Peculiarities of blood fibrinolytic activity in patients with comorbidity of chronic pancreatitis and coronary heart disease

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Key words: chronic pancreatitis, coronary heart disease, fibrinolytic potential, pathogenesis of comorbid pathology, peculiarities of clinical manifestations of associated diseases

Epi dem iolohichni study at this stage indicate that there are a teenager man faces numerous diseases tions [8] especially — at the age of 30 years. There is also an increase in obesity in young people, early manifestations of metabolic syndrome [12], and the development of atherosclerotic processes and non-clinical forms of coronary heart disease (CHD). Increasingly, the diagnosis of chronic pancreatitis (CP) in children and young and middle age. Regarding the combination of CP and CHD, it is more often registered after 35 years and is characterized by mutual influence, b yuchy manifest with a severe course or atypical manifestation of these each year with a minute ofryuvan, causing difficulties in diagnosis, adequate treatment and later high mortality [9]. T aki risk factors as left ventricular hypertrophy, increased levels of homocysteine, lipoprotein α, triglyceride or fibrinogen, the presence in the body of the pathogen and markers of inflammation, improve prokoahulyantiv (plasminogen UII factor inhibitor plasminogen type 1, factor Vilibranda) is also common [7]. It combines such a mechanism as a chronic low-intensity generalized inflammatory reaction (chronic low-intensity generalized inflammatory response to damage) [3]. Yes, O.O. Zazdrnov et al. (2001) examine yuchy indicators proteolysis (lysis for low- and ysokomolekulyarnyh proteins) and fibrinolysis in patients with CP in conjunction with CAD found that and ntensyvnist proteolysis significantly increased in patients with CP for IBS (2 times compared with both healthy individuals), which can lead to increased apoptotic activity in pancreatic tissue [5]. The author thus manifests itself in a significant decrease in fibrinolytic activity in these patients, which may contribute to the formation of microscopic platelet and fibrin clots system hemomikrotsyrkulyatsiyi and development of intravascular mikrozhortannya

blood, and the progression of the pathological process in software — to violate local blood circulation with subsequent increase of hypoxia, the permeability of cell membranes, destruction th acinar cells and release of pancreatic enzymes to systemic blood flow [6]. According to the authors, this aggravates the damage, closing the "vicious" circle of fibrotyzatsiyi parenchyma of software development exo — and endocrine insufficiency up to maldigestion and malabsorption manifestations [10]. In the above-mentioned sections of the pathogenesis can be involved both in the CP, and in the CP in conjunction with the CHD. It is possible thatoxidative and, carbonyl and nitroz and ytyv us stress, hypoxia I endotoxicosis i can be Mr. reasons and we as factors of local inflammatory reaction in the software and chronicsystemic th low intensity inflammatory response through activation of cytokine level, acute phase proteins of inflammation, violations hemostasis mechanisms cause latent DIC (which also plays an important role in the pathogenesis of both diseases), contributing to the development of angiogenesis, apoptosis and final stage of inflammation -fibrosis not only in CP, but also for coronary heart disease. That is, the acinar cells apoptosis and fence, the release of cytokines, activation of coagulation, tissue ischemia and necrosis are key factors in the deterioration of the status and development of the ekstrapankreatychnyh disorders associated with microvascular thrombosis, due to damage to the endothelial cells of blood vessels and hypercoagulation (including for IBS). It needs more detailed study.

The positive second commun for at CPB between accumulation and activation of blood coagulation system (through stimulating release of monocyte tissue factor, which initiates the coagulation and neutralizes trombotsytaktyvuyuchyy factor contributing ateromatoza and thrombosis), which is an important link in the origin and development of the inflammatory process in many diseases internal organs, including for ischemic CP [1]. It is possible that changing pH or redox homeostasis, accumulationproteolysis products and / or oxidation of proteins and lipids can inhibit the ability of the fibrinolytic system to maintain an adequate level omu tromboli of a village. Such an effect is inherent in, in particular, fibrin degradation products that bind a certain amount of prostaglandins and remove them from the bloodstream (increase of productsdegradation of fibrin occurs not only for atherosclerosis, but also with exacerbation of CP, recurrent CP). At the same t, t akyy same

mechanism may be the only course for CP, and on its course of comorbid coronary artery disease. Emerging hemodynamic disorders in coronary artery disease can cause ischemia of PO with subsequent deployment of pathological processes in it [2, 4]. So, software itself can be a source of changes in metabolic processes [11, 13].

M o and research — knows you figure spare part s blood fibrinolytic activity Mr. patients with CP and CHD.

Materials and methods. About 52 patients were watched, among them patients with CP — 21 (Group I), on CHD for chronic heart failure (CHF) — 12 (II group) and for comorbidity of CH and with CHD and CHF — 19 patients (group III) and 10 practically healthy persons (SOPs). The average age of the subjects was 49.7 ± 1.2 years, the diseasewas 7 to 11 years old, men were 58.8%, of women — 41, 2%.

Diagnosis of CP was established in accordance with the clinical protocol of the Order of the Ministry of Health of Ukraine dated June 13, 2005 No. 271 «Clinical protocol for the provision of medical care for patients with chronic pancreatitis». The diagnosis of CHD was exposed in accordance with the Order of the Ministry of Health of Ukraine No. 436 dated July 3, 2006. "On approval of the protocols of care, specialty" Cardiology "."

The inclusion criteria for CV were abdominal pain syndrome, periodic dyspeptic disorders; pi dtverdzhennya structural change software (for figures US), and violation of exocrine function software features mild, moderate exacerbation of CP, long-term smoking, alcohol abuse, availability of patient informed consent to participate in the study. *Criteria for inclusion* in the study of patients with coronary artery disease, stable angina pectoris I-II FK, CHF IIA-B, FC II-III (NYHA) were: CHF II or III FC; absence of angina attacks for 3 months; Regular ingestion of angiotensin-converting enzyme or angiotensin II receptor blockers, β-blockers, statins and antiplatelet drugs for 3 months; informed consent of the patient.

The exclusion criteria were as follows: oncological diseases, cancer; persons who have suffered acute pancreatitis, or exacerbation of relapsing CP, surgical intervention during the last 4 weeks; Angina pectoris requiring nitrates; suffered acute myocardial infarction over the past 3 months; other severe concomitant

diseases of the cardiovascular system in a state of decompensation; chronic kidney disease, insulin-dependent diabetes mellitus, dysfunction of the thyroid gland.

F ibrynolitychn second potential estimated by umarno with fibrinolytic th th th century and active (SFA), fibrinolytic enzyme w th century and ac h (FFA) and non-enzymatic fibrinolytic th th th century and active (NFA) blood plasma for the help of sets of reagents of the company "Simko Ltd" (Ukraine).

Mathematical processing of the results was carried out using the Variation-Statistic Analysis on IBM PC Pentium II using Statistica® 5.1 (Statsoft, Inc.) programs. The average arithmetic (M), the mean square deviation (q), the mean arithmetic mean (m), coefficients of direct (r) and indirect (η) correlations. The probabilities of the difference were determined by Student's t-criterion and Fisher's F-criterion for parametric data.

Research results and their discussion. The analysis of complaints showed that most of the abdominal pain was localized in the left hypochondrium in 7 (1 7, 5% of patients) and epigastrium in 14 (35.0% of patients), less in both hypochondrium 6 (15 % of patients), the rest — in the pyloroduodenal region. The intensity of the pain in most patients was moderate (periodic moderate pain was manifested in 12 patients (5, 7,1 %) in group I and in 6 (31, 5%) — in III, accompanied by flatulence, depleting the psychophysiological state of patients. Patients pointed to the presence of "equivalents" of pain in the form of abdominal discomfort, severity, swelling and dislocation in the epigastric area. Irritation complaints of pain in the left arm, neck are characteristic of the comorbid flow and often associated with patients with excessive (in volume) acceptance her and, instead of choking and other cardiac symptoms. The special features of comorbid CHD current CP we took the presence of coronary atherosclerosis in 87.5%, which was determined by atherosclerotic changes in the carotid arteries (from local to diffuse) with significant or insignificant hemodynamic impairment. Patients In the majority of cases, the third group observed a combined lesion of several vessels: aorta + abdominal trunk — 25.0%, aorta + upper erythema artery — 7.5%, abdominal trunk + upper erythema artery -12.5%, aorta + abdominal trunk + upper beige art Erya — 17,5% (ultrasound vessels of the abdominal cavity).

Due t o th that hemostasis processes suffer chronic low-intensity inflammation (which is one of the common units for the progression of CP, coronary artery disease, heart failure) In order to compare and establish the

peculiarities of the reaction in the comorbidity of these diseases, the state of the fibrinolytic potential in all subjects was investigated.

In the study groups, the decrease in the SFA score was found to be 14.6% in Group I and 27% in II, mainly due to decreasing enzymatic fibrinolytic activity by 34.4% and 54% respectively (Table 1). 1). Detected changes were accompanied by rising neenzymatychnoyi I fibrinolytic activity in patients with CP to 8.8% in patients with coronary artery disease by X CH — 10.3%, and comorbidity with coronary artery disease lesions software for CHF — by 19,1% (p <0, 05) in comparison with a group of practically healthy persons.

Table 1

Indicators of fibrinolytic activity of blood plasma in patients on CP and for a comorbid flow from CHD for X SN (M ± m)

Indexes	Practically healthy individuals n = 1 0	CP, n = 21	And X C + CHF n =12	CP + CHD + CHF n = 19
Total fibrinolytic activity, μg azofibrin / ml for 1 hr	1.88 ± 0.05	1.64 ± 0.03 *	1, 4 4 ± 0,27 *	1, 35 ± 0, 1 2 * / **
Non-enzymatic fibrinolytic activity, μg azofibrin / ml for 1 hr	0.68 ± 0.02	0.74 ± 0.01 *	0.7 5 ± 0.19	0,81 ± 0, 1 2 * / **
Enzymatic fibrinolytic activity, μg azofibrin / ml for 1 hr	1.21 ± 0.03	0.90 ± 0.02 *	0 71 ± 0.12 *	0.6 2 ± 0.0 11 * / **

Note a: ** — the difference is probable compared to the indicator for practically healthy persons (P <0.05); ** — the difference is probable in comparison with the index in patients with CP (P <0.05).

Thus, in patients with CP of CHD by CHF SFA can be znyzhuva m and by suppressing FFA and total violation of the structure of fibrinolysis uvatysya's related to the increase NFA (due to hypoxia and acidosis).

With nachne g ave and niche ting along with FFA n th omirn reduction of SFA may contribute to the formation of microscopic platelet and fibrin clots, resulting in the development of intravascular blood mikrozhortannya. With the progression of the pathological process in the software, this process will break ground uye placein circulation,promotes the growth of tissue hypoxia S software

destruction th acinar cells permeability of cell membranes and release S pancreatic enzymes into the system circulation. In addition, the microcirculation problem is a cytopathic effect on the acinar, stellate and islet cells and Langerhans with the following fibrosis of the parenchyma of the gland and the development of the external and intronsecretory insufficiency In addition, the decrease SFA, according to some authors [6] contributes to the degradation of cellular matrix, disruption of growth and division of cells, tissue regeneration, development of multiple sclerosis and fibrosis, not only in software but also in the myocardium and, from a clinical point of view burdens claim erebih both diseases.

It is possible that the decrease of FFA in patients with CHF with CHD for X-CH, is associated with activation of phospholipase A2, which increases both during exacerbation and during the period of unstable remission of CP, violating the permeability of membranes, contributing to the penetration of lipase into acicular cells, formingdestructive processes in the nyyu, including due to increased concentrations of thromboxane A2 and leukotriene B4, which are inflammatory mediators. They are also inducers of platelet activation, vasoconstrictors that increase tissue ischemia and suppress FFA by reducing the amount of plasminogen, leading to the reduction of endothelial cells, the appearance of their basement membrane, which adheres trombocytes, increasing vascular permeability [10], activating synthesis and the allocation of specific activation factors and platelet growth. In each platelet, there are thousands of growth factor molecules platelets (P DGF), whose action is aimed at stimulating the repair of tissues. The receptorand before it are in the vascular wall, in the fibroblasts and smooth muscle cells, where P DGF stimulates proliferation and production of the constituent connective tissue (glycosaminoglycans, collagen, etc.), forms a zone of necrosis and fibrosis. C and processes can occur both in the software and in the myocardium PGRF- B, P DGF- D, whichaffects migration and angiogenesis, is involved in the formation of fibrosis zones in the CP.

The next important factor that causes microcirculatory changes is FAT (platelet activation factor), a strong phospholipid inflammatory mediator, which is often localized in the software in places where white blood clots form. It also affects the system of the portal vein and the hepatocellular system of blood circulation, the formation of hypoxichearth in the myocardium, promotes disorders in the peripheral and central hemodynamics. In the caste Leno that CP managers

consider more important th count process and the formation of new arterio-venous anastomoses in place at zatr mbovanoyi reaction vessels and antyhemostaza aimed at improving the blood supply to the region ishemizovanho software [12, 14], especially for CHF.

So, those of the mechanism and should consider assigning medical rehabilitation for patients comorbidity CP, coronary artery disease (including heart failure if any).

Conclusions:

1. Clinical course of CP with CHD and rakter's Law is a reduction ARE intensity of pain, the prevalence of dyspeptic, one of the causes amplification of which is not only the development of exocrine insufficiency software, but atherosclerotic and changes in the walls of the vessels of the abdominal cavity (such as aorta + abdominal trunk, aorta + abdominal trunk + upper erythema artery).

2. CP patients with coronary artery disease (including by CHF) there is violation of the structure of total inhibition of fibrinolysis by enzymatic and non-enzymatic component of growth, contributing to microcirculatory shift hypoxic foci formation (including through the process of thrombosis), persistence of chronic low-th th generalizedinflammation and tissue fibrozuvannya software and infarction.

The prospect of further research is the search for medical correction of manifestations insufficiency of fibrinolytic potential in order to increase the efficiency of complextreatment of patients with the combined pancreatocardial pathology.

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The article presents the original data indicating changes in the fibrinolytic potential in patients with comorbidity of chronic pancreatitis and coronary heart disease. The results indicate that the increased proteolytic capacity (due to the decreased fibrinolysis) and generalization of the atherosclerotic process, activating chronic DIC-syndrome, may be considered as factors aggravating the clinical course of chronic pancreatitis, coronary heart disease and chronic cardiac

insufficiency, as they promote the risk of cardiovascular events and ischemic pancreatitis.