

**Materials and Methods.** Studies were carried out in homogenates of ID tissues in patients with OCh of 45-55 years after surgery and cadaveric material of healthy men of the same age after a car accident, which was used as a control. The total LDH activity was determined by a spectrophotometric method based on the Warburg optical test, the isozyme spectrum of LDH by the Davis polyacrylamide gel electrophoresis method, the determination of lactate and pyruvate by the enzymatic method Rollinghoff. Statistical data processing was performed using Student's T-test. The results of the study showed that the ID tissue of patients with OCh is characterized by a decrease of almost 3 times as compared with the control by the lactate/pyruvate ratio due to a decrease in the lactate content and pyruvate accumulation. At the same time, the total LDH activity in ID patients with OCh was reduced by 50-60% compared with control values, and the isoenzyme spectrum of LDH was shifted towards an increase in the LDH<sub>2</sub> isoenzyme. These results indicate that during the development of OCh, the metabolism of ID shifts from anaerobic, characteristic of this tissue to normal, to aerobic, which has its own anatomical explanation. When pathology in the ID, microvessels sprout and it switches from the diffuse type of nutrition to the production of nutrients and O<sub>2</sub> and the outflow of metabolites through the vessels.

The prospect of the results of the work can be the use of glycolysis markers in combination with the determination of the components of the extracellular matrix of the connective tissue ID to develop quantitative biochemical criteria for its pathology. The source of optimism for the prospects is the experimental data that revealed a high degree of correlation of changes in the content of lactate, pyruvate, the value of the lactate / pyruvate coefficient in ID and the blood of animals in the older age group under various stress effects.

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## THE ROLE OF GASTROINTESTINAL DAMAGE DIAGNOSTIC BIOMARKERS TO IMPROVE POSITIVE COMPLIANCE FOR ANTIVIRAL THERAPY OF HIV-POSITIVE PATIENTS

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Ukraine is currently one of the first countries in the European region in terms of the number of human immunodeficiency virus (HIV)-positive people. It is important to carefully follow antiretroviral therapy (ART) regimens for the management of such patients [1]. At the same time, the incidence of abdominal pain in the HIV- patient population ranges from 12 to 45 percent [2]. The often causes of such pain in HIV-infected patients are peptic gastroduodenal ulcers (PGDU) caused by *Helicobacter pylori* infection (HP) and the use of non-steroidal anti-inflammatory drugs (NSAIDs) [3].

The HP may development of chronic gastritis, which can lead to peptic ulcer disease [4]. Also, the gastrointestinal damage inflammatory biomarkers may be useful to monitor changes in gastrointestinal integrity during HIV infection [5].

**Materials and Methods.** 84 HIV-infected patients with dyspeptic complaints receiving ART were randomly selected for cross-sectional study in 4 Regional HIV Centers, located in big cities: Kyiv, Odessa, Kherson, Mykolaiv and 1 Center for HIV-Infected Children of National Children Specialized Hospital "OKHMATDYT"(Ukraine). Among them were 26 (31%) children aged 2 to 16 years (average age 8.4 years) and 58 (69%) aged 20 to 66 years (average age 34.7 years). Men predominated in the sexual structure – 54 (64.3%) patients. Diagnosis of HIV infection and prescription of ART was carried out in accordance with current recommendations [2]. The main biomarkers for the diagnosis of PGDU were data of esophagogastroduodenoscopy and the establishment of HP, namely: direct HP detection methods (histology, microbiological breeding method), representative antigen (fecal antigen test), or specific metabolism product (ammonia when conducting a rapid urease test, carbon dioxide in the respiratory test for urea). Also serological studies, ultrasound of abdominal organs, biochemical tests and hemogram data were used.

**Results.** Complaints of pain in the gastroduodenal region were noted in 69 patients (82.1%), discomfort in 14 (16.7%), anorexia in 70 (83.3%), nausea in 62 (73.8%), periodic vomiting 50 (59.5%), diarrhea in 34 (40.5%). A total of 17 patients (20.2%) had a history of PGDU. The majority of patients – 58 (69%) associated the appearance of dyspepsia with ART, which led to the cessation of drugs or an unauthorized reduction of their dose.

The established causes of dyspeptic disorders were both various lesions of the gastroduodenal zone, and inflammatory processes in the biliary system and pancreas, as well as their combination. The results are shown in Table 1.

**Table 1.**

Diagnoses	Absolute number of observations *	%	p
HP-negative gastroduodenitis	26	31,0	p>0,05
Relapse of HP-associated peptic ulcer	10	11,9	p>0,05
HP-negative peptic ulcer	8	9,5	p>0,05
First identified HP-associated peptic ulcer	7	8,3	p>0,05
HP-associated gastroduodenitis	5	6,0	p>0,05
Cholecystitis	26	31,0	p>0,05
Pancreatitis	21	25,0	p>0,05

\* Note – the sum of the values is not equal to the number of patients examined.

Isolated cholecystitis and pancreatitis were observed only in 13 (15.5%) and 15 (17.9%) patients, respectively, in the rest they were combined with damage to the gastroduodenal zone. Thus, gastroduodenitis and peptic ulcer were detected in the majority of the examined 56 (66.7%),  $p < 0.05$ . In 22 (26.2%) patients, the etiological cause of the inflammatory process in the gastroduodenal zone was *Helicobacter pylori*, and in 34 (40.5%),  $p > 0.05$ , no association of gastroduodenitis or peptic ulcer with this pathogen was found.

Correction of patient's management ART with the addition of regimens for digestive tract inflammatory diseases and eradication of HP allowed in 50 patients (59.5%) to stop dyspeptic syndrome, and in the remaining 34 (40.5%) to significantly reduce its manifestations,  $p < 0.05$ , thereby preventing interruption of ART or lowering the dose of drugs to suboptimal.

**Conclusion:** The results demonstrate the importance of correcting therapy after the detection of gastroduodenal damages, which are one of the main causes of dyspeptic disorders and the formation of negative compliance with ART in HIV-infected patients. In

the future, the development and introduction of modern effective algorithmic therapy approaches for older and younger HIV positive patients with gastrointestinal damage is recommended.

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**Key words:** biomarkers of *Helicobacter pylori* infection, HIV-positive patients, peptic gastroduodenal ulcers

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## FEATURES OF FREQUENCY DISTRIBUTION OF IMMUNOGENETIC MARKERS OF CLASS 1 HLA IN CHILDREN WITH TYPE 1 DIABETES IN COMBINATION WITH THYROID PATHOLOGY INTRODUCTION

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It has been established [1] that the genetic base of diabetes mellitus (DM) type 1 is on 70% determined by the HLA (Human Leukocyte Antigens) genes. No other genetic area alone determines the risk of developing a disease compared to the HLA system. According to the available data [2], autoimmune diseases of the thyroid gland and type 1 DM represent autoimmune syndromes of the unknown etiology with common immunological defects (target cells, thyrocytes and cells of the islets of Langerhans, excessively produce some proteins encoded by the HLA system – HLA of class 1, HLA of class 2 and transporter associated with antigen processing protein (TAP-1)). At this time, enough data have been accumulated that in carriers of mutations, the manifestation of diabetes is triggered by factors that cause a decrease in insulin sensitivity. These include environmental factors and such conditions as the period of active growth and puberty, excess body weight, infectious process and others [3]. According to the available data [4], adolescents with autoimmune thyroiditis have a combination of genetic and socio-ecological factors of predisposition, among which burdened heredity, smoking, sources of chronic infections, environmental situations are predominant. Thus, the study of frequency of occurrence of autoimmune pathology of the thyroid gland and diabetes is relevant today, as the frequency of their detection is increasing every year.

**Materials and Methods.** The frequency of distribution of antigens of HLA system of class 1 has been studied in 20 children suffering from type 1 DM in combination with thyroid pathology living in the northeastern region of Ukraine.

HLA antigens were determined using the microlymphocytotoxic test [14]. 20 specificities of locus A and 37 specificities of locus B were studied. Lymphocytes for typing were isolated on a gradient of ficoll-verographin.