

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



МАТЕРІАЛИ

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БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
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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.

Dudka T.V.

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

*Department of Internal Medicine, Clinical Pharmacology and Occupational Diseases
Bukovinian State Medical University*

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

bronchial asthma.

Material and methods. 92 patients were involved in the study: 30 patients with mild and moderate persisting BA (1st group), 30 patients with mild and moderate persisting BA of comorbid chronic acalculous cholecystitis (CAC) in the acute phase (2nd group), 32 patients with CAC in the acute phase (3rd group) and a control group - 30 practically healthy individuals (PHI) of the respective age.

Results. All the patients with BA and BA combined with CAC had a marked predominance of the parasympathetic nervous system, as evidenced by the established significant decrease in the activity of acetylcholinesterase (AChE) in patients with isolated asthma is 1,4 times ($p < 0,05$), in patients with asthma combined with CAC - there was more intense inhibition of enzyme activity – in 1,8 times ($p < 0,05$) and in patients with CAC of the 3rd group there were identical changes – a decreased activity of acetylcholinesterase in 1,6 times ($p < 0,05$) with significant intergroup differences between the groups ($p < 0,05$).

The distribution of patients according to the severity of asthma and correlation analysis showed a direct interdependence between the severity of asthma (by FEV₁ index-forced expiratory volume) of AChE activity ($r = 0,784$, $p < 0,05$).

Conclusions. These data suggest that patients suffering from asthma combined with CAC have a cholinergic imbalance due to vagotonia, established on clinical grounds, and also due to AChE activity inhibition. This vegetative background promotes BA development, mucus hypersecretion by the bronchial glands, and dyscrinia, as was found in the patients under examination. It also leads to a lack of gallbladder contractility, development of sphincter of Oddi hypertension dysfunction, and CAC.

Ferfetska K.V.

CHANGES IN INDICATORS OF C-REACTIVE PROTEIN AND TUMOR NECROSIS FACTOR ALPHA IN PATIENTS WITH CHRONIC PANCREATITIS COMBINED WITH OBESITY AND TYPE 2 DIABETES

*Department of Internal Medicine
Bukovinian State Medical University*

Introduction. Advance of chronic pancreatitis, especially with comorbid obesity and type 2 diabetes mellitus (DM), depends on the intensity of the immune response to damage, in the implementation of which pro-inflammatory cytokines and C-reactive protein (CRP) are important.

The aim of the study is to investigate the levels of C-reactive protein and tumor necrosis factor alpha (TNF- α) in patients with chronic pancreatitis associated with obesity and type 2 diabetes.

Material and methods. 97 patients with chronic pancreatitis were included in the study. All examinees were divided into 3 groups, representative in their number, age and sex. There were 27 patients with chronic pancreatitis in the first group, 28 patients with chronic pancreatitis and type 2 diabetes in the II group, 42 patients with chronic pancreatitis and obesity and type 2 diabetes in the III group. The study also included 30 practically healthy individuals (PHI), whose age and gender did not differ significantly from these characteristics of chronic pancreatitis patients. All the patients underwent general clinical examination methods: history taking, physical examination, laboratory tests. In addition, an anthropometric examination was performed: body weight index (BWI) (kg/m²) was calculated according to the Quetelet's formula and waist circumference was measured. CRP levels were determined with the help of the kit produced by the company NVL "Granum" LLC (Ukraine) using the principle of latex agglutination. TNF- α content was determined using the Human TNF- α total Platinum ELISA kit (Austria).

Results. According to the obtained data, the concentration of TNF- α in patients of the 1st group significantly increased relatively to those in PHI by 1.4 times ($p < 0,05$). Probably the highest levels of TNF- α were found in patients of the III group - 2.8 ($p < 0,05$), 1.9 ($p < 0,05$) and 1.3 times ($p < 0,05$), respectively to indicators in PHI, in the 1st and 2nd groups of patients. As for CRP indicators, the analysis of the results showed a probable increase in its content in patients of the III