

creening gives an ability to implement prenatal evaluation of likely hood for Down syndrome which has a great diagnostic value in pregnant women.

### DISORDERS OF LIPID METABOLISM AND CVR IN PATIENTS WITH GOUT COMBINED WITH NONALCOHOLIC FATTY LIVER DISEASE.

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**Relevance.** Metabolic syndrome, occurs in 60% of patients with gout. Result of this process is development of nonalcoholic fatty liver disease. Nonalcoholic fatty liver disease is a chronic disease that unites states from primary steatosis to fibrosis. It is a proven, that such patients combined with metabolic syndrome and the same time are in a group with increased risk of cardiovascular disorders.**Purpose.** Investigation of lipid metabolism in patients with gout in conjunction with nonalcoholic steatohepatitis, depending on the degree of cardiovascular risk. **Materials and methods.** The object of the study were 120 patients with gout in conjunction with nonalcoholic steatosis, which were treated at the rheumatology department of Ternopil university clinic. Patients were divided into two groups: with and without steatosis. The control group consisted of 30 healthy males of similar age. Cardiovascular risk (CVR) was defined by the SCORE scale. For the diagnosis of nonalcoholic steatosis used shear wave elastography. **Results and discussion.** That the average age of patients was  $57,32 \pm 8,45$  year, 100 % of the examined patients were males. Depending on the level of cardiovascular risk (CVR), in a group without steatosis, low CVR was set in 17(32.7%), moderate CVR in 21(40.4%), high CVR in 9(17.3%), very high CVR in 5(9.6%). In a group with steatosis low CVR was set in 11(16.2%), moderate CVR in 17(25.0%), high CVR 13(19.1%), very high CVR in 27(39.7%). For the analysis of lipid metabolism, in a group with steatosis, revealed a significant increase in total cholesterol, triglycerides, LDL, HDL then in a group without steatosis ( $p < 0.05$ ). However, the maximum level of total cholesterol, triglycerides, LDL observed in patients with very high CVR. Opposite changes were found in the case of HDL- installed significant decrease of this index in all groups of patients with steatosis, the lowest level recorded in patients with very high CVR. **Conclusions.** Gout in association with steatosis combines with metabolic disorders of lipid metabolism which in turn makes a significant contribution to the progression of cardiovascular disease.

### MICROALBUMINURIA AND MICROGLOBULINURIA AS A PREDICTOR OF THE KIDNEYS INJURY IN PATIENTS WITH GOUT

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**Abstract.** Recently, a large number of scientists paid attention to studying the influence of hyperuricemia in key of kidneys injury (gouty nephropathy), which is often founded in practice and tends to progress with increasing age of patients. The pathogenesis of gouty nephropathy (GN) is associated with hyperproduction of uric acid (UA) and the disbalances between the process of tubular secretion and reabsorption of urate. If albumin and other high molecular weight proteins are found in urine – this indicate glomerular damages. Tubular disorders characterized by presence low molecular weight proteins in urine – microglobulin ( $\beta_2$ -,  $\alpha_1$ - and retinol binding protein). In mixed type of kidneys injury low- and high molecular weight proteins are detecting. That's why early diagnosis of microalbuminuria (MA) and microglobulinuria (MG) is important to prevent progression of kidneys injury in patients with gout. **The aim** of the study was to prove kidneys injury in patients with gout, but without clinical signs of GN. **Materials and methods.** The study involved 20 patients with chronic gouty arthritis. All of them had salt diathesis. Patients received standard urate low therapy (Allopurinol 300 mg / day). MA and MG were determined in the morning portion of urine, by ELISA method. **Results.** The average age of patients was  $47,8 \pm 8,48$  years. The ratio between men and women was 20:1. Patients never had a complaints of the urinary system, never took medication to prevent kidneys injury, and, moreover, never treat renal pathology. The average value of levels of plasma UA in patients was  $0,497 \pm 0,096$  mmol/l. In 4 patients we have founded signs of urinary syndrome, a slight increase of blood creatinine level and urea, nephrolithiasis. 35 % of patients had MA, 45 % - MG and 15 % of patients had macroproteinuria. **Conclusion.** Formation of GN is asymptomatic, causing significant difficulties in early diagnosis, but can be suspended timely by correct therapy.

### DYNAMICS OF POPULATION LEVEL REPRESENTATIVES OF MICROFLORA SMALL BOWEL RODENTS WITH EXPERIMENTAL ACUTE EDEMATOUS PANCREATITIS

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**Actuality.** The turn of the millennium is marked by the negative trend of growth in the incidence of acute pancreatitis of varying severity which are pathogens belonging to the 10-20 taxonomic groups of microorganisms that pose a serious threat of multiple-dysfunction and death in up to 80% of patients. **Research aim.** Studying of the population of microorganisms cavity contents of the small intestine of white rats in the dynamics of experimental acute edematous pancreatitis. **Materials and research methods.** An experiment was conducted on white rats using model of acute pancreatitis on methodology of Mitsunuma. Population levels of microorganisms were studied in the course of microbiological research. **Results.** Changes in species ratios cavities microflora of the small intestine in experimental acute edematous pancreatitis may lead to changes in population-level of each microflora representative of the small intestines

cavity. Consequently, it has been found out that population-level coefficient quantitative dominance and significance of Bifidobacteria, Lactobacilli, Bacteroides, Eubacteria, E. coli and enterococci is reduced in animals with experimental acute edematous pancreatitis after 24 hours. Reducing of these indicators in Lactobacillus lasts for 96 hours, and 120 hours of examination, there is a tendency to increase. And it is considered by us to be the beginning of the small intestine cavities microbiota self-healing. However, bifidobacteria and enterococci are practically absent (maybe they are, but their level does not exceed the minimum measured level - 3,00 lg CFU/ml). Later their population level gradually increases to 96 h and is rarely subject to further changes. Accordingly, the formation and development of experimental acute edematous pancreatitis in rats is accompanied by significant changes in cavities microflora population of the small intestine. Gradual reduction of the concentration and analytical parameters in bifidobacteria, lactobacilli, enterococci, Escherichia coli, Bacteroides takes place. Opportunistic enterobacteria (Klebsiella, Edvarsiyela, Proteus) occupy the cavity of the small intestine after 24 hours and are found in moderate concentration (3,70-4,05 lg CFU/ml), but up to 96 hours reach quite high. Since 48 hours cavity of the small intestine colonize enteropathogenic Escherichia which, in our opinion, the fall of the cavity of the small intestine at a moderate population level, which increases to 72 hours will continue unchanged. Staphylococci that in intact animals are at a minimum, after 24 hours increase the content of the order of 1, and the following dates observations reach high population levels. Bacteria genus Clostridium appear in the cavity of the small intestine in 48 hours and proliferate rapidly, resulting in up to 120 hours they stand out in rather high concentrations. Peptostreptococcus occupy contents of the small intestine after 24 h at 4 lg CFU/ml, and from 72 hours - more than 5,00 lg CFU/ml. After 120 hours to abdominal flora of the small intestine joins the high concentration Peptostreptococcus. **Conclusion.** Consequently, longer simulation experimental acute edematous pancreatitis increases cavity microflora imbalance of a population of small intestine of rodents.

#### **VIRULENCE FACTORS OF *S. AUREUS*, ISOLATED FROM PATIENTSWITH (DFS) DIABETIC FOOT SYNDROMER**

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**Actuality.** Currently, the predominant causative agent of necrotic complications DFS is Staphylococcus aureus (25-73%), which is often obtained in the form of microbial associations, with gram-positive and gram-negative microflora. Biofilm producing activity of *S. aureus* as a major virulence factors of pathogens. Biofilm formation *S. aureus* in chronic infections requires an entirely new approaches to diagnosis and treatment strategy. **The purpose of the work.** The study of virulence factors *S. aureus*, isolated from patients with DFS. **Subjects and methods.** Studied 25 strains of *S. aureus*, isolated from patients with DFS and 25 strains of *S. aureus* from patients with wound infection without diabetic diseases. Microorganism's identification was carried out using MALDI – TOF spectrometry (BRUKER2012). Biofilm formation in vitro was determined and evaluated according to the method proposed by TetsG.V. 2013, to evaluate the gene expression profile- *fnbA* (fi bronectin binding protein A), *fnbB* (fi bronectin binding protein B), *clfB* (clumping factor B), *icaA* (intercellular adhesion gene) and 16S rRNA, involved in biofilm formation, carried out a quantitative polymerase chain reaction (qPCR) based on the PCR machine CFX96 (Bio-Rad). **Results.** It is shown that the initial matrix density of biofilm of *S. aureus* more ( $1,95 \pm 0,61$ ) than that of *E. coli* with ( $1,69 \pm 0,54$ ). The formation of biofilms *S. aureus* strains isolated from patients with DFS was  $1,95 \pm 0,61$ , which was significantly higher compared to a similar activity of strains isolated from patients without DFS ( $1,34 \pm 0,47$ )  $P=0.01$ . **Conclusion.** The molecular genetic research of *S. aureus* strains show an increased level of expression of *fnbB*, *clfB* genes in strains isolated from patients with DFS, these genes carry out the control synthesis of the main surface adhesins that determine colonization, invasion and involved in biofilm formation.

#### **IMMUNE PROTECTION STATE IN DIABETIC PATIENTS WITH PYOINFLAMMATORY PROCESSES ON APPLICATION OF OZONOTHERAPY**

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**Introduction.** Diabetes mellitus (DM) is characterized by the glucose tolerance impairment and is accompanied by not only well-defined clinical but also immune disorders. Changes in cellular and humoral immune response, formation of autoimmune reactions take an important place in the pathogenesis of the disease. **Materials and methods.** Diabetic patients with pyo inflammatory processes treated by traditional methods ( $n = 40$ ); diabetic patients with pyo inflammatory processes treated by ozonotherapy along with traditional treatment ( $n=53$ ). Discussion of results. The obtained results confirm changes in the absolute and relative number of immune cells in the peripheral blood of DM patients associated with pyoinflammatory processes. A relative number of lymphocytes decreases in these patients, at the same time a tendency to growth in the absolute number of the total pool of lymphocytes is formed. The research of the immune disorders degree confirmed that therapeutic measures, including ozonotherapy, against pyoinflammatory processes in patients with DM show their effectiveness. On admission 65,0% of patients were diagnosed with the I-II degree of immune disorders, which required immunorehabilitation; after pyoinflammatory processes therapy only 55,0% of diabetic patients were left. Special efficiency is shown in the III stage of immune disorders. **Conclusions.** Pyoinflammatory processes in patients with diabetes occur on the background of decrease in the appropriate number of lymphocytes; increase in the absolute and relative number of monocytes, the absolute number of leukocytes due to the increase in the relative amount of neutrophilic