серцево-судинними захворюваннями, зокрема ішемічним та геморагічним інсультами, гострим інфарктом міокарда, хронічною серцевою недостатністю, ішемічною хворобою серця, гіпертрофією лівого шлуночка. Наявність лептинових рецепторів у серці свідчить про те, що лептин може безпосередньо впливати на функцію серця.

Лептин посилює продукцію активних форм кисню в ендотеліальних клітинах, стимулює синтез та активацію цитокінів системного запалення – TNF-α та ІЛ>6, які є промоутерами артеріальної гіпертензії та атеросклерозу. Проатерогенна дія лептину пояснюється його впливом на різні типи клітин. В ендотеліальних клітинах лептин посилює оксидативний стрес, збільшує виробництво моноцитів та їх проліферацію.

Отже збільшення вмісту лептину в крові при метаболічному синдромі претендує на роль раннього і чутливого маркера ризику розвитку кардіоваскулярної патології та її ускладнень.

СЕКЦІЯ 2
ОСНОВИ МОРФОЛОГІЇ ТА ФІЗИКО-БІОЛОГІЧНІ АСПЕКТИ СТРУКТУРНОЇ ОРГАНІЗАЦІЇ БІОЛОГІЧНИХ ТКАНИН

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MORPHOLOGICAL FEATURES OF HUMAN THYMUS DEVELOPMENT IN THE FIFTH MONTH OF ONTOGENESIS

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Organs of the immune and endocrine systems perform general regulatory function. Therefore, investigations on chronological sequence of interaction and differentiation of tissues and cells within thymus, an organ that regulates processes of lymphocytopoiesis and provides endocrine regulation, is an essential problem for scientific research. Moreover, it is significant for different constitutional types of human fetuses and possibilities of postnatal adaptation of newborns.

In order to study out dynamics features of the morphometric parametersin thymus during prenatal period of human ontogenesis, human placentas in the fifth month of their development (158.2 - 164.3 parietal-coccygeal length (PCL)) were investigated using a set of morphometric methods (anthropometry, morphometry, macroscopy, microscopy of a series of histological sections).

Development of connective tissue stroma, which grows between the lobes can be estimated during this period of prenatal development. No clear separation of particles by trabeculaehas been observed. It should be noted, that on the periphery of organ, where the stroma is represented by particles of small size, the centrally located particles are larger. Comparing development of the cortical and cerebral substances in both types of lobules, one can see the poor development of cortical substance, especially in the central lobes. Development of the cerebral substance is significantly ahead of such in cortical zone; area of the cerebral substance is much larger with numerous bright epithelia-reticular stroma cells. In addition, Gassal's bodies have already appeared in the medullary area. Epithelial bodies are not numerous, small in size, significant variability is not defined. Gassal’s bodies are formed by concentrically layered flattened cells. Dystrophic changes are already visible in the internal epitheliocytes, including non-nucleated cells. Numerous blood vessels are represented in the cerebral substance of thymus. The development of blood vessels promotes the development of the medullary zone by parenchymal cells. Numerous lymphocytes are well identified and they begin to form recirculating masses. Vascularization of the cortical area is just beginning to get established: blood vessels are visualized only in deep area of the cortex. Such morphological peculiarities of stroma allow separate lymphocytes to begin colonization of the cortex. Histological specimens show a poorly developed cortical zone, in the cortical-medullary part of which are evidentsmall T-lymphocytes and in the subcapsular zone are visible larger cells.

Thus, during the fifth month of human ontogenesis rudiments of thymus begin to divide into lobes where cortex is less developed, compared to cerebral part. At this developmental stage we can observe occupation of cortical zone within thymic lobules by individual lymphocytes.

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GROWTH RATES OF THE PANCREATIC HEAD IN THE PRENATAL PERIOD OF HUMAN ONTOGENESIS

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Intrauterine human development is crucial for future formation and differentiation of organs and systems not only in the prenatal period but also in postnatal ontogenesis, so a large number of works in the modern and foreign scientific publications are devoted to the study of human development. Therefore, it is relevant to study thoroughly the dynamics features of morphometric parameters of the pancreas in the prenatal period of human ontogenesis.

The study of the dynamics features of morphometric parameters of the pancreas in the prenatal period of human ontogenesis was conducted on the basis of embryos of 5-6 weeks in development and human forearms aged from 7 to 11 weeks (24.7-61.0 mm parietal and coccygeal length (TCL)) were studied using a set of morphometric research methods (anthropometry, morphometry macroscopy, microscopy of a series of consecutive histological sections, statistical analysis). Methods of variational statistics are used to determine the average value (M) and the possible error (m), as well as the degree of reliability (p).

The results of the study depicted the growth indicators of the pancreatic body in the prenatal period of human embryogenesis (M±m): embryo length is 24.7-28.0 mm, pancreatic dimensions (mm) are the following: length - 3.00 ± 0.05 ($p < 0.05$), head width - 0.24 ± 0.012, head thickness - 0.390 ± 0.012; embryo length is 31.0-40.3 mm, pancreatic dimensions are (mm): length - 4.20 ± 0.22 ($p < 0.05$), head width - 0.310 ± 0.014 ($p < 0.05$), head thickness - 0.430 ± 0.009 ($p < 0.05$); embryo length is 42.0-48.5 mm, pancreatic dimensions are (mm): length - 5.80 ± 0.12 ($p < 0.05$), head width - 0.410±0.012 ($p < 0.01$), head thickness - 0.550 ± 0.020 ($p < 0.05$); embryo length is 53.5 - 61.0 mm, pancreatic dimensions are (mm): length-7.40 ± 0.26 ($p < 0.01$ head width - 0.490 ± 0.015 ($p < 0.05$), head thickness - 0.690 ± 0.014 ($p < 0.05$); embryo length is 53.5-61.0 mm, pancreatic dimensions are (mm): length-10.30 ± 0.28 ($p < 0.01$), head width - 0.490 ± 0.015 ($p < 0.05$), head thickness - 0.690 ± 0.014 ($p < 0.05$).

The growth rate of the pancreas in the prenatal period of human embryogenesis per 1 mm TCL of the embryo in mm is the following: in embryos with a length of 24.7 - 28.0 mm, the pancreas has length of 0.110 mm, while the body width is 0.006 mm and the body thickness is 0.010 mm; in embryos with length of 31.0 - 40.3 mm , the pancreas has length of 0.120 mm, while the body width is 0.007 mm and the body thickness is 0.003 mm; in embryos with length of 42.0 - 48.5 mm, the pancreas has length of 0.130 mm, while the body width is 0.007 mm and thickness is 0.004 mm; in embryos with length of 53.5 - 61.0 mm, the pancreas has length of 0.130 mm, while the body width is 0.006 mm and thickness is 0.004 mm.

The obtained data indicate that when the length of the forearm increases from 24.7 mm to 61.0 mm, the laying and development of the pancreatic body is slow, which may contribute more to the divergent differentiation of the endodermal epithelium of the pancreas into pancreatic exocrinocytes and endocrinocytes of the islets of Langerhans.

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DEVELOPMENT PECULIARITIES OF BRONCHIAL AND RESPIRATORY STRUCTURES IN HUMANS

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Advances in perinatal medicine have improved methods of early diagnosis and treatment of respiratory diseases, which has increased number of surgical procedures in newborns and fetuses for