

limb's main artery is occluded, only bypass surgery will be performed, while endovascular stenting can be done for patients with multiple stenosis, especially distal localizations. The radiographic results show that a long term history of diabetes mellitus in more than 37% will lead to secondary osteomyelitis and finally diabetic foot.

#### ЛІТЕРАТУРА

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## LIPID PEROXIDATION ACTIVITY AND STATE OF ANTIOXIDANT DEFENCE SYSTEM IN THE EYE TISSUES OF RABBITS WITH EXPERIMENTAL IMMUNOGENIC UVEITIS

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**Introduction.** Uveitis as a disease represents a serious social and medical problem in the world [1]. Currently, more and more evidence is emerging confirming the leading role of oxidative stress (OS) in the pathogenesis of uveitis, regardless of the etiological factor. Development of OS causes expression of proinflammatory cytokines (TNF- $\alpha$ , IL-1, IL-2, IL-6, IL-8), chemokines and growth factors. At the same time inflammatory markers increase the activity of OS, triggering a vicious circle of unregulated inflammation [2]. Considering that OS is believed to be an important pathogenetic factor in uveitis development and is accompanied by the depletion of endogenous antioxidant system, it is of great interest to study the major markers of OS, as well as the state of the antioxidant system, in particular, the key intracellular antioxidant – glutathione (GSH) in eye tissues of rabbits with experimental immunogenic uveitis.

**Aim of the study.** To study changes in lipid peroxidation products and the antioxidant defense system in eye tissue of rabbits on the 3<sup>rd</sup> and 7<sup>th</sup> day of experimental immunogenic uveitis (EIU).

**Materials and methods.** An experimental study was conducted on male rabbits in accordance with the Declaration of Helsinki on the humane treatment of animals. 15 rabbits (30 eyes) were divided equally into 3 groups: Control-1 (10 eyes), Experiment-1 (10 eyes), Experiment-2 (10 eyes). The first group (Control-1) included intact animals, which acted as a control group. In the remaining animals, EIU was reproduced according to Neroev's standardized method [3]. The intensity of lipid peroxidation (LPO) processes was assessed by determining diene conjugates (DC), triene conjugates (TC), and malondialdehyde (MDA) in eye tissues. The state of the antioxidant defense system was assessed by determining the content of reduced glutathione (GSH), oxidized glutathione (GSSG) and their ratio (GSH/GSSG), superoxide dismutase (SOD), catalase (CAT), and total antioxidant activity (TAA) in eye tissues of rabbits on the 3<sup>rd</sup> and 7<sup>th</sup> day accordingly.

**Results and discussion.** The data obtained indicate that the inflammatory process in the eye tissues of rabbits with EIU was accompanied by a significant progressive elevation of DC, TC, MDA levels, as well as a progressive depletion of endogenous antioxidants (GSH, CAT, SOD) and a decrease in the TAA in the eye tissues on the 3<sup>rd</sup> and 7<sup>th</sup> day of experiment. Thus, the DC content increased by 2.42 times on the 3<sup>rd</sup> day ( $p < 0,001$ ) and by 3.26 times on the 7<sup>th</sup> day ( $p < 0,001$ ); TK – 1.94 ( $p < 0,001$ ) and 2.47 times ( $p < 0,001$ ), MDA – 13.13 ( $p < 0,001$ ) and 16.98 times ( $p < 0,001$ ), respectively. The level of reduced glutathione (GSH) decreased on the 3<sup>rd</sup> day by 1.52 times ( $p < 0,001$ ), on the 7<sup>th</sup> day by 1.95 times ( $p < 0,001$ ), and the level of oxidized glutathione increased by 1.15 ( $p < 0,001$ ) and 1.32 times ( $p < 0,001$ ), respectively, which led to a significant decrease in the key indicator of tissue redox homeostasis – the GSH/GSSG ratio by 1.74 times on the 3<sup>rd</sup> day ( $p < 0,001$ ) and by 2.53 times on the 7<sup>th</sup> ( $p < 0,001$ ). Catalase activity decreased by 1.65 times on the 3<sup>rd</sup> day ( $p < 0,001$ ) and by 2.25 times on the 7<sup>th</sup> day ( $p < 0,001$ ). The SOD level decreased by 2.14 times by the 7<sup>th</sup> day ( $p < 0,001$ ). The TAA indicator on the 3<sup>rd</sup> day decreased by 1.25 times ( $p < 0,001$ ), on the 7<sup>th</sup> – by 2 times ( $p < 0,001$ ). The results of the experiment suggest the development of oxidative stress in the eye tissues of rabbits with EIU, decompensation of the local antioxidant system.

**Conclusion.** EIU in rabbits is accompanied by a significant elevation of LPO products in the eye tissues, along with progressive depletion and decompensation of local antioxidant defense systems, which confirms the key role of oxidative stress as a universal pathogenetic mechanism in pathogenesis of uveitis and indicates the need to find ways to potentiate endogenous antioxidant defense mechanism.

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