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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structure of the lungs. The external structure of the lungs does not affect the character of the branching of the bronchial tree, however, the distribution of bronchi within zones and segments is subject to individual fluctuations. In fetuses of 3-4 months, the lung has a typical glandular structure. Intersegmental and interlobular septa are well defined. The bronchial tree branches to respiratory bronchioles of the 1st order.

Petryshen O.I.

CHARACTERISTICS OF EPITHELIAL TISSUE OF KIDNEYS THAT HAVE BEEN STRUCTURALLY REORGANIZED

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Introduction. The excretion of different xenobiotics pass through the kidney, that leads to morphological and functional disorders. These substances include different chemical compounds of industrial processes. Among the pollutants of a technogenic origin chemical combinations of different metals occupy the first place, aluminium and led salts take the leading role.

The aim of the study. Objectives of our research was to determine the influence of aluminium and lead salts on the renal morphology.

Material and methods. The complex of morphological methods studied the renal structure of 50 mature albino male rats weighing 0,15-0,2 kg. Animals were divided into 2 groups. The 1st group – control (n-25), and the 2nd group – experimental (n-25) that during 14 days received 200 mg/kg aluminium chloride and 50 mg/kg lead chloride on 1% starch suspension intragastrically.

Results. The analysis of morphological indices of the kidney has found enlargement of the cortical substance thickness and medullar substance. Besides, experimental animals showed morpholodgic changes of the cells that are the components of the renal canaliculi. Thy cytoplasm contains small and single large vacuoles, and a number of epithelicytes contain paranuclear vacuoles which makes the cell bigger. The nuclei of the cells are hyperchromic, nuclear-cytoplasmatic Hertwig index is shifted into cytoplasm site. Some epitheliocytes of the proximal and distal canaliculi demonstrate local morphological changes accompanied by dystrophic cellular lesions.

Conclusions. A combined influence of aluminium and lead salts results in morphofunctional and dystrophic changes of the renal tissue with the occurrence of hydropic and ballooning dystrophy in the epithelicytes of the nephron canaliculi which is accompanied by stasis and sludge with a sharp hyperemia and lymphectasy, stromal and perivasal edema, small foci of diapedesic hemorrhages. Further studying of the influence of combined action of aluminum, lead salts on the kidney morphology will give the opportunity to reveal the dynamics of the development of compensatory-adaptive and reparative mechanisms as well as to develop methods of their correction.

Popova I.S.

CRITICAL PERIODS SHAPING THE EARLY PRENATAL DEVELOPMENT OF HUMAN NECK EMBRYO-TOPOGRAPHY

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Introduction. Given the stable incidence of congenital malformations in newborns worldwide, the study of human prenatal morphology provides critical insights into the origins and variations of human prenatal development, supporting efforts to manage and prevent these developmental abnormalities proactively. The anterior and lateral regions of the human neck contain key structures of the vascular, nervous, respiratory, and digestive systems, making this area particularly significant for clinical interventions such as cyst removal, tumor excision, and reconstructive surgeries. Moreover, data on critical periods of human embryological development enhance diagnostics and prevention of known congenital malformations during specific periods of gestation, especially for patients with a burdened family history.

The aim of the study. To investigate peculiarities of an early embryo-topography in the human neck region to determine possible periods of the developmental critical periods. These critical periods are believed to be vulnerable for possible congenital malformations establishment if the normal course of the developmental processes are impaired.

Material and methods. Six specimens of human embryos were subjected to microscopy, morphometry, and three-dimensional reconstruction. The material was classified by parietal length and obtained in accordance with the Declaration of Helsinki based on a bilateral agreement between the Department of Histology, Cytology, and Embryology of Bukovinian State Medical University and the Regional Pathologists Bureau.

Results. The research has traced step by step the processes of neck embryo-topography as a discrete part of the human body during the embryological stage of prenatal human development. Our findings indicate that the sixth week of prenatal development marks the first critical period in the formation of the infrahyoid triangles. During this stage, a common muscle layer for the infrahyoid muscles, as well as a shared precursor for the sternocleidomastoid and trapezius muscles, begins to develop. These early structures signal the initial separation of the anterior cervical region in humans. By the start of the sixth week, the muscle layer for the infrahyoid muscles in fetuses presents as a distinct band of muscle tissue extending dorsally and laterally on both sides of the tongue base. Additionally, this critical period is characterized by the formation of the subcutaneous neck muscles and the hyoid bone, driven by the differentiation of the hyoid pharyngeal arch and the emergence of the cervical sinus. We identify the 7th to 8th weeks of prenatal development as the second critical period, during which the complete separation of the omohyoid, sternohyoid, and thyrohyoid muscles occurs alongside the establishment of their innervation. This phase is also marked by the transition of the hyoid rudiment to the pre-cartilaginous stage and the loss of its connection to the cranial segment of Reichert's cartilage. During this period, anatomical variations and malformations may arise not only within the infrahyoid muscles - such as absence of muscle bellies, duplication, or atypical attachment - but also within the structure of the hyoid bone.

Conclusions. These critical periods underscore the complexity and precision of early cervical development, highlighting stages where structural differentiation and potential anatomical variations are established. Understanding these phases provides valuable insight into the mechanisms underlying congenital neck malformations and informs approaches for early diagnosis and intervention in developmental anomalies of the cervical region.

Semeniuk T.O.

TYPES OF INTERSTITIAL CELLS WITHIN THE HUMAN HEART VALVES

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Introduction. Millions of people worldwide suffer from different cardiovascular diseases. Diseases that affect the atrioventricular valve apparatus of a heart show an increasing trend every year. This, in turn, increases an interest of morphologists in the structural and functional changes of tissue and cellular components that occur in human heart valves with age. Despite numerous fundamental works about morphology of the valvular apparatus of the human heart, this issue still attracts the attention of scientists today. The modern view on the heart valves includes not only view that considers the valves like the passive mechanical structures that direct a blood. Valves are morphological components of the heart that have a complex structure, perform important functions and undergo changes with age. Cardiac surgeons are interested in creating an "active" substitute for heart valves for to prolong human life. In addition it is necessary to create substitutes that are as close as possible to the natural valve in terms of the structure and function. It would be possible thanks to the development of tissue engineering.

The aim of the study. To identify and study valvular interstitial cells in the leaflets of the atrioventricular valves of the human heart.