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LASER POLARIMETRIC TECHNIQUES USED AS OBJECTIVE EXPRESS METHODS FOR ADDRESSING PROBLEMS IN FORENSIC MEDICINE

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Express diagnostics – are part of the analysis of results during forensic examination, which allows the immediate study of an object. It should be noted that the field that develops rapid methods has its own characteristics: they should be as objective and accurate as possible, which is important for law enforcement agencies, and also allows retrospective reconstruction of elements of events and crimes.

Development of methods for rapid diagnostics – is a complex process that requires not only a deep knowledge of the profession, but also requires an examination of other, often unrelated sciences, synthesis and the ability to integrate the latest achievements in the light of their forensic value. One such integrative approach is to use a set of advanced laser polarimetric techniques to gather with a system of powerful mathematical analysis of biological tissues (BT) and body media (BM) of the human body in addressing highly relevant forensic practice such as establishing time of death (TOD) with various causes, time of formation of hematomas, intravital bodily harm, diagnosis of acute myocardial ischemia, diagnostics of changes in fluids and BM.

Today the development of such methods is a priority, the resolution of which will improve forensic medical practice in Ukraine.

The purpose of our study was to find and develop new laser polarimetric criteria for the rapid diagnosis of intravital and postmortem changes of BT and BM to address issues of forensic science and practice.

Investigation of biological tissues (samples of the skin, skeletal and cardiac muscles, brain, lungs, liver, kidneys, spleen and small intestine) and hematomas of the organs (brain, liver, kidneys, spleen) by laser polarimetric methods with the subsequent statistical processing of the results were conducted during the research.

As a result of our research, we found that the temporal dynamics of change in the morphological structure of BT postmortem are accompanied by dynamic changes in the structure of polarization images, which is the basis for establishing the TOD. Integrated use of polarization, matrix, correlation and statistical methods of analysis of images allows BT sections depending on the type to establish TOD from 1 to 140 hours, with a deviation of 1-1.5 hours.

It has been also revealed that the efficiency in determining hour intervals of the TOD for mechanical asphyxia for statistical moments 1-4th orders of distribution of depolarization degree from 1 hours to 74 hours, in case of death from hemorrhage for statistical moments of 1-4th orders of distribution of depolarization degree from 1 hour to 92 hours, with a deviation of 1 hour.

Laser polarimetry of hematomas of internal organs is effective for forensic medical determination of the time of their origin. Hematomas of different localization have coordinately inhomogeneous and individual structure on account of their multilayer arrangement structure. Utilization of indices of coordinate distributions of polarization conditions, degree of depolarization and phase displacements in laser images of hematomas in the internal organs is effective for the diagnosis of the time of their appearance.

It has been determined and theoretically substantiated interdependencies between the formation of abrasions in life or after death and statistical (average and dispersion) and spatial frequency (dispersion of extremes Log-log dependencies of spectra capacity) parameters, that characterize coordinate distributions of intensity, azimuths, ellipticity, phase displacements between orthogonal components of laser wave in the images of a person's shin. Statistical criteria of differentiation of intravital or postmortem origin of abrasions of the body shin of a person's body (statistically significant difference for change of the average from 1 to 130 hours, but for dispersion change from 1 to 100 hours) have been revealed.

Investigations of statistical structure of quantitative distributions of the extreme values of Muller matrix phase element of myocardial tissue permit not only to diagnose acute coronary

insufficiency, but to differentiate with other pathological conditions, when ordinary methods of histological research are not effective.

Conclusions. Therefore, laser polarimetric methods are powerful tools for rapid analysis of important conditions in forensic practice. The efficiency of laser polarimetric techniques in the analysis and BT and BM for determining TOD at its various causes, hematoma formation time, intravital formation of injuries and diagnosis of acute myocardial ischemia has been shown.

In our opinion, it is expedient to continue laser polarimetric study of a person's biological tissues or body media in case of a change of the environment or influence of an internal factor, to detect not only new specific indices and criteria, but to determine the most informative "target organs" for the solution of the questions of medico-biological nature and decision of the questions (issues) of forensic medical practice.

THE INFLUENCE OF PYELONEPHRITIS COMPLICATIONS ON COURSE OF PREGNANCY AND LABOR

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Pyelonephritis - nonspecific, infectious-inflammatory process with primary and primary lesion interstitial tissue walls and renal tubules, with subsequent involvement of glomerular and vascular system. Different pathological conditions, which provoked acute stage of chronic pyelonephritis among pregnant women has been analyzed. Among: anomalies of kidney development, glomerulonephritis, hypertonic disease, preeclampsia and oth. According retrospective investigation of case history of women of postpartum period which have complicated pyelonephritis of Chernivtsi region has been received such characteristics: general amount of cases of nephrological complicated diseases during 2013-2015 consists 87; ratio of these diseases consists: pyelonephritis - 78,16%, glomerulonephritis - 9,1% and oth. - 12,74%. Most part of all background conditions, which contributes development of acute stage of chronic pyelonephritis compound anomalies of kidney development (51%), among them the most - single left kidney (34%). Different groups of exciters of chronic pyelonephritis during pregnancy has been analyzed: *Ar. Piogenes*, *Streptococcus spp.*, *E. coli*, *Candida albicans*, *St. aureus*, *Enterobacter aerogenus*, *S. Haemolyticus*, *S. epidermidis*. Negative results of bacteriological examination of urine after finishing course of antibioticotherapy has been founded efficacy of antibioticotherapy in pregnant women with complicated pyelonephritis. The disappearance or significant reduction in the severity of the clinical manifestations of the disease: negative Pasternatsky symptom, disappearance of pain in the lumbar region, the normalization of body temperature and reduce the intensity of other general clinical symptoms.

SCREENING OF ANXIETY AND DEPRESSIVE DISORDERS AT PATIENTS WITH DIZZINESS.

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Introduction. Dizziness is common in neurological and somatic practice and may be a demonstration of various diseases. One of the causes are anxious and depressive disorders, which the frequency of occurrence in the general population, reaching 30% and determine high representation among patients of neurological profile. Polysymptomatic clinical demonstration of emotional disorders and, therefore, imperfection of their diagnostics determine the relevance of the problem of anxiety and depressive disorders in general clinical practice.

Objective: To identify emotional disorders at patients with dizziness.

Study design: 129 patients, hospitalized in the city neurological hospital, were examined. One of the main symptoms at the patients was complain on dizziness. The study used

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