The displacement of the maximum fluorescence power indexes to the short-wavelength range, starting with the wavelength λ = 473 nm were detected in the examined patients, and the absolute parameters of indexes remained significantly lower. The significant difference in the spectral distribution of the fluorescence intensity peak values, that were found in various diseases, have their attention drawn. In particular, in acute appendicitis case, the maximum parameters were observed at the wavelength of λ = 472 nm, with perforated ulcers - at the wavelength of λ = 468 nm, with acute cholecystitis - λ = 470 nm.

Thus, the above mentioned shows that the intensity of fluorescence of venous blood plasma of in patients with acute surgical diseases of the abdominal cavity changes with the characteristic regularity depending on the type of pathology. Determination of this indicator parameters can be applied for the purpose of differential diagnosis.

Ivashchuk S.I., Sydorchuk L.P.

EDEMATOUS PANCREATITIS DEVELOPMENT RISK DEPENDING ON COMBINATIONS OF ALLELIC VARIANTS OF GENES CFTR (rs 113993960), PRSS1 (rs 111033565) AND IL-4 (rs 2243250)

Family Medicine Department
Higher State Educational Establishment of Ukraine
«Bukovinian State Medical University»

The aim of the research was to study the combined influence of genes CFTR (rs 113993960), PRSS1 (rs 111033565) and IL-4 (rs 2243250) polymorphisms from the point of view of edematous pancreatitis development risk.

Genetic studies have been performed for 123 patients with acute and chronic pancreatitis exacerbation, among whom were 23 (18,7%) women and 100 (81,3%) men. The control group included 40 practically healthy individuals who were not relatives of the patients, of corresponding sex and age. Molecular genetic studies, which included the determining of polymorphic variants of genes CFTR (rs 113993960), PRSS1 (rs 111033565) and IL-4 (rs 2243250), have been performed at the laboratory of the State institution «Reference centre of molecular diagnostics of the Ministry of Health of Ukraine» (Kyiv). The polymorphic variants of analysed genes CFTR (rs 113993960), PRSS1 (rs 111033565) and IL-4 (rs 2243250) have been studied with polymerase chain reaction (PCR) method. The genotypes distribution among the examined patients and healthy people for the selected genes has been determined.

The distribution of polymorphic variants of CFTR (rs 113993960), PRSS1 (rs 111033565) and IL-4 (rs 2243250) genotype combinations showed no statistically significant difference between the group of patients and the control one. 52,47% of patients were the owners of NN / GG / CC genotype combination. 38,61% of patients with pancreatitis had the unfavorable T-allele of gene IL-4 in their genotype combination (NN / GG / CT-, or NN / GG / TT). The remaining combinations of genes CFTR / PRSS1 / IL-4 genotypes were met in rare cases (1-3 people). The incidence of minor TT-genotype of gene IL-4 was 7,50% in control group and 8,91% – in patients. Gene CFTR (delF508) mutation in the heterozygous state occured in 4.69% of patients and 2,50% of the healthy. The analysis of polymorphic variants of genes CFTR (rs 113993960), PRSS1 (rs 111033565), IL-4 (rs 2243250) genotype combination, depending on the type and etiology of edematous pancreatitis, showed no statistically significant difference in the frequency of genotype combination between the patients with acute or chronic pancreatitis exacerbation, and of alcoholic or biliary origin. Most of the patients were the carriers of a combination of favorable genotypes (NN / GG / CC): with acute pancreatitis – 57,81%, with chronic pancreatitis exacerbation – 43,24%, with alcoholic pancreatitis – 56,25%, with biliary pancreatitis – 45,95%. 29,69% of patients with acute pancreatitis, and 37,5% with alcoholic pancreatitis had an unfavorable T-allele of gene IL-4 in the genotype combination (NN / GG / CT, NN / GG / TT), also this allele was detected in 54,05 % of patients with chronic pancreatitis exacerbation, and in 40,54% with biliary pancreatitis. Among the patients with pancreatitis who had unfavorable T-allele of gene IL-4 in their genotype combination (NN / GG / CT-, or NN / GG / TT), 29,69% were with acute pancreatitis, 37,5% – with alcoholic one; 54,05% – with chronic pancreatitis exacerbation, 40,54% – with biliary pancreatitis.

The epidemiological analysis showed that the analyzed genes PRSS1 (365G> A), IL-4 (C-590T) and CFTR (delF508) genotype combinations are not risk factors of acute edematous or chronic pancreatitis exacerbation, neither of alcoholic nor of biliary origin.

Karliychuk M.A.

MORPHOMETRIC CHANGES OF SCLERAL LAMINA CRIBROSA IN PATIENTS WITH DIABETIC OPTIC NEUROPATHY

B.L. Radzikhovskiy Department of Ophthalmology
Higher State Educational Establishment of Ukraine
«Bukovinian State Medical University»

Lamina cribrosa morphology is ever changing in health and disease, and its changes might cause primary optic nerve damage and secondary damage due to decreasing of blood supplying and axoplasmic transport. Anatomical narrowing of the lamina cribrosa scleral canal may be a precondition of optic nerve and retina damage in diabetes mellitus (DM). There is no information in published literature about the morphometric changes of lamina cribrosa and its scleral canal in patients with diabetic optic neuropathy (DON) in vivo.

The objective was to study the morphometric changes of the lamina cribrosa and changes of its scleral canal in patients with DM depending on the type and stage of the diabetic optic neuropathy.

575 patients (1150 eyes) with type II DM aged 55,9±7,8 years with absence of glaucoma in anamnesis were examined. In addition to standard ophthalmologic methods optical coherent tomography of the retina and optic nerve was performed. Lamina cribrosa thickness was measured with the help of SD OCT using LC Thickness programm and main low noise filters programm, based on the adaptive compensation algorithm for eliminating a high-level noise in the deep layers of the optic nerve and improving the visualization of the posterior border of the lamina cribrosa, as well as for processing B-scan with a set of 3 digital filters: Butterworth Low-pass Filter inverion image, Wavelet Low-pass Filter Analysis Daubechies original and inversion image. The area of lamina cribrosa scleral canal was measured with the help of SD OCT using the LC cut position programm for choosing the depth of measurement and LC diameter calculation programm for improvement of the selected image by the main digital filters and determination of the most qualitative one for measuring the area of the lamina cribrosa scleral canal.

Analyzing the results of examination, the correlation between the type and stage of DON and scleral lamina cribrosa thickness in patients with DM was revealed. A thickening of scleral lamina cribrosa in average 1.9 times greater as compared to healthy persons of appropriate age was found. In 78.9% of eyes of the patients with DM a mild thickening of scleral lamina cribrosa (<700 μm) was observed; in 16.6% of eyes a moderate thickening (700-900 μm), and in 3.8% of eyes – a significant thickening (<900 μm) was observed. An average index of lamina cribrosa thickness in patients with DM without diabetic optic neuropathy was 1.4 times higher than that of the control group; in subclinical stage of axial DON – 1.9 times higher, in initial stage – 2.1 times higher, in severe stage of axial DON and diabetic papillopathy – 2.6 times higher, in anterior ischemic DON – 2.7 times higher, in dystrophic stage – 3.1 times higher than that of the control group (303+56 μm) ($p<0,001$). Scleral canal area in diabetic papillopathy is 35% less and in anterior ischemic DON is 21,6% less than it is in healthy persons of an appropriate age. A direct correlation was determined between the area of scleral canal of the lamina cribrosa and the state of the optic nerve head in diabetic papillopathy and ischemic diabetic optic neuropathy ($r=0,89$, $p<0,001$ and $r=0,93$, $p<0,001$ correspondingly).

As a result of the study a direct correlation between the type and stage of DON and scleral lamina cribrosa thickness in patients with DM was revealed. Narrowing of scleral canal of lamina cribrosa and a thickening of lamina cribrosa were found to play an essential role in the pathogenesis of diabetic papillopathy and ischemic diabetic optic neuropathy.

Karliychuk M.A., Konovalets I.V., Pinchuk S.V.*, Baryska O.B.*

BIOMARKER-PREDICTOR OF VISUAL OUTCOME IN RESOLVED ACUTE FORM OF CENTRAL SEROUS CHORIORETINOPATHY

B. L. Radzikhovskij Department of Ophthalmology
Higher State Educational Establishment of Ukraine
«Bukovinian State Medical University»
*Center of Modern Ophtalmology «Vash Zir»**

The natural history in the vast majority (80-90%) of central serous chorioretinopathy (CSC) cases is the spontaneous resolution within 3-4 months. Recovery of visual acuity usually follows, but some eyes suffer permanently diminished visual acuity and have poor visual outcomes. It is frequently difficult to discern the exact duration of the episode in patients with CSC, so it is rational to observe the patient's optical coherence tomography (OCT) – specifically the layers indicating photoreceptors integrity (M. Colucciello, www.retinalphysician.com, August 2017). Treatment prior to photoreceptor disruption would prevent vision loss.

Aim - to study the morphologic changes of outer nuclear layer (ONL) at the fovea and their relationship with visual acuity in patients with the resolved acute form of central serous chorioretinopathy.

The study comprised 24 patients (24 eyes) with acute form (fluid persisting <3 months) of central serous chorioretinopathy with subretinal fluid resolution. Patients underwent visual acuity testing, fundus examination, and spectral-domain optical coherence tomography at every visit with the intervals of 3 to 4 weeks until subretinal fluid (SRF) resolved. OCT (RTVue-100, Optovue, USA) was performed by acquiring six radial scans, 6 mm long, centered in the fovea using the fast macular scan function. The outer nuclear layer thickness at the central fovea and integrity of the photoreceptor inner and outer segment (IS/OS) junction were measured and assessed.

The average ONL thickness at the central 1-mm foveal zone was from 69,8 μm to 105,7 μm. In patients with visual acuity 0,4-0,5 and less the average ONL thickness at the central fovea was significantly ($P < 0.01$) thinner than that in patients with visual acuity 0,6-0,9. The ONL thickness was correlated with the visual acuity ($r=0.61$; $p<0,001$). Disorganization of photoreceptor IS/OS junction was observed in patients with visual acuity 0,3-0,4 and less and was absent in patients with visual acuity 0,6-0,9.

Also, the ONL thickness within the central foveal zone is positively correlated with the visual acuity in resolved acute form of CSC. Disorganization of photoreceptor IS/OS junction within the central foveal zone was observed in eyes with visual acuity 0,3-0,4 and less. Our results suggest that evaluation of outer nuclear layer morphology at the fovea may be used as biomarker-predictor of visual outcome in the acute form of central serous chorioretinopathy and for the definition of instances when treatment instead of observation may be desirable.