

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



МАТЕРІАЛИ

**104-ї підсумкової науково-практичної конференції
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hyperfiltration can be causative of the development of tubulopathies, that emphasizes the renoprotective effect of the renin-angiotensin-aldosterone system on the functional state of the kidneys in the early stages of the development of experimental diabetes mellitus.

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INTERRELATION BETWEEN VITAMIN D STATUS AND THE BODY MASS INDEX IN PATIENTS WITH TYPE 2 DIABETES

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Introduction. Relationship between serum levels of vitamin D and overweight and obesity in both population-based and clinical studies with different designs shows the importance of this vitamin in the causal network of obesity. Obesity and overweight are major risk factors for hypertension, leading to many other chronic diseases such as coronovascular disease and stroke.

The aim of the study. To investigate vitamin D status in patients with type 2 diabetes mellitus (DM) and to establish the association between serum 25(OH)D level and body mass index (BMI).

Material and methods. For this observational study, data were collected during summer 2021, over a period of one week from different areas in Chernivtsi region from 216 type 2 diabetic patients aged 36–79 years. Measured variables contained 25(OH)D level, weight and weight applied to check BMI degree. The average level of vitamin D among adolescents presented $21,2 \pm 6,4$ ng/ml. Female gender was associated with lower vitamin D concentrations ($19,3 \pm 5,9$ ng/ml vs. $24,1 \pm 7,1$ ng/ml for men). Among the participants, 74,3% had a BMI of 25 kg/m^2 and over, and in 26,9% of them the number was 30 kg/m^2 and over.

Results. High frequency of overweight and obesity was detected in observed participants. 83,3% individuals were overweight and obese in accordance to BMI, especially women. Violation of vitamin D status was detected in 88,1% people. 2,1% people had been identified to have severe vitamin D deficiency. Measurement of 25(OH)D demonstrated significant relationship between vitamin D level and BMI only among people with overweight ($\text{BMI } 25\text{-}29,9 \text{ kg/m}^2$). The average vitamin D concentrations in people with BMI over 30 kg/m^2 did not vary to a significant range from data in people with normal body weight. There were significant inverse correlations between serum 25(OH)D concentrations and body fat mass ($r=-0,317$, $P=0,001$), and parathyroid hormone (PTH) concentrations ($r=-0,314$, $P=0,003$). A significant positive correlation was observed between changes in serum PTH concentrations and body fat mass ($r=0,34$, $P=0,002$), while there were no significant correlations between serum 25(OH)D concentrations and body fat mass or PTH concentrations.

Conclusions. Our results confirm reliable relationship between vitamin D level and body mass index among type 2 diabetic patients with obesity and overweight.

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PECULIARITIES OF THE CARBOHYDRATE METABOLISM IN PATIENTS WITH LATENT AUTOIMMUNE DIABETES IN ADULTS DEPENDING ON THE LEVEL OF AUTOIMMUNITY

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Introduction. The presence of specific autoantibodies is the basis for differential diagnosis and prediction of type 1 diabetes mellitus (T1DM), which since 2021 includes latent autoimmune diabetes in adults (LADA), as well as predicting its occurrence in people at increased risk of the disease to detect it in the preclinical period. It is believed that autoantibodies appear 7 or more years before the onset of the diabetes (DM) and are detected in the onset of T1DM with a frequency of 50 to 90%, as opposed to 1% in the general population. Moreover, the titer of these antibodies determines the course of the disease and helps to choose the right treatment tactics.

The aim of the study. To investigate the features of carbohydrate metabolism in patients with latent autoimmune diabetes in adults depending on the degree of autoimmunity.

Material and methods. 53 patients with LADA were examined (an average age – $44,7 \pm 1,77$ years, duration of DM – $6,3 \pm 0,97$ years), the comparison group consisted of 22 people with T1DM (the average age – $37,2 \pm 2,57$ years, the duration of the disease – $16,4 \pm 2,28$ years). The guidelines of the Immunology of Diabetes Society (IDS, 2005) were followed in establishing LADA. 23% of LADA patients received insulin therapy alone; 47% – a combination of insulin and oral hypoglycemic agents; 30% – only oral hypoglycemic drugs. The degree of autoimmunity was determined by the level of antibodies to glutamic acid decarboxylase (antiGAD) and to tyrosine phosphatase-2 (IA-2ab), the state of carbohydrate metabolism - the level of blood glucose, glycosylated hemoglobin (HbA1C), C-peptide. Patients with LADA according to the main phenotypes were divided into 2 groups: LADA 1 (27 people) with high antibody titers (≥ 180 U/ml) to antiGAD and LADA 2 (26 people) with low antibody titers (18-180 U/ml). Relationships between titers of antibodies to islet antigens in LADA with the main indicators of carbohydrate metabolism were studied.

Results. Both antibodies (antiGAD and IA-2) were positive in 85% of patients with LADA and 68% of patients with T1DM. In 15% of patients with LADA, the antibody titer to IA-2 was considered negative. 20% of patients with classical T1DM were positive only for IA-2, another 12% – only for antiGAD.

Among patients with LADA, 27 people with the LADA 1 phenotype (mean antiGAD titer – $272,2 \pm 33,96$ U/ml, duration of the disease – $6,3 \pm 1,27$ years) and 26 people with the LADA 2 phenotype (the average antiGAD titer – $84,9 \pm 12,29$ U/ml, duration of DM – $6,2 \pm 1,43$ years). In patients with T1DM, the average antiGAD was $210,8 \pm 37,48$ U/ml. As well as the duration of diabetes in the LADA 1 and LADA 2 groups is almost the same, this eliminates the likelihood of a decrease in immune load with increasing disease duration, which apparently occurred in the group of patients with classical T1DM: in patients with a duration of the disease less than 5 years antiGAD titers were $604,7 \pm 36,41$ U/ml, at the same time 5 and more years after the manifestation they were $148,6 \pm 17,26$ U / ml.

Regarding IA-2 titers, in LADA they were $31,8 \pm 3,04$ U/ml and were similar to those in T1DM – $31,4 \pm 5,34$ U/ml.

A positive correlation was found between antiGAD and HbA1C levels, and a negative correlation – between antiGAD titers, insulin, and HOMA index.

Conclusions. Determination of autoantibody titers is the most important part of the diagnosis, which should be carried out in overt diabetes mellitus of any type or in case of suspicion of this disease. High levels of autoimmunity in patients with latent autoimmune diabetes in adults are associated with poorer compensation for diabetes and decreased insulin secretion, indicating a worse prognosis and requiring faster initiation of insulin therapy.

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LONG COVID AND DIABETES

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Introduction. Long-COVID is a new syndrome characterized by manifestations of functional, metabolic, coagulation or inflammatory dysfunctions after COVID-19. Poorly controlled diabetes increases the risk of severe COVID-19 and is associated with increased morbidity and mortality. On the other hand, COVID-19 has led to poor control of diabetes, its progression, and an increase in the number of new cases (especially corticosteroid-induced diabetes). COVID-19 may add to or exacerbate tachycardia, sarcopenia (and muscle fatigue), and microvascular dysfunction (and organ damage) in patients with diabetes.

The aim of the study. To evaluate the influence of clinical and demographic parameters (age, sex, body mass index (BMI), glycemic control (HbA1c)), as well as antidiabetic drugs on clinical outcomes in patients with type 2 diabetes (T2DM) after experiencing COVID-19.