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
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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.

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forward from the focus at the base of the zygomatic process. The zygomatic process of the temporal bone grows from this center of ossification. At the beginning of the fetal period of ontogenesis, the tympanic ring, which surrounds the external auditory canal, begins to form from four membranous ossification centers. Over time, this ring expands laterally and posteriorly, forming the tympanic part of the temporal bone. The anterior and posterior parts of this ring grow faster than the rest of the ring; as a result, there is a defect at the bottom of the passage – the Gushke foramen. The petrous part of the temporal bone ossifies in a cartilaginous way around the otic capsule with more than ten centers, which are first visible at the end of the 4th month of intrauterine development, and merge at the 6th month of intrauterine development after the cochlear labyrinth reaches its final size. By the 6th month of intrauterine development, the otic capsule is almost completely ossified.

Conclusions. 1. At the beginning of the 4th week of intrauterine development, the sources of the temporal bone are determined – its squamous part comes from the neural crest and the petrous part – from the paraxial mesoderm. 2. During the 7th-8th weeks of prenatal ontogenesis, the squamous part of the temporal bone ossifies in a membranous way, and the petrous part – in a cartilaginous way around the otic capsule with more than ten centers, which are first visible at the end of the 4th month, and merge at the 6th month of prenatal development.

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FEATURES OF STRUCTURAL CHANGES OF THE HYPOTHALAMIC SUPRAOPTIC NUCLEUS IN RATS DURING THE EARLY DIABETES 2

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Introduction. «Diabetes is currently a global health burden affecting over 537 million people worldwide» (Mosili P., 2024). Various complications, such as cardiovascular and chronic kidney disease, are widely reported and studied, while studies about the influence on the brain are not so common.

The aim of the study. To determine the structural organization of the hypothalamic supraoptic nucleus in rats with streptozotocin-induced diabetes.

Materials and Methods. In the experiment, mature rats were used and modeled with streptozotocin-induced diabetes. On the 14th day of the experimental diabetes development in rats, quantitative cyto-myeloarchitecture parameters, and histological and ultrastructural changes in the anterior hypothalamic supraoptic nucleus were determined.

Results. After 14 days of the experiment modeling, the histological structure of the hypothalamic supraoptic nucleus remained practically unchanged and identical to the intact animals. However, occasional occurrences of central chromatolysis were observed in the light neurons of the supraoptic nucleus. The perikarya of the dark neurons were densely filled with Nissl substance.

The ultrastructural feature of dark neurosecretory cells is the presence of highly developed granular endoplasmic reticulum in their peripheral zone, which was represented by flat elongated cisterns. These cisterns had a large number of ribosomes on their surface. Additionally, free ribosomes and polysomes were present in the hyaloplasm between the cisterns. A similar pattern has been observed in light neurons. Furthermore, an increase in the volumetric density of neurosecretory granules compared to intact indicators of up to $2.36 \pm 0.12\%$ ($p \leq 0.01$) has been detected. In the neuropil of the hypothalamus, most of the axons were filled with neurosecretory granules (NG) of moderate electron density. Alongside axons that were expanded and filled with neurosecretory granules, axons of neurosecretory cells with a usual structure containing mitochondria, synaptic vesicles, neurotubules, and neurofilaments have been observed.

Conclusions. The hypothalamic supraoptic nucleus contained light and dark neurosecretory cells with a well-developed protein synthesis apparatus. Changes of the neuro-glio-capillary complexes in the investigated hypothalamic nuclei were detected on the 14th day of the experimental streptozotocin-induced diabetes, indicating the activation of neurosecretion synthesis and the transport to the neurohypophysis. An increase in the volumetric density of neurosecretory granules compared to intact animals was found to be $2.36 \pm 0.12\%$ ($p \leq 0.01$).