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Pharmacological Correction of Immune and Metabolic Disorders in Acute Biliary Pancreatitis of Varying Severity in Elderly Patients

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Resume. The incidence of acute pancreatitis is up to 40 cases per 100,000 adults per year, including about 10-15% of patients with severe forms of this disease, the mortality rate among which reaches up to 80%.

A comprehensive assessment of quality of life indicators in elderly patients with chronic pancreatitis revealed a significant deterioration in the quality of life of these individuals according to most scales of general (SF-36) and specific questionnaires compared with indicators in healthy individuals.

Key words: biliary pancreatitis, elderly age, clinical manifestations, quality of life.

Relevance. The incidence of OP is up to 40 cases per 100,000 of the adult population, which includes about 10-15% of patients with severe forms of this disease [4,6]. Mortality from OP fluctuates at the level of 30%, while in severe cases it can be up to 80% of the number of cases. It is obvious that OP is the result of the impact of damaging factors and the interaction of local and systemic adaptive reactions of the body from the immune, nervous and endocrine systems [2,8].

At the same time, the ongoing immunometabolic changes are difficult to characterize by analyzing only animal models of OP, or by assessing the immune and metabolic parameters in patients. However, experimental studies suggest that the prognosis of AP directly depends on the degree of pancreatic necrosis, the intensity of multisystem organ failure caused by SIRS. The greatest number of deaths is observed in the early phase of the disease, due to the development of pancreatogenic shock, and in the late phase of the disease, due to the development of purulent complications [1,5].

In this regard, the basis of the pharmacotherapy of OP should be not only an understanding of its pathogenetic mechanisms, but also timely prevention of the development of severe, complicated forms associated with either excessive activation or insufficiency of the immune system, the formation of metabolites at the site of inflammation, which have various effects on regulatory systems. organism [3,7]. Currently, among the factors that determine the progression and aggravation of OP, the authors distinguish the following. Primary - pancreatic enzymes (trypsin, chymotrypsin, phospholipase A2, lipase, etc.). Secondary - pancreatic enzymes that activate the kallikrein-kinin system with the formation of bradykinin, histamine, serotonin, which increase vascular permeability, cause microcirculation disorders, edema, microthrombosis, ischemia, hypoxia and tissue acidosis [2,4]. Tertiary - macrophages, mononuclear cells and neutrophils, which, during the development of SIRS and hypoxia, produce pro-inflammatory cytokines (IL-1, IL-6 and IL-8, TNF), platelet activating factor, prostaglandins, thromboxane, leukotrienes, nitric oxide. Factors of aggression of the fourth order - cytokines, tissue enzymes, metabolites, altered as a result of a pathological process of various nature. Obviously, the factors of aggression of the third and fourth order are mainly products of the cells of the immune system [6,8].

Purpose of the study. To establish the pharmacological efficacy of the combined use of immunomodulators, antioxidants and membrane protectors in acute biliary pancreatitis of varying severity in the experiment and clinic.

Materials and research methods. The object of this study was to analyze the results of treatment of 48 patients with ductal complications of cholelithiasis and a block at the level of the distal part of the common bile duct of benign etiology for the period 2019-2021.

Research results. Clinical studies have been conducted in a small group of patients with acute biliary pancreatitis. On the day of hospitalization, all patients with OP of mild biliary etiology who received conservative treatment complained of pain in the upper abdomen of a girdle character, dyspeptic disorders, and severe weakness.

When examining people with mild biliary etiology OP who did not need surgery, there were no respiratory and hemodynamic disorders, palpation of the abdomen showed pain and tension in the epigastrium, in 13 people (6 patients in the group receiving basic treatment and 7 patients additionally treated with polyoxidonium, emoxipin and Essentiale H), the bottom of the gallbladder was palpated. Symptoms of peritonitis in all patients were negative.

Ultrasound examination of the abdominal organs revealed microcholecystolithiasis in 21 patients (10 patients receiving basic treatment and 11 patients receiving immunomodulatory, antioxidant and membranoprotective therapy), large stones were found in 7 patients (3 and 4 patients in the respective groups). In 12 (6 patients in each group) out of 28 cases, signs of acute cholecystitis were revealed, in the rest - signs of chronic cholecystitis.

Signs of biliary hypertension in the subjects were not determined. An increase in the size of the pancreas compared with the norm was noted by 1.2-1.3 times in all patients.

During fibrogastroduodenoscopy in 28 patients, traces of bile were found in the duodenum, which indirectly indicated the patency of the bile ducts, and in 23 (10 in the group treated in accordance with the NCR, 13 in the group that additionally received an immunomodulator, a membrane protector and an antioxidant) - papillitis phenomena and indirect signs of pancreatitis were found. In 8 cases (4 patients in each group), the major duodenal papilla was located in the parapapillary diverticulum.

Given the absence of complications of cholelithiasis, patients in this group received only drug treatment, and surgical interventions were performed on a delayed basis after the symptoms of acute inflammation of the pancreas were relieved. There were no lethal outcomes. Upon admission to the clinic, all patients with OP of mild biliary etiology showed a significant increase in plasma levels of pro-inflammatory cytokines, anti-inflammatory IL-4, oxygen-dependent activity of polymorphonuclear leukocytes in spontaneous and stimulated HBT-test, concentration of intermediate and end products of lipid peroxidation, total antioxidant blood plasma activity, a decrease in the concentration of C3 and C4 complement components, the number of phagocytic granulocytes and the number of particles absorbed by them (decrease in FP, HF), with a normal level of IL-10, normal activity of antioxidant defense enzymes (SOD and catalase).

Standard drug treatment of patients with mild biliary etiology of AP corrected the plasma levels of TNF, IL-6, IL-4, C4 component of complement, did not affect the level of IL-1P, IL-8, G-CSF, C3 component complement, OAA, increased the concentration of IL-10, the level of lipid peroxidation products.

Compared with baseline and healthy donors, standard treatment reduced the functional activity of peripheral blood neutrophils. The inclusion of a combination of polyoxidonium, emoxipin and Essentiale N in the therapy of patients with mild biliary AP, compared with standard treatment, normalized the concentration of TNF, IL-6, IL-8, IL-4, the parameters of the functional activity of peripheral blood neutrophils, the content of intermediate and final LPO products, OAA, corrected the content of G-CSF, the level of the C4 component of the complement system.

All patients in this group were discharged from the hospital in a satisfactory condition. Pain relief against the background of conservative infusion and antispasmodic therapy was observed within a day from the start of treatment, which made it possible to refrain from active surgical tactics in patients of this group with mild OBP.

The duration of hospital treatment in patients who received basic treatment (in accordance with national clinical guidelines) ranged from 7 to 14 days, which directly depended on the timing of relief of clinical symptoms and instrumental (ultrasound and CT data) signs of normalization of the size of the pancreas, the absence of complications.

Conclusion. The combination of ferrovir, mexidol and phosphogliv in experimental acute pancreatitis of mild severity corrects 13.3% and normalizes 80% of the studied laboratory immune and oxidative parameters, with moderate severity, respectively - 50% and 18.7%, with severe - approaches the control values.

The pharmacological efficacy of polyoxidonium, emoxipin and Essentiale N in acute biliary pancreatitis of mild and moderate severity makes it possible to limit the use of minimally invasive surgical methods of treatment and perform surgical treatment of cholelithiasis in a delayed manner, and in the absence of positive effects of this combination, which are an indicator of the severity of the course of the disease, to carry out an early transition to active tactics using minimally invasive and traditional surgical methods of treatment.

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