

THE COURSE OF CHRONIC ISCHEMIC PANCREATITIS IN PATIENTS WITH CORONARY HEART DISEASE

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ABSTRACT

The formation of changes in the pancreas in chronic abdominal ischemia is based on a violation of the blood supply to the organ and a change in microcirculation associated with an increase in the concentration of endothelin-1 in the blood and a decrease in nitric oxide metabolites.

The aim of the study was to increase the effectiveness of treatment of chronic pancreatitis associated with stenosing atherosclerosis of the abdominal aorta in patients with chronic ischemic heart disease.

Materials and methods. 100 patients with stenosing atherosclerosis of the visceral branches of the abdominal aorta and ischemic heart disease were examined, the comparison group consisted of 25 patients over 60 years old with chronic ischemic heart disease (CHD) without clinical and instrumental signs of stenosing atherosclerosis of the visceral branches of the abdominal the aorta. The average age of patients in the main group was 70.35 ± 0.92 years, in the comparison group — 69.48 ± 0.73 years.

Results. Among the examined patients, 72% were diagnosed with stable angina pectoris of functional classes II—III, and 28% with postinfarction cardiosclerosis or atherosclerotic heart disease with arrhythmia. Coronary pathology was stable in all patients.

Discussion. Characteristic clinical manifestations of chronic ischemic pancreatitis are paroxysmal pain syndrome in the epigastric region and (or) in the left hypochondrium, which occurs after eating, during exercise or an attack of arrhythmia, lack of effect from taking antacid drugs and relief of pain syndrome by taking antispasmodics or nitrates.

Conclusions: At the heart of the development of ischemic pancreatitis, a violation of neuroendocrine regulation is of great importance, characterized by an increase in the concentration of endothelin-1 in the blood and a decrease in the level of nitrites. These indicators are closely correlated with the severity of exocrine pancreatic insufficiency.

Key words: chronic ischemic pancreatitis, endothelial dysfunction, treatment.

INTRODUCTION

Chronic abdominal ischemia is a consequence of a disorder of the blood supply to the abdominal organs caused by a violation of the patency of the unpaired visceral arteries of the abdominal aorta. The most common cause of chronic abdominal ischemia is atherosclerosis of the abdominal aorta and its unpaired branches (55-88%). Patients with chronic abdominal ischemia in clinical practice are much more common than this pathology is diagnosed. Among those who died from coronary heart disease, hypertension, atherosclerosis of the cerebral arteries, arteries In 75.5% of cases, atherosclerosis of the abdominal aorta and its branches is detected during autopsy of the lower extremities and their complications. The frequent asymptomatic course (32.2—98%) of abdominal ischemia, an uncertain clinical picture with various "masks" make timely diagnosis difficult. Chronic deficiency of arterial circulation along the unpaired visceral arteries of the abdominal aorta leads to morphofunctional changes in almost all parts of the gastrointestinal tract to one degree or another. Localization of ischemic organ damagedigestion depends on the visceral artery feeding them. Thus, when the abdominal trunk is affected, the organs of the upper floor of the abdominal cavity are mainly affected: liver, pancreas, stomach, duodenum and spleen. Stenosis or occlusion of the superior mesenteric artery is manifested in disorders of the pancreas, small intestine, and lesion of the inferior mesenteric artery more often causes ischemia of the colon. The most striking clinical picture of chronic ischemia of the digestive organs is observed when two or three visceral arteries are affected. Changes in microcirculation are an important mechanism for the progression of ischemic lesions of the digestive organs. Chronic abdominal ischemia of atherosclerotic genesis, as well as atherosclerosis in general, is characterized by endothelial dysfunction, impaired rheological properties of blood, hypercoagulation, increased platelet aggregation, generalized arteriole spasm, which predisposes to micro thrombosis and exacerbates tissue hypoxia. Most studies are devoted to the problem of acute mesenteric circulatory disorders, which is observed in the late stages diseases when conservative therapy is not effective. Whereas the clinicomorphological characteristics of manifestations of ischemic lesions of the digestive organs, aspects of pathogenesis and the possibility of therapy incombined cardiac and abdominal pathology have not been sufficiently studied. The aim of the study was to increase the effectiveness of treatment of chronic pancreatitis associated with stenosing atherosclerosis of the abdominal aorta in patients with chronic ischemic heart disease.

MATERIALS AND METHODS OF RESEARCH

100 patients with stenosing atherosclerosis of the visceral branches of the abdominal aorta and ischemic heart disease were examined, the comparison group consisted of 25 patients over 60 years old with chronic ischemic heart disease (HIBS)

without clinical and instrumental signs of stenosing atherosclerosis of the visceral branches of the abdominal aorta. The average age of patients in the main group was 70.35 ± 0.92 years, in the comparison group — 69.48 ± 0.73 years.

Criteria for inclusion in the study: the presence of hemodynamically significant stenosis of the abdominal trunk of atherosclerotic genesis, confirmed by Doppler examination. Exclusion criteria from the study: the presence of severe concomitant diseases in the decompensation stage, determining the severity of the condition and limiting diagnostic studies: chronic obstructive pulmonary disease with respiratory insufficiency of II—III degree; acute phase of myocardial infarction, acute cerebrovascular accident, diagnosed tumors of any localization; extravasal compression of the abdominal trunk; diabetes mellitus; alcoholic pancreatic lesion glands, gallstone disease, refusal of the patient to be examined. The research methods included ultrasound dopplerography (abdominal aorta, echocardiography, fibrogastroduodenoscopy, ultrasound examination of abdominal organs, computed tomography, coprological examination and determination of elastase-1 activity in feces. Taking into account the degree of hemodynamic disorders in the abdominal aorta and its unpaired visceral branches and the assessment of dysfunction of the digestive organs, the IV functional classes of abdominal ischemic disease were distinguished. Determination of the concentration of endothelin-1 in Blood serum was performed by solid-phase enzyme immunoassay using the Endothelin 1-21 kit (Biomedica, Austria), the study of the total level of nitrites in blood plasma was performed using a ready-made test system (R&D Systems, Total Nitric Oxide Assay). Antispasmodic, lipid-lowering, antiplatelet and enzyme therapy were performed. Among the examined patients with chronic ischemic pancreatitis and coronary heart disease, along with standard treatment of pancreatitis, 50 received therapy with perindopril, amlodipine and bisoprolol (group I), 50 — perindopril, isosorbide mononitrate and bisoprolol (group II). The dynamics of manifestations of extracretory insufficiency was assessed on the basis of clinical and laboratory criteria after 6 and 12 months of treatment. The obtained materials were processed using statistical software packages "EXCEL" and "Statistical Package for Social Science" (SPSS) version 14.0, the Student and Mann-Whitney reliability criteria were applied.

THE RESULTS AND THEIR DISCUSSION

Among the examined patients, 72% were diagnosed with stable angina pectoris of functional classes II—III, and 28% with postinfarction cardiosclerosis or atherosclerotic heart disease with arrhythmia. Coronary pathology was stable in all patients. The clinical picture of chronic ischemic pancreatitis was dominated by abdominal pain syndrome. Early pain was more often reported in 74% of patients, and 26% reported persistent abdominal pain. The pain was most often localized in the epigastric region (52%) or in the left hypochondrium (18%), in 30% of patients it had

a shingling character. In addition, some patients (28%) noted pain in the pyloroduodenal region, which indicated the involvement of the stomach and duodenum in the pathological process. Pain syndrome, in addition to eating, was provoked by physical exertion, an arrhythmia attack, the effect of taking antacid drugs was absent, in order to relieve pain, patients took antispasmodics or nitrates.

When analyzing the manifestations of dyspeptic syndrome, a wide range of the range of complaints characterizing both gastric dyspepsia — nausea (32%), heaviness in the epigastric region (56%), belching with air (68%), and signs of impaired abdominal digestion — flatulence (100%), unstable stools (68%) or diarrhea (30%). When assessing the trophological status, it was noted that 10% of patients had normal body weight, low nutrition or malnutrition was determined in 38% of patients. In most cases, the patients were overweight (26%) or suffered from obesity of I—III degrees (26%). According to ultrasound examination of the pancreas, all patients had signs of chronic pancreatitis: increased echogenicity and heterogeneity of the pancreatic parenchyma, irregularity and indistinctness of its contours, dilation of the main pancreatic duct (18%). When analyzing the indicators of the coprogram, signs of exocrine pancreatic insufficiency were revealed: moderate (44%) and pronounced (56%) creatorrhea, moderate steatorrhea was found in 60%, and severe in 40% of cases. The average level of pancreatic elastase was 128.8 ± 40.4 micrograms/g of feces. The analysis of dopplerography indicators indicates that patients with atherosclerotic stenosis of the visceral branches of the abdominal aorta are characterized by an acceleration of velocity flows and an increase in the resistance index and the pulsativity index. Under the influence of exercise, the main hemodynamic parameters of the abdominal trunk, splenic artery and superior mesenteric artery increased to a greater extent than in practically healthy individuals and significantly exceeded the values at rest.

In patients with ischemic chronic pancreatitis, it was established a twofold increase in endothelin-1 levels and a significant decrease in plasma nitrites compared with those in practically healthy individuals and patients with CHF without clinical and instrumental signs of stenosing atherosclerosis of the visceral branches of the abdominal aorta. The level of endothelin-1 in the blood correlated with the degree of insufficiency of the exocrine function of the pancreas ($r = 0.588$). In an examination conducted 12 months after the start of treatment, among patients with chronic ischemic pancreatitis and CHF (group I) who received ACE inhibitor (perindopril) in complex treatment in combination with bisoprolol and amlodipine, clinical and instrumental remission of pancreatitis was maintained in 86% of cases. Pancreatitis remission was accompanied by an increase in the level of elastase-1 in feces to 167.5 ± 48.3 micrograms/g of feces, a decrease in the concentration of endothelin-1 and a slight increase in the level of blood nitrites.

Dyspeptic syndrome of varying severity, the level of pancreatic elastase in feces and indicators of endothelial dysfunction persisted among patients receiving therapy including perindopril, bisoprolol and isosorbide mononitrate they remained without significant dynamics. Characteristic clinical manifestations of chronic ischemic pancreatitis are paroxysmal pain syndrome in the epigastric region and (or) in the left hypochondrium, which occurs after eating, during exercise or an attack of arrhythmia, lack of effect from taking antacid drugs and relief of pain syndrome by taking antispasmodics or nitrates. The clinical picture of chronic abdominal ischemia is quite variable, the nature of the pain syndrome, manifestations of gastric and intestinal dyspepsia indicates polyvalence of lesions of the digestive system against the background of stenosis of several branches of the abdominal aorta, which was then confirmed by Doppler examination.

We have not established a reliable dependence of the intensity of abdominalgia and exocrine pancreatic insufficiency depending on the functional class of abdominal ischemia. This indicates that the course of chronic abdominal ischemia is not determined by the depth of lipid metabolism disorders, but is more related to the peculiarities of blood supply, microcirculation and cytoprotective properties of the digestive system. The most optimal and preferred complex treatment regimen for chronic ischemic pancreatitis in patients with CHF is a combination of enzyme preparations, antispasmodics with an ACE inhibitor (perindopril), bisoprolol and amlodipine. Against the background of this therapy, the vast majority of patients have a stable course CHF, pancreatitis remission with improvement of exocrine pancreatic function and positive dynamics of indicators characterizing endothelial dysfunction.

CONCLUSIONS:

1. At the heart of the development of ischemic pancreatitis, a violation of neuroendocrine regulation is of great importance, characterized by an increase in the concentration of endothelin-1 in the blood and a decrease in the level of nitrites. These indicators are closely correlated with the severity of exocrine pancreatic insufficiency.
2. The use of a combination of perindopril, bisoprolol and amlodipine in the complex treatment of coronary artery disease in patients with chronic ischemic pancreatitis contributes to the stable course of CHF, remission of pancreatitis with improvement of exocrine function of the pancreas and It is accompanied by a positive dynamics of indicators characterizing endothelial dysfunction.

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