News of the European pancreatology
(by materials of the 47th Meeting of the European Pancreatic Club)

N. B. Gubergrits, N.V. Byelyayeva

Donetsk National Medical University n. a. M. Gorky, Ukraine

Key words: European Pancreatic Club, Ukrainian Pancreatic Club, diagnostics and treatment of chronic pancreatitis, pancreatic insufficiency, Creon

47th meeting of the European Pancreatic Club took place in Toledo (Spain) on 24-26 June, which included more than 300 oral and poster presentations [1].

First of all, focus on the lecture by Prof. J. Mayerle (Germany). At the beginning of the lecture he gave by the definition of chronic pancreatitis (CP).

CP is a progressive inflammatory disease of the pancreas, which is characterized by irreversible structural changes, leading to exocrine and/or endocrine insufficiency. Structural changes include uneven fibrosis, diffuse or focal destruction, loss of acinar cells and islets, inflammatory infiltration and change channels. Complications CP are:formation of pseudocysts, duct stenosis, obstruction of the common bile duct, malnutrition, chronic abdominal pain. Debilitating pain is the main symptom of CP. The disease is a proven risk factor for cancer of the pancreas. CP decreases the quality of life of patients.

This definition of CP is not very far gone from the old definition, which was given 10 years ago, "CP is a mysterious disease with unclear pathogenesis, unpredictable clinical course and treatment of unknown" [19].

Currently, the frequency of CP is 1.6-23.0 per 100 thousand of population, morbidity — 27.4 per 100 thousand of population, mortality — 12.8-19.8% in 10 years.

It was steresed that it is important to determine the etiology of CP, i.e. it should be taken into account in the appointment of treatment. In addition, each version of CP etiological inherent in certain comorbidities (e.g., alcohol CP often accompanies alcoholic liver disease). The etiology is important for planning and monitoring of patients, since it is associated with a different risk of cancer of the pancreas (e.g., the

risk increased sharply in hereditary CP). In recent years there has been a tendency to increase the frequency of hereditary and autoimmune pancreatitis and reduce the incidence of alcohol and idiopathic pancreatitis and CP on the background of the anomalies of the pancreas. These trends are likely explained by modern diagnostic and treatment.

Metabolic CP may demand etiotropic treatment. Hyperlipidemic pancreatitis develops upon SII apolipoprotein deficiency, lipoprotein lipase. Such pancreatitis is very rare and occurs when the level of serum triglycerides above 1000 mg/dl. If treatment will lead to a decrease below 500 mg/dl, the symptoms disappear. Frequency of CP when hyperparathyroidism — not more than 1.5-7.0%. Thus increased levels of serum calcium and increase the risk of pancreatitis. Timely parathyroidectomy promotes the disappearance of symptoms of pancreatitis.

We analyzed the risk of progression from acute pancreatitis to CP. In 24.1% of patients with acute pancreatitis develops CP. But this frequency depends on the etiology of acute pancreatitis: in alcoholic pancreatitis, it was 48.2%, idiopathic pancreatitis (non-hereditary) — 47%, in pancreatitis associated with other causes — 4.8%.

Smoking is a significant risk factor for the transition of acute pancreatitis in CP. It increases the risk of CP by 25% and reduces the production of bicarbonate and α_1-antitrypsin. The duration of life of patients after acute pancreatitis significantly depends on transition to CP (Fig. 1).

The risk for CP after acute pancreatitis and the risk of calcification of the pancreas decreases with refusal of alcohol, especially by increasing the length of CP (Fig. 2). Upon termination of alcohol intake in patients with CP production of bicarbonate, lipase and chymotrypsin is significantly higher than in those patients who continue to abuse alcohol (Fig. 3). However, smoking is of great importance for the further course of disease of the pancreas (Fig. 4, Fig. 5).

Prof. J. Mayerle presented frequency of gene mutations in nonalcoholic CP (Fig. 6).

Autoimmune pancreatitis is pancreatitis which is clinically characterized by the frequent development of obstructive jaundice, histologically — lymphoplasmatic infiltration and moiré-formed fibrosis, therapeutically — quick and severe response to corticosteroids.

In the diagnosis of CP still take into account the activity of pancreatic enzyme levels. However, if earlier increased amylase was considered the cornerstone of diagnosis of pancreatitis, it is now agreed that this figure is not suitable for early diagnosis of CP, as its specificity is 90-95%, sensitivity <10%. Indicators of tripsinogen and protein pancreatic stones procarboxypeptidase B didn't confirm expectations in the diagnosis of CP. Extracellular matrix proteins (e.g., hyaluronic acid, procollagen-III-peptide) submitted informative in the diagnosis of CP. However, imaging techniques are more informative, especially endosonography (Table 1). Endosonographical changes of the pancreas correlated with their corresponding morphological changes. Endosonography in recent years gives the possibility of endosonoelastography with quantification. The more progressive is endosonoelastography with contrast, the results of which allow to conduct a differential diagnosis between inflammatory and neoplastic diseases of the pancreas.

Table 1

Endoscopic ultrasound diagnostic criteria for HP

(by M. F. Catalano et al., 2009 [8])

Criterion	Visualization	Histology
Hyperechoic foci	Crisp small hyperechoic foci	Fibrosis
Hyperechoic bands	Small linear hyperechoic areas	Bridging fibrosis
Lobulation	Rounded area department hyperechoic linear strands	Fibrosis, granular atrophy
Cyst	Anehogennoe round or oval structure	Cyst or pseudocyst
Calcification	Hyperechoic structure with acoustic shadow	Calcification
Expansion of the main duct	More than 3 mm	Expansion of the main duct

Expansion side ducts	Small anechoic structure outside the main duct	Expansion side ducts
Uneven flow lumen	Fluctuations in the duct diameter	The focal dilation and constriction
Hyperechoic duct wall	Hyperechoic wall of the main duct	Periductal fibrosis

From imaging techniques in recent years has increased the diagnostic value of magnetic resonance cholangiopancreatography with the introduction of secretin. According to the volume of filled duodenum we can judge the exocrine function of the pancreas. The sensitivity of the method upon soft exocrine pancreatic insufficiency (EPI) is up to 92%, specificity — 75%.

Prof. J. Mayerle reiterated the well-known fact that in the diagnosis of EPI should not rely on the data scatoscopy, as steatorrhea appears only in the later stages of the CP when the amount of functioning pancreatic parenchyma does not exceed 10% of the normal amount. Informative value of currently used functional tests is presented in Table 2.

Table 2

Diagnostic informative value of functional tests

Test	**Sensitivity, %**	**Specificity, %**
Secretin-cholecystokinin test	90	94
Fecal chymotrypsin	57	88
Fecal elastase	70	85
Pancreolauryl test	82	90
^{13}C-breath test	90	90

They highlighted the benefits of fecal elastase test: non-invasive method for tubeless; elastase-1 — pancreatic specific enzyme; minimal changes in the activity of elastase-1 in the intestinal transit; stability of the enzyme; simple measurement technically; prior to the study there is no need to abolish enzymatic preparations; low cost. The lecture drew attention to the pathogenesis of abdominal pain in CP. It highlighted a number of mechanisms its development, which should be considered when choosing a treatment strategy [15]:

– local causes: inflammatory focus (mass), pseudocyst, etc.;

– obstruction of the ducts;

– extrapancreatic complications (peptic ulcers, et al.);

– inflammation (inflammatory cytokines);

– interstitial hypertension;

– complications of surgical or endoscopic intervention;

– drug-induced bowel dysfunction (due to the introduction of narcotic analgesics);

– increased production of cholecystokinin;

– shortage of gastrointestinal hormones, gut motility disorders, bacterial overgrowth syndrome (BOS);

– peripheral sensitization, psychosomatics, neuropathy;

– other reasons: changes in the enteric nervous system, increased sympathetic tone, mesenteric ischemia, associated pathology, opioid-induced hyperalgesia.

In addition, lectures were illuminated some theoretical issues relating to the development and progression of fibrosis of the pancreas at CP, possible areas of inhibition of fibrosis in the long term.

Lecture by Prof. Carlo La Vecchia (Italy) was dedicated to smoking and alcohol as the etiological and pathogenetic factors of pancreatic pathology. In respect of acute pancreatitis he underlined the following points [12]:

– ethanol increases the concentration of digestive and lysosomal enzymes in the acinar cells, destabilizing the organelles that contain these enzymes;

– smoking leads to the infiltration of lymphocytes and plasma pancreatic cells to oxidative stress, increased production of interleukin-6;

– meta-analysis of five studies showed that the risk of acute pancreatitis in smokers — 1.74, in ex-smokers — 1.32;

– the results of a meta-analysis of CP risk in smokers — 2.8, in ex-smokers — 1.4; and the risk of CP is directly proportional to the dose of daily received ethanol (Fig. 7);

– upon rejection of alcohol, exocrine function of the pancreas is much better than with continuing intake (Fig. 3);

– risk of calcification of the pancreas is significantly reduced upon stopping smoking (Fig. 4);

– PanC4 study demonstrated that the risk of pancreatic cancer in smokers — 2.20, persistent smokers (more than 35 cigarettes a day) — 3.39, in ex-smokers — 1.17 (Fig. 8)[18];

– PanScan study found no relationship between the alcohol intake and cancer of the pancreas, but consuming more than 60 g of ethanol a day increased the risk to 1.38, and in men who consumed spirits up — 2.23 [3].

Reports about the diagnosis of diseases of the pancreas attracted the attention of the following information. J. Carvallo (Spain) presented data on the misdiagnosis of malignant disease of the prostate prior to surgery. After surgery, it appears that such an error occurred in 22% of cases, i.e. in these cases the diagnosis of adenocarcinoma of the pancreas after the intervention was not confirmed histologically and even in rare cases identified normal tissue of the pancreas. Upon surgery for suspected malignant cysts, serous cystadenoma is revealed in 47.0%, in 25.0% — intraductual mucinous neoplasia, 14.7% — cystadenoma mucinosa, 12.5% — pseudopapillary solid neoplasm.

F. Bolado et al. (Spain) showed that much more informative endosonography in establishing the etiology of idiopathic pancreatitis compared to magnetic resonance cholangiopancreatography introduction secretin. Thus, when examining 34 patients using endosonography in 15 cases diagnosed cholelithiasis, 2 — choledocholithiasis,

3 — pancreas divisum, 3 — intraductal mucinous neoplasms, 5 — CP. In a study of the same patients using magnetic resonance cholangiopancreatography with secretin administration: 1 — choledocholithiasis, 4 — pancreas divisum, 3 — intraductal mucinous neoplasia, 2 — CP.

De Jesus et al. (Spain) drew attention to the need for screening for cancer of the pancreas in patients with newly diagnosed or decompensated diabetes. So, during endosonography 18 such patients in 13% of cases detected adenocarcinoma of the pancreas, 7% — of neuroendocrine tumors of the pancreas.

B. Napoleon et al. (France) reported on the possibilities of the new method — cofocal laser endomicroscopy in the diagnosis of cystic tumors of the pancreas. It was demonstrated clinical observations confirming the information content of the method in detecting intraductal mucinous neoplasms.

E. Martinez-Moneo et al. (Spain) reported on the diagnostic and prognostic value of the ratio of neutrophils/lymphocytes with adenocarcinoma of the pancreas. The results of the study "bribe" the simplicity of the method, but the proposed ratio may be only approximate "screening" value.

C. Meyer et al. (Germany) presented the results of studies on the treatment of pancreatitis hypertriglyceridemic drug Alipogen created through genetic engineering. Lipoprotein lipase deficiency is a rare cause of pancreatitis:

– frequency — 1-2 cases per 1 million population;

– reason — gene mutation lipoprotein lipase (chr8p22);

– result — significantly increased Hb blood triglycerides breaker failure due to violation of chylomicrons and lipoprotein lipolysis very low density.

Clinic of the pancreatitis: plasma, visually similar to the milk; xanthoma; relapsing pancreatitis.

Therapeutic options currently — the strictest diet (only 15% of calories from fat).

Pathogenesis of hyperlipidemic pancreatitis associated with a high level of chylomicrons in the blood during fat intake. The capillaries are formed chylomicrons units, which leads to the difficulty of blood flow in the pancreas, by its edema and

development of pancreatic attack.

Alipogen is administered intramuscularly. When it arrives in the muscle cell to single-stranded DNA lipoprotein — lipase is introduced into the nucleus, the DNA double-stranded forms of the enzyme, and it is transported to the endothelium, which is involved in lipolysis chylomicrons and very low density lipoproteins. The result of the treatment is to reduce the frequency of episodes of pancreatitis by 48% (the authors examined 27 patients). Side effects of Alipogen: muscle pain, induration and hyperthermia at the injection sites.

Great interest was aroused by a lecture of Prof.V. Singh (USA) "The pancreas, and fat". It was devoted to the peculiarities of the flow of pancreatitis in patients with an excess of peripheral and/or visceral fat. The lecturer focused on the role of adipokines (resistin, visfatin, adiponectin, leptin, etc.) in the pathogenesis of acute pancreatitis and CP. It was shown that amount of intrapancreatic fat correlates with body mass index and fat with an excess of such increased risk of pancreatic necrosis. Iincreasing amount of peripancreatic adipose tissue increases the risk of multiple organ failure. Moreover, both alternatives increase the risk of cancer of the pancreas. Were the results of experimental and clinical studies confirming these provisions. Unfortunately, evidence-based research on the treatment of pancreatic steatosis, steatopancreatitis has not been carried out yet, and statins (rosuvastatin) even led to worsening of the condition.

A lecture by Prof. E. Dominguez-Munoz (Spain) was devoted to the analysis of modern approaches to diagnosis and treatment EPI. First of all, it named the main reasons for the primary and secondary EPI. Primary EPI most often associated with acute pancreatitis, CP, cystic fibrosis, diabetes, pancreatectomy and resection of the prostate. Secondary EPI can be caused by gastrectomy, duodenektomiey, Crohn’s disease, celiac disease, a condition accompanied by acidification of duodenal lumen (BOS, etc.). Professor drew attention to the fact that endocrine insufficiency of the pancreas (diabetes mellitus) diagnosed and treated by different doctors: internists, endocrinologists, general practitioners, and so on. EPI, according to Prof. E. Dominguez-Munoz, never diagnosed and treated by general practitioners, but only

by gastroenterologists and rarely — surgery (unfortunately, in Ukraine, the surgeons don’t pay enough attention to EPI). Symptoms of diabetes (thirst, polyuria, and others) are known to all doctors, whereas EPI symptoms caused trophological failure (hypoproteinemia, hypovitaminosis, osteoporosis, etc.) are known much smaller circle of doctors, which leads to late EPI diagnosis.

At the same time, malnutrition are associated with lower blood levels of the essential amino acids, fatty acids, micronutrients, fat-soluble vitamins lead to complications with high morbidity and mortality. For example, the effects of malnutrition are osteoporosis, immune deficiency, which is, lead to pathological fracture m s, have an immunodeficiency. In a retrospective single-center observational study, which included 147 patients operated on the CP (resection of the prostate, pancreatectomy), shows that the life expectancy of patients after surgery was significantly longer in the terms of appointment of adequate replacement therapy (minimicrospherical drug — Creon — at 50 000 FIP units for the main meal and 25 000 FIP units upon break) compared with the duration of life of patients who received no postoperative enzyme preparations. In 6 years after surgery the cumulative survival rate of patients treated with the enzyme preparations was almost twice that of the survival of patients who were not taking replacement therapy (Fig. 9). [11]

Illustrative results obtained in the study N. Vallejo-Senra et al. (2015) [13]. The authors observed 480 patients with CP for 5 years. During the period 41 (8.5%) patients died, which is 17.2 ‰ a year. In the general population mortality was significantly lower — 4.29 ‰ per year ($p<0.05$). In the analysis of mortality depending on the availability EPI turned out that all mortality in CP with EPI significantly worse than in CP without EPI (Table 3). The authors have shown that a deficiency of nutrients associated with increased risk of cancer, infections and cardiovascular diseases. The causes of death of patients with CP were as follows: cancer of various localization — 39%, infection — 24%, cardiovascular diseases — 10%, cirrhosis — 10% other reasons — 17% [13].

Table 3

Indicators of mortality of patients with CP depending on EPI availability

(by N. Vallejo-Senra et al., 2015 [13])

	CP with EPI	**CP without EPI**	**R**
Mortality	17.4%	6.1%	<0.05
Mortality	34,3‰ per year	12,3‰ per year	<0.05
Age of death	57	63	<0.05

To assess the nutritional status can be used anthropometric parameters (body weight, body mass index, the ratio of the different tissues of the body) and nutritive parameters (blood levels of fat-soluble vitamins, proteins, lipids, macro- and micronutrients). To assess the correlation of various tissues of the body the method of dual energy X-ray absorptiometry is used.

To diagnose EPI the following laboratory parameters are used.

– Fat-soluble vitamins:

• vitamins A, D, E;

• vitamin K and water-soluble vitamins — the deficit does not reflect the existence of EPI.

– Plasma proteins:

• total protein, albumin, prealbumin, retinol-binding protein.

– Macro- and microelements:

• magnesium;

• zinc is decreased in patients after pancreatic duodenectomy, but not in CP;

• iron and selenium do not suffer when EPI.

C. M. Sikkens et al. (2013) studied 40 patients with CP, 28 of which are according to the fecal elastase test diagnosed EPI. It is shown that in patients with EPI blood levels of fat-soluble vitamins significantly reduced (Fig. 10) [16].

The presence of hypovitaminosis in CP in dependent on the availability of tee EPI is confirmed by other studies (Fig. 11). [9]

The above-mentioned study by C. M. Sikkens et al. (2013) also shows that patients with CP EPI in the absence of adequate replacement therapy significantly reduced Creon bone mineral density (Fig. 12). [16]

The study by B. Lindkvist et al. (2012) demonstrated a significant decrease in the level of plasma proteins in CP with EPI (Fig. 13). [17] The same study shows that when EPI significantly reduced following nutritive parameters: hemoglobin, albumin, prealbumin, retinol-binding protein, magnesium. Furthermore, upon EPI a significant increase of glycosylated hemoglobin is registered. The more changes trophological indicators, the higher the probability EPI (Fig. 14).

Nutritional parameters should be used to diagnose and to monitor the effectiveness of substitution treatment, and monitoring the current state and trophological status of patients. For example, the significant positive dynamics of body weight and nutritional parameters was demonstrated in a high-evidential study by H. Ramesh et al.(2013), in which patients with EPI administered for 51 weeks minimicrospherical enzyme preparation Creon) in a dose of 80 000 FIP units at the main food and 40 000 FIP units at lanch [2].

Perez Aisa A. et al. (Spain) studied the frequency of secondary EPI in 61 patients who underwent gastrectomy or resection of the stomach. Patients had triglyceride, and hydrogen breath tests, nutritional status was evaluated. EPI diagnosed in 38% of cases, BOS — in 68.9% of cases. Patients were significantly reduced on the body mass index and levels of vitamin D in the blood.

An interesting study was conducted by F. P. Roldan et al. (Spain). They showed that intensity of pain in patients with fibromyalgia and generalized musculoskeletal pain correlates with the degree of reduction of pancreatic secretion of triglyceride breath test results and a decrease in indicators of vitamin D in the plasma. The authors suggested that generalized muscle pain and fibromyalgia are a manifestation EPI.

Prof. S. L. Haas et al. (Sweden) examined 1105 patients with various gastrointestinal complaints. In carrying out the fecal elastase test it was found that the content of elastase-1 is below 200 mcg/g holds 18.4%, and lower than 100 mcg/ —

8.3% of cases. EPI frequency increased with age of the surveyed. Thus, under the age of 30 years, the decline in fecal elastase-1 was determined in 8.3% of cases, and at the age of 80 years and older — in 25.0% of cases.

M.-L. Valenciano et al. (Spain) examined patients with CP, which until this study were observed at the doctor. It was found that in 54% of patients have decreased fecal elastase test parameters, where e m in 45.9% of cases, these figures below 100 mcg/g, i.e. more than half of patients with CP, which are not observed by a doctor, have EPI, and they do not receive adequate treatment. In patients with CP without medical supervision there is a significantly reduced quality of life, especially the indicator of overall health.

A. Peixoto et al. (Spain) showed that in CP severity of structural changes on CT pancreas using Cambridge classification does not correspond to the results of frequency EPI triglyceride breath test. Thus, the cord e ite structural changes of the pancreas were found in 10% of patients, and EPI — in 79% of patients. The authors noted that the results of the breath test were correlated with indicators of fecal elastase-1.

Y. Shekhovtsova et al. (Ukraine) reported a high incidence EPI in patients with type 2 diabetes — 90% (based on fecal elastase test). The authors found a positive correlation between the indicators of fecal elastase-1 and body mass index.

G. Capurso et al. (Italy) reported the results of a meta-analysis of the frequency of BOS in CP. In a meta-analysis included eight studies (1579 patients) at various levels of evidence. For the diagnosis of BOS using hydrogen breath test with lactulose or glucose. It turned out that BOS holds not less than 20% of patients with CP. The authors concluded that it is necessary to conduct diagnostics of BOS in CP, as it occurs when the lumen of the duodenal acidification reduces the effectiveness of enzyme replacement therapy and aggravates the clinical manifestations.

G. Oracz et al. (Poland) defined the etiology of CP children. In a third of cases the cause of the disease proved to be a genetic mutation, at least — the anomaly of the pancreas, the disease of bile duts, hyperlipidemia, trauma, autoimmune CP, other reasons (worm infestation, drug pancreatitis and others.); almost a fifth of the cases

diagnosed with idiopathic pancreatitis. Among the genetic mutations dominated mutations PRSS1, SPINK 1, CFTR — both isolated and combinations thereof.

S. Fernandes (Spain) compared the severity of acute pancreatitis in patients with biliary pathology undergoing or underwent cholecystectomy. We use a variety of assessment scales of severity of pancreatitis, including constantly updated classification of Atlanta. Author draws the conclusion that although cholecystectomy does not guarantee recovery from pancreatitis, its weight in survivors of intervention was significantly less than in patients not undergoing cholecystectomy (considering mortality, hospitalization, additional invasive procedures, length of stay in the hospital, including intensive therapy).

Our attention was drawn to the study D. R. Morice (UK) on the empirical antibiotic therapy in infected pancreatic necrosis (retrospective analysis). In most cases of pancreatic tissue were plated frames g-negative enteric bacteria, especially Enterococcus faecalis, determined by the sensitivity of the bacterial flora to gentamicin, ciprofloxacin, vancomycin, tazocin, teicoplanin. Therefore, the choice of drug for the empirical antibiotic therapy for necrotizing pancreatitis should choose these tools.

Lyarsky S. et al. (Belarus) shared their extensive experience in performing laparoscopic surgery in CP. They presented the results of cytogastrostomy, cytoduodenostomy, cytojejunostomy, pancreatojejunostomy.

A. Pap et al. (Hungary) reported on the feasibility of therapy within 2-3 days by nitroglycerin and/or theophylline when necessary with five delay medical endoscopic retrograde cholangiopancreatography in patients with biliary pancreatitis without cholangitis, but with biliary obstruction. According to the authors, such treatment leads to a spontaneous release of stones in half the cases.

L. Archibugi et al. (Italy) presented preliminary results on the possible prevention of pancreatic adenocarcinoma by prolonged using of aspirin and statins.

Interesting were clinical observations duodenal dystrophy (L. V. Vinokurova et al., Russia), pancreatic micsofibrosarcoma (T. Marjal, Hungary).

P. Hurnik et al. presented clinical observation of combination of

adenocarcinoma of the pancreas with the presence of Giardia in the tissue of the organ. The authors asked the question: "Primary carcinoma of the pancreas or reactive atypia when giardiasis?". This is not the first case of such a combination, and there is no answer to the question.

P. Gomez-Rubio et al. (Spain, the Netherlands, Sweden, Germany) reported the results of a multicenter study case-control concerning the possible implications of asthma and inhaled allergens to reduce the risk of adenocarcinoma of the pancreas. The study included 1297 patients, while the control group consisted of practically 1024 healthy. They revealed significant negative correlation between the risk of cancer of the pancreas, and allergic diseases. The mechanisms of this relationship remain unclear and require further research.

At the meeting of the European Pancreatic Club there was a meeting of the group of European experts on the creation of standardized recommendations for diagnostics and treatment of CP (HaPanEU). The recommendations will be published in the journal of EUG by the end of 2015. President of the Ukrainian Pancreatic Club Prof. N. B. Gubergrits participated in the work of this group (a subgroup of the diagnosis and treatment of EPI). In addition, Prof. N. B. Gubergrits was elected to the Council of the European Pancreatic Club (the first and only member of the post-Soviet countries).

The meeting of the European Pancreatic Club, as always, was very interesting and gave an opportunity to get new information and communicate with colleagues.

References

1. 47th European Pancreatic Club (EPC) meeting // Pancreatology. — 2015. — Vol. 15, No 3S. — P. S2–S131.
2. A 51-week, open-label clinical trial in India to assess the efficacy and safety of pancreatin 40000 enteric-coated minimicrospheres in patients with pancreatic exocrine insufficiency due to chronic pancreatitis / H. Ramesh, N. Reddy, S. Bhatia [et al.] // Pancreatology. — 2013. — Vol. 13. — P. 133–139.
3. Alcohol intake and pancreatic cancer : a pooled analysis from the pancreatic cancer cohort consortium (PanScan) / D. S. Michaud, L. Jiao [et al.] // Cancer Causes Control. — 2010. — Vol. 21, No 8. — P. 1213–1225.
4. Buchler M. W. Diseases of the pancreas / M. W. Buchler, W. Uhl, P. Malfertheiner, M. G. Sarr. — Basel [et al.] : Karger, 2004. — 212 p.
5. Cigarette smoking accelerates progression of alcoholic chronic pancreatitis / P. Maisonneuve, A. B. Lowenfels, B. Mullhaupt [et al.] // Gut. — 2005. — Vol. 54, No 4. — P. 510–514.
6. Cigarette smoking, smoking cessation and acute pancreatitis : a prospective population-based study / O. Sadr-Azodi, A. Andren-Sandberg, N. Orsini, A. Wolk // Gut. — 2012. — Vol. 61, No 2. — P. 262–267.
7. The different courses of early- and late-onset idiopathic and alcoholic chronic pancreatitis / P. Layer, H. Yamamoto, L. Kalthoff [et al.] // Gastroenterology. — 1994. — Vol. 107, No 5. — P. 1481–1487.
8. EUS-based criteria for the diagnosis of chronic pancreatitis: the Rosemont classification / M. F. Catalano, A. Sahai, M. Levy [et al.] // Gastrointestinal Endoscopy. — 2009. — Vol. 69, No 7. — P. 1251–1261.
9. Fat-soluble vitamin concentration in chronic alcohol-induced pancreatitis. Relationship with steatorrhea / F. Marotta, D. Labadarios, L. Frazer [et al.] // Dig. Dis. Sci. — 1994. — Vol. 39. — P. 993–998.
10. Gullo L. Effect of cessation of alcohol use on the course of pancreatic dysfunction in alcoholic pancreatitis / L. Gullo, L. Barbara, G. Labo // Gastroenterology. — 1988. — Vol. 95, No 4. — P. 1063–1068.

11. Insulin dependence and pancreatic enzyme replacement therapy are independent prognostic factors for long-term survival after operation for chronic pancreatitis / M. Winny, V. Paroglou, H. Bektas [et al.] // Surgery. — 2014. — Vol. 155, No 2. — P. 271–279.
12. Lankisch P. G. Acute pancreatitis / P. G. Lankisch, M. Apte, P. A. Banks // Lancet. — 2015. — Vol. 386, No 9988. — P. 85–96.
13. Mortality in patients with chronic pancreatitis with and without exocrine pancreatic insufficiency / N. Vallejo-Senra, J. Iglesias-Garcia, J. Larinj-Noia [et al.] // 47th European Pancreatic Club (EPC) meeting // Pancreatology. — 2015. — Vol. 15, No 3S. — P. S12–S13.
14. Natural history of acute pancreatitis : a long-term population-based study / P. G. Lankisch, N. Breuer, A. Bruns [et al.] // Am. J. Gastroenterol. — 2009. — Vol. 104, No 11. — P. 2797–2805.
15. Pain mechanisms in chronic pancreatitis: of a master and his fire / I. E. Demir, E. Tieftrunk, M. Maak [et al.] // Langenbecks Arch. Surg. — 2011. — Vol. 396, No 2. — P. 151–160.
16. The prevalence of fat-soluble vitamin deficiencies and a decreased bone mass in patients with chronic pancreatitis / C. M. Sikkens, D. L. Cahen, A. D. Koch [et al.] // Pancreatology. — 2013. — Vol. 13, No 3. — P. 238–242.
17. Serum nutritional markers for prediction of pancreatic exocrine insufficiency in chronic pancreatitis / B. Lindkvist, J. E. Dominguez-Munoz, M. Luaces-Regueira [et al.] // Pancreatology. — 2012. — Vol. 12, No 4. — P. 305–310.
18. Smoking and body mass index and survival in pancreatic cancer patients / C. Pelucchi, C. Galeone, J. Polesel [et al.] // Pancreas. — 2014. — Vol. 43, No 1. — P. 47–52.
19. Steer M. L. Chronic Pancreatitis / M. L. Steer, I. Waxman, S. Freedman // N. Engl. J. Med. — 1995.— Vol. 332. — P. 1482–1490.
20. Variants in CPA1 are strongly associated with early onset chronic pancreatitis / H. Witt, S. Beer, J. Rosendahl [et al.] // Nat. Genet. — 2013. — Vol. 45, No 10. — P. 1216–1220.

News of the European pancreatology
(by materials of the 47th Meeting of the European Pancreatic Club)

N. B. Gubergrits, N.V. Byelyayeva

Donetsk National Medical University n. a. M. Gorky, Ukraine

Key words: European Pancreatic Club, Ukrainian Pancreatic Club, diagnostics and treatment of chronic pancreatitis, pancreatic insufficiency, Creon

Article represents the results of main scientific researches in pancreatology conducted in 2014–2015. There are stated achievements of leading pancreatologists of Europe regarding study of etiology, pathogenesis, diagnostics and treatment of pancreatitis and tumors of the pancreas.

Fig. 1. The probability of survival of patients with acute pancreatitis (by P. G. Lankisch, 2009 [14]).

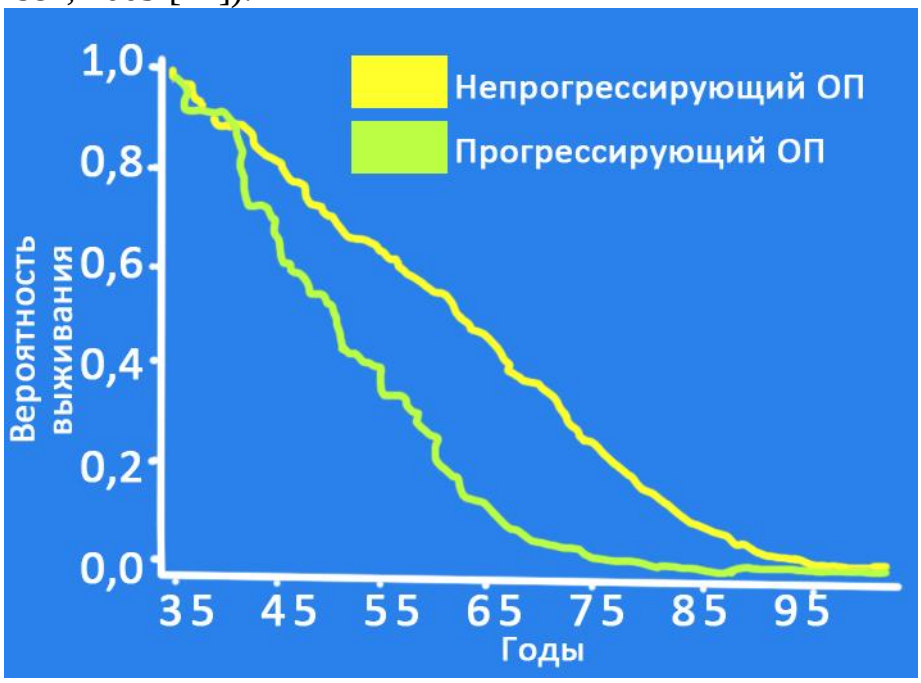


Fig. 2. Reducing risk of calcification of the pancreas at refusal of alcohol by increasing length of CP (by P. Layer et al., 1994 [7]).

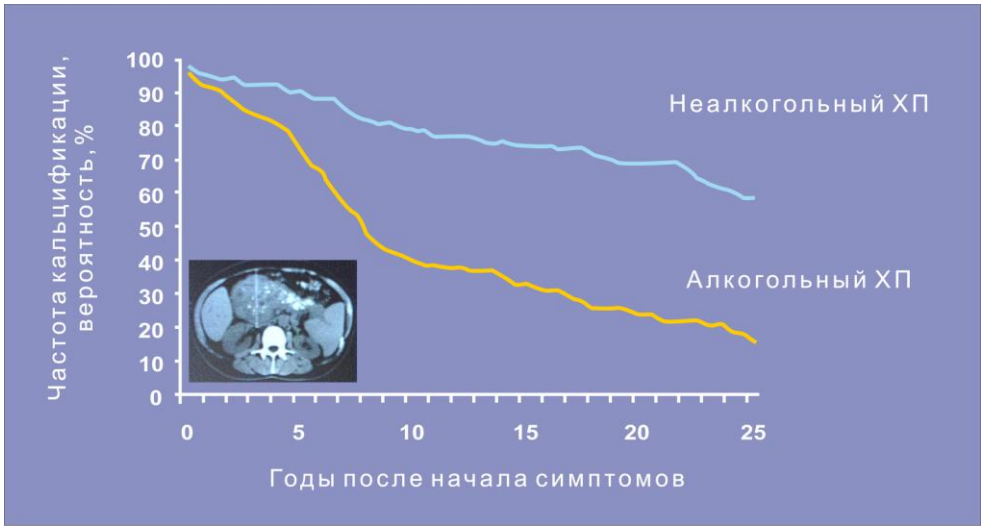


Fig. 3. Production of bicarbonates and enzymes of the pancreas in patients with CP, who continue and stop the intake of alcohol (by L. Gullo et al., 1988 [10]).

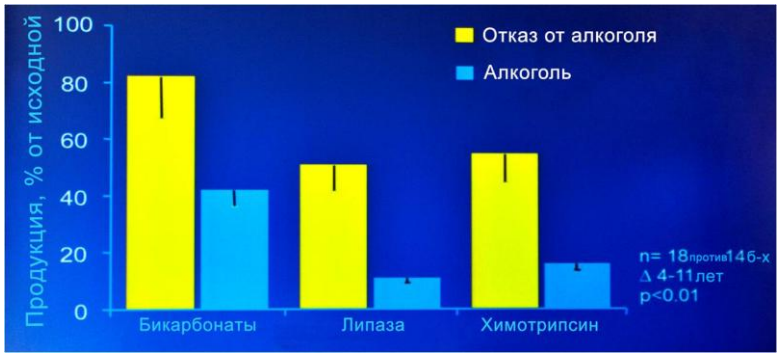


Fig. 4. The risk of calcification of the pancreas in patients with CP, depending on smoking (by P. Maisonneuve, 2005 [5]).

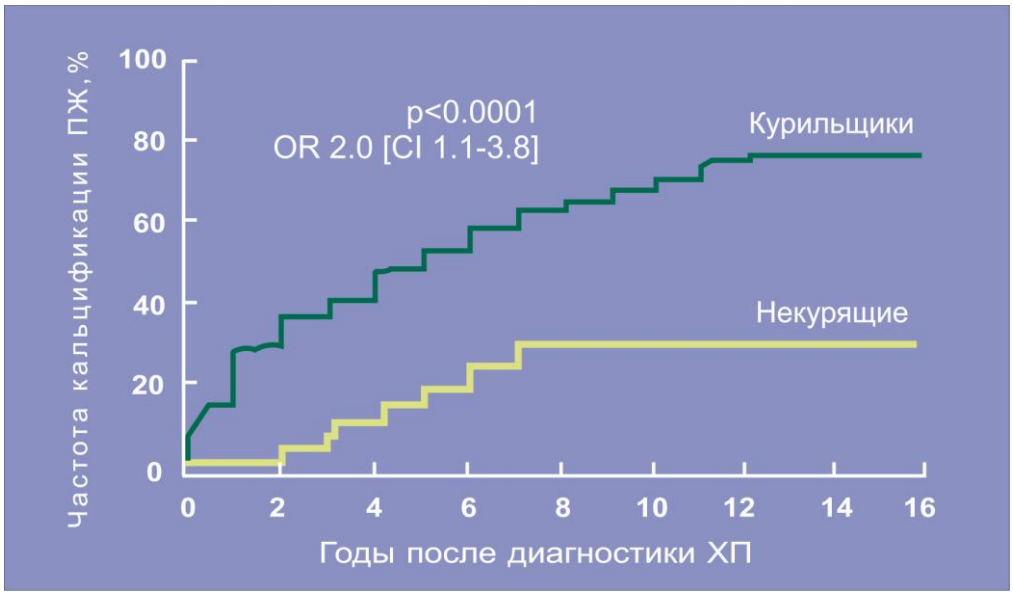


Fig. 5 . The relative risk of acute pancreatitis and CP depending on smoking (by O. Sadr-Azodi et al., 2012 [6]).

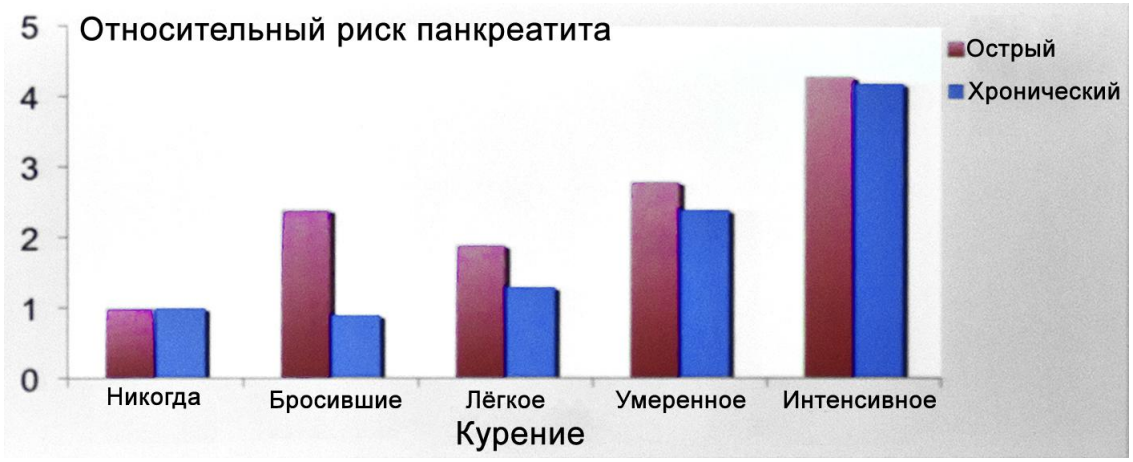


Fig. 6. The frequency of genetic mutations at nonalcoholic CP (by H. Witt et al., 2013 [20]).

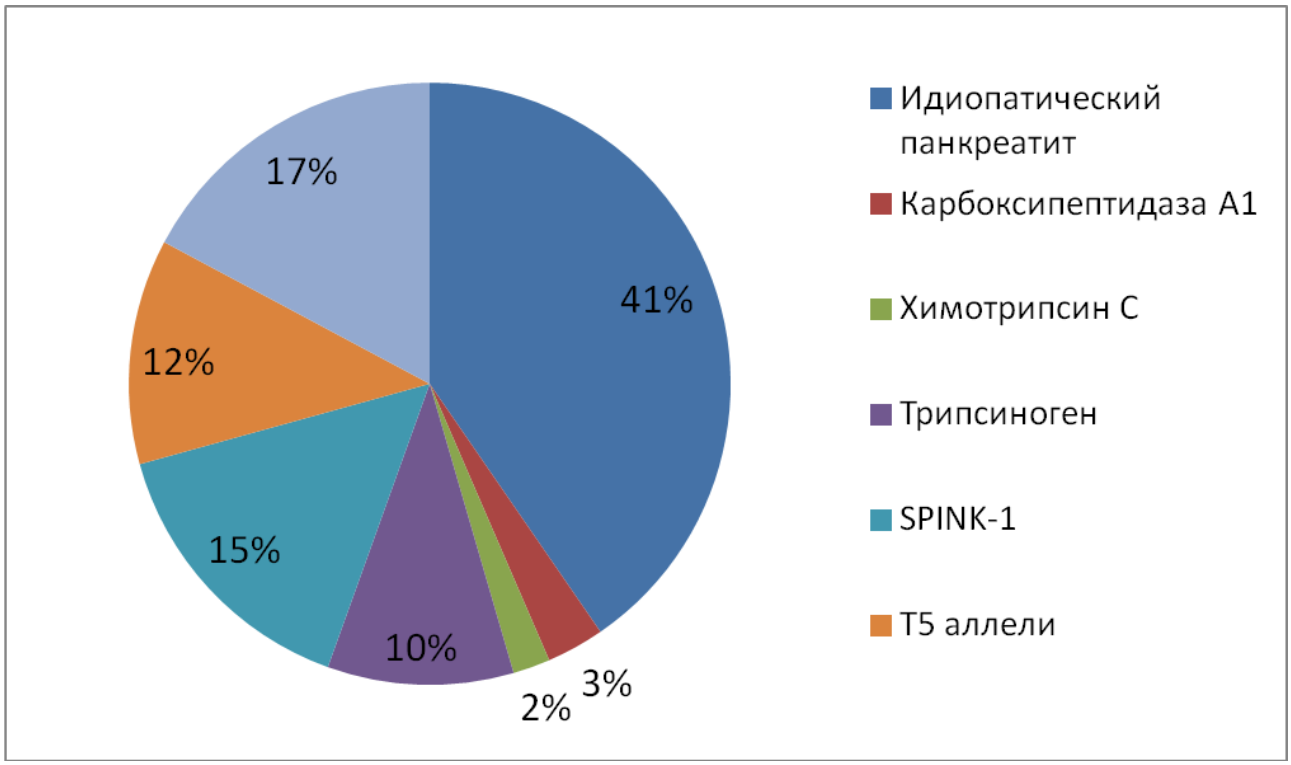


Fig. 7. The relationship between the dose of received ethanol per day and the risk of CP (by M. W. B uchler et al., 2004 [4]).

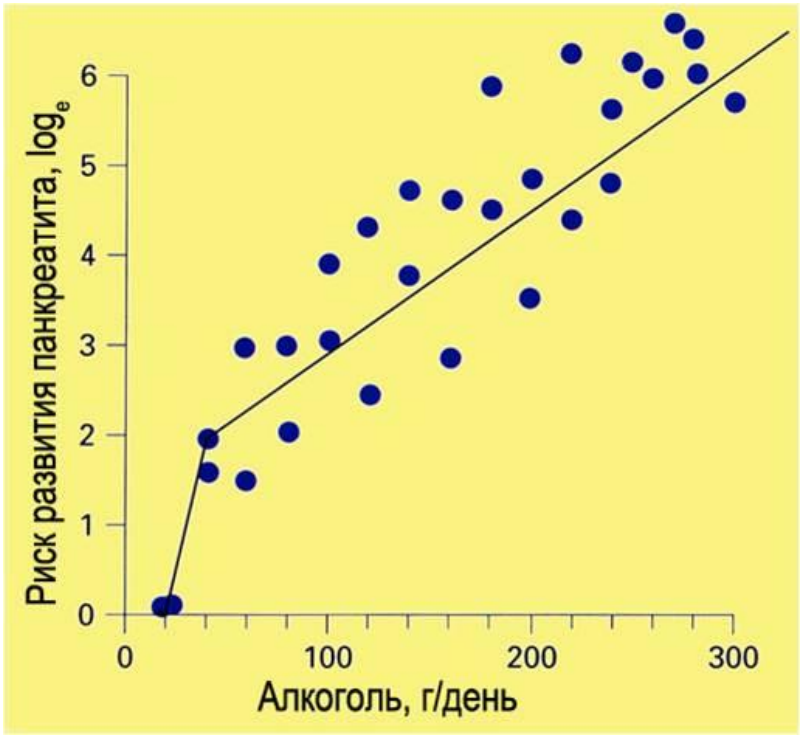


Fig. 8. Survival upon cancer of the pancreas depending on smoking (by C. Pelucchi et al., 2014 [18]).

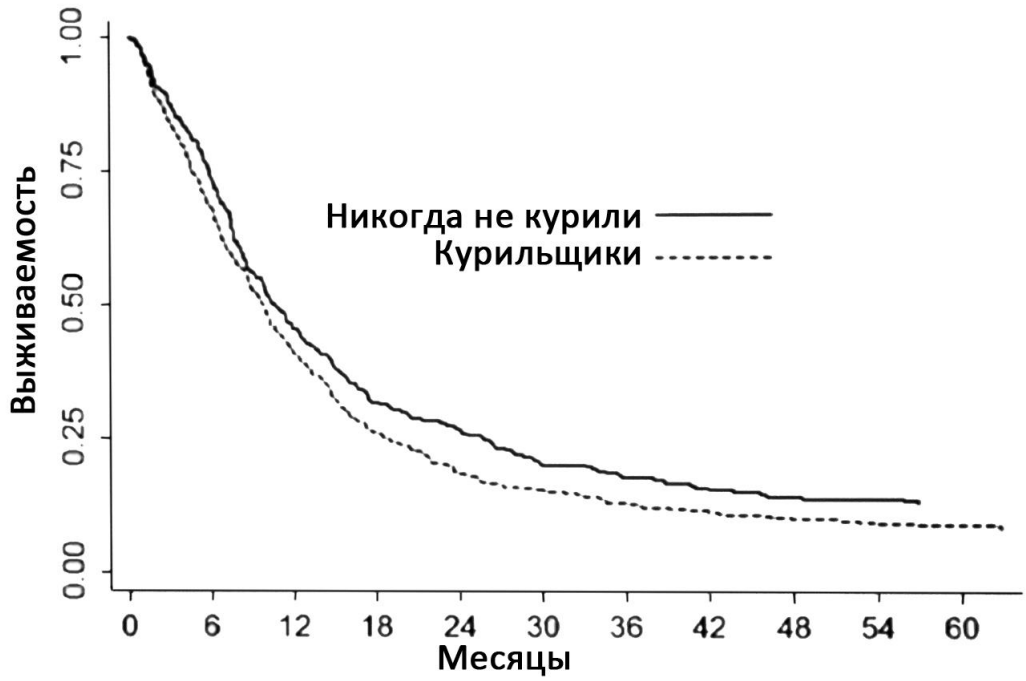


Fig. 9. The duration of life of patients with CP after surgical intervention depending on appointment of replacement enzyme therapy (by M. Winny et al., 2014 [11]).

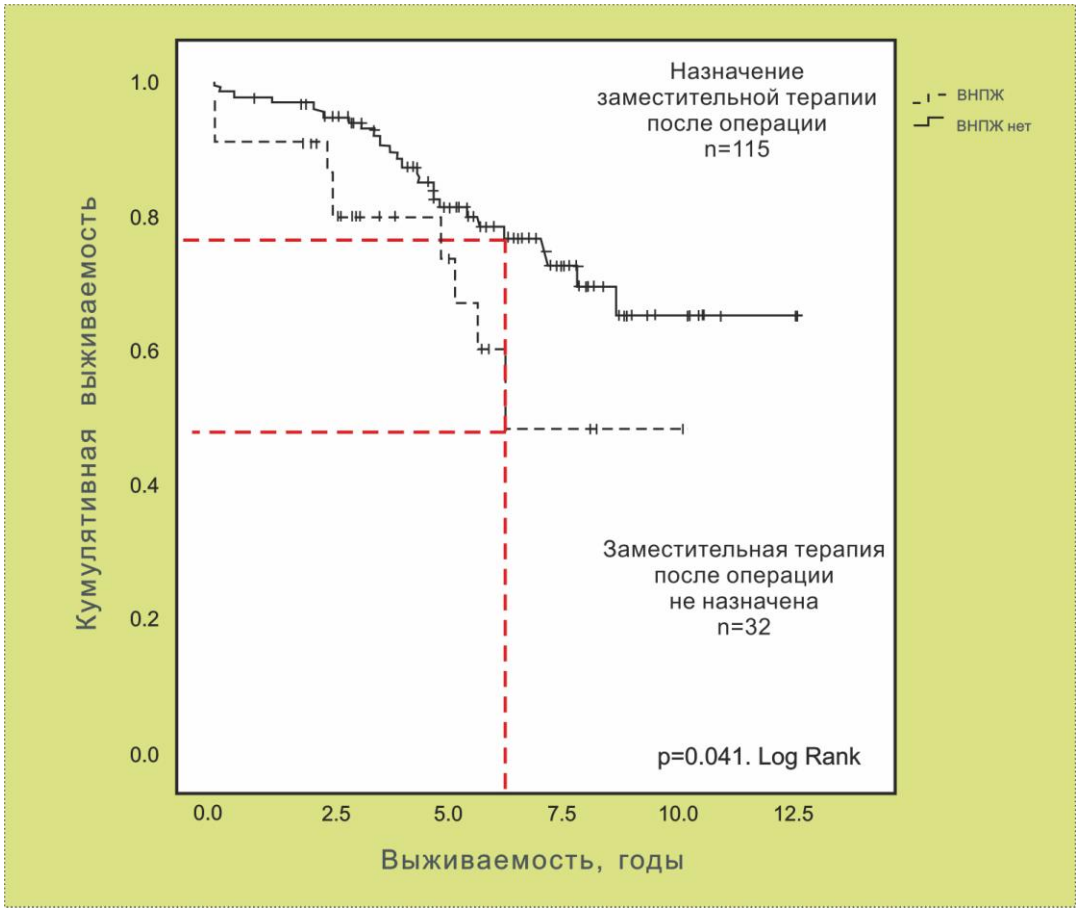


Fig. 10. The frequency of hypovitaminosis in CP subject to EPI availability and

appointment of enzyme preparations (FP) (by C. M. Sikkens et al., 2013 [16]).

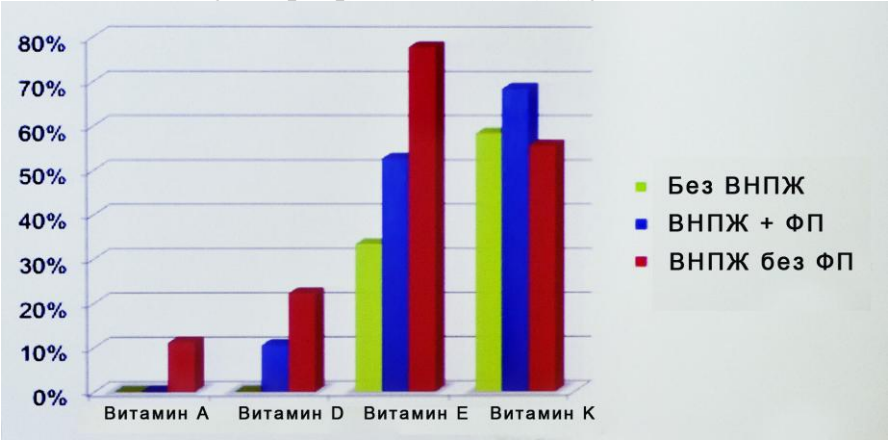


Fig. 11. Frequency of A and E hypovitaminosis in CP depending on the presence of EPI ($p<0.05$ compared with the control group) (by F. Marotta et al., 1994 [9]).

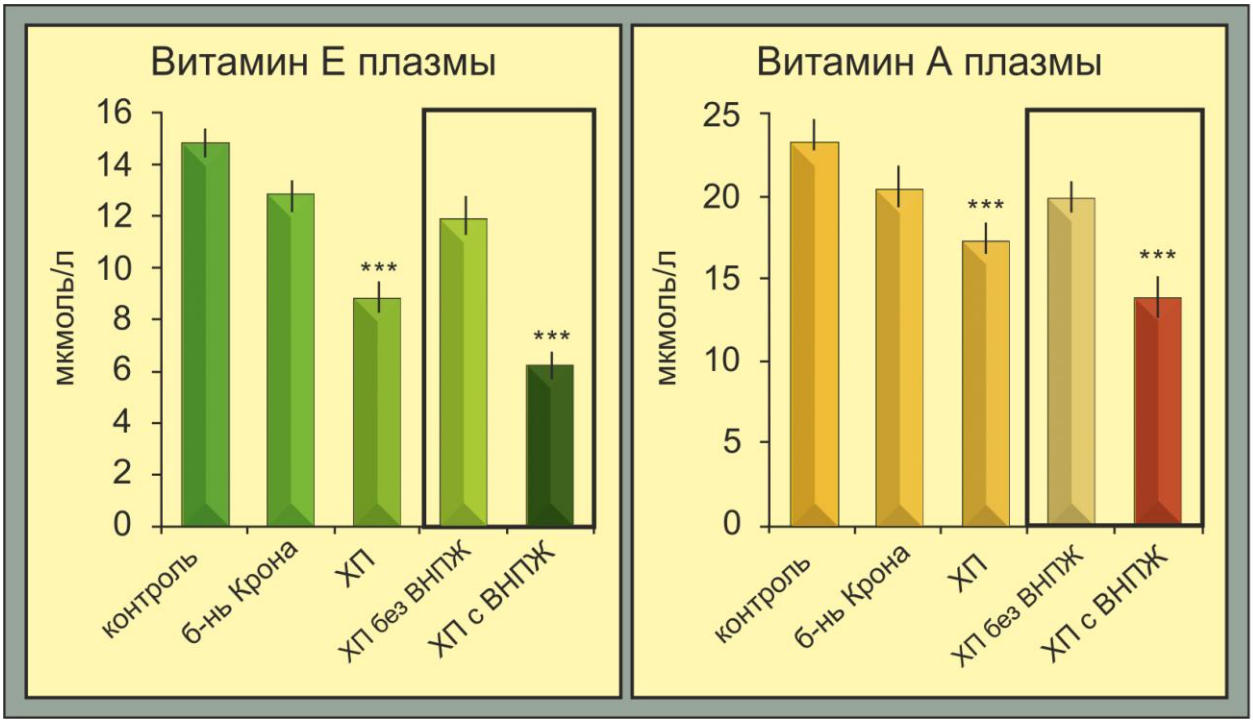


Fig. 12. Single mineral bone density (BMD) in patients with CP with and without EPI depending on the purpose of enzyme preparations (FP) (by C. M. Sikkens et al., 2013 [16]).

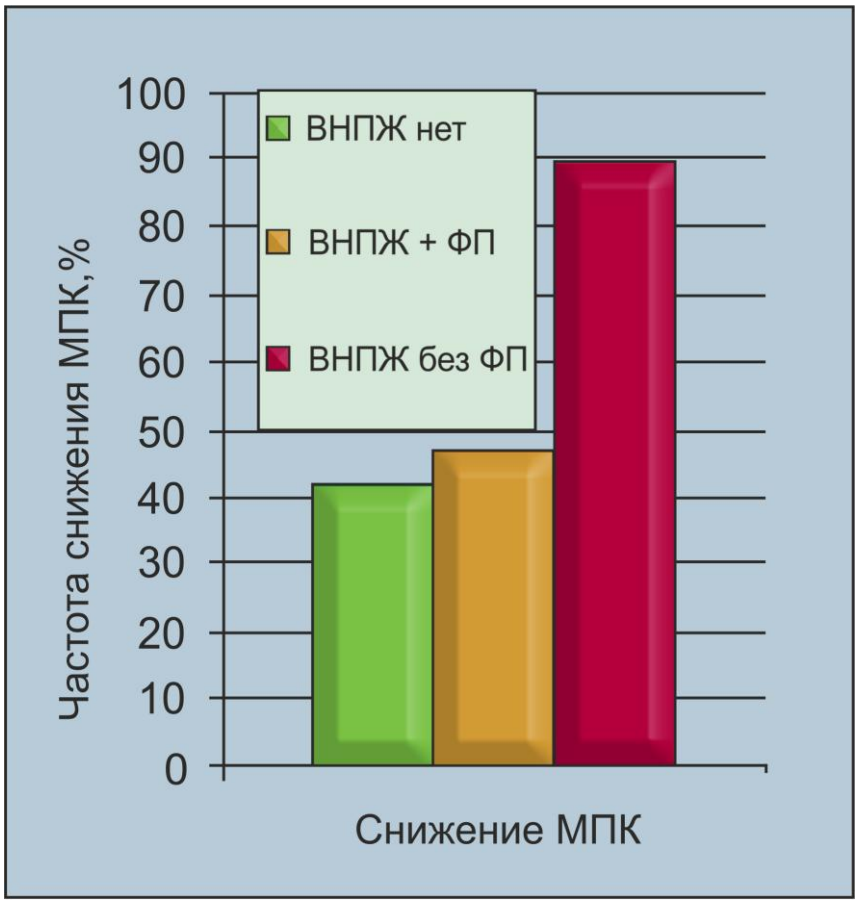


Fig. 13. Frequency of reducing blood plasma proteins in CP (by B. Lindkvist et al., 2012 [17]).

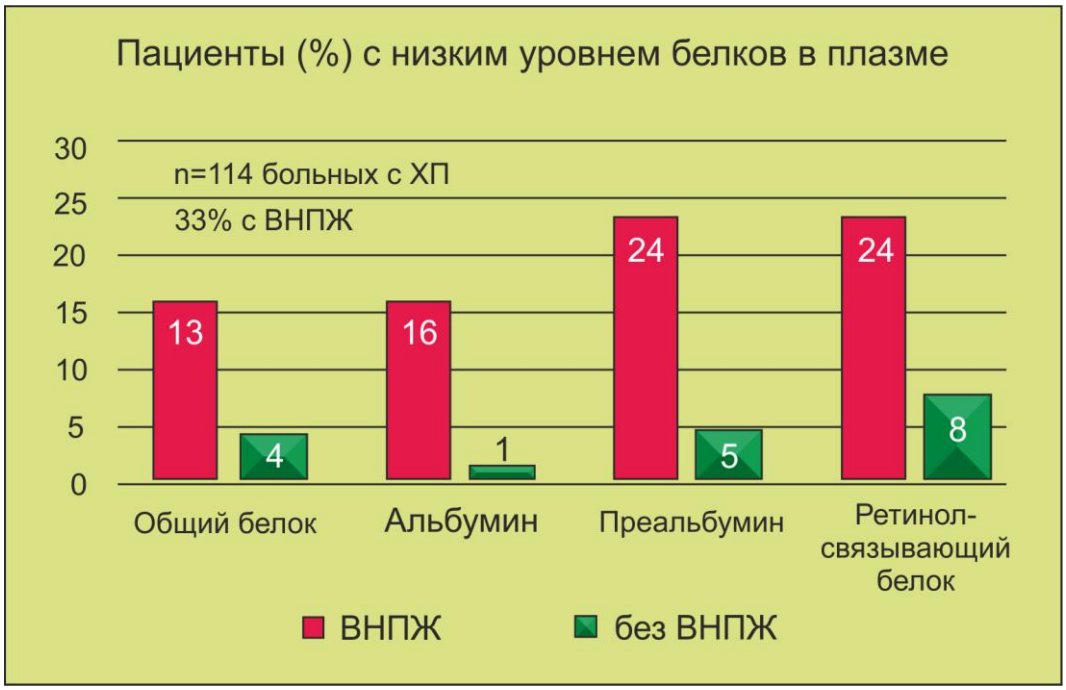
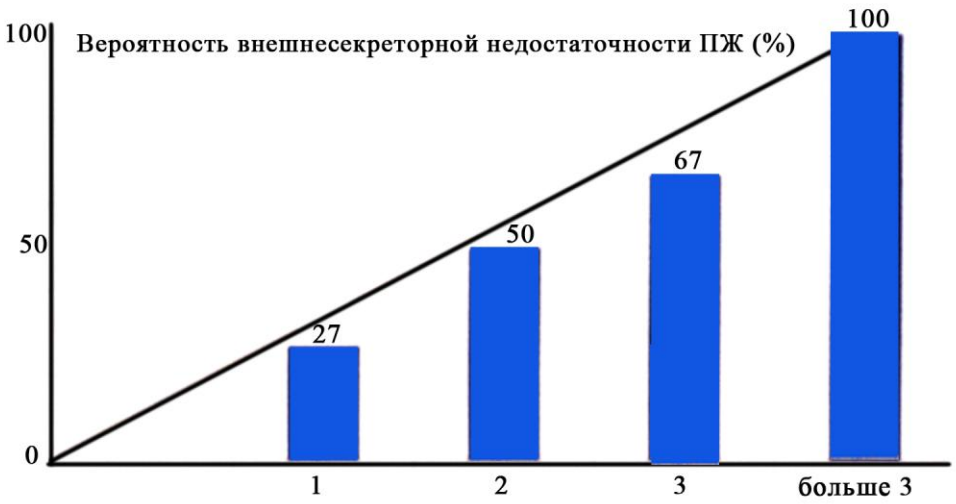


Fig. 14. The relationship between EPI probability and amount of changes in nutritional status indicators (by B. Lindkvist et al., 2012 [17]).



Количество изменённых трофологических показателей