МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ

М А Т Е Р І А Л И

106-ї підсумкової науково-практичної конференції
з міжнародною участю
професорсько-викладацького колективу
БУКОВИНСЬКОГО ДЕРЖАВНОГО МЕДИЧНОГО УНІВЕРСИТЕТУ
03, 05, 10 лютого 2025 року

Конференція внесена до Реєстру заходів безперервного професійного розвитку, які проводитимуться у 2025 році №1005249

Чернівці – 2025

УДК 61(063)
М 34

Матеріали підсумкової 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) – Чернівці: Медуніверситет, 2025. – 450 с. іл.

У збірнику представлені матеріали 106-ї науково-практичної конференції з міжнародною участю професорсько-викладацького колективу Буковинського державного медичного університету (м. Чернівці, 03, 05, 10 лютого 2025 р.) зі стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

ISBN 978-617-519-135-4

natural balance of the eye tissues, thus producing an “inflamed” phenotype. As a result of these processes, there is increase of inflammatory cytokines expression which contribute to the onset of different eye diseases. To date, the molecular mechanisms that determine the development of ocular pathologies are not fully clarified and there is no therapy capable of preventing eye damage for people with diabetes. Understanding the cellular and molecular mechanisms that lead to eye damage could be useful for the management of diabetic retinopathy.

The aim of the study. To evaluate the influence of biomarkers of inflammation on diabetic retinopathy.

Material and methods. Market available biomarkers of inflammation on diabetic retinopathy management were used.

Results. The evaluation of pathophysiological mechanisms in diabetic retinopathy found that early stages are characterized by histopathological changes which include loss of pericytes, basement membrane thickening, haemodynamic alterations leading to reduced vascular integrity. The later stages of diabetic retinopathy are characterized by complications, which include visual impairment, primarily due to macular edema and proliferative diabetic retinopathy. Also, the severity of retinopathy was associated with poorer metabolic control, demonstrated by elevated HbA1c. Diabetic complications accompany the accumulation of advanced glycation end products in diabetic tissues. Increased accumulation of these products has been reported in epiretinal membranes by the use of immunohistochemical technique. Binding of advanced glycation end products to high-affinity receptor in pericytes exerts selective toxicity resulting in their death. Vascular endothelial growth factor exerts important role in intraocular neovascularization due to ischemic retinopathy.

Conclusions. Early stages of diabetic retinopathy are characterized by histopathological changes which include loss of pericytes, basement membrane thickening, haemodynamic alterations leading to reduced vascular integrity. The later stages of diabetic retinopathy are characterized by complications, which include visual impairment, primarily due to macular edema and proliferative diabetic retinopathy. Binding of advanced glycation end products to high-affinity receptor in pericytes exerts selective toxicity resulting in their death.

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LIPID METABOLISM IN ACUTE AND CHRONIC RHINOSINUSITIS IN PATIENTS WITH DIABETES MELLITUS

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Introduction. The problem of treating paranasal sinusitis, despite the achievements in their study and successes in the development of modern methods for treating this pathology, remains relevant today. A special group is made up of patients with diabetes mellitus, which contributes to the chronicity and recurrence of the process, increases the number of complications and is not only a medical but also a socio-economic problem. Patients with diabetes mellitus are more susceptible to infection, the source of which is the pathology of the ENT organs with its rapid development and subsequent complications.

The aim of the study. The literature does not cover the nature and degree of lipid metabolism disorders in maxillary sinusitis in patients with diabetes mellitus, its place and role in the pathogenesis of the disease, and approaches to its correction have not been formulated. Basically, studies are conducted in patients without endocrine disorders. Therefore, it is very important to study the features of the clinical course of sinusitis and the nature of lipid metabolism disorders in patients with diabetes mellitus.

Material and methods. The data of modern literature on lipid metabolism in acute and chronic rhinosinusitis in patients with diabetes mellitus are analyzed.

Results. Increased vascular-tissue permeability plays a huge role in ENT pathology, which is maintained due to impaired lipid peroxidation processes and is especially pronounced in patients with diabetes mellitus. Various disorders in the antioxidant defense system and in the lipid

oxidation system in purulent rhinosinusitis indicate depletion of the body's internal reserves to maintain adequate homeostasis. In patients with chronic maxillary sinusitis in the acute stage, in contrast to patients with acute maxillary sinusitis, disorders in the cellular immunity system and manifestations of "oxidative stress" are more pronounced, the indicators of functional and metabolic activity of neutrophils, the cytokine link and the complement system are less altered, which must be taken into account when prescribing treatment. The authors note that traditional complex treatment completely or partially corrects the impaired indices of immune and oxidative status in patients with acute maxillary sinusitis. In patients with exacerbation of chronic maxillary sinusitis, this treatment has virtually no effect on the altered indices. When studying antimicrobial immunity in patients with purulent maxillary sinusitis, it was found that the elimination of infection in the body is performed by cells with phagocytic properties, immunoglobulins and complement. The course and outcome of the inflammatory reaction depend on the reaction of neutrophilic granulocytes, which are the first to fight the infectious agent. In patients with diabetes mellitus, the work of a number of complexes responsible for cellular respiration is impaired, which leads neutrophils and other elements of the immune system to a state of hypoxia. As a result, the biocidal activity of phagocytic cells decreases, which entails a decrease in the phagocytic activity of neutrophils. In studies of neutrophil metabolism in patients with chronic purulent maxillary sinusitis with a history of diabetes mellitus, it was found that carbohydrate metabolism processes are significantly reduced in neutrophils, as well as the activity of succinate dehydrogenase, which is the main element in tissue respiration. The data obtained indicate that neutrophils are in a state of hypoxia.

Conclusions. Analysis of the presented literature data on lipid metabolism in acute and chronic rhinosinusitis in patients with diabetes mellitus indicates the role of hypoxia in which all immunological components are. This does not allow the body to fully effectively fight the disease, dictates the need to develop new treatment methods using antioxidants to affect the functional and metabolic activity of phagocytic cells and stabilization of cellular respiration in all its links.

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PREVALENCE OF REFRACTIVE DISORDERS IN AMBLYOPIA

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Introduction. Amblyopia is one of the most common eye conditions in childhood. It is an ophthalmological disorder characterized by a persistent reduction in visual acuity in one or both eyes, which cannot be corrected with glasses or contact lenses. The global prevalence of amblyopia ranges from 1 to 10%. Uncorrected ametropia not only leads to reduced visual acuity and the absence of binocular vision but can also cause neurosis, delay in overall child development, and sometimes restrict career choices, potentially resulting in disability. According to the literature, in the overall structure of primary visual disability in Ukraine, 25% are children with disabilities, and among them, 10% have severe amblyopia. It underscores the need for timely detection of refractive anomalies and an understanding of correction methods to prevent the onset of amblyopia.

The aim of the study. To determine the prevalence of refractive pathology in amblyopia. Given that the issue of refractive anomalies holds not only medical but also social significance, there is a need for timely detection of refractive anomalies, as well as a comprehensive approach to the treatment and prevention of amblyopia.

Material and methods. The study involved 42 children aged 3 to 15 years. With optimal optical correction after cycloplegia, visual acuity with foveal fixation of the amblyopic eye was assessed. Four degrees of amblyopia are distinguished based on the level of persistent vision reduction: mild (visual acuity 0.8-0.4), moderate (visual acuity 0.3-0.2), high (visual acuity 0.1-0.05), and very high (visual acuity 0.04 or lower). The following research methods were used: visometry, keratorefractometry, skiascopy, retinoscopy, ophthalmoscopy, biometry, and determination of eye position by Hirschberg's method.

Results. Among the examined children, hypermetropia was observed in 21%, complex hypermetropic astigmatism in 19%, mixed astigmatism in 18%, myopic astigmatism in 19%, and