

**THE EFFECT OF CORRECTION ON THE DYNAMICS OF
PATHOMORPHOLOGICAL CHANGES IN THE LAYERS OF THE RETINA IN
OPIOID RETINOPATHY IN THE EARLY STAGES OF EXPERIMENTAL
OPIOID EXPOSURE**

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Background. In specialized domestic and foreign literature, great importance is attached to the study of the retina and the processes of its structural changes under the influence of various factors and nosologies. However, the problem of correction of opioid retinopathy in subchronic periods of experimental opioid exposure still remains unsolved.

Objective. The purpose of the study is to find out the features of the pathological changes in the layers of the retina and links of its hemomicrocirculatory bed in the subchronic period of correction of opioid retinopathy under experimental opioid exposure.

Methods. The research material is sexually mature, outbred male rats in the amount of 34 animals, weighing 160 - 270 g, aged 4.5 - 7.5 months. Animals were injected intramuscularly with nalbuphine once a day. The initial dose of nalbuphine during the first

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2 weeks was 0.212 mg/kg. The animals were removed from the experiment by an overdose of diethyl ether. Ultrastructural preparations were prepared according to the generally accepted method. Under the conditions of two-week administration of opioid followed by four-week withdrawal, degenerative changes were found in the pigment epithelium, outer and inner segments of photoreceptors, axons of the outer retinal layer, amacrine, bipolar and ganglion cells of the retina. The phenomenon of hyperemia and moderate perivascular edema in the vessels of the inner reticular layer is present. Six weeks later, rats treated with opioids for two weeks and then withdrawn, followed by correction with pentoxifylline for four weeks, showed a general tendency toward improvement, manifested by minor degenerative changes in the pigment epithelium and destruction of the membranous discs of the outer segments of the photoreceptors. Six weeks later, hyperemia and perivascular edema in the choroidal vessels were found in rats treated with an opioid for two weeks, followed by continued opioid administration with pentoxifylline for four weeks. Degeneration and necrosis of the pigment epithelium, degeneration and destruction of membrane discs, degeneration of ganglion neurons, hyperemia, stasis and perivascular edema in the vessels of the ganglion layer, nerve fiber layer, reactive and sometimes necrotic changes in Müller cells.

Results. The results of the study show that with a two-week opioid exposure, the most prognostically favorable indicators were in the group where complete withdrawal was carried out with subsequent correction with the drug pentoxifylline. It can also be concluded that during the correction of opioid retinopathy, it cannot be carried out with drugs of the antibradykinin group (pentoxifylline) without complete withdrawal of the opioid because this contributes to a sharp increase in pathomorphological manifestations in the layers of the retina and is a prognostically unfavorable moment.

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