KL-1304-003
The techniques to detect apoptosis of spermatozoids
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Abstract. The article presents the classification and evaluation of techniques applied in documentation of apoptosis of spermatozoids. The main point of techniques detecting the changes in DNA of apoptosis spermatozoids (SCSA technique, TUNEL test and Comet assay) is revealed. The annexin technique, the technique of detection of changes of cells transmembrane potential, the technique of detection of activity of caspase and technique of detection the degree of expression of proteins-regulators of apoptosis are discussed too. The advantages and shortcomings of these techniques are considered.

Key words: apoptosis, spermatozoid, fertility

KL-1304-009
Annexin-5 as a biochemical marker of early vascular disorders under chronic disease of kidneys
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Abstract. The study evaluated the significance of annexin-5 as a biochemical marker of atherosclerosis in patients with chronic disease of kidneys. The sample consisted of 46 patients with chronic disease of kidneys without clinical symptoms of atherosclerosis. The indicators of lipidogram, intima-media complex of carotid artery, reactivity of vessels of microcirculatory channel and concentration of annexin-5 are determined. The decrease of velocity of glomerular filtration is accompanied by the increase of concentration of annexin-5 related to indicators of lipidogram. The increase of concentration level of annexin-5 is accompanied by the most expressed dysfunction of endothelium. The increase of level of annexin-5 in blood of patients with chronic disease of kidneys is especially informative in case of lacking of clinical symptomatic of atherosclerosis and it testifies the presence of vasomotor endothelial dysfunction. The dynamic detection of concentration of annexin-5 can ameliorate the prognosis of possibility of development of cardio-vascular complications under diseases of kidneys.

Key words: chronic disease of kidneys, atherosclerosis, endothelial dysfunction, annexin-5

KL-1304-011
The concentration of growth factors in patients with inherent and acquired shortenings of limbs bones
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Abstract. The article deals with the results of study of level of growth factors in blood serum of patients with inherent and post-traumatic shortenings of limbs' bones. The detection in blood serum the level of epidermal growth factor, insulin-like growth factor I and angiopoetins is proposed to monitor in given patients the reparative bone formation.

Key words: growth factor, post-traumatic bone shortening, inherent shortening of bones

KL-1304-013
The evaluation of eosinophilogram of peripheral blood in children with eosinophilia
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Abstract. The higher rate of eosinophilia, large specter of morphologic and functional signs of eosinophils, dependence of indicators from character of clinical course of disease, presence of complications and schemes of treatment condition the need in study and interpretation of eosinophilograms in children with allergic diseases. The level of laboratory techniques applied in routine clinical practice to evaluate morphological and functional characteristics of eosinophils is underdeveloped. The implementation of such modern high-tech techniques as computer morphometry, highly sensitive and highly specific modifications ELISA, applying to detect associated with eosinophilia cytokines, chemokines and growth factors make it possible to approach to this issue at the new qualitative level.

Key words: eosinophilia, morphometry, cytokines, children

KL-1304-017
The impact of blood smear preparation on effectiveness of functioning of Vision Hema - the digital system of automatic blood analysis
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Abstract. The article deals with study of the impact of standardization of blood smears preparation on effectiveness of functioning of Vision Hema system. The analysis was applied to the results of counting of 200 leukocytes in 30 blood smears prepared from venous blood stabilized with ethylenediaminetetraacetic acid using thoroughly degreased slide plates and applying automatic device to prepare blood smears (comparative group) and in 49 preparations prepared manually from non-stabilized capillary blood (control group). The standardization of the procedure of preparation of glass samples resulted in five time decrease of total amount of artifacts and in disappearance of thrombocytes aggregates and pavement epithelium cells. The absolute amount of destroyed leukocytes decreased in 2.4 times and particles of dirt in 9.5 time. The proposed technique of preparation of smear increased velocity of automatic analysis of leukogram by the Vision Hema system in 2 times and speeded up validation by physician of derived results in 3 times.

Key words: morphologic analysis of blood cells, standardization of preparation of blood sample, digital system of automatic blood analysis

KL-1304-020
The noninvasive technique of analysis of aggregation activity of thrombocytes, leukocytes and erythrocytes
The Chita state medical academy, Chita; ELFI-TECH Ltd., Rehovot, Israel
Abstract. The article considers the noninvasive technique of analysis of aggregation activity of thrombocytes and formation of leukocytic-erythrocytic-thrombocytic aggregates and some particular indicators of hemostasis system. The speckle-analysis of characteristics of coherent light dispersion from surface of erythrocytes moving in artificially isolated vessel section. The study established high correlation ratio between light dispersion index and spontaneous ADP-, adrenalin- and collagen-induced aggregation of thrombocytes, formation of leukocytic-erythrocytic and thrombocytic-erythrocytic aggregations. The established facts permits to consider that analysis noninvasive technique makes it possible to estimate approximately the aggregation activity of blood corpuscles.

Key words: noninvasive technique, analysis, hemostasis, aggregation of thrombocytes, leukocytic-erythrocytic and thrombocytic-erythrocytic aggregations

KL-1304-024
The immune-enzyme analysis based on chimeric molecule and oligopeptide fragmentations to detect autoantibodies to β-adrenergic receptor in patients with dilation cardiomyopathy
The institute of experimental cardiology of the Russian cardiologic R&D production facility of Minzdrav of Russia, Moscow
Abstract. The article deals with specification of technique of immune-enzyme analysis to detect autoantibodies to β-adrenergic receptors (β₁-AP) using compound of oligopeptids representing the fragmentations of extracellular sites β₁-AP and chimeric molecule of extracellular section of receptor. This technique significantly excels the analogues defined in publications by its sensitivity and correlation with diagnosis.

Key words: dilation cardiomyopathy, autoantibody, immune-enzyme analysis

KL-1304-027
The specific sensitization and local immunity of oral cavity in conditions of chronic aerogenic load
L.M. Masyagutova, A.B. Bakirov, I.D. Rybakov
The Ufa research institute of occupational medicine and human ecology, Ufa
Abstract. The article considers the results of analysis of concentration of IgA, IgM, IgG, IgE, sIgA, sICAM-1 in non-stimulated saliva of female workers of poultry sector who underwent aerogenic impact of complex of occupational factors. The changes in indicators are analyzed depending on intensity of sensitization. The study demonstrated that the greatest changes in concentration of sICAM-1 are detected primarily in case of fungous infection.

Key words: indicator, local immunity, concentration of sICAM-1, specific sensitization

KL-1304-030
The clinical economic rationale of practicability of immunologic examination of patients with chronic infectious inflammatory diseases
Abstract. The article presents the results of clinical economic analysis providing the evaluation of implementation of immunologic examination of patients with chronic infectious inflammatory diseases. To calculate the clinical economic indicators the factor costs and indirect costs were determined in case of
immunologic examination and without examination according the data of prospective (80 patients) and retrospective study (500 outpatient cards). To evaluate the significance of approach based on immunologic examination methods the percentage of patients with relapse-free period was calculated. The clinical economic evaluation of methods of diagnostic and treatment made it possible to determine economic advantages of application of immunologic methods of examination independently of localization of chronic torpid process and to assess relationship between costs of immunologic methods of examination and effectiveness of applied treatment.

Key words: clinical economic analysis, immune status, chronic infectious inflammatory disease

KL-1304-033
The formation and spread of MRSA strains in patients with pyoinflammatory diseases
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Abstract. The article considers the results of study of formation and spread of MRSA in patients with suppurative focuses of stafillococcus ethiology after application of antibacterial therapy. The antibacterial therapy applied to these patients used one of the following pharmaceuticals - cefazolin, lincomycin, gentamicin, oxampicin, ciprofloxacin, ofloxacin. All the strains of S.aureus ssp.aureus isolated from patients were tested on MRSA. Their phagovars were detected using international kit of phages for grouping of S.aureus ssp.aureus. The comparison of data received after analysis of resistance to oxacillin of strains and their phages isolated at the onset of disease and after applied treatment was carried out. The study established that against the background of applied antibacterial therapy in 10.7% of patients, MRSA formed and in 15.4% of patients, the change of initial strains of S.aureus ssp.aureus by MRSA strains of other phages groups was established. The presented results testified the need of obligatory testing of strains isolated from patients with staphylococcus infection on antibiotics resistance. The application of antibacterial therapy and its correction taking in account the laboratory data on antibiotics resistance and strict following the sanitary hygienic standards.

Key words: MRSA, pyoinflammatory disease

KL-1304-036
The sensitivity of plague agent from Siberian natural focuses of disease to antibacterial preparations in vitro
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Abstract. The comparative analysis was applied concerning antimicrobic action of different groups of antibacterial preparations on the plague agent strains isolated from Siberian natural focuses of disease. The analysis was applied to results obtained using such different methods as disco-diffusive technique, serial dilution and HiCOMB MIC test. It is established that freshly isolated cultures of Yersinia pestis have high sensitivity to antibacterial preparations of different groups. The results obtained using three technical approaches intercorrelate in significant degree. The HiCOMB MIC test was applied for the first time for analysis Y.pestis strains from natural focuses of plague of Siberia.

Key words: Yersinia pestis, plague, antibacterial preparation, antibiotics sensitivity, growth medium

KL-1304-040
The microbiocenosis of upper parts of digestive tract of children with gastroesophageal reflux disease and chronic gastroduodenitis
Yu.S. Apentchenko, V.M. Tchervinetz, I.I. Ivanova, N.B. Basalayeva, Ye.A. Beliyeva
The Tver state medical academy, Tver

Abstract. The article considers the microbe specter of mucous coat of esophagus and stomach in children with gastro esophageal reflux disease and chronic gastroduodenitis. In patients with diseases of upper parts of digestive tract, the opportunistic pathogenic bacteria are isolated more often and their strains have aggression factors and cytotoxicity. In children with reflux disease the microbe landscape of esophagus is larger both in numerical and specific respect as compared to healthy adolescents and children with isolated gastroduodenitis.

Key words: micro flora, digestive tract, children, gastro esophageal reflux disease, chronic gastroduodenitis

KL-1304-043
The mode of identification of microscopic fungi of genus of Coccidoides SPP. In vitro
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Abstract. The article deals with analysis of morphologic characteristics of microscopic fungi of genus of Coccidoides spp. under cultivation on culture of mouse splenocytes culture. During two days, the strains of
C. imitis and C. posadasii converse from filamentous to spherulic form. This process makes it possible to apply this test to identify agents of coccidioidomycosis.

**Key words:** Coccidioides imitis, agent of coccidioidomycosis, filamentous form, spherula

**KL-1304-046**

*The challenges of standardization in clinical diagnostic laboratories of medical organizations*

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**Abstract.** The generalized data concerning the conditions of application of regulations of national standards in clinical diagnostic laboratories of medical organizations is presented. The primary information was provided by 14 regions of 6 federal administrative okrugs of Russia. The causes of challenges of application of requirements of standards are presented. They are mostly related with insufficient financial support, lacking of manpower, difficulties with reagents supply, inadequate technical maintenance of devices and absence of support of administration of medical organizations. The recommendations are formulated concerning the necessity of publishing the document of Minzdrav of Russia to determine the need in application of standards in laboratory practice.

**Key words:** national standard, insufficient financial support, deficiency of professional manpower, mismatch of reagents and applied methods and devices, inadequate technical maintenance

**KL-1304-049**

*The system of quality management in medical laboratory: the problematic issues of implementation of GOST RKS 9001-2008, GOST R ISO 15189-2009 and GOST R ISO 53079-2008*

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**Abstract.** The article presents the approaches to development and implementation of system of quality management in laboratory as an integral part of the given system in whole medical institution. The costs of works execution concerning quality support are to be weighted with economic profitability and timeliness of medical care provision to ill people considering pre-analytic stage (out-laboratory and in-laboratory) laboratory analysis. Factually it is a matter of development of system of balanced indicators concerning quality management of institution and laboratory functioning. The problematic issues are presented concerning maintenance of particular requirements of GOST R ISO 15189 about quality of production. The emphasis is made on the necessity of training of administrations of laboratories in the field of quality management and economics of laboratory business.

**Key words:** GOST R ISO, standardization, quality, laboratory medicine management, issue, economic profitability, pre-analytic stage of laboratory analysis, training of professionals

**KL-1304-053**

*The assurance of analytical validity of results of cytological analysis: the requirements to reagents*

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**Abstract.** The cytological analysis is an important diagnostic method in many clinical disciplines. In particular cases, the cytological and histologic analysis provides ultimate interpretation of observed form of human pathology, including the most intricate for clinical diagnostic cases of oncologic diseases. The verity of cytological and histologic conclusion about the results of analysis of tissue assay is based on the structural characteristics of tissues, cells and their components. All this, in its turn, significantly depends on stain applied. In the laboratory medicine, the standardization provides settings of requirements to applied reagents with purpose to increase the validity of laboratory information. The project of national standard of the Russian Federation is presented founded on ISO 19001 regulating information provided by manufacturer with diagnostic reagents in vitro for staining in biology i.e. in cytological and histochemical analysis.

**Key words:** cytological analysis, validity, cytological conclusion, applied stains, requirements to information about reagents provided by manufacturers, ISO 19001