Objective of the research: to analyze patients' quality of life and functions of the limbs after *internal* fracture fixation of the upper and lower extremities with biodegradable and not biodegradable polymeric devices.

157 patients were followed-up within 10-44 years after internal fixation of limb fractures with fixation devices of the same design made of different materials. Fixation devices made of polyglycolide were used in 37 cases, polyamide-12 – in 62 cases, metal – 58 cases. The investigations of upper and lower extremities functional results, quality of life were performed by means of clinical methods, DASH (Disability of the arm, shoulder and hand outcome measure and LEFS (Lower extremity functional scale) functional scales. DASH outcome measure functional test was developed by the American Academy of Orthopedic Surgeons (AAOS) and USA Institute of Work&Health. This test was designed to determine function and signs related to injuries and diseases of the upper extremity. It helps to estimate the results of treatment as well. LEFS test was introduced by M. Binkley in 1999. It reveals any difficulties in patients related with function of the lower extremity.

Two types of polymeric materials were used for internal fracture fixation. They were: polyamide-12 (P-12), biologically inert material that can be present in the soft tissues and bone for many years without any complications and biodegradable material polyglycolide (PG) – a polymer of glycolic acid. The results of treatment were compared with internal fixation of patients treated with stainless steel metal devices. Patients with fractures of the upper extremity were tested with DASH outcome measure scale. Function for PG group was 12.98 less, in P-12 group – 19.27 less, in metal group – 19.86 less. Patients ability to perform work on specialty, go in for sport, play music were15.05 less in the group when PG was used, 20.58 less when PG was used, and 21.54 less when metal fixing devices were used. Functional results for the lower extremity of patients examined with LEFS reveals average values for PG group – 68.78, P-12 group – 47.1, after metal osteosynthesis – 52.4. The results obtained correlate significantly with the results of clinical examination of patients in long term outcome.

The use of Dash outcome measure and LEFS scales enables estimating clearly how patients feel themselves after underwent surgical treatment. Quality of life score according to DASH scale in patients with injuries of the upper extremities after polymeric osteosynthesis was 6.88 points higher than that in the control group. In patients with injuries of the lower extremities results were better on 7.94 points according to LEFS as compared to metal fixation device group.

Ivashchuk S.I.

INFLUENCE OFGENES IL-4 (C-590T), TNF-α (G-308A), PRSS1 (R122H), SPINK1 (N34S) AND CFTR (delF508C) POLYMORPHISM ON SYSTEMIC INFLAMMATORY RESPONS EINDICATORS INPATIENTS WITH EDEMATOUS PANCREATITIS

Family Medicine Department
Higher state educational institution of Ukraine
«Bukovinian State Medical University»

The aim of the research was to study the systemic inflammatory response indicators in patients with edematous pancreatitis with genes IL-4 (C-590T), TNF-α (G-308A), PRSS1 (R122H), SPINK1 (N34S) and CFTR (delF508C) polymorphism.

Genetic studies were carried on 123 patients, among them were 23 (18,7%) women and 100 (81,3%) men. The control group was made up of 40 healthy individuals matched for age and sex. The quantitative determination of the gene polymorphism structure was as follows: gene PRSS1 (R122H) was investigated in 123 patients; CFTR (delF508) and IL-4 (C-590T) – in 101, SPINK1 (N34S) – in 63, TNF-α (G-308A) – in 11. Molecular genetic studies included the determination of polymorphic variants of genes IL-4 (C-590T), TNF-α (G-308A), PRSS1 (R122H), SPINK1 (N34S) and CFTR (delF508). The polymorphic variants of analyzed genes were studied by polymerase chain reaction. The level of interleukin-1β (IL-1β), -4 (IL-4) and tumor necrosis factor alpha (TNF-α) were determined in plasma by ELISA and chemiluminescence analysis. C-reactive protein (CRP) was determined by photometric analysis.

The distribution of genotypes among the patients and healthy people was as follows: gene SPINK1 (N34S) – GG-genotype was found in all groups (100 %); gene PRSS1 (R122H) – GG-genotype was found in 117 patients (95,12 %), in 6 (4,88 %) – GA-genotype, in the group of healthy people only carrier state GG-genotype occurred; gene CFTR (delF508) – NN-genotype was in 98 patients (97,03 %), NM-genotype – in 3 persons (2,97 %), in the healthy people group only carrier state NN-genotype occurred; gene TNF-α (G-308A) – GG-genotype was identified in 9 patients (81,19 %), GA-genotype – in 2 (18,81%); 58 patients (57,43 %) had gene IL-4 (C-590T) – CC-genotype, CT genotype – 34 (33,66%) patients, mutation TT-genotype – 9 (8,91 %), among the healthy – 26 (65 %), 11 (27,5 %) and 3 (7,5 %), respectively (χ^2<1,0, p>0,05).

In the C-allele carriers of the gene IL-4 (CC- and CT-genotype) the content of the above-mentioned indicators is significantly higher than such of the owners of TT-genotype: the IL-4 – 8.44 (p=0,001) and 5,11 times (p=0,008), the IL-1β 1,64 (p=0,003) and 1,28 times (p=0,049), the TNF-α 2,34 (p<0,001) and 2,19 times (p=0,002), the CRP to 1,26 (p=0,008) and 1,06 times, respectively. Where in the levels of CRP and IL-1β in patients with CC genotype of the gene IL-4 were higher than those with intermediate CT-genotype by 19,05 % (p=0,049) and 28,50 % (p=0,051).

The differences in cytokine and CRP production taking into consideration the G-308A polymorphism of the gene TNF-α showed significant dysregulatory changes of function Th1 and Th2 immunity links on the background of the inflammatory process of pancreas: despite significantly higher levels of CRP and IL-4 in homozygous carriers of wild G-allele than in patients with GA-genotype – 7,95 (p_{GG}=0,001) and 43,68 times (in patients with GA-genotype IL-

4 content was lower than that determined diagnostically significant in plasma and equal to zero), the level of proinflammatory TNF-α in these patients was lower by 20,62% (p_{GG}=0,037).

For R122H polymorphism of gene PRSS1, in heterozygous carriers of the mutant allele cytokine and CRP content was higher than in the GG-genotype carriers, for IL-4 – by 73,45% (p_{GG}=0,048), for IL-1β – by 18,60 % (p_{GG}=0,044), for TNF-α – 2,24 times (p_{GG}=0,001), for CRP – c 2,87 times (p_{GG}=0,005), respectively.

For existing deletion of phenylalanine amino acid in the domain 508 of the seventh chromosome of gene CFTR (delta F508) was found a significantly lower level of IL-4, TNF-α and CRP, than with its absence: by 30,9% (p_{NN}=0,035), 12,75% (p_{NN}=0,04) and 5,19 times (p_{NN}=0,001), respectively.

Thus, in patients with edematous pancreatitis was observed the high production of TNF-α, IL-1β and IL-4 in carriers of wild C-allele of the gene IL-4, NN-genotype of CFTR gene and GA-genotype of gene PRSS, that indicates the increased activity of nonspecific anti-infectious immune defense factors in these patients. Systemic inflammatory response in these patients was accompanied by cytotoxic levels of CRP, which were significantly superior in patients with CC-genotype of gene IL-4 by 19,05% and 26,13%, GG-genotype of gene TNF-α–7,95 times, NN-genotype of gene CFTR 5,19 times and in patients with heterozygous GA-genotype carriers of gene PRSS1 2,87 times.

Karatieieva S.Yu.

CHANGES IN THE IMMUNE PROTECTION STATE IN DIABETIC PATIENTS WITH PYOINFLAMMATORY PROCESSES

Department of Patients Care and Higher Nursing Education
Higher State Educational Establishment of Ukraine
"Bukovinian State Medical University"

The immune system disorders in diabetic patients lead to a significant decrease in non-specific and specific immune antiinfectious defense by inhibiting phagocytic function of polymorphonuclear leukocytes, lowering of compliment system activity, lyzocim, interferons, bactericide activity of blood serum.

Materials and methods: diabetic patients with pyoinflammatory processes treated by traditional methods (n = 40); diabetic patients with pyoinflammatory processes treated by ozonotherapy along with traditional treatment (n=53).

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.

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 polymorphonuclear leukocytes, as well as decrease in the absolute number of eosinophils, erythrocytes and hemoglobin and a significant increase.

Knut R.P., Sydorchuk R.I.

MORPHOLOGICAL CHANGES OF HERNIA SAC AND HERNIA-SURROUNDING TISSUES IN ELDERLY PATIENTS SUFFERING INGUINAL HERNIAS

Department of General Surgery
Higher state educational establishment of Ukraine
«Bukovinian State Medical University»

During last years the incidence of inguinal hernias in elderly grew significantly. The complications development in these patients after inguinal hernioplasty reached 6-18%. It can be explained with the fact that during surgery and postoperative period surgeons don't take all the aspects of complications pathogenesis in these patients into consideration.

The aim of the study was to evaluate the morphological changes of hernia sac and hernia-surrounding tissues in elderly patients with inguinal hernias.

For the research purpose we used bioptates of hernia tissues of 24 patients (aged 60-83, mean 67.47±2.54 yrs), obtained during the inguinal hernioplasty. We paid special attention to evaluation of the muscular tissue atrophy and development of cicatrize and inflammatory changes. For investigation we assessed following tissues: hernia sac, subcutaneous cellular tissue, muscular tissue and, in some cases, preperitoneal cellular fat. Fragments of tissues were fixed and processed in accordance to histological standards.

We determined principal signs of chronic inflammation of the hernia sac in all 24 patients. In 8 (33.3%) patients we established isolated inflammation of hernia sac tissues, and in 10 (41,6%) patients it combined with chronic inflammatory changes of hernia-surrounding tissues.

In 6 (25.0%) patients with the recurrent inguinal hernias the inflammatory changes of hernia sac and hernia-surrounding tissues were very pronounced and combined with their cicatrize changes. In all patients we also established expressed atrophic changes of muscular tissue. The last can witness about the fact that the suture methods of