Research groups	Ki-67 – positive nuclei in trophoblasts of chorionic villi (‰)	
	Observation of inflammation of the manure during pregnancy without anemia*(n=23)*	Observation of inflammation of the manure in iron deficiency anemia in gravidas *(n=21)*
Acute chorioamnionitis	54±2.3 p_1<0.001 p_2>0.05	56±3.8 p_3>0.05 p_4=0.03
Chronic chorioamnionitis	*(n=20)* 57±3.5 p_1<0.001 p_2>0.05	(*n=21)* 59±3.6 p_3>0.05 p_4=0.02

Note: p_1 – the probability of difference between the physiological pregnancy and the study group; p_2 – the probability of difference between the group of placentas with iron-deficiency anemia and the study group; p_3 – the probability of difference between the inflammation and comorbid inflammation in iron-deficiency anemia; p_4 – the probability of difference between the inflammation in combination with iron-deficiency anemia 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 chorioamnionitis with the 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 chronic chorioamnionitis the proliferative activity in the trophoblast of the chorionic villi of the placenta increases.

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DIFFERENTIAL DIAGNOSIS OF ALCOHOL AND CARBON MONOXIDE POISONING BY MEANS OF STATISTICAL ANALYSIS OF DIFFUSIVE TOMOGRAPHS OF OPTICAL ACTIVITY FLUCTUATIONS OF THE ADRENAL GLANDS HISTOLOGICAL SPECIMENS

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The currently known diagnostic signs of death from acute poisoning such substances as alcohol and carbon monoxide are relatively evidential, and sometimes subjective, which determines the search for new diagnostic methods to differentiate the cause of death from poisoning in forensic practice.

Objective of the research is to evaluate the possibility of objective differentiation of the cause of death in cases of ethanol and carbon monoxide poisoning by statistical analysis of diffuse tomograms of fluctuations in the optical activity of histological specimens of the adrenal glands.

The object of the study were histological sections of the adrenal glands, selected from 110 corpses that died of coronary heart disease (1 control group, n = 20), due to ethanol (group 2, n = 45) and carbon monoxide poisoning (group 3, n = 45). Histological sections of the adrenal glands were made according to standard methods on a microtome with rapid freezing. The research method is based on the implementation of polarization reconstruction of the distributions of the average values of birefringence of the polycrystalline component of the adrenal glands specimens in cases of ethanol and carbon monoxide poisoning.

The statistical analysis (calculation of the mean *Sr*, dispersion *Dp*, asymmetry *As* and excess *Ek*, which are systematized and presented in table) identified the following scenario of changes in tomographic manifestations of necrotic changes in the molecular structures of the adrenal tissue in cases of alcohol and carbon monoxide poisoning – reduction of the magnitude and ranges of changes in the values of fluctuations of circular birefringence (FCB), which are quantified in the reduction of statistical moments of the 1st and 2nd orders, as well as in the increase of the statistical

moments of the 3rd and 4th orders, which characterize the asymmetry and excess of FCB distributions.

Specimen	Histological sections of the adrenal glands		
Statistical moments	Control group (n=20)	Group 2 (n=45)	Group 3 (n=45)
Average, *Sr x* 10^{-2}	0,28 ± 0,012	0,13 ± 0,006	0,065 ± 0,003
ρ_1; ρ_2,		$\rho_1<0,05$	$\rho_2<0,05$
$\rho_{1;2}$		$\rho_{1;2}<0,05$	
Dispersion, *Dp* x10^{-2}	0,31 ± 0,014	0,15 ± 0,007	0,085 ± 0,003
ρ_1; ρ_2,		$\rho_1<0,05$	$\rho_2<0,05$
$\rho_{1;2}$		$\rho_{1;2}<0,05$	
Asymmetry, *As*	0,31 ± 0,014	0,52 ± 0,024	0,89 ± 0,041
ρ_1; ρ_2,		$\rho_1<0,05$	$\rho_2<0,05$
$\rho_{1;2}$		$\rho_{1;2}<0,05$	
Excess, *Ek*	0,39 ± 0,017	0,68 ± 0,033	0,97 ± 0,041
ρ_1; ρ_2,		$\rho_1<0,05$	$\rho_2<0,05$
$\rho_{1;2}$		$\rho_{1;2}<0,05$	

Statistical reliability (ρ_1; ρ_2; $\rho_{1;2} < 0,05$) and diagnostic efficiency of forensic digital differentiation of diffuse tomograms of the adrenal glands specimens of the deceased from all groups were found. A satisfactory (*Dp*→*82%*) and excellent (*Sr, As, Ek* →*90-92%*) level of balanced accuracy of statistical processing of coordinate distributions of the value of the FCB sections of the adrenal glands in forensic differential diagnosis of alcohol and carbon monoxide poisoning was established.

The efficiency and statistical reliability (ρ_1; ρ_2; $\rho_{1;2} < 0,05$) of application of the method of statistical analysis of diffuse tomograms of optical activity fluctuations of histological specimens of adrenal glands in forensic differentiation of the cause of death are demonstrated.

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SEARCH FOR RESULTS OF APPLICATION OF THE MORPHOMETRIC PARAMETERS AT THE FIELD OF SPORTS

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The professional sports performance associated with a significant load on the athlete's body encourages scientists, doctors and coaches to search for physiological reserves of the body and the optimal training regimes. From this point of view, the study of changes that occur into individual organs, systems and in the body as a whole, under the influence of physical activity of varying intensity and nature is relevant and of great practical importance.

The current study was conducted on an athletes, parameters, objective data. The study results have shown the following information: the level of results in modern sports is so great that to achieve them, athletes need to have the appropriate morphological and functional data, as well as excellent physical and mental abilities. The main problem in training athletes is adequate selection and sports affiliation. The solution of the problems of selection involves the creation of a model of an athlete for the particular kind of sport and a certain set of characteristics that determine athletic performance.

This requires anthropometric assessment, morphometric and biometric data to track physical and physiological parameters, information to assess performance and recovery in sports, modification of training regimes to prevent injuries, provide guidance on regulating the use of technologies that used in professional sports, as well as to research and make recommendations for the proper collection, storage and exchange of the health information.

However, now prognostic value and dominance of indicators of total and partial body size and morphometric and somatotypological characteristics in predicting the prospects for achieving high results in professional sports have not been established yet.