

**SECTION OF CLINICAL MEDICINE #1 (ALLERGOLOGY, CARDIOLOGY,  
ENDOCRINOLOGY, INTERNAL MEDICINE, GASTROENTEROLOGY,  
HAEMATOLOGY, NEPHROLOGY, RHEUMATOLOGY)**

**СЕКЦІЯ КЛІНІЧНОЇ МЕДИЦИНИ №1 (АЛЕРГОЛОГІЯ, КАРДІОЛОГІЯ,  
ЕНДОКРИНОЛОГІЯ, ВНУТРІШНЯ МЕДИЦИНА, ГАСТРОЕНТЕРОЛОГІЯ,  
ГЕМАТОЛОГІЯ, НЕФРОЛОГІЯ, РЕВМАТОЛОГІЯ)**

**THE ASSOCIATION BETWEEN BMI AND THE CONDITION OF THE ORAL CAVITY AMONG THE YOUNG  
POPULATION, THE DENTAL PERSPECTIVE**

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**Relevance.** Excessive body weight is a major health problem that can lead to severe health effects. Nowadays, obesity is highly prevalent among people in Europe and America (15-30% of the population), affecting both children and adults. The main cause is determined to be the misbalance between calories intake and expenditure. During recent years, the problem became particularly concerning among young people.

Obesity is associated with several conditions of the oral cavity – caries, periodontitis and xerostomia (dry mouth). According to the recent research data, the increased body weight is associated with the decreased saliva flow, its volume, as well as changes in pH. Additionally, obesity has an impact on the treatment plans for dental patients (Ameta Primasari et al, 2019; Ignacio Roa et al, 2018).

**The aim of the study.** To assess the impact of the body complexity and BMI on the status of the oral cavity among the young population.

**Materials and methods.** The body weight, height and BMI were assessed using the formula  $BMI = w/h^2$  (kg/m<sup>2</sup>). Normal ratio of BMI was taken as 18, 5 -25 kg/m<sup>2</sup>. Excessive weight – BMI over 25 kg/m<sup>2</sup>, obesity – BMI over 27 kg/m<sup>2</sup>. Additionally, the survey was conducted using the self-designed questioner. Also, the dental check-up and saliva pH testing were performed (using the universal pH stripes). The data was analyzed with standard statistical methods. All participants gave the consent to take part in the study and agreed for their data to be collected, stored and used for analytical purposes.

**Results.** 105 individuals were examined, age 20-24 (av. 22,3±1,2 years old), 61,9% female, 38,1% male. Normal BMI – 66,7%, increased BMI – 11,4% and decreased BMI – 14,3%, obesity – 7,6%. The survey revealed the certain aspects of young people's approach to body constitution, lifestyle, physical activity and dental health. The study showed the prevalence of normal BMI among the young population. In the increased BMI group no gender pattern was noticed. The pH testing showed the increased number of cases with xerostomia and the decreased saliva pH among participants with increased BMI.

**Conclusions.** BMI assessment and understanding of its importance regarding the health outcomes for the patients is a crucial part of the daily work of doctors of all specialties, in particular, dentists. Strong awareness about health for patients themselves has a positive impact on making healthy lifestyle choices and adhering to the medical advice.

Using the study results, the brochure was designed to support both dentists and patients to work out an appropriate management plan in cases like excessive body weight and obesity.

**RATIONALITY OF NON-STEROIDAL ANTI-INFLAMMATORY DRUGS USAGE IN ACUTE PAIN SYNDROME  
TREATMENT**

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**Relevance.** Acute pain syndrome impairs locomotor activity, impairs performance, and impairs patients' life quality overall. Sudden development of intense unbearable pain causes the search for a drug that quickly eliminates the pain.

**Purpose** of this study was to investigate the effectiveness of lornoxicam injections on the onset of acute joint pain on patients with gouty arthritis.

**Materials and methods.** 22 male patients, age from 35 to 50 years inclusive, were observed. The diagnosis of gouty arthritis was established according to the relevant clinical and laboratory criteria. 12 patients (54%) had acute pain localized in the I-phalanx joint of one foot, 6 patients (28%) had combination of I-phalanx joint arthritis of one foot with the lesion of one ankle joint and 4 patients (18%) with the adherence to one lesion. With the onset of patient's acute pain, lornoxicam was given intramuscularly at a dose of 8 mg per injection. First two days of acute pain, lornoxicam was given 8 mg twice daily at 8 hour intervals. The daily dose was 16 mg lornoxicam.

**Results.** 19 (86.36%) patients felt the pain in the joints decreased significantly after the first intramuscular injection. Subsequently, injections were continued for complete elimination of the pain. Out of 22 patients with acute pain, only 3 (13.64%) of them received an intravenous 8 mg lornoxicam intravenously after the first intramuscular injection over 5 hours. These 3 patients had gout arthritis for more than 10 years, so their pain decreased significantly after intravenous administration. All other medicines were discontinued with lornoxicam. The duration of acute pain treatment with lornoxicam was 4-6 days. Regardless of previous treatments for gout arthritis, the use of lornoxicam eliminated the manifestation of severe pain at acute onset of gouty arthritis in all 22 patients. Pain reduction occurred on the first day of lornoxicam usage at a daily dose of 16 mg. Complete elimination of acute pain was observed within 4-6 days of

treatment with lornoxicam. Positive effect achieved by intramuscular administration of the drug. 3 patients with a disease period of more than 10 years had the initial intramuscular treatment combined with a single intravenous administration.

**Conclusions.** The use of lornoxicam eliminates acute pain caused by gouty arthritis within 4-6 days of treatment at a dose of 16 mg per day. Administration of lornoxicam intramuscularly twice daily at a dose of 8 mg with 8 hours intervals provides guaranteed pain relief in acute gouty arthritis.

## THE CONTRIBUTION OF PRO-INFLAMMATORY INTERLEUKIN-6 IN THE DEVELOPMENT OF CARDIOMYOPATHY IN TYPE 2 DIABETES IN PATIENTS WITH INCREASED BODY WEIGHT

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**Introduction.** According to statistics from the World Health Organization, the number of patients with diabetes has increased 4 times and continues to grow steadily. Hyperglycemia causes an increased risk of cardiovascular disease, including myocardial pathology, regardless of concomitant vascular causes.

The development of cardiomyopathy (CMP) in patients with type 2 diabetes mellitus (DM-2), especially those with increased body weight, is determined by changes in the metabolism of visceral adipose tissue, which increases the level of factors that increase insulin resistance - tumor necrosis factor- $\alpha$ , interleukin-6 (IL-6) and others.

**The aim of the study.** Was to determine the effect of IL-6 on the formation of CMP in patients with DM-2 with normal and overweight.

**Materials and methods.** The study is a fragment of research of the Department of Internal Medicine № 3 and endocrinology of KhNMU "Diabetes mellitus and problems of comorbid pathology". We examined 102 patients with DM-2 (duration of diabetes from 1 to 9 years without severe diabetic complications). The control group consisted of 20 healthy volunteers, comparable in age and gender.

In all patients and controls, body mass was measured, height was measured, and body mass index (BMI) was calculated. The content of IL-6 was determined by ELISA using Vector-Best reagent kits. An echocardiographic method was used to measure diastolic function of the left ventricular myocardium as a marker of myocardial lesion in diabetes. The maximum peak of diastolic filling was determined with rapid filling of the left ventricle E, the maximum peak of the rate of atrial filling of the left ventricle during left atrial systole A, and the E/A ratio.

**Results.** The first group included patients with DM-2 and BMI below  $24.99 \text{ kg/m}^2$  ( $n=20$ ). Patients with BMI above  $25.0 \text{ kg/m}^2$  were allocated to group 2 ( $n=82$ ). IL-6 (pg/ml) in the control group was  $8.83 \pm 0.22$ ; in the 1st group -  $10.02 \pm 0.26$ ; in group 2,  $13.78 \pm 0.24$  and significantly differed in groups ( $p \geq 0.05$ ). The indicator E (ms) in the control group was  $0.71 \pm 0.01$ ; in the 1st group  $0.63 \pm 0.01$ ; in the 2nd group  $0.58 \pm 0.006$ . The E/A ratio in the control group was  $1.4 \pm 0.075$ ; in the 1st  $0.94 \pm 0.03$ , in the 2nd -  $0.81 \pm 0.022$  and differed significantly in the groups ( $p \geq 0.05$ ). A correlation between the level of proinflammatory IL-6 and the E/A ratio was found in patients in group 2 ( $R = -0.285$  ( $p \geq 0.05$ )). No significant correlations were found in patients of group 1 and healthy volunteers.

**Conclusion.** Adipokine IL-6 as a mediator of inflammation contributes significantly to the development of diastolic dysfunction, which is the primary link in the pathogenesis of heart failure in patients with DM-2.

The data of our study confirm the effect of IL-6 on the formation of CMP in patients with DM-2 and require further in-depth study of this problem.

## THE EFFECTS OF FINIFIBRATE IN PATIENTS WITH DIABETIC NEPHROPATHY

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**Relevance.** It is known that disorders of lipid metabolism in patients with diabetic nephropathy (DN) lead to decreasing of kidney function and increasing risk of cardiovascular disorders. According to a number of studies, low high-density lipoproteins and increased level of triglycerides are independent risk factors in the general population.

**Purpose of the study.** Evaluate the potency of fenofibrate in the treatment of patients with diabetic nephropathy.

**Materials and methods.** 47 patients with DN and dyslipidemia were divided into 2 groups. Patients in the first group (19 women and 7 men,  $57.4 \pm 2.3$  years old) were treated with basic therapy. In the second group (12 women and 9 men,  $52.8 \pm 1.4$  years old), fenofibrate was additionally prescribed at a dose of 145 mg per day for 6 months. Doppler ultrasound of the kidneys and heart was performed to evaluate the results of treatment (Evaluation of treatment outcomes were conducted on the results of Doppler ultrasound of the kidneys and heart)

**Research results.** Based on the results of patient's treatment who were receiving basic therapy, proteinuria level significantly decreased from  $(0.156 \pm 0.070) \text{ g/l}$  to  $(0.070 \pm 0.029) \text{ g/l}$  ( $p < 0.05$ ). In the group of patients receiving fenofibrate, protein loss with urine decreased from  $(0.28 \pm 0.058) \text{ g/l}$  to  $(0.059 \pm 0.030) \text{ g/l}$  per day and was statistically significantly lower than in the first group ( $p < 0.05$ ). Conducting an ultrasound examination in patients in this group showed a significant decrease of the renal vascular resistance (RI) index from  $(0.75 \pm 0.050)$  to  $(0.63 \pm 0.050)$ , ( $p < 0.02$ ), and a tendency of improving transmitral blood flow, namely, a decrease of IVRT from  $(105,436 \pm 2,040) \text{ ms}$  to  $(93,270 \pm 4,029) \text{ ms}$  ( $p < 0.05$ ) and an increase of the  $V_e: V_a$  correlation from  $(0.854 \pm 0.025)$  to  $(1.250 \pm 0.040)$ , but this was not statistically significant ( $p = 0.062$ ). These effects of fenofibrate can be explained by the following: fenofibrate is an agonist of the activated peroxisome proliferator (PPAR). It was found that both PPAR and cytochrome P450 4A are expressed in the proximal tubules of the kidneys. Treatment with PPAR agonists increases the content of cytochrome P450 4A protein and the production of 20-hydroxyarachidonic acid, and thus, fenofibrate can improve blood flow, restoring the action of cytochrome P450-dependent arachidonic acid hydroxylase.