

**МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»**



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VASCULAR ENDOTHELIAL DYSFUNCTION AND HEMOSTASIS OF PATIENTS WITH COPD AND TYPE 2 DIABETES

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Introduction. Chronic obstructive pulmonary disease (COPD), a chronic inflammatory disease, mainly with lesions of the peripheral respiratory system with development of emphysema, manifested by irreversible bronchial obstruction, has a progressive nature with the subsequent development of pulmonary insufficiency and chronic pulmonary heart disease. Diabetes mellitus (DM) also remains a very important problem in Ukraine today, as its incidence has increased by 10% in the last 2 years. In 2010, more than 1 million patients with diabetes were registered in Ukraine, including 870 thousand patients with type II diabetes. The study of a comorbid course of COPD and diabetes has a long history. Although the combination of COPD with diabetes is common, there is no comprehensive information in the literature concerning this problem, in particular on the pathogenic role of vascular endothelial dysfunction and the state of the hemostasis system.

The aim of the study: to establish the pathogenetic features of chronic obstructive pulmonary disease combined with type 2 diabetes mellitus, based on the study of the functional state of the endothelium and oxidative modification of proteins.

Material and methods. 10 patients with COPD, 10 patients with COPD associated with diabetes, 10 healthy individuals were examined. The studies were conducted in different periods of the disease using clinical, endoscopic, ultrasound, functional and laboratory methods.

Results. The course of chronic obstructive pulmonary disease with concomitant type 2 diabetes mellitus is characterized by an increase in vascular and endothelial dysfunction, which is one of the pathogenic factors of recurrence and progression of the disease, and therefore requires adequate correction. Moreover, vascular endothelial dysfunction in patients with COPD combined with type 2 diabetes mellitus, accompanied by uncontrolled enhancement of oxidative modification of serum proteins against the background of decompensation of unlimited proteolysis, which can lead to a significant accumulation in the blood of oxidatively modified proteins, is an important factor in disease progression.

Conclusions. The study of oxidative modification of proteins and the study of the functional state of the endothelium in patients with COPD combined with type 2 diabetes is necessary to predict recurrence, severity and complications.

Dudka I.V.

DISTURBANCE OF THE REGULATION OF GLYCAEMIA PARAMETERS IN PATIENTS WITH COMORBID CHRONIC PANCREATITIS AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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Introduction. Chronic pancreatitis (CP) of various etiology and chronic obstructive pulmonary disease (COPD) frequently associate with somatic pathology in the internal medicine clinic. Each nosology out of this pathological tandem can result in glucose metabolism disorders since both organs – the pancreas and lungs – take an active part in a direct supply of carbohydrate metabolism and its regulation. At the initial stages of chronic pancreatitis exacerbations, in addition to an enzymatic imbalance of the pancreas, hyperinsulinemia with clinical signs of hypoglycemic conditions is observed.

The aim of the study. To determine the degree of insulin resistance in patients with chronic pancreatitis with its isolated course and with comorbid COPD and diabetes mellitus (DM).

Material and methods. 55 patients with chronic pancreatitis of a mixed etiology in the exacerbation stage of moderate severity were examined. The first group of patients included 19 individuals with an isolated course of chronic pancreatitis (1 group), 2nd group included 18 patients

with chronic pancreatitis and COPD GOLD2-3 group D, 3rd group included 18 patients with chronic pancreatitis and COPD GOLD 2-3 group D and T3cDM of moderate severity. The control group (CCOPD) included 16 individuals with isolated COPD GOLD 2-3 group D, the control group (CDM) included 17 individuals with isolated type 2 DM of a moderate severity, subcompensated. The average age of patients was 51.3 ± 3.14 . The group of comparison included 15 practically healthy individuals (PHI). All the patients were examined for the functional state of the pancreas and carbohydrate metabolism was assessed.

Results. Analysis of the laboratory findings concerning HbA1c content in the blood serum as a marker of persistence and intensity of hyperglycemia showed its reliable increase in patients from the 1, 2, 3 and 5 groups by 1.2, 1.3, 1.4 and 1.4 times, respectively in comparison with PHI ($p_{1,2,3,5} < 0.05$). Examination of insulin content in the blood of patients from the 1st group found reliable hypoinsulinemia which was 1.6 times lower than that of PHI ($p < 0.05$), though in patients from the 2nd and 3rd groups insulin content in the blood was reliably lower – 1.8 and 3.2 times respectively ($p_{2,3} < 0.05$). Reliable hyperinsulinemia was found in patients from the 5th group, that was 2.8 times higher than that of PHI ($p < 0.05$) and was indicative of the insulin resistance phenomenon. The calculation results of the Caro index (glucose/insulin) showed that in patients from the 5th group this index was 1.2 times lower than that of PHI ($p < 0.05$), which confirms insulin resistance syndrome available in patients with type 2 DM. At the same time, this index in patients from the 1, 2, 3 and 4 groups was 2.3, 2.6, 10.1 and 1.2 times higher, respectively than that of PHI ($p_{1,2,3,4} < 0.05$), with the reliable difference between the groups ($p < 0.05$), which confirms absolute insufficiency of insulin secretion by β - cells in the islet of Langerhans. Calculation of insulin resistance index by means of HOMA2 model found deep insulin resistance available with underlying decreased sensitivity of the peripheral tissues to insulin in patients from the 5th group of observation: HOMA index of IR 3.4 times increased ($p < 0.05$) and HOMA%S index 3.5 times decreased ($p < 0.05$) in comparison with indices of PHI.

Conclusions. A comorbid course of chronic pancreatitis with exacerbated COPD is associated with more intensive disturbances in carbohydrate metabolism regulation and glycaemia parameters in comparison with an isolated course of chronic pancreatitis. The HbA1c content in the blood serum confirms the role of chronic pancreatitis in the development of chronic postprandial hyperglycemia, advanced disorder to glucose tolerance, intensified glycosylation of transport proteins (hemoglobin), and further formation of diabetes mellitus. The reliable hypoinsulinemia is indicative of absolutely insufficient insulin secretion by β -cells in the islet of Langerhans and the role of chronic inflammatory process in the pancreas promoting development of diabetes mellitus.

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CHANGES IN ACETYLCHOLINESTERASE ACTIVITY IN PATIENTS WITH BRONCHIAL ASTHMA WITH COMORBID CHRONIC ACALCULOUS CHOLECYSTITIS

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Introduction. Bronchial asthma (BA) is a global problem in internal medicine that is leading among respiratory diseases; therefore, it remains an actual problem for scientific research within Ukraine and worldwide. More than 300 million people globally have asthma, with up to 10% of all patients who have severe asthma. There is an increase in the tone of bronchial smooth muscles and hypersecretion of mucus in patients with bronchial asthma, probably due to the increased cholinergic activity. Acetylcholine is synthesized from choline and acetyl-CoA mainly by the enzyme choline acetyltransferase expressed in airway epithelial cells, which release acetylcholine. Acetylcholine binds to muscarinic receptors, which play a key role in the pathophysiology of asthma, leading to bronchoconstriction, increased mucus secretion, inflammation, and airway remodeling.

The aim of the study. To study the peculiarities of changes in the activity of acetylcholinesterase in patients with combined course of chronic acalculous cholecystitis and