

Material and methods. In our study, 102 patients with chronic pancreatitis underwent a comprehensive examination. All the patients were found to experience hypertension II as a comorbid condition. The patients underwent in-hospital treatment in the department of internal medicine in Khust regional hospital during 2017-2018.

As far as gender distribution is concerned, it should be noted that female patients prevailed (55,9%) with the average age being 51,0±10,0 years. The duration of chronic pancreatitis was within a range of 7,0±3,0 years, whereas the hypertension duration range was 5,0±2,0 years. These patients underwent anamnestic and clinical examination.

All the patients underwent general physical and laboratory examination. The range of instrumental examinations included abdominal cavity ultrasound examination (ultrasound machine LOGIQ 7 (the USA, 2008 p.) with the use of sensor C (convecs) 3-5 MHz), duodenal drainage, esophagogastroduodenoscopy (EGD, gastroscope PENTAX FG29W (Japan, 2008), electrocardiography (12 Channel ECG machine SCHILLER AT-2). In addition, ERCP was performed in order to study the structure and morphology of the pancreas. This method was used to examine 12 patients with a marked pain syndrome and low positive dynamics of treatment. The use of ultrasound examination failed to provide comprehensive and explicit imaging of the state of the pancreas, the pancreatic ducts in particular. In view of this, the use of such an invasive diagnostic technique as ERCP was proven to be appropriate. ERCP was performed with Olympus TJF-20 duodenoscope with a side view in Andriy Noval Transcarpathian Regional Clinical Hospital.

The catheter was inserted and located (over the ampulla of Vater) in the duodenum; then, the pancreatic ducts were filled with the contrast material (Triombrast) through the catheter. The contrast material was injected on a step-by-step basis under the visual 'online' control performed with Philips X-Ray Machine with an image amplifier until the proper image for verification was obtained. The results were interpreted according to the criteria of the Cambridge classification.

Results and their discussion. General physical and laboratory examination of the treatment group of patients was considered of prime importance. As far as their clinical characteristics are concerned, on their admission to hospital all the patients presented with pain dyspeptic syndrome and exocrine pancreatic insufficiency in different proportions. Each of the syndromes mentioned above was characterized by polymorphism of symptoms. The analysis of potential etiologic factors was conducted in order to identify the peculiar features of the clinical course depending on the causative factor. The findings were as follows: 20 (19,6%) patients were found to have alcohol consumption as the leading cause to the development and exacerbation of chronic pancreatitis; 14 (13,7%) patients had overeating of mainly smoked, fatty and fried food, as a causative factor; 29 (28,4%) patients reported the absence of any dietary regime; 1 (1,0%) patient had an abdominal trauma as a causative factor, 7 (6,9%) patients attributed the exacerbation of the disease to a stress-

ful professional environment; and 4 (3,9%) patients to physical exercise. For 37 (36,3%) patients it was impossible to clearly identify the cause which led to the exacerbation of chronical pancreatitis. In our opinion, it is also important to note that 38 (37,3%) patients were found to have been smoking for a long time, which has quite a significant effect on the development and progression of both chronic pancreatitis and hypertension.

In patients of the treatment group, chronic pancreatitis was not an isolated pathology; apart from hypertension a number of patients were found to have other morphological and functional disorders related to the endocrine system, the digestive system and cardiovascular system. Particular attention was paid to changes in the digestive tract, which were revealed by performing duodenal drainage and EGD. The former examination procedure was the leading one in the identification of the biliary disorders (sphincter of Oddi hypertension was found in 15 (14,7%) patients, hypotonia in 18 (17,7%) patients, duodenogastric reflux in 10 (9,8%) patients and microcholedocholithiasis in 25 (24,5%) patients. In addition, 10 (9,8%) patients had history of cholecystectomia because of calculous cholecystitis. The findings of the duodenal drainage examination of the biliary tract confirm the possibility of the influence of the biliary disorders on the development or relapse of inflammatory changes of the pancreas. The use of EGD revealed the following changes: erythematous gastropathy in 20 (19,6%) patients, erythematous gastroduodenopathy in 14 (13,7 %) patients, reflux esophagitis in 7 (6,9%) patients, stomach ulcer in 1 patient (1,0%) patient and congestive gastropathy in 4 patients (3,9 %). There are many theories that describe the mechanisms of the reciprocal influence of the development of chronic pancreatitis and esophago-gastroduodenopathies on the pathogenic mechanisms which have to be considered when selecting optimal treatment protocol.

While evaluating sonographic images of the pancreas in patients of the treatment group the following changes were revealed:

- enlargement of the pancreas in 29 (28,4%) patients;
- edge roughness in 24 (23,5%) patients;
- inhomogeneity of the parenchyma in 16 (15,7%) patients, density in 7 (6,9%) patients and large-scale granularity in 2 (1,96%) patients;
- hyperechogenicity of the parenchyma in 76 (74,5%) patients;
- calcification of the parenchyma in 10 (9,8%) patients;
- unechogenic cavities in the parenchyma (cystic lesions) in 3 (2,9%) patients;
- dilation of the duct of Wirsung (diameter > 2 mm) in 27 (26,5%) patients.

12 patients, who were experiencing durable pain syndrome with marked intensity on their admission to hospital, were selected for ERCP. Taking into account the patients' poor response to treatment over three weeks and perdurance of structural changes according to the follow-up sonographic test results, the decision was made to perform additional diagnostic examination (ERCP) to obtain verified information about the structural changes in the pancreatic ducts and parenchyma of the pancreas to adjust treatment.

In 7 (58,3%) patients the pain was located in the left hypochondrium, while in 5 (41,7%) patients the pain centred in the epigastric region. The pain was clearly localized only in 1 patient (8,4%), whereas in the rest patients the pain was observed to radiate both in a "left semibelt-like" fashion (n=7; 58,3%) and in a "complete belt-like" fashion (n=4; 33,3%). The character of pain was different: 6 (50,0%) patients complained of burning pain, 2 (16,7%) patients had stabbing pain and 4 (33,3%) patients were not able to clearly describe their pain, thus, identifying it as pain of a different nature. Due to the persistent character of pain, 5 patients (41,7%) suffered from sitophobia. Apart from this, the pain intensified when a patient's position was changed or in the supine position. The pain subsided insignificantly when the patients were sitting in a forward leaning position or lying with their legs placed close to the trunk. The use of medication to control or relieve pain (antispasmodic drugs, analgesics and enzyme drugs) had no apparent effect on this symptom, which worsened the patients' quality of life and led to compromised quality of treatment protocols.

When performing the ultrasound examination to identify the structural changes in the pancreas in the patients the following signs were revealed: 4 (33,3%) patients were found to have inhomogeneous parenchyma, hyperechogenicity of the parenchyma was observed in 8 (66,7%) patients; edge roughness in 7 (58,3%) patients, calcification of the parenchyma in 3 (25,0%) patients and unechogenic cavities in 2 (16,7%) patients. 5 (41,7%) patients were found to have the dilation of the major pancreatic duct.

According to the findings of ERCP, all the examined patients were diagnosed with the dilation of the duct of Wirsung. The mean diameter of the major pancreatic duct was 5,8±1,7 mm. In what follows, there is a pancreatogram of a patient with the normal pancreatic duct of Wirsung (1,4 mm) (Fig. 1) and that of a patient with chronic pancreatitis and the dilated major pancreatic duct up to 5,2 mm (Fig. 2) for comparison. Figure 3 shows a similar case accompanied by the dilation of the small branches (Fig. 3).

According to the results of the pancreatograms, the difference from the data of sonographic examination is observed. Hence, the ultrasound examination failed to reveal the increase in the size of the duct of Wirsung in all the patients (n=5), whereas according to the findings of ERCP the dilation of the major pancreatic duct was observed in all the patients under examination (n=12).

In addition to the changes in the diameter of the duct of Wirsung, the dilation of the small pancreatic ducts was detected in 2 (16,7%) patients (Fig. 3). In other words, these very patients were diagnosed with ductal form of chronic pancreatitis. Figure 4 shows the pancreatogram of the patient with calcification of the duct of Wirsung.

3 (25%) patients with chronic pancreatitis were diagnosed with lithiasis of Wirsung's duct. This result led to the identification of obstructive (calcified) chronic pancreatitis. In all the cases of calcification of the major pancreatic duct, the increase of its size was observed. Figure 5 shows a pancreatogram of the patient with the combination of calcinosis of the major pancreatic duct and a cystic lesion of the pancreas.

Patient L (8,4%), 55 years old, was diagnosed with the combination of cystic transformation and calcinosis of the major pancreatic duct. This finding is important since it shows that there is a link between the observed cavity and the duct of the pancreas.

We also detected cystic lesion of the head of the pancreas in combination with the dilation of the major pancreatic duct (Fig. 6).

2 patients (16,7 %) were diagnosed with cystic transformation in combination with the dilation of the duct of Wirsung. The clinical picture of these patients was characterized by the marked exocrine pancreatic insufficiency, a severe course of chronic pancreatitis and frequent exacerbations (5-6 times a year). The X-ray findings were consistent with the fact of the deposition of contrast agent, in other words, the detection of a cystic lesion in the parenchyma of the pancreas.

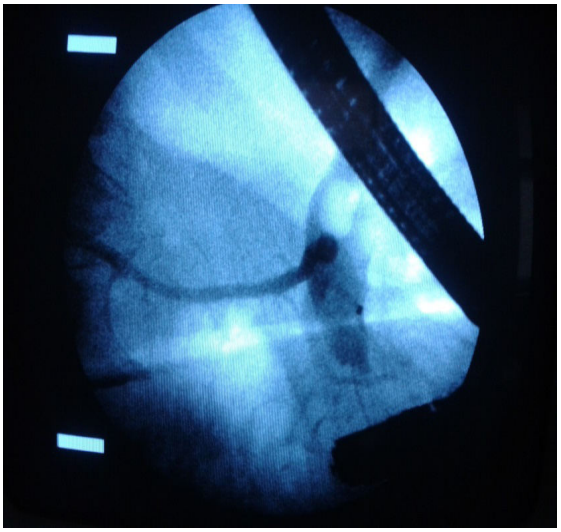

Fig. 1 Pancreatogram of patient V. 52 years old. (normal value)

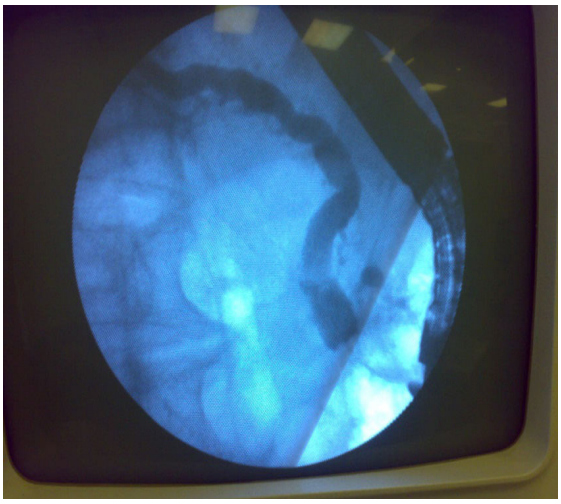

Fig.2. Pancreatogram of Patient P., 49 years old. (the dilation of the major pancreatic duct)

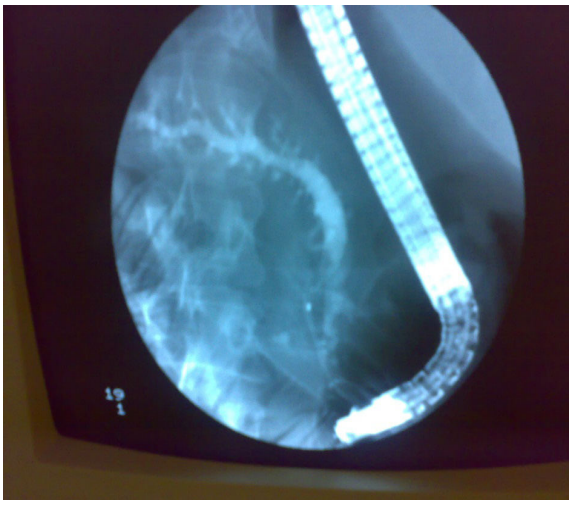

Fig. 3 The dilation of the major pancreatic duct and small branches (Patient K, 50 years old)

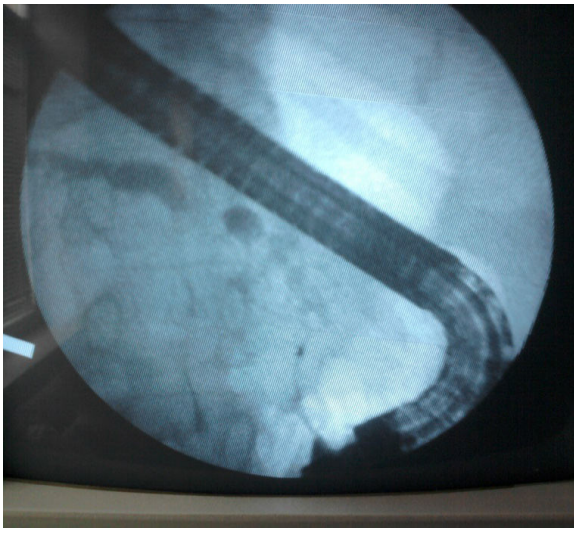

Fig. 4. Calcification of the duct of Wirsung (Patient O, 51 years old)

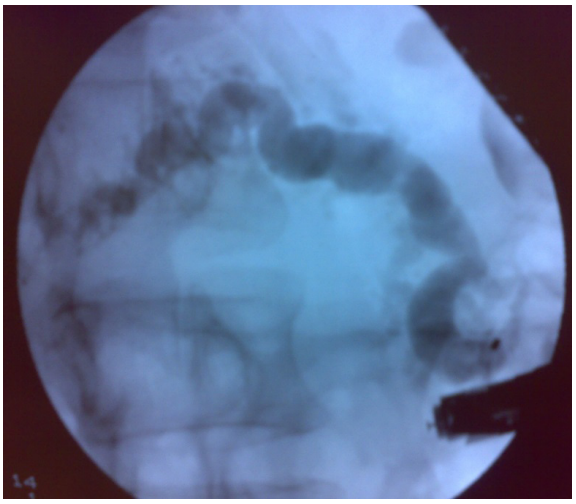

Fig. 5. Cystic lesion and calcinosis (Patient L, 55 years old)

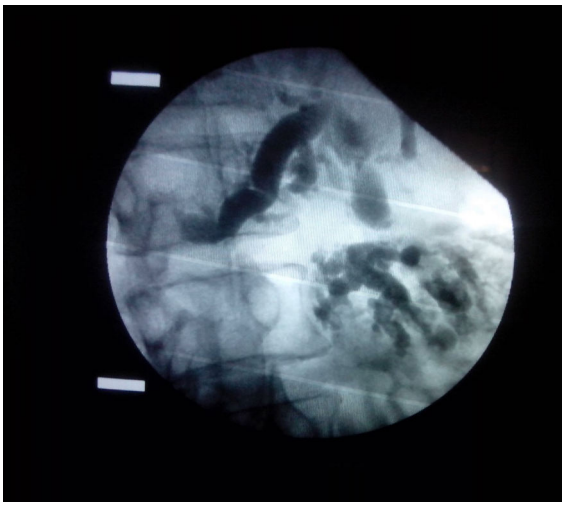

Fig.6. Cystic lesion of the head of the pancreas in combination with the dilation of the major pancreatic duct (Patient B, 52 years old)

Hence, our findings justify the use of additional diagnostic examination methods. For the ultrasound examination managed to detect the dilation of the major pancreatic duct only in a small proportion of the patients who underwent the ERCP procedure. On the contrary, it was ERCP that made it possible to identify the presence of this specific sign of chronic pancreatitis. Despite the invasive character of ERCP, there are cases when the effectiveness of a treatment protocol gets impaired without the use of this procedure.

The present research is very informative for clinical practice. A gastroenterologist often treats patients with chronic pancreatitis who present with a relapsing course of disease or torpid response to assigned therapy. Ultrasonographic examination fails to assess clinical manifestations and possibilities of their elimination in the proper way. It is desirable that such patients undergo the ERCP procedure which provides additional information about the structural changes both in the pancreatic ducts and in pancreatic parenchyma. More specifically, even a small number of the examined patients (n=12) were diagnosed with the dilation of the duct of Wirsung (5,8 ± 1,7 mm). 3 (25 %) patients with chronic pancreatitis were found to have lithiasis of Wirsung's duct, which made it possible to identify obstructive (calcified) chronic pancreatitis. The dilation of small pancreatic ducts that was detected in 2 (16,7 %) patients also showed the combination of cystic transformation and calcinosis of the major pancreatic duct in 1 patient (8,4 %). The above-mentioned facts account for the unmotivated absence of a therapeutic benefit and provide a reason for changes in the treatment protocol used to provide clinical care to patients diagnosed with chronic pancreatitis.

Conclusions. The imaging of structural changes in the pancreas requires the combination of instrumental and diagnostic methods, in particular EGD and ultrasound examination, as well as ERCP in order to make accurate assessment of the pancreatic ducts and parenchymatous parameters of the pancreas in case of a relapsing course of disease.

1. The research findings about the structural changes in the pancreas contributed to the development of the specific features of clinical manifestations of the pathological condition in question in case of a relapsing course of disease. All the examined patients (n=12) were diagnosed with the dilation of the duct of Wirsung (5,8±1,7 mm). 3 (25%) patients with chronic pancreatitis were diagnosed with lithiasis of Wirsung's duct, which made it possible to identify obstructive (calcified) chronic pancreatitis. The dilation of small pancreatic ducts was found in 2 patients (16,7%), in addition, the combination of cystic transformation and calcinosis of the major pancreatic duct was detected in 1 patient (8,4%).

2. The analysis of the identified disorders of the pancreatic ducts and parenchyma makes it possible to adjust treatment protocols to provide proper clinical care to patients with chronic pancreatitis.

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SUMMARY

COMPLEX VISUAL ASSESSMENT OF STRUCTURAL CHANGES IN PANCREAS IN THE PATIENTS WITH CHRONIC PANCREATITIS

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Chronic pancreatitis is one of the leading gastroenterologic disorders which is characterised by polymorphism of clinical manifestations, polyetiologic course and, usually, polymorbidity. The presence of such a combination of signs makes both diagnosis and treatment more difficult. This is why nowadays it is necessary to use a range of clinical, laboratory and instrumental methods of a diagnostic endeavour in order to make a diagnosis and determine the state of the pancreas.

The aim of this study - to investigate and analyse structural changes in the pancreas in chronic pancreatitis in the anamnestic and clinical dimensions.

In the present study, in order to achieve our aim 102 patients with chronic pancreatitis underwent general physical and laboratory examination. All the patients experienced hypertension II as a comorbid condition. In the formed group, female patients prevailed (55,9%) with the average age being 51,0±10,0 years. The duration of chronic pancreatitis was within a range of 7,0±3,0 years, whereas the hypertension duration range was 5,0±2,0 years. The following instrumental examination procedures were performed: sonographic examination of the abdominal cavity, esophagogastroduodenoscopy, duodenal drainage and endoscopic retrograde cholangiopancreatography (ERCP).

Apart from hypertension, the patients with chronic pancreatitis belonging to the treatment group were diagnosed with other morphological and functional disorders related to the endocrine system, the digestive system and cardiovascular system which were revealed with the use of additional laboratory and instrumental methods.

When the clinical picture was assessed on admission to hospi-

tal, all the patients presented with pain dyspeptic syndrome and exocrine pancreatic insufficiency in different proportions. 12 patients with chronic pancreatitis, whose clinical picture showed a marked pain abdominal syndrome, the intensity of which did not subside during 3 weeks of background therapy, and the absence of dynamic changes according to the ultrasound examination of the pancreas, underwent the additional diagnostic procedure ERCP to identify structural changes of the pancreatic ducts and parenchymatous parameters of the pancreas.

The findings were as follows: the signs of the dilation of the major pancreatic duct were identified in all examined patients (100%), which did not coincide with the data provided by the ultrasound examination; the dilation of the small pancreatic ducts was found in 2 (16,7%) patients, lithiasis of Wirsung's duct in 3 (25,0%) patients; the combination of cystic transformation and calcinosis of the major pancreatic duct in 1 patient (8,4%); and cystic transformation in combination with the dilation of the duct of Wirsung in 2 (16,7%) patients.

The imaging of structural changes in the pancreas requires the combination of instrumental and diagnostic methods, in particular EGD and ultrasound examination, as well as ERCP in order to make accurate assessment of the pancreatic ducts and parenchymatous parameters of the pancreas in case of a relapsing course of disease. The analysis of the identified disorders of the pancreatic ducts and parenchyma makes it possible to adjust treatment protocols to provide proper clinical care to patients with chronic pancreatitis.

Keywords: chronic pancreatitis, instrumental methods of examination, endoscopic retrograde cholangiopancreatography.

РЕЗЮМЕ

КОМПЛЕКСНАЯ ВИЗУАЛЬНАЯ ОЦЕНКА СТРУКТУРНЫХ ИЗМЕНЕНИЙ ПОДЖЕЛУДОЧНОЙ ЖЕЛЕЗЫ У БОЛЬНЫХ ХРОНИЧЕСКИМ ПАНКРЕАТИТОМ

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Хронический панкреатит (ХП) является одной из ведущих гастроэнтерологических патологий, которая характеризуется полиморфизмом клинических проявлений, полиэтиологическим течением и полиморбидностью. Наличие такого комплекса признаков затрудняет диагностику и лечение. С целью установления диагноза и определения состояния поджелудочной железы (ПЖ) необходимо применение ряда клинико-лабораторно-инструментальных методов диагностического поиска.

Цель исследования - опредедить и проанализировать структурные изменения поджелудочной железы при хроническом панкреатите в клинико-анамнестическом ракурсе.

Для достижения поставленной цели выполнено общеклиническое и лабораторное обследование 102 больных ХП. Сопутствующей патологией для всех пациентов была гипертоническая болезнь (ГБ) II стадии. В сложившейся группе превалировали больные женского пола (55,9%), средний возраст составил 51,0±10,0 лет. Продолжительность ХП колебалась в диапазоне 7,0±3,0 года, а ГБ – 5,0±2,0 года. Из инструментальных методов исследования осуществлено сонографическое исследование органов брюшной полости, эзофагогастродуоденоскопия (ЭФГДС), дуоденальное зондирование и эндоскопическая ретроградная холангиопанкреатография (ЭРХПГ).

У пациентов основной группы с ХП, кроме ГБ, обнаружены и другие морфо-функциональные расстройства на уровне эндокринной, пищеварительной и сердечно-сосудистой систем, которые диагностированы с помощью вспомогательных лабораторно-инструментальных методов. При оценке клинической картины на этапе поступления в стационар у всех пациентов установлены болевой, диспепсический синдромы и синдром экзокринной недостаточности в разных соотношениях. У 12 пациентов с ХП в клинической картине превалировал выраженный болевой абдоминальный синдром, интенсивность которого не уменьшалась в течение 3 недель базовой терапии, динамические изменения при ультразвуковом обследовании (УЗИ) ПЖ отсутсвовали. Поэтому именно этим больным дополнительно выполнено ЭРХПГ для определения структурных изменений протоковой системы и паренхиматозных параметров ПЖ. Получены следующие результаты: признаки расширения главного панкреатического протока обнаружены у всех обследованных (100%), что не совпадало с данными УЗИ; установлено расширение мелких панкреатических протоков у 2 (16,7%) больных, вирсунголитиаз – у 3 (25,0%) пациентов; у 1 (8,4%) обследованного – сочетание кистозной трансформации и кальциноза главного панкреатического протока; кистозная трансформация в сочетании с расширением Вирсунгового протока диагностирована у 2 (16,7%) пациентов.

Визуализация структурных изменений поджелудочной железы требует сочетания инструментально-диагностических методов, в частности ЭФГДС, УЗИ и при рецидивирующем течении, назначения ЭРХПГ для детальной оценки проточной системы ПЖ и паренхиматозных параметров. Анализ идентифицированных нарушений дает возможность адекватной коррекции лечебной тактики больных ХП.

რეზიუმე

ქრონიკული პანკრეატიტის მქონე პაციენტების პანკრეასის სტრუქტურული ცვლილებების კომპლექსური ვიზუალური შეფასება

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კვლევის მიზანს წარმოადგენდა ქრონიკული პანკრეატიტის მქონე პაციენტების კუჭქვეშა ჯირკველში განვითარებული სტრუქტურული ცვლილებების ანალიზი და შეფასება ანამნეზის რაკურსის გათვალისწინებით.

ჩატარებულია 102 ავადმყოფის საერთოკლინიკური და ლაბორატორიული გამოკვლევა. თანმხლებ და-ავადებას ყველა პაციენტში წარმოადგენდა ჰიპერტონიული დაავადება, II სტადია. გამოკვლეულთა ჯგუფში სჭარბობდა ქალები (55,9%), საშუალო ასაკი - 51,0±10,0 წელი. ქრონიკული პანკრეატიტის ხანდაზმულობა მერყეობდა 7,0±3,0 წლის ფარგლებში, ჰიპერტონიული დაავადებისა კი - 5,0±2,0 წელი. კვლევის ინსტრუმენტული მეთოდებიდან ჩატარებულია მუც-

ლის ღრუს ორგანოების სონოგრაფია, ეზოფაგოდუოდენოსკოპია, დუოდენური ზონდირება და ენდოსკოპიური რეტროგრადული ქოლანგიოპანკრეატოგრაფია. ძირითადი ჯგუფის ყველა პაციენტს, გარდა ჰიპერტონიული დაავადებისა, აღენიშნებოდა ენდოკრინული, საჭმლის მომნელებელი და გულ-სისხლძარღვთა სისტემების დარღვევები, რომელიც დიაგნოსტირდა დამატებითი ლაბორატორიულ-ინსტრუმენტული კვლევებით. კლინიკური სურათის შეფასებისას სტაციონარში შემოსვლის ეტაპზე ყველა პაციენტს სხვადასხვა თანაფარდობით დაუდგინდა ტკივილითი, დისპეპსიური სინდრომები და ეგზოკრინული უკმარისობის სინდრომი. ქრონიკული პანკრეატიტის მქონე 12 პაციენტის კლინიკურ სურათში პრევალირებდა გამოხატული აბდომინური ტკივილის სინდრომი, რომელიც არ მცირდებოდა სამკვირიანი ძირითადი თერაპიის პერიოდში; პანკრესის ულტრაბგერითი კვლევით დინამიკური ცვლილებებიც არ აღინიშნებოდა. ამიტომ, სწორედ ამ ავადმყოფებს პანკრესის სადინარების სისტემის სტრუქტურული ცვლილებების და პარენქიმული პარამეტრების განსაზღვრისათვის დამატებით ჩაუტარდათ ენდოსკოპიური რეტროგრადული ქოლანგიოპანკრეატოგრაფია. შედეგები აღმოჩნდა შემდეგი: ყველა გამოკვლეულში დადგინდა პანკრესის მთავარი სადინარის გაგანიერების ნიშნები, რაც არ შეესატყვისებოდა ულტრაბგერითი კვლევის მონაცემებს; 2 (16,7%) პაციენტში დადგინდა პანკრესის მწვრილი სადინარების გაგანიერება, 3 (25,0%) პაციენტში - ვირსუნგოლითიაზი, 1 (8,4%) გამოკვლეულში - პანკრესის მთავარი სადინარის კისტოზური ტრანსფორმაციისა და კალცინოზის შერწყმა, 2 (16,7%) პაციენტში დადგინდა ვირსუნგის სადინარის გაფართოება კისტოზურ ტრანსფორმაციასთან კომპლექსში.

კუჭქვეშა ჯირკვლის სტრუქტურული ცვლილებების ვიზუალიზაცია საჭიროებს ინსტრუმენტულ-სადიაგნოსტიკო მეთოდების შერწყმას, კერძოდ, ეზოფაგოდუოდენოსკოპიას, ულტრაბგერით კვლევას და მორეციდივე მიმდინარეობის დროს ჯირკვლის სადინარების სისტემის და პარენქიმული პარამეტრების დეტალური შეფასებისათვის - ენდოსკოპიურ რეტროგრადულ ქოლანგიოპანკრეატოგრაფიას. იდენტიფიცირებული დარღვევების ანალიზი იძლევა მკურნალობის ტაქტიკის ადეკვატური კორექციის საშუალებას პაციენტებში ქრონიკული პანკრეატიტით.

ВЗАИМОСВЯЗЬ ФАКТОРА РОСТА ФИБРОБЛАСТОВ 23 С МАРКЕРАМИ ВОСПАЛЕНИЯ И ФИБРОЗА ПРИ ДИАБЕТИЧЕСКОЙ НЕФРОПАТИИ

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Диабетическая нефропатия (ДН) - частое осложнение сахарного диабета, при котором специфически поражаются как клубочки почек, так и тубуло-интерстициальная ткань, что приводит к развитию терминальной почечной недостаточности. Заболеваемость ДН неуклонно растет во всем мире, являясь ключевой причиной инвалидизации и смертности больных диабетом [2].

Неизбежным следствием прогрессирования нефропатии является нарушение обмена фосфора и кальция. Согласно современным представлениям, регуляция фосфорно-кальциевого обмена осуществляется не только благодаря паратгормону (ПТГ) и витамину D, но и с участием новых метаболически активных веществ, т.н. фосфатонинов - циркулирующих эндокринных регуляторов почечного метаболизма фосфатов и костной минерализации. К фосфатонинам относится фактор роста фибробластов FGF23 - новый эндокринный регулятор независимого от ПТГ механизма почечного метаболизма фосфора и кальция. Последние исследования показали, что FGF23 является наиболее ранним маркером прогрессирования минеральной костной болезни при хронической болезни почек (ХБП) [13,20].

FGF23 секретируется в костной ткани, а именно в остеокластах и остеобластах. В физиологических условиях этот эндокринный фактор роста контролирует выведение фосфатов почками путем блокады натрий-фосфатного котранспортера в эпителии проксимальных канальцев, влияет на витамин D благодаря ингибированию 1-α гидроксилазы (CYP27), которая превращает 25(OH)D в активную форму - 1,25 (OH)2D.

В многочисленных исследованиях по изучению терминальной ХБП указывается на значительное увеличение концентраций FGF23 в крови диализных пациентов. Установлено, что летальность у больных на диализе прямо коррелирует с уровнем FGF23, независимо от концентрации фосфора в крови. Роль FGF23 доказана в формировании сердечно-сосудистых нарушений, таких как эндотелиальная дисфункция, атеросклероз и гипертрофия левого желудочка [1,3,7,19,20]. Недавние исследования показали более высокую прогностическую ценность FGF23 в отношении неблагоприятных исходов в сравнении с более изученными показателями минерального метаболизма, такими как фосфатемия и уровень ПТГ [6,9].

Взаимосвязь FGF23 с альбуминурией и снижением скорости клубочковой фильтрации (СКФ) систематически не изучалась. А оценка FGF23 как фактора прогрессирования ХБП проводилась преимущественно в гетерогенных когортах. На сегодняшний день количество работ, посвященных изучению роли данного агента в развитии и прогрессировании диабетического поражения почек, весьма ограничено, а представленные результаты противоречивы. Открытым остается вопрос, касающийся непосредственного участия FGF23 в патогенезе ДН.

Известно, что развитие склероза и фиброза почечной ткани при ДН связано с увеличением продукции ангиотензина II,