

specialized capillaries of the liver are formed from the capillaries of the transverse septum, they gradually surround the growing strands of hepatoblasts. Sinusoids contain intravascular blood cells: mainly erythrocyte type. Small caudal part of the hepatic diverticulum forms the rudiment of the gallbladder.

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TEMPORAL DYNAMICS OF COMPLEX DEGREE MODULE MAPS OF MICROSCOPIC IMAGES MUTUAL POLARIZATION OF BRAIN HISTOLOGICAL SECTIONS TO ESTABLISH THE TIME OF HEMORRHAGES FORMATION

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One of the most common mechanical injuries in forensic practice is traumatic brain injury and it is very important to make the differentiation diagnose of the time of hemorrhage formation in the human brain (HB), namely ischemic stroke (IS), hemorrhage of traumatic (HTG) and non-traumatic (NTG) genesis, as this eliminates the violent nature of death and narrows the circle of suspects.

The purpose is to develop forensic criteria for the differentiation of the time of hemorrhages formation of different genesis by mapping the distributions of the magnitude of the complex degree of mutual polarization (KDMP) of HB histological sections. Native histological specimens of HB with HTG included (1 group) - 30 samples, 30 samples with HNG (2 group), 35 samples with IS (3 group) and samples from 20 corpses, the cause of death of which was acute coronary insufficiency (4 control group). The following set of studies was performed: 1) temporal monitoring of necrotic and degenerative-dystrophic changes by measuring maps of the KDMP module of a series of microscopic images of histological sections of the brains of the dead of all groups with different hemorrhage formation time (HFT) - from 6 hours up to 168 hours; 2) statistical temporal analysis of objective data of polarization-correlation microscopy of coordinate consistency of types and forms of polarization by calculating a set of statistical moments of the 1st - 4th orders, which characterize the magnitude maps of the KDMP module of digital microscopic images with different HFT; 3) established time duration of linear sections of dependences of statistical moments of the 1st - 4th orders which characterize necrotic changes of maps of the KDMP module of set of points (pixels) of digital microscopic images of samples of histologic sections of the nervous tissue from corpses with various HFT.

Comparative analysis of polarization-correlation mapping data of microscopic images of brain histological sections of the dead from all groups found the time dependence of the magnitude of statistical moments of the 1st - 4th orders, which characterize polarization and azimuthal-invariant Mueller matrix maps, especially dependences of the value of asymmetry and excess distributions of the KDMP modules up to 48 hours from the moment of hemorrhage formations.

The accuracy of determining the time of hemorrhage formation by the method of KDMP - mapping of polarization-inhomogeneous microscopic images of histological sections of the brain is $45 \text{ min} \pm 15 \text{ min}$.

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IMMUNOHISTOCHEMICAL STUDY OF TROPHOBLASTS PROLIFERATIVE PROCESSES IN BASAL DECIDUITIS COMBINED WITH IRON-DEFICIENCY ANEMIA IN GRAVIDAS

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Morphological manifestations of inflammation of the placenta have been and remain the subject of many studies. Though, in Ukrainian and foreign scientific literature there are insufficient data concerning the processes of proliferation and apoptosis in the chorionic villi in chorioamnionitis and basal deciduitis. The influence of iron-deficiency anemia on the course of these processes in inflammation of the placenta is not sufficiently studied. Even if scientific sources mention that

moderate hypoxia in placental tissues caused by iron-deficiency anemia leads to stimulation of proliferative processes in the trophoblast of the chorionic villi of the placenta, and strongly inhibits proliferation processes.

Objective: to establish quantitative parameters of cell proliferation in the trophoblast of the chorionic villi of the placenta in acute and chronic basal deciduitis in iron-deficiency anemia in gravidas by means of the immunohistochemical method.

The placental tissue was preserved in phosphate buffered neutral 10% formalin solution with further passing the material and preparing paraffin blocks. By means of a sliding microtome the cuts were made 5 micrometers thick keeping to appropriate requirements. Histological examinations were conducted on the base of histological samples stained with hematoxylin and eosin. According to DAKO recommendations by means of immunohistochemical method further detection of antigen Ki-67 expression in nucleus of trophoblast structures was determined (polymeric system of detection with the stain diaminobenzidine). The number of Ki-67-positive nuclei was calculated in per mille. Statistically significant were differences with $0,05$. The results are presented in Table.

Research groups	Ki-67 – positive nuclei in trophoblasts of chorionic villi (‰)	
	Observation of inflammation of the manure during pregnancy without anemia ($n=16$)	Observation of inflammation of the manure in iron deficiency anemia in gravidas ($n=15$)
Acute basal deciduitis	53 ± 3.1 $1 < 0.001$ $2 > 0.05$	56 ± 3.2 $3 > 0.05$ $4 > 0.05$
Chronic basal deciduitis	$(n=21)$ 55 ± 2.8 $1 < 0.001$ $2 > 0.05$	$(n=20)$ 57 ± 3.7 $3 > 0.05$ $4 > 0.05$

Note: 1 – the probability of difference between the physiological pregnancy and the study group; 2 – the probability of difference between the group of placentas with iron-deficiency anemia and the study group; 3 – the probability of difference between inflammation and comorbid inflammation in iron-deficiency anemia; 4 – the probability of difference between inflammation in combination with IDA and without inflammation in iron-deficiency anemia.

The results of our research can serve as additional criteria for making pathological diagnosis of acute and chronic forms of basal deciduitis with determination of morphological differences caused by iron-deficiency anemia in gravidas out of inflammatory foci. Iron-deficiency anemia in gravidas leads to the intensification of proliferative processes in the trophoblast of the chorionic villi of the placenta relative to the placenta from physiological pregnancy. In case of acute as well as in basal deciduitis, the proliferative activity in the trophoblast of the chorionic villi of the placenta increase.

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DEVELOPMENT AND ESTABLISHMENT OF PELVIC JOINTS IN THE PRENATAL PERIOD OF HUMAN ONTOGENESIS

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The research of morphogenesis and dynamics of space-time relationships of pelvic joints during the fetal period of development in terms of topographic and anatomical approach to the problems of embryogenesis has done with help of proper morphological methods. Vertebral arches are laid before its vertebral bodies but they exist separately for a long period of time. After the development of pre-cartilage tissue begins in the spine, intervertebral cartilages (future intervertebral discs) appear in the form of thin strips of compacted mesenchyme. They begin to form in the cranial spine of embryos 10.0-13.0 mm parietal-coccygeal length (PCL) and are found along the spinal column.