

On the peculiarities of nutrition of patients with chronic pancreatitis in remission

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Diseases of the pancreas occupy the dominant position in the structure of gastroenterological morbidity in Ukraine. Thus, in 2014 their prevalence was 873795 cases (2474.7 cases per 100 thousand population), and the incidence — 76298 new cases (215.8 cases per 100 thousand population) [3]. Hence the need for a meticulous attitude of the population to the prevention of chronic pancreatitis (CP), including to nutrition as a healthy lifestyle.

The main risk factors for CP development include stress, obesity, pregnancy, gastroenterological diseases such as stomach ulcer, duodenal ulcer (duodenal ulcer), non-stone cholecystitis, cholelithiasis, and the like. It should be noted that during a certain period of the duration of CP (usually after 10 years of prescription) gastroesophageal disease of the esophagus (GERD) develops.

Causes of CP development, obesity and other diseases of the organs of the gastroduodenal and biliary zones are considered to be alcohol abuse (25-60% of the patients are men), smoking (they can be considered as inter-aggravating factors), chronic obstructive pulmonary disease (COPD), and biliary disease systems (25-40% of patients — women), excess body weight, hypodynamia, malnutrition, acute, acidic, hot or cold food.

Drinks containing caffeine, citrus fruits, milk, tomatoes and products from them (tomato juice, pasta, sauces), horseradish, onion, garlic, pepper increase acid products in the stomach, irritate its mucous membrane and reduce the tone of the lower esophageal sphincter in such patients. Drinks contain components such as

nitrosamines, polycyclic bicarbonates, acetaldehyde, they can disrupt the metabolism of nutrients, activate specific enzymes, affect hormonal status, endo- and exotoxin, initiate peroxide stress, suppress immunity and activate cell proliferation [4]. In addition, it increases the incidence and aggravates the course of the CP without the presence of a culture of food (consuming a large amount of food at a time; abuse of acute, fried and hot food). Often, patients themselves notice that malnutrition affects the quality of their lives, but do not deny themselves the pleasure of eating their favorite dishes (although the use instead of roasted meat steamed significantly reduces the number of attacks of abdominal pain syndrome).

Chronic use of alcohol (ethanol) is often associated with atrophic processes in the mucous membrane of the stomach, duodenal ulcer, with a decrease in the secretion of the salivary glands and a change in the composition of saliva during long-term use (which primarily affects the activity of the pancreas), as well as secondary disturbances of distal esophageal motility. In alcoholics (who use up to 300 g of ethanol per day for many years), the following disorders of the esophagus motility occur: a significant increase in pressure of the lower esophageal sphincter with normal relaxation after eating, reduction of esophageal clearance (purification). As for patients with alcoholic neuropathy, in them the tone of the lower esophageal sphincter does not increase. In addition, alcohol abuse can lead to acute necrotizing esophagitis and the appearance of linear rupture of the esophagus mucosa (Mellori-Weiss syndrome) when bleeding occurs due to severe vomiting in severe intoxication. Do not bypass the abuse of alcohol and pancreas, contributing to the development of CP.

The clinical picture of CP consists of many syndromes [2]:

Abdominal pain syndrome is characterized by periodically varying intensity of the thorny, sometimes occlusive pain above the navel with irradiation in the left hypochondrium (inflammation of the tail of the pancreas), in the right hypochondrium (inflammation of the head of the pancreas), in the epigastrium or back (inflammation of the body of the pancreas), which increase in the position of

the patient on the back and decrease in a sitting position and with the torso of the trunk ahead (sometimes the pain passes into the heart and mimics the attack of the angina), and also decreases under the influence of anesthesia, and sometimes even the drug (pain is due to increased pressure in the channels of pancreas as a result of slowing down the outflow of secretion, inflammation or sclerotic changes in them).

Dyspepsia syndrome (pancreatic dyspepsia) is accompanied by a decrease or loss of appetite, increased salivation, rash, rarely heartburn, nausea, vomiting, which does not bring relief.

The syndrome of external secretion is manifested by maldigestion (swelling and rickets in the stomach, pancreatic diarrhea 2-3 times a day, and more often with the release of a greasy stool with a fatty lust of stool ("pancreatic stool"), with the remains of undigested food (steatorrhea). As a result, digestion is significantly disturbed, progressively decreases body mass, which sometimes causes cancer.

The syndrome of inadequate intestinal absorption (malabsorption) is due to external secretion deficiency with violation of all types of metabolism (protein, fatty, carbohydrate, vitamin, mineral, water-salt) with the possible development of polyglandular (adrenal) insufficiency.

Syndrome of trophic insufficiency — at the CP trophologist chronic insufficiency often runs subclinically, has three degrees of severity, where the importance is given to indicators of BMI, volume of shoulder, thickness of skin and fat folds over triceps, volume of shoulder muscles, albumin content, transferrin, lymphocytes characterize trophological insufficiency. The trophological status is a combination of metabolic processes of the organism, which are caused by genotype, sex, age, ensuring the adequacy of functioning in order to support homeostasis, wide adaptation reserves (which depend on nutrition, living conditions and diseases).

Allergic syndrome is manifested by various forms of allergy, "eosinophilic" pancreatitis with an increase in eosinophils to 30-40%.

The syndrome of severe inflammation is characteristic of the course of hyperfermental pancreatitis and is manifested by general weakness, fever, tachycardia, hypotension, lack of appetite, leukocytosis, and accelerated erythrocyte sedimentation rate (ESR).

Thrombohemorrhagic syndrome — it occurs more often in acute pancreatitis, but can also occur with severe exacerbations of CP as a result of hyperfermentemia; pancreatic enzymes entering the bloodstream and various hemorrhagic rashes on the abdomen, face, etc. (late clinical symptoms).

Cholestatic syndrome or compression syndrome of adjacent organs is more common in cancer and cyst pancreas. With pronounced edema of the head of the pancreas, the outflow of pancreatic and bile ducts becomes more complicated, resulting in mechanical jaundice or partial mechanical obstruction.

The syndrome of endocrine disorders may be manifested by the clinic of hyperinsulinism, hypoglycemic states and pancreaticogenic diabetes as a result of atrophy of the islet cells and substitution with the connective tissue (diabetes mellitus develops within 5-7 years after pancreatitis, in which hypoglycemic conditions are relatively common with subsequent vascular trauma).

Proceeding from the multifacetedness of the clinical picture, medical treatment relates to relieving pain, promoting the establishment of enzymatic function, eliminating the intensity of inflammation and endocrine disorders.

However, dietary nutrition in the treatment of patients with CP in its value is not inferior to medical treatment. It should be noted that the recommendations regarding the nutrition of patients changed several times. So, in the 50's and 60's of the 20th century doctors recommended a diet rich in carbohydrates, while significantly restricting fats and, to a lesser extent, proteins. It was believed that protein products increase the activity of proteolytic enzymes and may be the cause of autolysis of the tissue of the pancreas. For a long period recommended white bread, porridge, sweets, jelly, honey, jam, and protein products were administered gradually, in small portions.

Studies of 1970-1980 showed that protein deficiency promotes the development of atrophy of the gland, while high protein products prevent the development of the external secretion function of the pancreas and contribute to its repair. It has been shown that the protein requirement for CP is no more than 120 g per day (50% — animal). Began to reduce the timing of starvation, as long-term hunger increases the translocation of microorganisms with the development of bacterial complications (syndrome of excess bacterial growth in the small intestine and dysbiosis of the urinary tract).

In recent years, it is recommended that a full meal with CP in the remission period. Only during the period of exacerbation is recommended a significant restriction of fat, in remission expanding the intake of fats. Low-fat diet contributes to stagnation in the biliary tract, reduces the effectiveness of the cholecystokinin mechanism of stimulation of the external secretion function of the pancreas and promotes the stagnation of pancreatic juice in the ducts.

Consequently, the purpose of dietary nutrition for patients with chronic obstructive pulmonary disease (as a method of rehabilitation) is the adaptation to nutrition during the period of the stigma of the exacerbation of the disease; providing the body with the necessary amount of energy, plastic material, regulatory factors; correction and prevention of violations of the injector function of the pancreas; improve digestion and absorption processes.

In the development of a dietary diet, changes in other organs and systems (gall bladder, bile ducts, intestines) should be taken into account the high risk of violations of the insulatory apparatus, which may be manifested as hyperglycemia, hypoglycemia, type 2 diabetes mellitus, lipid metabolism disorders. Often diagnose changes from the side-gland, changes in calcium metabolism and zinc metabolism, which is important in the activity of beta-cells of pancreas that synthesizes insulin.

When developing a diet for patients with CP, the influence of food on the external secretion function of the pancreas is taken into account. It is considered that the secretion of gastric juice starts under the influence of nervous and humoral stimuli during eating (odor), when it comes to the mouth, stomach, duodenum.

Significance in this case has irritation of receptors of tongue, stomach, duodenum and chemical influence of food components. Food components stimulate the secretin secretion — a hormone that increases the secretion of pancreatic juice from the ducts of the soft tissue into the lumen of the duodenum, the small intestine. Organic acids (citric, apple, acetic) affect pancreatic secretion as a chloride uterine acid of the stomach. The specified products are limited or excluded during the period of exacerbation, and in remission in order to improve digestion, it is possible to allow their use (if tolerated). This is especially true for patients with reduced gastric secretion.

Dietary fat and purify its hydrolysis are stimulants for the release of the duodenal mucous membrane of cholecystokinin-pancreatosin — a hormone that is absorbed in the blood, stimulates the formation and release of pancreatic enzymes, causes the reduction of the gall bladder and the allocation of bile to the small intestine. This is a physiological important mechanism for coordinating the trawling processes.

Pancreatic lipase, phospholipase affects only emulsified fats. The main emulsifier of edible fat is bile acids. It is they who participate in the transport and absorption of fatty acids, cholesterol, fat-soluble vitamins in the small intestine. That is, the most important is the hydrolysis of nutrients that comes with the components of food. Splitting occurs in the presence of pancreatic enzymes. For portability, the amount of dietary fat in the CP should not be limited. They are limited only in combination with cholelithiasis or intolerance. Fat-soluble vitamins, phospholipids, omega-3 fatty acids are prescribed additionally [1].

Patients with chronic obstructive pulmonary disease (CP) in the event of a diet disturbance during the remission period should increase the amount of protein up to 1.8-2.0 g per 1 kg body weight (due to animal proteins). With a shortage of body weight of 10% or more it is necessary to achieve normalization of the status as soon as possible (using special adapted mixtures). The amount of vitamins should increase by 100-200%. For this purpose, it is recommended to use carrots, potatoes, tomatoes, apple juices and fresh berries and fruits (but cautiously, in

small quantities, so as not to cause exacerbation, and when decreasing the enzymatic function, the juice is recommended to dilute with water). The temperature of drinks should be roomy. Vitamin and mineral complexes of preparations are additionally recommended.

Prevention and correction of violations of endocrine function of pancreas. It is worth noting that patients with chronic obstructive pulmonary disease of the elderly and overweight and with severe fibrosis have an increased risk of developing diabetes mellitus. Increases the risk of developing type 2 diabetes, with a pancreatitis that lasts more than 10 years. For those with normal glucose, it is recommended not to use excessive amounts of sweets, especially easy to absorb carbohydrates. In order to prevent diabetes, it is necessary to restrict confectionery, bread and bakery products, products rich in maltodextruses, malt. These components are widely used in the food industry, in dairy products, sauces, and mayonnaise. It should be taken into account that the glycemic index of malt and maltodextrism is higher than that of sugar. The use of carbohydrates should be distributed uniformly throughout the day, which allows you to prevent large fluctuations in blood glucose.

Improvement of suction and etching processes is to exclude products that are heavily digestible. Soybeans contain proteolytic enzymes inhibitors, so they are excluded from use. Alcohol is excluded in any drinks. The amount of fat is recommended to use moderately, distributing foods containing fats, for 3-4 doses. In this case, it is not necessary to heat the fat, so the fat in the fat is contraindicated. Cooking food is recommended (for example, meat that is pre-soaked in juice, low-fat sour cream, kefir, mineral water, meat stew with the addition of roots, spicy herbs). Use fresh cottage cheese, freshly made cottage cheese casseroles, low-fat lactic acid products, omelet. Quantity and volume of dishes should not cause discomfort, flatulence.

Thus, an individually designed diet, taking into account the peculiarities of the course of CP, the patient's status is an important factor in the prevention of relapse of the disease, the progression of the external and secretion of the

endocrine disorder, and can be used as one of the links of rehabilitation and preventive measures.

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The review contains modern statistical data on the prevalence and incidence of chronic pancreatitis, the role of nutrition in the development of the chronic inflammatory process in the pancreas, the influence of nutritional culture on the formation of the disease. The pathophysiological changes occurring in the pancreas upon alcohol abuse are revealed. The components of food and beverages that can disrupt the metabolism of nutrients, activate specific enzymes, initiate lipid peroxidation processes and provoke an inflammatory process in the gland tissue are listed. The objective signs of chronic pancreatitis and the dominant clinical syndromes are described in detail. A brief historical excursion into the peculiarities of dietary nutrition in patients with chronic pancreatitis is presented, modern ideas on the rational nutrition of patients with chronic pancreatitis are described. Emphasis is made on the dietary habits of patients in remission; the importance of adaptation to adequate ration during the period of attenuation of exacerbation of chronic pancreatitis is underlined. The recommendations for the prevention of diabetes mellitus are set, nutritional measures that can improve the processes of absorption and digestion are listed. The feasibility of an individual approach to the development of an optimal diet, taking into account the peculiarities of the course of chronic pancreatitis, the patient's condition, which helps prevent the progression of exo- and endocrine pancreatic insufficiency, is considered. The importance of diet in the rehabilitation of patients with chronic pancreatitis is discussed.