

**The Ministry of Russian Federation for Civil  
Defence, Emergencies and Elimination  
of Consequences of Natural Disasters**

**The Nikiforov Russian Center of  
Emergency and Radiation Medicine**

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**Annotated Index of Articles of the Reviewed Research  
Journal «Medico-Biological and Socio-Psychological  
Problems of Safety in Emergency Situations»  
(for the period of 2007–2010)**

**edited by S.S. Aleksanin**

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The index presents annotations and keywords of articles published in the journal during the period of 2007–2010 (258 articles). The annotations are ordered in the index by the principal of topic. Bibliographic record is given according to the national standard GOST 7.0.5–2008. Regarding the fact that all the articles are published in the same journal, the identification documents data is specified only in the first record of the section (subsection), it is omitted furthermore in the analytical bibliographical description.

The index also contains general information of the journal and guidelines for articles writers. The electronic variant of the index can be found on the web site of the journal establisher – The Federal State Institute of Public Health «The Nikiforov Russian Center of Emergency and Radiation Medicine» EMERCOM of Russia (periodical issues) <http://www.arcerm.spb.ru>

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## GENERAL INFORMATION ABOUT THE JOURNAL

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By decision of the panel board of the State Commission for Academic Degrees and Titles, The Ministry of Russian Federation of Education and Science, the journal is included into “The list of leading reviewed research journals and issues where main research results and PhD or Doctor dissertations should be published” (19<sup>th</sup> February, 2010. № 616).

## 1. GENERAL THEORETICAL ISSUES

1. *Evdokimov V.I.* Life Quality of Russian Population and Some Aspects of its Objective Assessment. 2008. N 1. P. 23–32. Pic. 10, Tabl. 4, Bibliogr. 26.

Modern concepts of life quality are presented. Scientifically grounded human needs comprise a system-forming factor in many of them. Life quality is a ratio purpose/result of human activities, the main parameter of human potential of a country and a leading guideline of technological innovation. Conceptual models assess life quality in two ways: measurement of objective living conditions and measurement of subjective life ratings. Main directions of life quality assessment in population of the whole country and separate regions of Russia are analyzed. Key words: life quality, social needs, economic level of life, index of development of human potential, social and economic characteristics.

2. *Evdokimov V.I., Fedotov A.N.* Life Quality and Methodological Aspects of its Subjective Assessment. 2008. N 4. P. 63–71. Pic. 4, Tabl. 5, Bibliogr. 22.

The main criterion of life quality is a self-assessment of satisfaction with realization of particular needs. Subjective life quality assessment considers needs and interests of people as individual and reflected in their perceptions, personal opinions; these subjective assessments may not always agree with objective measurements and calculations. Tests of life quality assessment are briefly reviewed (SF-36, WHOQL-100). Data obtained via these tests and data of constructed inquiry for life quality assessment are compared in details. Key words: life quality, subjective assessment, needs, methods of life quality assessment.

3. *Novitsky A.A., Aleksanin S.S., Dudarenko S.V.* Mechanism of Internal Organs Pathology Development in Conditions of Ecological and Professional Overstrain of Human Regulatory Systems. 2010. N 1. P. 5–9. Pic. 2, Bibliogr. 7.

Long-term study of mechanisms of development under the influence of extreme ecological and professional factors on human body has allowed us to formulate the concept of a syndrome of chronic adaptive overstrain. Personal estimation of extreme factors, psychological stress and arising psychosomatic manifestations along with overstrain of adaptation mechanisms underlie the development of somatic pathology. In response to the long-term psychological overstrain exposure, excessive personal and reactive anxiety there arise a severe dissociation of tropic functions of the hypothalamus–hypophysis system, disturbance of physiological connections in hypothalamus–hypophysis–thyroid system, hypothalamus–hypophysis–adrenals and hypothalamus–hypophysis–gonad systems; catabolism, glycolysis, and lipid peroxidation are activated in the organism. Predominantly and first of all they are the immune cells, epithelium of gastrointestinal tract, and blood vessel endothelium that suffer. A syndrome of chronic adaptive overstrain is one of the pathogenetic mechanisms of somatic pathology development under the influence of extreme ecological and

professional factors on human body. Key words: adaptation, syndrome of adaptive overstrain, somatic pathology.

4. *Turzin P.S., Ushakov I.B.* Reality and Prospects of Ecological and Extreme Medicine. 2007. N 1. P. 13–18. Bibliogr. 24.

Information on methodology of researches and scientific practical elaborations in various branches of ecological and extreme medicine is presented. Existing interdisciplinary approaches and innovative technologies aimed at health preserving and at increasing working capacity of people with extreme professions are described. Key words: ecological medicine, extreme conditions, harmful factors, assessment of risk level.

5. *Ushakov I.B., Bogomolov A.V., Kukushkin Yu.A.* Functional States of Operators with Hazardous Professions and Methodological Aspects of its Dynamic Control. 2010. N 4, Pt. 2. P. 6–12. Bibliogr. 23.

The methodological aspects of dynamic control of the functional states of operators with hazardous professions for all stages of their professional activities have been formulated and disclosed as a result of systematic analysis of the features of operator's functional states formation and development, characteristics of functional states and basic mathematical approaches to their diagnosis. Key words: functional state, functional reliability, the operators with hazardous professions, ecology of people with hazardous professions.

## 2. MEDICAL ISSUES

### 2.1. Disaster medicine management

6. *Ershov A.L.* Utilization of Helicopters for Emergency Out-Patient Care (Review). 2008. N 2. P. 3–19. Pic. 3, Tabl. 1, Bibliogr. 71.

A review of foreign literature presents information on origin and efficiency of air medical service practice along with some national features of medical helicopters utilization in the most developed countries. Helicopter emergency medical services (HEMS) have always been emphasized as a tool for trauma transportation. A comparison of diseases outcomes of patients managed by HEMS and road ambulances is given. Important aspects of HEMS including staffing and safety are discussed. Rapid growth of this type of health care delivery coupled with an increasing number of traffic accidents has prompted professional and economical scrutiny of these services. Key words: emergency medicine, medical air transportation, helicopter emergency medical services (HEMS).

7. *Grebenyuk A.N., Nosov A.V., Musiychuk Yu.I., Rybalko V.M.* Medical and Protective Measures at Chemical Accidents. 2009. N 2. P. 14–20. Tabl. 5, Bibliogr. 20.

Medical and protective measures undertaken at chemical failures and accidents are considered. Classification of chemical accidents is given; objects on which they occur are described; chemicals most frequently involved in accidents are submitted. The basic measures undertaken by medical service during the preparatory period, key positions of the plan for chemical accident response, a procedure of necessary quantity of medical teams are formulated. Objectives of medical service in process of chemical failure and during the early period of its liquidation are described. The basic directions of anti-gas protection of rescuers and the population are submitted; the sanitary-and-hygienic measures directed on prevention of chemical injuries are listed. Features of use of individual protective equipment are considered; measures of sanitary processing are described. Key words: chemical accident, response plan, medical measures, anti-gas protection, individual protective equipment.

8. *Kutsenko V.P., Nosov A.V., Budarin S.N.* Modernization of Universal Information-Operating System for Making Administrative Decisions in Situations of Accidents with Emission of Poison Substances in Sea Areas of the Chemical Weapon Flooding. 2010. N 4, Pt. 2. P. 13–16. Pic. 2, Bibliogr. 14.

Universal purpose information-operating system (IUS MN) which is used today in a number of modern projects of ships for navy doesn't fully correspond the requirements shown to the system for solving problems of providing ship functioning durability in case of radiation or chemical situation worsening. Particularly, IUS MN does not provide control of chemical situation during decompression of weapons containing poison substances and moreover during their detonation. This circumstance demands the further IUS MN modernization and perfection including both its physical components and software. Practical in-

structions on assessment of consequences of hazardous substances accident emission (RD-03-26-2007) based on the principals of assessment of consequences of hazardous substances accident emission («Toxi-3») and earlier developed principals «Toxi-1» and «Toxi-2» are not adjusted for ships. Variants of calculations to assess the consequences of weapon poison substances accident emissions during the technical works in chemically dangerous areas of Baltic Sea have been considered. Key words: emergency situation, poison substances, system IUS MN, medical control panel, ships, estimation technique, emission, dense gas.

9. *Mullov A.B.* Coal Mine Explosions in Kuzbass Region and Optimization of its Medico-Sanitary Consequences Liquidation. 2009. N 3. P. 10–14. Tabl. 3, Bibliogr. 10.

Classification of coal mine explosions has been developed based on the period of time when mine's rescuers have access to victims employing special equipment and rescue medical care. The structure of wounded and died on-the-spot victims of explosions has been analyzed determining the most common causes of combined injuries due to methane explosion and coal dust, i.e. poisoning by carbon monoxide (CO) and the impairment of respiratory function. Determining severity of shockogenicity of isolation time period according to the original method enables to make more accurate prognostic outcome of combined explosive injuries (RF Patent N 2159081). The pre-hospital and early hospital management included plasma substitute perflorane with gas-transport function, which resulted in lethality decrease among severely injured miners with unfavorable and questionable outcome due to combined explosive injuries. Key words: coal mine explosion, equipment and rescue medical care, combined injuries, perflorane.

10. *Murashev N.V., Antonov A.A., Zavalina T.A.* Protection of the Medical Subdivisions deployed in Field Conditions from Conventional Weapons in Emergency Situations. 2008. N 4. P. 7–13. Pic. 6, Tabl. 3, Bibliogr. 6.

The article presents the procedure of determining the protection level of medical subdivision under the single influence of the intensive fire of enemy. It presents the results of the determination and assessment of the protection rendered to these subdivisions with different level of the ballistic protection of the utilized technical equipment for development. Key words: emergencies, ballistic protection, technical equipment for the development, medical construction.

11. *Nosov A.V.* Features of Medical Care in the Poison Gases Dumping Areas. 2010. N 2. P. 10–14. Pic. 1, Tabl. 2, Bibliogr. 17.

The factors of chemical danger are considered during engineering works in areas of chemical warfare dumping. The probable scripts of deterioration of chemical conditions are determined at realization of works in the specified areas. The basic probable forms of personnel defeats are given. The measures on perfection of personnel medical protection are offered. Key words: chemical danger, sea engineering works, medical measures, medical protection, poison substances.



12. *Saprykina A.G., Kudinova E.V.* Technological and Administrative Decisions on Optimization the Donor Services accepted in Blood Service of Samara Region. 2008. N 4. P. 23–26. Tabl. 1, Bibliogr. 3.

Over the last years the main tendency in activity of national Blood Service was the acceptance of all possible measures to increase safety of blood transfusion for the patient and to provide the viral safety of blood and its components, which is provided by severization of requirements to the production quality. A regional program «Provision of virus-proof donor blood, its components and preparations, done in the institutions of Blood Service of Samara region for the period of 2001–2002” has been implemented. Thus, creation of the modern information system, universal information space and dash coding has allowed creating a universal donor base at the blood transfusion station. Activities held in Blood Service of Samara region on reorganization and introduction of new modern technologies have given a possibility to provide medical institutions of the region with viral safety of blood, its components and preparations. Key words: Blood Service, viral safety of blood, information technologies.

13. *Sidorov M.G., Khirmanov V.N.* Participation of Ambulance Teams in Liquidation of Consequences of Emergencies in Saint-Petersburg for the period of 2006–2007. 2010. N 3. P. 23–36. Tabl. 3, Bibliogr. 3.

Authors assess participation of ambulance teams in liquidation of emergency situations (ES). A separate group composes ES with the quantity of victims more than 10 people. In total 498 people have suffered in this type of ES. Imbalance between quantity of people requiring medical aid and forces rendering it can appear in such situations. Ratio index of ambulance teams quantity involved in ES liquidation and victims is defined. If this index is above 0.8, medical provision in ES center is considered adequate. This index was above 0.8 in all ES with quantity of victims less than 10 people. However, if there were more than 10 victims, the index was on average equal to 0.6. The index was too low in ES with quantity of victims more than 25 people – 0.3. Measures on optimization of medical provision at liquidation of ES consequences in conditions of deficiency of medical forces and means are suggested. Key words: emergency situation (ES), ambulance, a pre-hospital stage, expert computer system.

14. *Soldatov E.A., Kulnev S.V., Shvets V.A., Bigunets V.D.* Opportunities of Unmanned Aircraft Usage for the Benefit of Medical Service during Liquidation of Emergency Consequences. 2010. N 2. P. 50–55. Pic. 1, Tabl. 2, Bibliogr. 14.

The review of Russian and foreign books provides brief historical data on appearance and efficiency of unmanned aircraft (UMA), along with some features of their usage in the most developed world countries. Development of new information technologies stimulates a rigorous study of professional and economic aspects of multipurpose UMA uses for the benefit of medical service, particularly in local conflict areas and during liquidation of emergency consequences. Since technologies will sooner or later be inevitably transferred from the military sphere to the civil one, it seems important to investigate which UMA complexes are the most appropriate in the civil sphere. Key words: unmanned

aircraft (UMA), remotely piloted aircraft, unmanned aircsystems, emergency medicine, emergency medical service, emergency situation.

15. *Soldatov E.A., Shvets V.A., Bigunets V.D.* Information Technologies in Rendering Medical Assistance to the Injured and Victims of Emergencies. 2009. N 1. P. 23–28. Pic. 5, Bibliogr. 8.

Novel information technologies are widely used in military medical and rescue teams' activities. Authors have presented analysis of methodological follow-up of mobile telemedicine technologies in rendering medical assistance to the injured and victims on the territories of local conflicts and emergencies. Key words: information technologies in health care, mobile telemedicine systems, mobile objects monitoring, positioning.

See also 192, 248, 251.

## 2.2. Medical issues of safety

16. *Kuznetsov S.M., Skorniyakov V.V.* Comparative Assessment of 13B1 and 114B2 Freons Effects on Human Organism combined with Main Fire Factors (Carbon Monoxide and Air Temperature). 2009. N 1. P. 11–15. Tabl. 2, Bibliogr. 4.

Influence of 13B1 and 114B2 Freons in combination with carbon monoxide and air temperature on human functional state indices and operational activities was compared during the experiment. The study was carried out according to the design of four-factor experiment. The lower and upper values of factors are: Freon 13B1 = 100 g/m<sup>3</sup> and 500 g/m<sup>3</sup>, Freon 114B2 = 50 g/m and 150 g/m<sup>3</sup>, carbon monoxide = 0 g/m<sup>3</sup> and 0.5 g/m<sup>3</sup>, air temperature = 10 and 40 °C, time exposure = 10 and 30 min. The concentration of oxygen was maintained within the limits of 19–21 %. The experimental environment was set up under conditions of hermetic climatic chamber «Kulautomat» with volume of 5 m<sup>3</sup>. Eight practically healthy male volunteers at the age of 23–27 years were exposed to its static effect. It was stated that complex of factors with Freon 114B2 in all experiments resulted in the pronounced disorder of human operational activity: decreasing of heart and breath rates. It is dangerous to use Freon 114B2 for fire-fighting in presence of people without respiratory organs protection. The complex of factors with Freon 13B1 did not result in considerable disorders of human operative activity without protective means. It is acceptable to be used for fire-fire-extinguishing in the inhabited accommodations. Key words: Freon 13B1 (Hallon 1301), Freon 114B2 (Hallon 2402), carbon monoxide, fire-extinguishing means, fire-fighting means, fire factors, combined exposure.

17. *Murashov O.V.* Expert Evaluation of Pre-Hospital Assistance rendered by Local People to the Victims of Emergency Situations with Different Kinds of Injuries. 2010. N 3. P. 27–30. Pic. 3, Bibliogr. 10.

Expert evaluation of pre-hospital assistance rendered by local people of Pskov region to 902 victims with different kinds of injuries in 2005–06 was carried out. The main factors influencing the complications appearance and the

survival after serious injuries in emergency situations were determined. Out of 502 victims survived after injuries and delivered to hospitals, the first aid was given by local people on the spot only in 6 % of cases. Key words: life safety and security, injuries, first aid, emergency aid.

18. *Murashov O.V., Evdokimov V.I.* Optimization of First Aid by means of Effective Medical Education provided to Schoolchildren. 2010. N 4, Pt. 1. P. 49–52. Pic. 3, Tabl. 1, Bibliogr. 9.

The article presents the data of an expert evaluation of pre-hospital aid rendered by Pskov region population to 902 victims with different traumas for the period of 2005–2006. It concerns the main factors which influence the appearing of complications and survival rate in cases of serious damages. The main organizing conditions to increase effectiveness of medical first aid education provided to schoolchildren were defined, and ways to solve the problem were suggested. Key words: traumatism in Russia, basics of personal and social safety, first aid, effectiveness of schoolchildren education.

19. *Shantyr I.I., Drygina L.B., Khizha V.V.* Rationale for Including Nutriceutics based on Apian Royal Jelly to the Comprehensive Therapy of Victims of Technogenic Disasters. 2010. N 1. P. 70–74. Tabl. 1, Bibliogr. 23. The results of apian nutriceutic composition study are presented. Indications to use of these beekeeping products in the comprehensive therapy of victims of technogenic disasters as antioxidant, hypoglycemic and immunostimulating substances are substantiated. Key words: technogenic disasters, nutriceutics, beekeeping products, apian royal jelly.

20. *Shantyr I.I., Listopadov Yu.I.* Health State of the Communal Services Staff as a Criterion of Megapolis Security. 2008. N 3. P. 33–36. Pic. 2, Tabl. 4, Bibliogr. 7.

The issue of occupational health of people working at communal services institutions (water supply and liquid waste management) of megapolis was reviewed. The results of detailed medical examination of 238 people has demonstrated that only 16.4 % of them were healthy while 70.2 % have some chronic diseases, which resulted in some work limitations and undermined the reliability and performance of work of the communal services. Key words: human factor, professional health, medical examination, communal services institution of megapolis.

21. *Sidorov A.A.* Prevention of Morbidity with Temporal Disability as a Factor of Emergency Situation Prevention in Enterprise of Housing and Communal Services of a Megapolis. 2010. N 1. P. 19–24. Pic. 4, Tabl. 3, Bibliogr. 3.

The article presents statistical results and analysis of morbidity with temporal disability of the big housing and communal enterprise workers providing uninterrupted operation of complex modern buildings and industrial installations of water supply and water drainage under risk circumstances of potential consequences of disrupting normal life-support in the megapolis. Key words: morbidity, ability to work, risk of emergency situation.

22. *Sidorov A.A., Zaitsev V.M., Dokhov M.A., Listopadov Yu.I.* Preliminary Medical Examinations as a Source of Information about Health State of the Enterprise Workers providing Ecological Security of a Megapolis. 2010. N 3. P. 35–39. Pic. 4, Tabl. 3, Bibliogr. 7.

We considered the statistical and analytical results of morbidity of the big housing and communal enterprise workers providing uninterrupted operation of complex modern buildings and industrial installations of water supply and water drainage under risk circumstances of potential consequences of disrupting normal life-support in the megapolis. Key words: occupational health, preliminary medical examination, housing and communal enterprise, megapolis.

23. *Sidorov M.G., Khirmanov V.N., Boikov A.A., Elchinskaya L.E., Ershov P.P.* Structure of Emergency Situations and Characteristics of Victims in Saint-Petersburg in 2006–2007. 2008. N 3. P. 10–15. Pic. 1, Tabl. 4, Bibliogr. 7.

We analyzed the terms used in the Russian EMERCOM and Ministry of Health as well as the structure of emergency situations in Saint-Petersburg for the period of 2006–2007. There were 161 emergencies during this period (regional – 1, municipal – 14, local -146). 923 people (101 children) suffered from the accidents, among those 328 people (15 children) died. The interventions necessary to reduce the fatality rate were presented. Key words: emergency situations, structure, liquidation of emergency situations, ambulance.

### **2.3. Toxicology, chemical safety**

24. *Bonitenko E.Yu., Bonitenko Yu.Yu.* Complex Effect of Ethanol and Inhibitor of Alcohol Dehydrogenase on Ethylene Glycol Toxicity. 2009. N 4. P. 42–47. Pic. 1, Tabl. 2, Bibliogr. 12.

The effects of ethanol, isovaleric acid amide (IAA) and their combination on ethylene glycol toxicity, concentration, its metabolite concentration and acid-base parameters were studied on white male rats. It was showed that high doses of ethanol, IAA and their consecutive and combined (with lesser ethanol doses) administration increased ethylene glycol concentration and LD<sub>50</sub> and decreased glycolate level in blood. IAA virtually eliminated the metabolic acidosis and ethanol weakly affected acid-base parameters. After consecutive administration of ethanol and IAA only a tendency for ethylene glycol LD<sub>50</sub> increase was observed versus control animals only treated with ethanol. In case of combined administration this tendency was observed versus control animals only treated with IAA. High doses of IAA were the most effective. The prospects of antidote treatment with IAA in ethylene glycol intoxication are discussed. Key words: acute intoxication, acute ethylene glycol intoxication, antidote treatment, ethanol, isovaleric acid amide (IAA).

25. *Nosov A.V., Kutsenko V.P.* Factors of Chemical Danger during Technical Activities in Sea Areas of Chemical Weapon Flooding. 2010. N 4, Pt. 2. P. 46–50. Pic. 5, Tabl. 1, Bibliogr. 12.

Leading world countries refused to use out-of-date samples of chemical weapons of the first generations which became one of the results of the World War II. Appearance of a new kind of danger to crews of the courts performing sea technical works in such areas became a consequence of destruction of poison substances stocks by flooding them in water areas of the World Ocean. Aimed at optimization of medical maintenance of potentially dangerous works in areas of chemical weapon flooding, the analysis of factors of the chemical danger capable to become the cause of intoxications and other forms of toxic process in personnel of sea technical objects has been carried out. Key words: chemical dangers, sea technical activities, medical protection, poison substances.

26. *Vologzhanin D.A., Grebenyuk A.N., Bala A.M.* Features of Sensitization to Chemical Allergens of Individuals with Occupational Exposure to Highly Toxic Chemicals. 2010. N 4, Pt. 2. P. 17–21. Pic. 3, Tabl. 1, Bibliogr. 13.

Results of application tests with chemicals most frequently being the reason of contact allergic dermatitis in individuals with occupational exposure to highly toxic chemicals are provided. It is shown, that the contact sensitization in the given category of people occurs more often than in patients without occupational exposure to highly toxic substances, but suffering from eczema. It is established, that the contact sensitization is polyvalent, but is not characterized by high intensity in most cases in individuals with occupational exposure to chemicals. Contact sensitization to cobalt, thiomersal, and mixture of thiuram derivatives is the most expressed and common. Key words: allergy, allergic contact dermatitis, sensitization, chemical allergens, highly toxic chemicals.

See also 11, 56, 71, 153.

## **2.4. Medical issues of emergency situations**

### **2.4.1. Medical consequences of emergency situations**

27. *Aleksanin S.S.* Somatic Pathology after Radiation Accidents: Longitudinal Study Results. 2008. № 4. P. 3–6. Bibliogr. 6.

Results of the longitudinal epidemiological, clinical, biochemical, cytogenetical and immunological studies of the long-term somatic pathology patterns in clean-up workers of the radiation accident consequences are presented. Key words: radiation accident, clean-up workers of Chernobyl Nuclear Power Plant Accident, rescuers, somatic pathology, long term.

28. *Aleksanin S.S., Shapovalov S.G., Listopadov Yu.I., Belykh A.N.* Epidemiological Analysis of Burns obtained during Peace Time and dur-

ing the Period of the Counterterrorist Operations in the Chechen Republic. 2010. N 2. P. 5–9. Pic. 7, Tabl. 6, Bibliogr. 9.

The materials we analyzed were medical histories and results of clinical examination and treatment of 4560 patients with burn injuries of varying severity and their consequences. Patients are divided into two groups: 1<sup>st</sup> group – received treatment in clinic of burns at Military Medical Academy in 1990–2005 (4227 persons), 2<sup>nd</sup> group – the military men participated in the counterterrorist operation in the Chechen republic in 1999–2001, who were treated at stages of medical evacuation (333 persons). Calculated lethality dependence on the age and the total burn area allowed us to assess severity of calcined state in the acute phase of burn injury (during the first day since injury), to determine the outcome prediction of trauma and the concept of treatment. Key words: military personnel, emergency, traumas, burns.

29. *Aleksanin S.S., Timoshevsky A.A., Kalinina N.M.* Clinico-Experimental Rationale for Using Interleukin-1 $\beta$  in Prevention and Treatment of Injuries in Radiation Accidents. 2009. N 2. P. 39–46. Pic. 1, Tabl. 2, Bibliogr. 12.

Results of long-term research of interleukin-1 $\beta$  in prevention and treatment of radiation injuries due to the acute, prolonged, fractionated and combined external and internal irradiation are presented. Key words: emergency situations, radiation accidents, radioprotective effect of interleukin-1 $\beta$ .

30. *Bikkinina G.M., Iskhakov E.R.* Influence of Extreme Situations on Risk Factors of Chronic Diseases in Employees of Law-Enforcement Bodies. 2010. N 1. P. 31–33. Tabl. 1, Bibliogr. 10.

Officers of law-enforcement bodies were examined after their official mission in the Chechen Republic. Risk factors of chronic non-infectious diseases were assessed in 80 employees of law-enforcement bodies using special questionnaire based on the WHO CINDI inquiry. Weak dynamics of negative behavioral habits of tobacco smoking and alcohol intake was observed. Number of people paying more attention to practicing healthy life-styles and physical activity tended to increase. Key words: employees of law-enforcement bodies, extreme situations, behavioral risk factors.

31. *Donskov V.V., Alborov A.Kh., Popov M.V.* Patterns of Medical Assistance during Emergency Situations rendered to Individuals with Combined Injuries complicated by Acute Pyelonephritis. 2009. N 4. P. 12–14.

Bibliogr. 6 Results of observations over 273 people injured in emergency situations whose traumatic disease was complicated by urinary tract infection, acute serous or purulent pyelonephritis have been studied. Causes of these complications have been examined, i.e. long-term latching of urethral catheter, kidney trauma, anamnestic urological pathology. Conception of the integrated medical diagnostic approach aimed at prevention and elimination of the infection inflammatory kidney complications has been developed. The possibilities of ultrasonography usage while performing of percutaneous paracentesis surgical interventions on kidneys in purulent destructive pyelonephritis have been considered. Key words: multitrauma, pyelonephritis, puncture, emergency situation.

32. *Kostyuk G.P., Sinenchenko A.G., Degtyarenko V.I.* Characteristics of Reactive Borderline Mental Disorders in Servicemen in Emergency Combat Situations. 2010. N 1. P. 13–16. Tabl. 2, Bibliogr. 10.

Characteristics of neurotic disorders in servicemen participated in combat actions of the united group of military units in the Chechen Republic have been assessed. The predominance of neurotic reactions (63.3 %) in the structure of neurotic disorders has been demonstrated. They are characterized by acute onset, short duration and partiality of manifestations. Decisive role of premorbid personal qualities in development of the lingering neurotic disorders has been determined. They have just influenced the clinical display of the disease and its outcome. Key words: neurotic reactions, combat mental disorders, emergency situations, personal qualities, conscripts, the Chechen Republic.

33. *Makarov A.B., Dergunov A.V.* Description of Pathogenesis of Post-traumatic Peritonitis Endogenous Intoxication in Patients injured in Emergencies and Natural Disasters. 2010. N 2. P. 39–42. Tabl. 3, Bibliogr. 9.

We examined the parameters of endogenous intoxication in 86 patients with posttraumatic peritonitis. These parameters are indicative of increased severity of endogenous intoxication with inflammatory process generalization on the peritoneum. Besides, as a result of electrogastroenterography in the same patients during the preoperative period, we revealed the direct relationship: the more serious the endogenous intoxication is, the more evident the paresis of gastrointestinal tract is. These rates should be viewed as important diagnostic criteria to identify the degree of endogenous intoxication. Combined use of proserine and low-amplitude electro stimulation during postoperative period favors the optimal treatment of patients with posttraumatic peritonitis that can be expressed in more active restoration of gastrointestinal peristalsis as compared to other methods of treatment. Key words: posttraumatic peritonitis, endogenous intoxication, gastroenterocolonography.

34. *Nazarov V.V., Kalinsky P.P.* Patterns of Neurologic and Psychopathological Disorders in Young People after Emergency Situation. 2009. N 3. P. 19–21. Tabl. 1, Bibliogr. 8.

The expediency of use of antioxidants and vasoactive preparations for complex treatment of psychopathological and neurological disorders in patients, survived acute hypoxia during emergency situation is shown. In patients survived hypoxic coma during emergency situation there were organic disorders of mnemonic functions diagnosed, and asthenic and anxiety/depression manifestations, disturbances of peripheral nerves of the upper and lower extremities were observed. Key words: cognitive disorders, neurological disorders, acute hypoxia, hypoxic coma, emergency situation.

35. *Skornyakov V.V., Ivanov V.V., Grigoriev S.G.* Structural Characteristics of Head Injuries received during the Counterterrorist Operation in the Chechen Republic. 2010. N 1. P. 10–13. Pic. 5, Tabl. 1, Bibliogr. 4.

On the basis of real data obtained in the archive of the Military Medicine Museum, Saint Petersburg, Russia, there has been carried out analysis of the structure of the head injuries in the servicemen during conduction of the coun-

terrorist operation in the Chechen Republic. Key words: emergency situation, local conflict, counterterrorist operation, head injuries, structure of the head injuries.

See also 100, 106, 244.

#### **2.4.2. Long-term effects of Chernobyl Nuclear Power Plant Accident**

36. *Kravtsov V.Yu., Rozhko A.V., Nikonovich S.N., Nadyrov E.A., Ibragimova N.V.* Cariopathological Findings in Cell Populations of Tyrocytes in Residents of Gomel Region, exposed to Radiation in Childhood and Adolescence in Chernobyl Nuclear Power Plant Accident. 2009. N 2. P. 64–68. Pic. 5, Tabl. 1, Bibliogr. 10.

Cell populations of tyrocytes of nodular goiters obtained via thyroid gland biopsy in those injured due to «iodine stroke» after Chernobyl Nuclear Power Plant accident are characterized by nuclei abnormalities (micronuclei, internuclear chromatin bridges and «caudate» nuclei – broken bridges). Increased incidence of tyrocytes with nuclei abnormalities in the Gomel patient group is observed throughout the whole spectrum of studied nuclei abnormalities. Tyrocytes with giant internuclear bridges revealed in irradiated patients for the first time, seem to be candidates as radiospecific cytology markers. Key words: thyroid gland, tyrocytes, nuclei abnormalities, Chernobyl Nuclear Power Plant accident.

37. *Nadyrov E.A., Masyakin V.B., Nikonovich S.N.* Breast Cancer Epidemiology in Women Residing on the Territories contaminated after Chernobyl Nuclear Power Plant Accident. 2010. N 1. P. 17–19. Pic. 1, Tabl. 1, Bibliogr. 8.

We performed a comparative analysis of breast cancer incidence among women residing in the territories contaminated as a result of Chernobyl Nuclear Power Plant accident. Higher level of incidence has been registered among women aged 30 to 49. We show the differences by tumor size and metastasis peculiarities in patients who died because of breast cancer. Key words: breast cancer, incidence, Chernobyl Nuclear Power Plant accident.

38. *Rozhko A.V.* Relation of Thyroid Pathology Increase to Received Exposure Dose in Children and Adolescents affected in Chernobyl Nuclear Power Plant Accident. 2010. N 1. P. 49–53. Pic. 2, Tabl. 3, Bibliogr. 8.

Analysis of radiation factor role on formation of thyroid incidence rate and thyroid pathology structure among children and adolescents exposed to radiation of Chernobyl Nuclear Power Plant accident, showed that there was observed the increase of thyroid pathology on all the nosologic forms (except for diffuse goiter) with increase of exposure dose. Key words: diffuse goiter, single-nodular goiter, multi-nodular goiter, adenoma, cancer, autoimmune thyroiditis, exposure dose, incidence rate.

39. *Rozhko A.V., Masyakin V.B., Vlasova N.G.* Characteristics of Thyroid Pathology Development in People exposed to Radiation in Childhood and Adolescence. 2008. N 4. P. 19–22. Pic. 1, Tabl. 3, Bibliogr. 9.



The morbidity rate and dynamics of diffuse and nodular goiter have been estimated in the group of 2916 people, exposed to radiation in childhood and adolescence, with the determined values of the absorbed thyroid exposure doses. It has been shown that the frequency of nodular goiter developed in terms of diffuse goiter is comparable to similar value of primarily determined nodular goiter. There are no statistically significant differences in the average periods of realization of nodular goiter developed on the basis of diffuse goiter and nodular goiter determined primarily. The average exposure dose of the subjects with revealed thyroid pathology is significantly higher than in the group of subjects with normal thyroid status. The greatest difference in thyroid exposure rates is registered between men and the women with nodular goiter developed primarily. Key words: thyroid gland, thyroid pathology, nodule goiter, absorbed dose, Chernobyl Nuclear Power Plant accident.

40. *Rozhko A.V., Masyakin V.B., Nadyrov E.A., Aleksanin S.S.* Assessment of Risk of Thyroid Pathology Development in People exposed to Radiation in Early Childhood. 2009. N 3. P. 6–9. Pic. 1, Tabl. 2, Bibliogr. 9.

In the cohort study there were performed assessments of relative risk of different thyroid pathology development in population of Gomel region (Republic of Belarus) exposed to radiation in early childhood. Statistically significant estimates of relative risk were gained for all the nodular goiter forms in children with absorbed dose > 1Gy. The presented material suggests that the substantial percentage (up to 71 %) of nodular goiter cases is associated with thyroid irradiation. Key words: thyroid pathology, relative risk, attributive function, increased radiation risk group.

41. *Rozhko A.V., Nadyrov E.A., Masyakin V.B.* Structure and Levels of Thyroid Pathology in a Cohort of People exposed to Radiation in Childhood and Adolescence. 2009. N 1. P. 29–32. Tabl. 3, Bibliogr. 12.

The clinical data on 2916 people exposed to radiation in the childhood and adolescence has been analyzed in a cohort study. Structure and levels of thyroid pathology depending on sex and age at the moment of the accident have been estimated. It has been shown that a thyroid cancer incidence is comparable with a multinodular goiter incidence. In younger age groups statistically significant difference between boys and girls was observed only for diffuse goiter and autoimmune thyroiditis. The comparable level of morbidity values was noted for nodular goiter forms, adenoma and thyroid cancer. Key words: thyroid gland, nodule goiter, thyroid cancer, morbidity.

#### **2.4.3. Clean-up workers of Chernobyl Nuclear Power Plant accident**

42. *Aleksanin S.S., Inzhevatin D.I., Batskov S.S.* Assessment of Risk-Factors for Disturbance of Intrahepatic Circulation in Chernobyl Clean-up Workers with Non-Alcoholic Steatohepatitis. 2009. N 2. P. 5–13. Pic. 1, Tabl. 7, Bibliogr. 23.

We examined 160 patients with non-alcoholic steatohepatitis, including 93 clean-up workers of Chernobyl Nuclear Power Plant accident. Parameters of

intrahepatic circulation were studied; lipid and carbohydrate metabolism was assessed, as well as their disorder effects on occurrence and progression of non-alcoholic steatohepatitis. It was established that aggravation of non-alcoholic steatohepatitis and inflammatory findings in the liver are associated with intrahepatic circulation disturbance and insulinoreistance increase, with specific change in C-peptide level with calculated HOMA-IR. Key words: non-alcoholic steatohepatitis, intrahepatic circulation, excessive body weight, insulinoreistance.

43. *Aleksanin S.S., Plemyannikova E.V., Makarova N.V.* Clinico-Epidemiological Description of Metabolic Syndrome in Clean-up Workers of Chernobyl Nuclear Power Plant Accident residing in the North-Western Region of Russia. 2010. N 3. P. 15–18. Pic. 1, Tabl. 2, Bibliogr. 10.

Clinico-epidemiologic analysis of metabolic syndrome signs was held for clean-up workers of the Chernobyl Nuclear Power Plant accident with long-term effect and for the comparison group. Spectrum, frequency and structure of metabolic syndrome signs were analyzed on the basis of clinical examination. Differences of lipid metabolism abnormalities for ChNPP accident clean-up workers and for the comparison group were identified. Key words: Chernobyl clean-up workers, long-term effects, metabolic syndrome, essential hypertension, adiposis, carbohydrate metabolism.

44. *Aleksanin S.S., Plemyannikova E.V., Makarova N.V.* Metabolic Syndrome Epidemiology for Clean-up Workers of Chernobyl Nuclear Power Plant Accident residing in the North-Western Region of Russia. 2010. N 4, Pt. 1. P. 5–9. Pic. 5, Tabl. 1, Bibliogr. 11.

Structure, levels and dynamics of metabolic syndrome major signs spread in clean-up workers of Chernobyl Nuclear Power Plant accident were studied on the basis of information in database of North-Western regional center of national radiation epidemiologic register (period 1986–2006). The register database self-descriptiveness is low for epidemiologic research of clean-up workers' metabolic syndrome. There was a conclusion made on low vigilance of doctors to metabolic syndrome signs detection. It was suggested to continue metabolic syndrome epidemiologic research on the results of advanced survey of clean-up workers at specialized clinics. Key words: clean-up workers of Chernobyl Nuclear Power Plant accident, long-term effects, metabolic syndrome, essential hypertension, adiposis, diabetes mellitus.

45. *Baranova O.V.* Substantial and Structural Components of Mental State in Individuals survived the Chernobyl Nuclear Power Plant Accident. 2010. N 3. P. 81–84. Pic. 3, Tabl. 1, Bibliogr. 8.

Characteristics of view of the Chernobyl Nuclear Power Plant accident were studied in 30 clean-up workers. View of the accident was considered as a key element of a person's adaptive mind. The subjective assessment of mental health was defined; interrelations between personal properties and subjective assessment of mental health were established. It is possible to assume that in process of removal from the moment of the accident the maintenance of view of the failure reflects concentration of the person in experience of mental health

and the personal potential. Key words: Chernobyl Nuclear Power Plant accident, extra risk division, rescuers, clean-up workers, adaptive mind.

46. *Batskov S.S., Andreev A.A., Davydova N.I., Bychkova N.V.* Clinico-Immunological Characteristics of Autoimmune Pancreatitis in Clean-up Workers of Chernobyl Nuclear Power Plant Accident. 2010. N 3. P. 10–15. Pic. 1, Tabl. 1, Bibliogr. 15.

Clinico-immunological characteristics of new clinical entity – autoimmune pancreatitis (AIP) is presented. Possibilities of modern clinico-laboratory and instrumental methods in AIP diagnostics of 65 male patients – clean-up workers of Chernobyl Nuclear Power Plant accident are considered. 104 completely healthy men – rescuers of Russian EMERCOM recovery teams composed a control group. Clinical AIP image is described with atypical pain syndrome and other organs and systems frequent pathological invasion. Massive immunological status dysfunctions were observed at AIP which indicated breakdown of central mechanisms of immunotolerance formation. One of the triggers which started up a cascade of autoimmune reactions at patients with AIP is likely a herpetic infection. Key words: autoimmune pancreatitis, immunological status, clean-up workers of Chernobyl Nuclear Power Plant accident, rescuers.

47. *Drygina L.B., Zyбина N.N., Davydova N.I., Korsakova N.E.* Development of Osteopenia Syndrome and Deficiency of Androgens in Male Clean-up Workers of the Chernobyl Nuclear Power Plant Accident. 2008. N 3. P. 46–51. Tabl. 4, Bibliogr. 16.

The problem of age-dependent androgen deficiency is of great importance due to its contribution to metabolic processes disturbance. Recently data on association of low testosterone in 40–50 year men with the bone mineral density decrease have been obtained. The paper considers questions related to studying androgen contribution to osteopenic syndrome development in Chernobyl clean-up workers. Key words: osteopenic syndrome, androgens, age-dependent deficiency, biochemical markers, bone tissue remodeling.

48. *Filippova Yu.N., Neronova E.G., Ilchishina T.A., Mikhaylova I.A., Slozina N.M.* Spread of Helicobacter Pylori Infection in Chernobyl Clean-up Workers with Different Gastroduodenal Disorders. 2008. N 3. P. 15–19. Tabl. 5, Bibliogr. 14.

The epidemiologic prevalence of HP-infection in Chernobyl accident clean-up workers with different gastroduodenal disorders residing in the North-Western region of Russia was estimated using the polymerase chain reaction (PCR). The frequency of Helicobacter pylori pathogenic factor – CagA genotype was analyzed in dependence with nosological form of gastroduodenal pathology. Key words: Helicobacter pylori, CagA genotype, prevalence, Chernobyl clean-up workers.

49. *Khirmanov V.N., Sidorov M.G.* Risk Groups of Development of Cardiovascular Pathology Complications in Clean-up Workers of Chernobyl Nuclear Power Plant Accident. 2009. N 1. P. 5–10. Tabl. 2, Bibliogr. 11.

Rules for the estimation of risk of cardiovascular pathology complications (mainly heart attacks, insults, including those with fatal outcomes, and also sudden cardiac death) in Chernobyl clean-up workers are systematized. Necessary diagnostic tests and criteria for the estimation of their results are presented. Principles of efficient grouping of Chernobyl clean-up workers depending on the revealed risk level of cardiovascular complications and death in the remote (10-year) period are proposed, and also in the nearest period (hours, days, weeks) of dangerous aggravation of a disease. A value of stratification in Chernobyl clean-up workers of the cardiovascular complications and death risk for the clinical practice is considered. In view of the degree of this risk the efficient volume of preventive and therapeutic measures is proposed. Key words: cardiovascular diseases, risk of complications of a cardiovascular pathology, medical consequences of radiation accidents, diagnostic test.

50. *Krasnov V.N., Yurkin M.M., Kryukov V.V., Kurmysheva N.Ya.* Therapy of Mental Disorders in Clean-up Workers of Chernobyl Nuclear Power Plant Accident. 2010. N 2. P. 15–21. Pic. 1, Tabl. 2, Bibliogr. 16.

In the paper we present the results of the open comparative therapeutic study of 346 clean-up workers of Chernobyl Nuclear Power Plant accident. We practiced several kinds of therapy, all of which were methodically maximally adjusted to clinical comparison. The following medications were used: cerebrolizin (n = 137), instenon (n = 87), mexidol (n = 63), pikamilon (n = 30), piracetam (n = 29). Therapy course consisted of 20 daily intravenous injections. Patient's condition was estimated by the rate of 4 clinical symptom complexes: asthenic, psychovegetative, hypothyroid and complex of cognitive disturbances. Clinical conclusions were checked on with statistic methods. The results show evident effectiveness of the investigated therapy. The medications proved to be evidently tropic to various variants of psychopathologic syndromes. Key words: clean-up workers of Chernobyl Nuclear Power Plant accident, mental disorders, therapy of cognitive disorders, neuroprotectors, nootropics.

51. *Shantyr I.I., Yakovleva M.V., Ushal I.E., Vlasenko M.A.* Microelement Status of Chernobyl Clean-up Workers residing in Saint-Petersburg. 2008. N 2. P. 23–28. Tabl. 1, Bibliogr. 32.

Microelement status has been studied in 100 Chernobyl clean-up workers residing in Saint-Petersburg during last 5 years by inductively coupled plasma-mass spectrometry. Mineral metabolism was assessed taking into account stable parameters (radiation dose, year of participation in clean-up work, dietary habits, occupational history). Key words: Chernobyl clean-up workers, mineralogram, microelement status, essential trace elements, toxic trace elements.

52. *Sosnovsky S.V., Nesterenko O.N.* Changes in the Organ of Vision in Clean-up Workers of the Chernobyl Nuclear Power Plant Accident in the Remote Follow-up Period. 2008. N 1. P. 11–18. Pic. 1, Bibliogr. 10.

Changes in the organ of vision in clean-up workers of the Chernobyl Nuclear Power Plant accident have been studied. The results of the morphology and function alterations in the organ of vision during many years of follow-up among 3500 clean-up workers are presented. Diagnostic value of several methods for

testing of function parameters of the vision system is determined; there were no radiation-induced irradiation cataracts, however, an increase in total number of cataracts due to intense involution processes was noted. Key words: Chernobyl Nuclear Power Plant accident, Chernobyl clean-up workers, organ of vision, irradiation cataract, retinopathy.

53. *Tikhomirova O.V., Kotlyarova E.V., Nikiforova I.D., Kozhevnikova V.V., Zakharova N.I., Makarova N.V.* Diagnostic Value of Computed Tomographic Perfusion in Estimation of Chronic Brain Ischemia in Clean-up Workers of Chernobyl Nuclear Power Plant Accident. 2010. N 3. P. 5–10. Pic. 4, Tabl. 1, Bibliogr. 14.

76 clean-up workers of Chernobyl Nuclear Power Plant accident, male, age 43–69, with risk factors of cerebrovascular diseases and impairment of working capacity, attention, memory (basic group) and 23 healthy men, age 45–60 (control group) underwent computed tomographic (CT) perfusion studies. Referential values for cerebral blood flow (CBF) and cerebral blood volume (CBV) for various areas of gray and white matter derived from CT perfusion are received. The most significant differences between groups have been revealed for CBF (ml/100g·min) in gray matter of frontal cortex (mean, 95 % percentil) – 19.6 (9.7–38.2) and 31.7 (17.7–43.3),  $p < 0.001$  and basal ganglia – 28.6 (15.0–64.9) and 36.3 (26.1–55.1),  $p < 0.001$  for basic and control group respectively. CT perfusion data allows diagnosing the patients with an early stage of chronic brain ischemia. Key words: CT perfusion, chronic brain ischemia, clean-up workers of Chernobyl Nuclear Power Plant accident.

#### **2.4.4. Veterans of the World War II**

54. *Sinenchenko A.G., Kostyuk G.P.* Medical Casualties of Psychiatric Profile among Servicemen of the Soviet Army during the World War II. 2010. N 3. P. 19–22. Tabl. 3, Bibliogr. 14.

Information about structure of casualties of psychiatric profile among the servicemen of the Soviet Army during the World War II was generalized on the basis of scientific literature research. Staging of specialized psychiatric assistance for servicemen who participated in battles at different war periods were shown in the article. A predominance of borderline mental insanities among the wounded and patients from the front is indicated. The data on length of treatment of neurotics and mental patients among servicemen during the different years of war was generalized. Key words: World War II, Soviet Army, stages of evacuation, mental insanity.

#### **2.4.5. Veterans of extra risk divisions**

55. *Rybnikov V.Yu., Oleshko V.A.* Health State and Medico-Psychological Correction of Psychosomatic Disorders in Veterans of Extra Risk Divisions. 2007. N 2. P. 13–20. Tabl. 3, Bibliogr. 5.

The article presents the results of health state assessment of veterans of extra risk divisions including the analysis of their primary and chronic morbidity,

disabilities, as well as phenomena and structure of psychosomatic disorders. The efficiency of correction of psychosomatic disorders in the veterans of extra risk divisions using the audiovisual methods, phenotropil and methods of psychotherapy was assessed and results were presented. Key words: veterans of extra risk divisions, morbidity, disabilities, psychosomatic disorders, medical psychological correction.

56. *Sosyukin A.E., Partsernyak A.S.* Markers of Premature Aging in Individuals with Polymorbid Cardiovascular Pathology working on Objects of Chemical Weapons Storage and Disposal. 2010. N 3. P. 31–34. Tabl. 3, Bibliogr. 13.

We examined 105 servicemen with polymorbid cardiovascular pathology, divided into 3 groups (n = 35). The 1-st and 2-nd group included men at the age of 35–45 years, 3rd group – 45–55 years. Troops of 2-nd group carried out the storage and destruction of chemical weapons. To compare with the 1-st group of individuals here were detected signs of premature aging, showing an increase in biological age by 10–15 years, degenerative-dystrophic changes in the cervical spine, decreased bone mineral density of lumbar spine, as well as reduction of myocardial perfusion. These figures are comparable with the pathological changes in the 3rd group of soldiers that allows regarding them as markers of premature aging in people with polymorbid cardiovascular pathology, working in the storage and destruction of chemical weapons. Key words: servicemen, storage and disposal of chemical weapons, professional longevity, markers of premature aging.

#### **2.4.6. Residents of blockaded Leningrad**

57. *Semenova O.N., Shmeleva V.M., Yagashkina S.I.* Hyperhomocysteinemia in Patients – Residents of Blockaded Leningrad suffering Chronic Heart Failure. 2008. N 3. P. 52–56. Tabl. 1, Bibliogr. 27.

Hyperhomocysteinemia is a proved risk factor of a cardiovascular pathology. Frequency of homocystein level increase and hyperhomocysteinemia distribution was assessed in 90 patients survived the blockade of Leningrad, middle aged ( $73.2 \pm 1.8$ ), who suffered chronic heart failure as a result of ischemic heart disease. The control group consisted of 50 people (middle age – 67 years old). Average value of homocystein in patients survived the blockade of Leningrad with heart failure ( $15.2 \pm 5.3$ )  $\mu\text{mol/l}$  exceeds average value in control group ( $9.8 \pm 2.7$ )  $\mu\text{mol/l}$  ( $p < 0.001$ ). Hyperhomocysteinemia appears 14 times more often in patients with heart failure than in control group compared by principle of age (44.4 % to 3.2 %). Key words: chronic intimate insufficiency, ischemic heart diseases, homocystein, senile age, blockade of Leningrad.

58. *Semenova O.N., Yagashkina S.I., Vedenev E.V.* Clinical and Medico-Social Aspects of Rehabilitation for Patients – Residents of Blockaded Leningrad suffering Chronic Heart Failure. 2009. N 1. P. 20–23. Tabl. 2, Bibliogr. 6.

Clinical and medico-social aspects of rehabilitation for patients with chronic heart failure who survived the blockade of Leningrad were studied. 401 patients

with chronic heart failure of 1–3 functional class underwent examinations. Early symptoms of chronic heart failure were caused by the younger age during the blockade (about 5 years old); the older the individuals were during the blockade, the later they developed chronic heart failure. These results were statistically significant. One should take into account the role of age at exposure to the severe psychophysiological stress to provide with adequate therapy and rehabilitation for such patients. Key words: chronic heart failure, rehabilitation, elderly patients, stress, blockade of Leningrad.

59. *Vedeneev E.V., Semenova O.N., Yagashkina S.I.* Main Difficulties experienced by Hospital Practitioners at rendering Medical Assistance to Patients – Residents of Blockaded Leningrad suffering Chronic Heart Failure. 2010. N 2. P. 43–45. Tabl. 2, Bibliogr. 11.

Authors studied and described main difficulties experienced by hospital practitioners at rendering medical assistance to patients with chronic cardiac insufficiency – residents of blockaded Leningrad. 55 practitioners responded to our questionnaire and interview. Authors presented analysis of main difficulties experienced by hospital practitioners. Distinguished types of psychological and somatic difficulties are to be taken into consideration both in medical rehabilitation of patients, and prevention of adverse mental effects in practitioners. Key words: public health institute, hospital practitioners, chronic heart failure, residents of blockaded Leningrad.

## **2.5. Medical support to specialists of extreme professions**

60. *Aleksanin S.S.* Rescuers of EMERCOM of Russia and Analysis of their Professional Working Load, Hygienic Assessment of Load and Intensity of Work. 2007. N 1. P. 59–63. Pic. 2, Tabl. 2.

The final class of load and intensity of rescuers' work is presented. In the mode of high alert it is classified by the most significant factors of production process as permissible by load (2nd class of working conditions) and intensive work of 2nd degree, while in the mode of emergencies cleaning-up it is classified as harmful (intensive) work of 2nd degree as well as hazardous and extreme work. The range and intensiveness of the work performed by rescuers are individual and dependant on the time of year, region, type of search and rescue formation and presence of additional specialty. Key words: rescue workers, regulation of work, special conditions of work.

61. *Aleksanin S.S., Rybnikov V.Yu.* Theoretical Grounds and Conception of Medico-Psychological Support to Rescuers of Russian EMERCOM during their Professional Activity. 2007. N 1. P. 3–12. Pic. 1, Bibliogr. 18.

Theoretical grounds, principles and conception of medico-psychological support to rescuers of Russian EMERCOM during their professional activity are formulated. The theoretical grounds of medico-psychological support to rescuers of Russian EMERCOM during their professional activity include the concep-

tion of professional health of the specialists with extreme professions as well as the modern conceptions of prenosological diagnostics and correction. Key words: rescuers, professional activities, medico-psychological support.

62. *Aleksanin S.S., Shantyr I.I.* Methods to Optimize a Diet of EMERCOM Rescue Groups at organizing Search-and-Rescue Works in Mountains considering the Afghanistan Experience. 2008. N 1. P. 3–6. Bibliogr. 16.

Experience of organizing the servicemen nutrition during their presence in the Afghanistan mountain areas was analyzed. Signs of protein and vitamin deficiency were revealed. A complex adjusting diet was suggested and tested, its efficiency was assessed. Based on the results, the recommendations are provided on how to rationalize a diet of rescue groups in mountain areas. Key words: adequate protein diet, bioelement supply, rescuers, mountain activities.

63. *Aleksanin S.S., Shantyr I.I., Astafiev O.M.* Info-Analytical Support to Medico-Psychological Aid to Specialists of Russian EMERCOM. 2007. N 2. P. 3–12. Bibliogr. 12.

The article presents experience of creation and keeping the records of the specialized registry of people exposed to radiation along with the experience of elaboration of epidemiological part of the protocol of WHO international program on studying medical consequences of Chernobyl Nuclear Power Plant accident. Key words: medico-psychological aid, medical registry, rescue workers, clean-up workers of Chernobyl Nuclear Power Plant accident.

64. *Bikkinina G.M., Iskhakov E.R.* Assessment of Professional Activity Characteristics of People working at the Law-Enforcement Bodies and their Perception of the Narcotism Problem. 2009. N 1. P. 68–71. Pic. 2, Bibliogr. 9.

Intensity of risk factors among employees of law-enforcement bodies (LEB) of different services has been analyzed via the questionnaire «Communication with drug abusers». We studied professional activity characteristics in 98 LEB employees using the self-developed questionnaire. It has been established, that 46.3 % of respondents communicate with addicts 1 or more times a week, 26.8 % individuals – once in half a year or less, 19.5 % individuals – approximately once a month. 95.1 % of respondents have answered, that the narcotism poses a serious danger to the society. 40 % employees of staff divisions, 33.3 % employees of LEB and kinology service, and also 11.1 % patrol-and-sentry servicemen (PSS) answered that they took part in anti-narcotic activities. All the PSS, employees of urgent response groups of LEB on duty, 20 % of operative employees of criminal investigation departments, 45 % of local policemen, 15 % of inspectors on affairs of underaged were exposed to physical and moral violence. Key words: emotional stress, risk factors, professional desadaptation, law-enforcement bodies (LEB), illicit drug trafficking.

65. *Bochenkov A.A., Zagorodnikov G.G.* Flying Personnel and its Health state and Adaptation in Extreme Environmental Conditions of the High North. 2010. N 4, Pt. 1. P. 21–24. Pic. 3, Tabl. 2, Bibliogr. 7.



Infectious diseases, respiratory ones constituting the major part of them, occupy the leading position in the morbidity of flying personnel. The flying personnel most liable to infectious diseases is the one serving in the High North up to a year and the other come from the south climatogeographic area of Russia. It was stated that during the period of the flying personnel's adaptation to the extreme conditions of the High North the requirements to the organism functional state increase and that there is a close connection between the adaptation of the flying personnel's organism to new climatogeographic conditions and its primary morbidity. Key words: primary morbidity, adaptation, flying personnel, High North.

66. *Butyrina E.V., Mamatova N.T., Kozhevnikova V.V., Tikhomirova O.V.* Characteristics and Spread of Sleep Disturbances in Men with High Level of Professional Stress. 2010. N 2. P. 21–24. Tabl. 3, Bibliogr. 18.

Stress and night-shift work are significant contributing factors leading to sleep disturbances. We have examined 39 healthy men working at the specialized brigade of the Federal Fire-Fighting Service (Saint-Petersburg) at the age of 20–43 years old with the period of work from 1 up to 22 years. The examination included a questionnaire for subjective sleep characteristics assessment, the obstructive sleep apnea questionnaire, the Epworth Sleepiness scale, the Hospital Anxiety and Depression scale, and 8-hour polysomnographic recoding of night sleep. Significant decrease of sleep efficiency at the expense of increase of intra-sleep awakening time, increase in quantity of shifts between sleep stages and reduction of REM sleep time were more often observed in the group with more than 5-year experience. It was established, that reduction of delta sleep percentage correlates with body mass index increase, and long-term employment in the special emergency federal fire brigade leads to reduced stress resistance, with stable sleep disturbance as its early manifestation. Key words: stress, sleep disturbances, polysomnography, fire-fighters.

67. *Dergunov A.V., Idirisov A.N., Mokeeva E.G.* Sportsmen Neuroendocrine Status during the Process of Alpine Adaptation. 2008. N 3. P. 41–46. Pic. 2, Tabl. 2, Bibliogr. 20.

Physical exercises and their influence to sportsmen's adaptation to the alpine conditions were assessed. It has been established that regular trainings which modulate functions of endocrine, vegetative and endogene opioid systems depending on nature and intensity of physical exertion to the body of different kinds of sport may stimulate sportsmen adaptation possibilities or restrain them. Key words: sportsmen, adaptation, alpine hypoxia, endocrine, vegetative and endogene opioid systems.

68. *Gorelova O.M., Pevzner A.V., Kheimez G.I., Sablin O.A.* Chronic Passive Orthotest for Assessment of Risk of Vasovagal Syncope in Rescuers of Russian EMERCOM. 2009. N 2. P. 21–27. Pic. 8, Tabl. 2, Bibliogr. 7.

Cardiovascular response to a chronic passive orthotest was studied to reveal possible regulatory abnormalities in patients with known vasovagal syncope (n = 36). The control group included rescuers of EMERCOM of Russia (n = 23) and other professionals (n = 12). Chronic passive orthotest according to the

standard (Westminster) protocol makes it possible to induce vasovagal syncope in 55 % cases and to identify the key pathogenesis mechanisms. Chronic passive orthotest with impedance reography is appropriate to be included into the examination program for individuals of hazardous occupations. Key words: vasovagal syncope, orthostatic test, impedance cardiography, individuals of extreme professions, rescuers.

69. *Khalikova Z.V., Iskhakov E.R.* Echocardiography and Lipid Spectrum Parameters in Officers of Russian Ministry of Internal Affairs who took part in Counterterrorism Operations in the Chechen Republic. 2009. N 4. P. 9–11. Tabl. 2, Bibliogr. 8.

The long-term influence onto lipid metabolism and echocardiography parameters of missions to «hot spots» in officers of the Internal Affairs Ministry undergoing hospital treatment has been revealed. Examination included: the detection of total cholesterol (TC), low-density lipoproteins (LDL), high-density lipoproteins (HDL), triglycerides (TG), and heart and aorta echocardiography. Cardiovascular pathology has been prevalent in patients who have taken part in contra-terrorism operations in the Republic of Chechnya. The increase of aortic valve and ascending aorta diameter, hypertrophy of the posterior left ventricular wall, diastolic dysfunction, atherosclerosis of aorta and valvular apparatus, symptoms of ventricular remodeling have occurred more frequently in these patients. Moreover, LDL and TG increase was observed in patients taken part in combat operations. Key words: stress, extreme activity, officers of MIA, cholesterol metabolism, cardiovascular system.

70. *Kotenko P.K., Kireev S.G., Golovinova V.Yu.* Prediction of Disease Incidence among Employees of the Federal Fire-Fighting Service, EMERCOM of Russia using Neural Networks. 2010. N 4, Pt. 1. P. 15–20. Pic. 4, Tabl. 2, Bibliogr. 11.

The object of our study includes health indices of the employees of the Federal Fire-Fighting Service, EMERCOM of Russia for the period of 2003–2008. We have used the method of neural network prediction: linear network, multi-layer perceptron and networks with radial basis function. We present the algorithms and the creative results of a neural network prediction of disease incidence among employees of the Federal Fire-Fighting Service of the North West Regional Centre, EMERCOM of Russia in both general classes of diseases and the most important for this category: respiratory system, musculoskeletal system and connective tissues; blood circulatory system, trauma, poisoning and some other consequences of the exposure of external factors. Key words: the Federal Fire-Fighting Service, fire-fighters, morbidity, neural networks, neural network prediction.

71. *Kushnir L.A., Boyarintsev V.V., Grebenyuk A.N.* Patterns of Chemical Risk Perception in Specialists of the State Fire-Fighting Service and Search-and-Rescue Group of the Headquarters of Russian EMERCOM in the Astrakhan Region. 2009. N 1. P. 62–68. Tabl. 3, Bibliogr. 10.

Perception of the chemical risk was studied in 32 fire-fighters and 30 rescuers of the Headquarters of Russia EMERCOM in the Astrakhan region. More

than 80 % of responding fire-fighters and rescuers consider own health to be excellent or good. Most of the interviewed fire-fighters consider the health to be determined predominantly by heredity; as for specialists of the search-and-rescue group, a life style and health-preserving behavior play a leading role in health maintenance. More than a half of the interviewed fire-fighters and rescuers mentioned toxic factors among the most dangerous risk factors of premature health and life loss, and marked chemical substances as very dangerous. According to the interviewed EMERCOM specialists, exhaust car gases result in the most adverse effect on health among all the chemical danger sources; a high disease risk is associated as well with thermal power stations' exhaust and alimentary products containing nitrates and nitrites. Among individuals with chronic pathology only 30 % of fire-fighters and 12.5 % of rescuers did not exclude a probability of their disease occurrence due to professional chemical exposure. Key words: fire-fighters, rescuers, professional chemical risk, risk perception.

72. *Nazarov R.N.* Model of Comprehensive Treatment rendered to Servicemen with Psychogenic Chronic Dermatoses. 2008. N 2. P. 34–36. Bibliogr. 6.

Issues of comprehensive treatment rendered to servicemen with stress-related chronic dermatoses, such as eczema, psoriasis, atopic dermatitis, hyperhidrosis, chronic urticaria are considered. Application of medico-psychological correction aimed at elimination of psychological and autonomic disorders in patients during complex treatment of these chronic dermatoses significantly reduces terms of treatment and quantity of relapses within a year. Key words: chronic dermatoses, stress, medico-psychological correction, psychotherapy, transcranial electrostimulation.

73. *Petrov D.L., Pavlichenko N.L.* Complex Medico-Psychological Assessment of «Mexidol» Impact on Adaptation Process of Cadets studying at the Universities of the State Fire-Fighting Service, EMERCOM of Russia. 2007. N 2. P. 20–24. Bibliogr. 10.

A complex medico-psychological research of «Mexidol» application to 112 cadets studying at the Ivanovsky Institute of the State Fire-Fighting Service, EMERCOM of Russia, is submitted. Two experimental groups received “Mexidol” and two control groups received placebo were selected casually, they were randomized and representative. The research was carried out using double blind method. It has revealed that cadets who received “Mexidol” at minimally effective doze for a short period of time have increased adaptability to military and fire-fighting service combined with intensive educational process. Key words: adaptation, cadets of the higher institutions of State Fire-Fighting Service, fire-fighters, Mexidol.

74. *Petrov D.L., Sharabanova I.Yu., Kaldyshkina O.S., Devushkina A.V., Vaseneva T.V.* Comparative Assessment of Efficiency of Vaccine «Grip-polum» and Medicine «Dibazolium» used to Prevent Acute Respiratory Infections and Flu in Cadets studying at the Universities of EMERCOM of Russia. 2008. N 2. P. 45–47. Pic. 1, Bibliogr. 8.

Comparative assessment of efficiency of «Grippolum» and «Dibazolum» used to prevent acute respiratory infections and flu in 950 cadets of the Ivanovsky Institute of the State Fire-Fighting Service, EMERCOM of Russia is provided. One group was vaccinated with a single dose of «Grippolum» in September, 2007, while the participants of the second group received courses of «Dibazolum» treatment in September–November, 2007, and February, 2008. Both groups were selected randomly; they were randomized and representative. The research has not revealed significant differences between «Grippolum» and «Dibazolum» used to prevent acute respiratory infections and flu during a semi-annual follow-up period. Key words: cadets, the State Fire-fighting Service, flu, acute respiratory infections, «Grippolum», «Dibazolum».

75. *Poroshin A.A., Shishkov M.V., Bobrinev E.V., Galkina E.Yu.* Disease Incidence in Specialists of the Federal Fire-Fighting Service of Russia for the Period of 2005–2007. 2009. N 1. P. 16–19. Pic. 7, Tabl. 2, Bibliogr. 4.

The results of statistical studies of the disease incidence of the personnel of the Federal Fire-Fighting Service of Russia are presented. Obtained results can provide a basis to improve the system of disease prevention in fire-fighters. Key words: profession-related disease incidence, fire-fighters, exposure factors, climate.

76. *Sannikov M.V., Aleksanin S.S.* Epidemiological Result Analysis of In-depth Medical Examinations of Professional Rescuers of Russian EMERCOM. 2009. N 4. P. 5–9. Pic. 4, Bibliogr. 8.

Analysis of the results of the in-depth medical examination of professional rescuers of EMERCOM of Russia residing in the North-Western region and of the Central airmobile detachment during the period of 2005–2008 in clinical setting allowed revealing urgent disease classes and nosologies, studying the dynamics of disease prevalence, identifying relationships of disease incidence and functional state of rescuers with age and working experience. Key words: rescuers, medical examination, disease incidence, functional state, age, working experience.

77. *Sannikov M.V., Andreev A.A.* Health State of Rescuers and Specialists working for the State Fire-Fighting Service, EMERCOM of Russia. 2007. N 1. P. 19–26. Pic. 3, Tabl. 2.

The article presents information on studying health state of specialists with hazardous professions of EMERCOM of Russia (rescuers and firefighters). Relevant classes of diseases for this category of people are determined; the dependence of morbidity level on the service length and intensity is presented. Pathogenetic mechanisms promoting the formation of somatic pathology in rescuers and firefighters are presented. The character of changing of the functional state level and functional reserves depending on the service length and intensity of professional activities is shown. Key words: firefighters, rescuers, professional load, morbidity, functional state, immune and hormone status.

78. *Shantyr I.I., Harlamychev E.M.* Bioelemental Status of Rescuers (Fire-Fighters) residing in the North-Western Region of Russia. 2009. N 5. P. 43–45. Tabl. 3, Bibliogr. 8.

Trace element status emerging during professional activities was analyzed in fire-fighters from Saint-Petersburg. Examined group included 65 rescuers (fire-fighters) residing and working in Saint-Petersburg, whose length of service was 1–25 years. The obtained data was compared to the reference ranges published in the scientific literature. In order to exclude effects of biogeochemical regional patterns of the North-Western region of Russia and Saint-Petersburg, trace element status was studied in 87 virtually healthy young men engaged in intellectual work. Trace element content in the internal body environment was assessed via analysis of chemical composition of the hair by mass spectrometry with inductively bound plasma, a method of mineral metabolism disorder diagnostics. Key words: rescuers, fire-fighters, trace element status, mass spectrometry with inductively bound plasma.

79. *Shortov G.N.* Functional Disorders of the Musculoskeletal System in Rescuers of Russian EMERCOM and Manual Therapy of these Disorders. 2007. N 1. P. 44–49. Pic. 2, Bibliogr. 10.

The article represents author's conception of aetiopathogenesis of pains and the development of degenerative-dystrophic changes in the musculoskeletal system. The most frequent mechanism of pains origin in rescuers is the strain of muscle groups (functional blocks). Effectiveness of the proposed method of manual therapy has been found in 89.6 % of 781 treated patients. The most effective treatment has been observed in cases of toracalgia. Key words: musculoskeletal system, functional block, manual therapy.

80. *Sysoev V.N., Yurchenko I.A., Kozlova I.Yu., Kornilova A.A.* Assessment and Prediction of Functional State and Working Capacity during Long Shift Cycle. 2010. N 1. P. 34–39. Pic. 1, Tabl. 2, Bibliogr. 8.

There is a discussion of improving express methods of diagnosing untoward changes of functional state in professionals of mental labor associated with high emotional and nervous strain. Comparative analysis of annual dynamics of functional state parameters, working capacity, temperature and pain sensitivity has been performed in professionals performing with different degree of success. During the first 2 months after vacation the warming-up period was observed, during the subsequent 5 months the working capability was optimal, and after 8 months the proper quality of professional activity is maintained due to increased physiological cost of activities, and initial signs of chronic fatigue appear. The pain sensitivity threshold measured using modified thermosensitivity test and asymmetry coefficient between values of pain thresholds for fingers of hands and feet assessed during annual shift cycle are the integral parameters of functional state and working capacity. Key words: functional state, working capacity, emotional and nervous strain, pain sensitivity threshold.

81. *Timoshevsky A.A., Kalinina N.M., Grebenyuk A.N., Zatsepin V.V.* Medical Antiradiation Protection provided to the Specialists of Search-and-Rescue Groups. 2008. N 4. P. 13–18. Tabl. 2, Bibliogr. 15.

Modern medical means of antiradiation protection include radioprotectors, substances for sustained radioresistance maintenance, prevention of general primary radiation response, early treatment of radiation injuries, prevention and treatment of internal irradiation. Variety of these means require physicians to be familiar not only with a limited number of government-issue preparations, but also backup ones which can be purposefully bought for medical provision of rescue work during mitigation of consequences of radiation accidents. Order and regimes of integrated use of modern national preparations aimed at medical antiradiation protection provided to the specialists of search-and-rescue groups during radiation accidents are described. Key words: search-and-rescue groups, medical means of antiradiation protection.

See also 5, 30, 118, 121, 138, 173, 234, 244, 245, 247, 248, 252.

## **2.6. Applied medicine and public health issues**

### **2.6.1. Public health organization**

82. *Adkhamov B.M., Tegza V.Yu., Zakurdaev V.V., Furmanov E.E.* Competition and Quality of Sanatorium Services of the Russian Federation Ministry of Defence. 2010. N 1. P. 39–43. Pic. 1, Tabl. 4, Bibliogr. 12.

The competitive analysis of three military sanatoria situated on the Black Sea coast is carried out; strong and weak points of provided services are revealed. Mechanisms of increase of competitiveness are defined using a modern method of the competitive analysis and, hence, improvement of quality of rendered sanatorium services. Key words: quality of services, competition, the competitive analysis, sanatorium services, economic activities.

83. *Belyaev V.R., Zarubin A.A.* Processing Algorithm of the In-coming Information in the Round-the-Clock Medical Dispatching Desk (Contact Center) and its Significance for Determining the Organizational and Staff Structure. 2010. N 3. P. 45–47. Pic. 1, Bibliogr. 4.

The grounds for the number of necessary working positions for the round-the-clock medical dispatching desk (contact center) operators of an insurance company are determined with the help of imitation modeling as a part of mathematical modeling. Estimations are based on the intensity of the in-coming information flow. Key words: medical dispatching desk, information flows, mathematical modeling, insurance company, voluntary health insurance.

84. *Diachenkova O.I.* Some Aspects of Life Quality of Stomatologists residing in Voronezh City. 2009. N 5. P. 64–67. Pic. 1, Tabl. 1, Bibliogr. 8.

The analysis of socio-hygienic characteristics of working conditions and life support of physicians-stomatologists is provided. Results of self-assessment of some aspects of the living standard, satisfaction with profession and health status of physicians-stomatologists were analysed. Key words: physician-stomatologists, quality of life, standard of living, healthy life style.

85. *Evdokimov V.I., Gubin A.I., Tepysheva N.V.* Effects of Life Quality Parameters on Formation of Professional Burning-out Syndrome in Physicians. 2009. N 5. P. 67–75. Pic. 6, Tabl. 3, Bibliogr. 17.

Sociological survey of 100 physicians-traumatologists revealed medium scores of subjective satisfaction with their standard of living and consistency between objective and subjective appraisals of the standard of living that made quality-of-life assessment more accurate. Objective data on the standard of living allowed ranking 32 % of physicians-traumatologists among the poor population stratum, 50 % – among the underprovided stratum, and 16 % – among the middle stratum (relatively well provided). In general, low level of professional burning-out (PB) in physicians-traumatologists was revealed. The survey showed the established professional burning-out in 10 % of physicians-traumatologists and its significant manifestations in another  $\frac{1}{4}$  of interviewed physicians. Objectively high income of the physician-traumatologist family turned out to be achieved along with low level of PB, and considerable communal charges suggesting low standard of living are achieved along with high level of PB manifestations. There were obtained no data suggesting synergizing effect of subjective assessments of satisfaction with economic condition and standard of living on PB formation. This parameter is possibly not the key one in etiopathogenesis of PB in physicians. Key words: healthcare professionals, physicians, standard of living, professional burning-out, risk factors.

86. *Evdokimov V.I., Gubin A.I.* Methodological Issues of Assessment of the Professional Burning-out Syndrome in Traumatologists. 2009. N 3. P. 76–81. Pic. 6, Tabl. 2, Bibliogr. 18.

Conclusive algorithm for assessment of professional burning-out syndrome (PBO) in 100 traumatologists is presented using integrated data of the K. Maslach test and V.V. Boiko questionnaire. Mean age of physicians was ( $40 \pm 1$ ) years, experience – ( $16 \pm 1$ ) years. Expert appraisals of traumatologists professional efficiency and health status were collected. Using step-by-step analysis of variance, classification models of professionals were identified according to integrated PBO estimate. It was established that low integrated PBO estimates were up to 59 points and corresponded to low PBO level in physicians, moderate ones comprised 60–136 points and high – 137 points and more. Significant influence of integrated PBO estimate on professional efficiency ( $r = -0.26$ ), health status ( $r = -0.26$ ) and quality of life measures ( $r = -0.27$  to  $-0.13$ ) was revealed in traumatologists. Key words: professional burning-out syndrome, analysis of variance, integrated burn-out estimate, professional adaptation.

87. *Tegza V.Yu., Vaschenkov V.V., Petrov S.V., Bigunets V.D.* Assessment of Health Care Quality in Medical and Prophylactic Institutions. 2009. N 3. P. 54–56. Pic. 2, Bibliogr. 4.

In the setting of rendering medical assistance to injured and victims (patients) in the areas of local conflicts and emergency situations, the satisfaction of a patient still remains one of the most essential elements of the medical assistance quality. The results of the most important patients' needs in the setting of rendering medical assistance are provided. It was revealed that medical staff

activities and achieving the desired treatment effect is the most substantial influence to patient satisfaction. Key words: need satisfaction, patient needs, quality of medical care, medical and prophylactic institutions, quality management.

88. *Tolokonnikova E.P., Popov V.I.* Estimation of the Situational Anxiety in Students of Medical Universities. 2009. N 5. P. 61–64. Pic. 2, Bibliogr. 10.

Situational anxiety in 150 first-, third- and fifth-year students of medical higher school has been assessed. Average level of situational anxiety according to the Spielberger–Khanin test was  $(38.1 \pm 0.5)$  points. The highest anxiety level was observed in fifth-year students –  $(50.7 \pm 0.8)$  points. Difference between these results and data from first-year students analysis  $(44.9 \pm 0.2)$  points and third-year students analysis  $(33.5 \pm 0.8)$  points was statistically significant ( $p < 0.001$ ). Significant time trend of the anxiety during semester has been shown. Key words: situational anxiety, student, institute of higher education, training, examination, stress.

89. *Yakovlev A.G., Bolekhan V.N., Kuznetsov S.M.* Microbial Risk Factor in Cases of Computer Technology Use in Health Care Centers. 2010. N 3. P. 73–75. Tabl. 2, Bibliogr. 10.

Bacteriologic wash-offs from the surfaces of personal electro-calculation machine keyboards in the resident rooms and sensor panels of the intensive care and reanimation unit monitors were analyzed. We established spectrum of the sowed microorganisms in order of their number reduction in the wash-offs: *S. epidermidis*, *S. aureus*, *Candida* spp., *Acinetobacter* spp., *Enterococcus* spp., *Bacillus* spp., *E. coli*, и *K. oxytoca*. Anti germ activity of four disinfectant substances for technology care was studied. The most bactericidal to *S. aureus* was a substance that had 1-propanolol. Key words: personal electro-calculation machine, means of organization technology treatment, antibacterial activity, prophylactics of infection in health care centers.

See also 181.

### **2.6.2. Cardiovascular system diseases**

90. *Dyachuk A.V., Shanin V.Yu., Shuliko L.A.* Effect of Acute Stress on Circulation Parameters related to Susceptibility to Essential Hypertension. 2008. N 2. P. 43–44. Tabl. 2, Bibliogr. 5.

Blood circulation in practically healthy women vs. men is characterized by a somewhat higher increase of a stroke index in response to 20s breath-holding following a deep breath. An extent of a stroke index increase is directly related to susceptibility to essential hypertension both in men and women. Key words: stress, arterial pressure, heart stroke index, risk factor.

91. *Minyaeva N.A., Tepysheva N.V.* Patterns of Cerebral Hemodynamics in Adults with Arterial Hypertension. 2008. N 2. P. 36–42. Bibliogr. 9.

Presented is a correlation model for hemodynamics of intracranial arteries and measures of arterial hypertension via Doppler imaging in individuals prone to arterial hypertension and patients with long diagnosed arterial hypertension. Key words: arterial hypertension, intracranial arteries, velocity gradients, tone of vessels.



92. *Yarokhno N.N., Bondareva Z.G.* Acute Myocardial Infarction Course in Patients with Different Electrocardiography Dynamics of ST-Segment during Thrombolytic Streptokinase Therapy. 2008. N 4. P. 27–30. Pic. 3, Bibliogr. 9.

This study was aimed to determine the clinical particularities of acute myocardial infarction (AMI) under different electrocardiographic evolution of ST segment on background of thrombolysis by streptokinase. A total of 294 patients with Q-positive AMI were recruited into this study. The present study established that full (100 %) ST-segment re-elevation after thrombolysis was associated with most favorable current of AMI. The increasing of subepicardial damage after thrombolysis («paradoxal» ST segment evolution) was associated with high level of fatal events and complications of AMI. Key words: acute myocardial infarction, thrombolysis, streptokinase, evolution ST-segment.

See also 49, 56–59, 119, 182, 184, 185, 204.

### **2.6.3. Endocrine diseases**

93. *Filippova E.A.* Clinical Picture and Treatment of Patients with Diabetes Mellitus Type 2 and Erectile Dysfunction. 2009. N 3. P. 35–40. Tabl. 4, Bibliogr. 11.

Against the background of a 6-month administration of affinity-purified antibodies to endothelial NO-synthase (Impaza product) in 135 male patients with diabetes mellitus type 2, there were improvements in mental status, erectile function, endothelial function, elevated levels of testosterone. Key words: diabetes mellitus, mental health, erectile dysfunction, endothelial dysfunction, affinity-purified antibodies.

94. *Rusalenko M.G., Moskaleva E.V., Gatalskaya G.V., Mokhort T.V.* Assessment of Life Quality in Adolescents with Type 1 Diabetes. 2009. N 4. P. 19–24. Pic. 4, Tabl. 2, Bibliogr. 8.

Authors have analyzed results of survey of teenagers with type 1 diabetes by techniques of general and diabetic modules of quality of life and scales of psychological well-being. Considerable decrease in quality-of-life indicators in adolescent patients compared to their healthy counterparts is established. Low indicators of psychological well-being specify concerns of sick adolescents about the negative future and their psychological disadaptation, dictating necessity of optimization of rendering psychological help to the given group of patients. The interrelation of level diabetes compensation with quality-of-life indicators and its psychological component was revealed. Key words: diabetes type 1, adolescents, quality of life, psychological well-being, glycated hemoglobin.

See also 172, 173.

### **2.6.4. Traumas (injuries, burns, frostbites)**

95. *Admakin A.L., Samarev A.V., Sannikov M.V.* Specifics of Monitoring and Treatment of Injured with Burn Shock. 2009. N 3. P. 22–26. Pic. 2, Tabl. 4, Bibliogr. 7.

Rendering assistance to severely burned patients, despite the reached successes, still remains one of the current problems in combustiology. It is confirmed in the given research, in which a high mortality of severely burned patients with the heaviest shock is shown. Performing infusion and transfusion therapies under the modified Parkland formula allows survival of victims in emergency situations, when adequate monitoring is not possible. In the conditions of the specialized burn centre the treatment of severely burned patients is performed on the basis of monitoring of the vital body systems. Modern monitoring techniques include low-invasive and allow tailoring treatment of the burnt. Key words: burns, burn shock, infusion therapy, monitoring.

96. *Admakin A.L., Sannikov M.V.* Integrated Approach in Rehabilitation of Patients with After-Burn Scars and Contractures. 2010. N 3. P. 40–44. Pic. 4, Tabl. 5, Bibliogr. 5.

Scar-altered skin represents a serious problem for rehabilitation of the patients with burns as it can be the cause not only of functional disorders, but also of psychological discomfort. In such cases integrated approach is the most effective one, when different surgical and therapeutic methods are well-balanced. In the article there's given an example of such an approach, the effectiveness of applying the medicament for preventing the overgrowth of connective tissue on the example of «Contractubecs» gel, in particular. The clinical effectiveness of the medicament is shown as it betters the quality of patient's life, it improves objectively the state of the scars that become softer and more elastic and not so prominent on the intact skin. Key words: patients with burns, scar-altered skin, rehabilitation, «Contractubecs» gel.

97. *Donskov V.V., Startsev V.Yu., Polyushkin S.V., Bondar I.I.* Clinical-Psychological Patterns in Patients with Polytrauma complicated by Urinary Tract Infection. 2009. N 5. P. 36–37. Bibliogr. 6.

Clinical and psychoneurological patterns were analyzed in 102 patients with polytrauma complicated by an acute pyelonephritis. It was established that all these patients require extended treatment and rehabilitation, including treatment of psychological desadaptation. Key words: polytrauma, acute pyelonephritis, clinical and psychoneurological patterns, quality of life.

98. *Gaydash A.A., Denisov A.V., Tyurin M.V., Samokhvalov I.M.* A New Look at the Morphogenesis of Gunshot Fractures. 2010. N 4, Pt. 1. P. 81–87. Pic. 5, Tabl. 1, Bibliogr. 10.

This article is devoted to studying the fundamental mechanisms of destruction of a bone fabric. Authors developed a complex of the methodological approaches to reveal details of structural mechanisms of various anatomic bone types destruction at fire crises. At action fire missiles the bone fabric collapses differently, that is determined by its structural and micromechanical properties. Thus, the main influence in damaging compact substance of tubular bones is made by cracks and bone matrix breaks, lacuno-cavernosis deformation of compact substance, and also homogenization and condensation of bone matrix in the tubule membranes area. As a whole tubular bones collapse mainly on fragile type with formation crises. At the same time, damage of compact sub-

stance of flat bones is formed by the following basic components – bone matrix break and deformations of layers displacement. Thus, flat bones collapse mainly on viscous type with formation of foraminous crises with smooth edges. Key words: fire crisis, a tubular bone, a flat bone, bone matrix, hydroxyapatit, a shock wave, electronic microscopy, cavities, lacunas, a shock – wave bony rarefaction.

99. *Golovko K.P., Tyurin M.V., Madai D.Yu., Tolmachev I.A.* Therapeutic Management of Maxillofacial and Brain Injuries from Non-Lethal Kinetic Weapons. 2009. N 2. P. 27–31. Pic. 12, Tabl. 1, Bibliogr. 5.

Use of non-lethal kinetic weapons in the setting of peacetime has been analyzed. Statistical data is provided on localization of injuries, their severity and consequences of this type of gunshot injury, according to forensic medical examination of victims. Clinical observations are described for injuries due to illegal use of non-lethal kinetic weapons (head wounds) which are the most prevalent among injuries. Key words: non-lethal kinetic weapons, self-defense, field surgery, face injuries.

100. *Grigoriev S.G., Ivanov V.V., Skornyakov V.V.* Experience of Development of Predictive Model of Head Injury Outcome in Victims during the Period of Counterterrorism Operations in the Chechen Republic. 2003. N 3. P. 15–18. Pic. 1, Tabl. 2, Bibliogr. 4.

Purpose, tasks to be solved via discriminant analysis, algorithm of its application and assessment of quality of developed model are shown. Capabilities of mathematical and statistical approach are demonstrated on specific example of development of predictive model for outcomes of treatment in patients with head injuries. Data obtained during review of case reports of persons suffered during counterterrorism operation in the Chechen Republic were used as teaching information. Provided approach to the model development can be used in various areas of medicine for solving tasks of diagnostics, prediction, expert appraisal, occupational selection, treatment options and strategies, etc. Key words: discriminant analysis, individual prognosis, mathematical and statistical model, craniocerebral injury, head injury.

101. *Gurskaya O.E.* Screening Neurophysiologic Criteria for Assessment of Severity of Traumatic Brain Injury and Prognosis in Acute Period of Trauma. 2009. N 4. P. 47–53. Pic. 3, Tabl. 2, Bibliogr. 15.

Neurophysiologic investigation, including somatosensory evoked potentials (SSEPs) and brainstem acoustic evoked potentials (BAEPs) was performed in 81 patients in acute period of traumatic brain injury (TBI), 60 patients with severe head injury and 31 patients with mild head injury. Statistically significant differences of amplitudes and latencies of N30 and N48 components of SSEPs were found between control group, groups with mild TBI and severe TBI. Also statistically significant differences of interpeak intervals P14–N18, P14–N20 of SSEPs, III–V of BAEPs between groups with favorable and unfavorable outcomes were found in patients with severe TBI. These neurophysiologic parameters may be used as screening criteria for assessment of functional state of specific and nonspecific systems of brain and prognosis in acute period of trauma.

Key words: traumatic brain injury, somatosensory evoked potentials, brainstem acoustic evoked potentials.

102. *Kalinina N.M., Matveenko A.V., Kikchemasov S.Kh., Davydova N.I.* Efficiency of Immune Modulator «Derinat» for Prevention and Treatment of Sepsis in Severely Burnt Patients. 2008. N 3. P. 28–33. Tabl. 6, Bibliogr. 8.

The study of 50 burnt patients (68 % had severe burns and 32 % medium degree burns). The use of Derinat restores the ratio of pro-inflammatory and anti-inflammatory cytokines, reduces the harmful effects of systemic inflammation, enhances the proliferation of the specific T and B-lymphocytes, which consequently improves the post-burn period of treatment and efficiently prevents complications. For instance, the average survival of the main group was ( $18.7 \pm 4.1$ ) days, while the control group only up to 8 days ( $7.8 \pm 2.1$ ) days. Key words: burnt patients, sepsis, immunological examination, derinat.

103. *Kuzin A.A.* Epidemiological Importance of Hospital Infection in Treatment of Patients with Severe Trauma. 2010. N 1. P. 24–27. Tabl. 4, Bibliogr. 4.

The objective of the research was to study the influence of hospital infection on outcomes of treatment in patients with severe trauma. Features of clinical manifestation were studied, hospital infection incidence in patients with severe trauma, duration of their treatment and death rates were assessed, and also comparison was performed with similar indicators in surgical patients. Essential influence of hospital infection on indicators of quality of treatment in patients with severe trauma has been established, in particular high disease incidence, variety and features of development of clinical forms, prolongation of treatment and lethality of patients. The obtained data testify the need to clarify and work out the actions directed to prevent distribution of hospital infection at rendering medical aid to patients with severe trauma. Key words: severe trauma, patients, hospital infection, duration of treatment, lethality.

104. *Legeza V.I., Remizov D.V., Slukhai S.I.* Therapeutic Properties of Modern Dressings (Review). 2010. N 2. P. 31–39. Bibliogr. 40.

The article presents a review of the data on various types of modern means of local wounds treatment (liquid, soft, solid medicinal forms, aerosols) describing usefulness, functional properties, requirements to wound dressing and indications for their application in various phases of wound process. Key words: wounds, local treatment, dressing means, indications.

105. *Lemeschenko A.V., Dergunov A.V.* Alterations of Immune Functions of the Body after Contusion of Visual Organ; their Correction. 2009. N 3. P. 32–34. Pic. 1, Bibliogr. 10.

Comparative pathophysiological diagnostics of immunological status in 46 patients with mild contusion of visual organ was performed during treatment. Immunotherapy with thymalin is one of the most promising approaches in ophthalmorehabilitation of patients, and it allowed setting up adequate, optimal neuroimmunological signals which are aimed at the fastest recovery. Key words: emergency situations, eye damage, mild contusion of visual organ, immunological status, thymalin.

106. *Samokhvalov I.M., Golovko K.P., Pichugin A.A., Denisenko V.V.* Usage of the Temporary Intraabdominal Hemostasis Method in Abdominal Trauma. 2010. N 4, Pt. 1. P. 32–38. Pic. 4, Tabl. 4, Bibliogr. 9.

At present the achievement of a reliable temporary hemostasis in abdominal trauma in the prehospital period remains an unresolved problem. Numerous existing intraabdominal hemorrhage control methods are applied mostly in the intraoperational period. The Military Field Surgery department at Kirov Military Medical Academy (Saint-Petersburg) has developed a temporary intraabdominal hemostasis method based on intraabdominal infusion of hemostatic solution, mechanical compression with a circular pressure dressing being applied on the abdomen at the same time. Key words: emergency situation, abdominal trauma, temporary intraabdominal hemostasis, solid organ trauma, persistent intraabdominal hemorrhage, cryoprecipitate, hemoperitoneum, acute care.

107. *Shapovalov S.G.* Expander Dermotension in Rehabilitation System for Patients after Burns. 2010. N 4, Pt. 1. P. 24–31. Pic. 4, Tabl. 2, Bibliogr. 9.

The work presents the efficiency of expander dermotension method in various areas of body applied to 144 patients with scarring after burns, who were observed in clinic of burns at Kirov Military Medical Academy for the period of 1988–2005. The efficiency analysis of skin plastics stretched by expander in various anatomic areas has shown the best results at performance of expander dermotension on head and neck areas. Variants of complications of expander dermotension are analysed: extrusions, suppurations, hematomas, necroses, etc. Key words: burns, expander dermotension, scarring.

See also 29, 31, 33, 35, 116, 128

### **2.6.5. Oncological diseases**

108. *Khintal T.V., Baranov V.L., Serebryakova I.P.* Nontoxic Goiter in Females from Iodine Deficiency Territory. 2008. N 3. P. 19–24. Pic. 4, Tabl. 4, Bibliogr. 17.

192 patients who had nontoxic goiter and 30 comparable healthy females were examined. In 11 (5.7 %) patients living in industrial centres of Komi region subclinical hypothyroidism was revealed. In Komi patient's complaints on hypothyroidism were observed more frequently, objective features of disease were abnormal more frequently, then in patients of other nationalities and healthy females. Among euthyroid patients by classification trees statistical method using TSH threshold level 2.55 MU/l was established. Higher TSH levels associated with complaints number increasing, menstrual disturbances, infertility, nodules in thyroid gland appearance, clinical and laboratory dates worsening. Key words: nontoxic goiter, iodine deficiency, reproductive age females, subclinical hypothyroidism, Komi region, thyroid-stimulating hormone.

109. *Movchan K.N., Grinenko O.A., Koval V.V., Koloskov V.V.* Scientific Ground of Actions on Additional Prophylactic Medical Examination of the Population of Municipal Territories aimed at the Early Detection of

Bladder Cancer in High-Risk Workers of Cancerogenic Manufactures. 2008. N 1. P. 19–23. Pic. 1, Tabl. 1, Bibliogr. 8.

The results of the survey of 241 inhabitants of the Leningrad region concerning availability of medical care in treatment-and-prophylaxis institutions are presented. Separate analysis of the results of comprehensive examination of 46 workers involved in manufacturing of aniline dyes known for their high cancerogenic effect on the development of bladder cancer was performed. According to the requirements of the Priority national project in public health, the additional prophylactic medical examination was shown to be prescribed to improve the early diagnostics of bladder cancer among workers involved in cancerogenic manufacturing. The step-by-step standardized system for diagnostics of this pathology is offered. Key words: workers of environmentally harmful factories, bladder cancer, additional dispensarization.

110. *Nadyrov E.A.* Mathematical Modeling Methods of Postoperative Risk of Breast Cancer Early Development. 2008. N 4. P. 31–34. Tabl. 2, Bibliogr. 5.

The comparative analysis of mathematical modeling methods of the risk of breast cancer early development has been made. The advantage of the quadratic model of discriminate analysis in comparison with a linear model for determining the prognosis of current breast cancer has been shown. The effectiveness in early relapse risk determining was 90 %. Key words: breast cancer, progression of disease, clinical and diagnostic markers, prognosis, the mathematical model.

See also 37–41, 129, 162, 170, 202.

### **2.6.6. Neurologic and mental disorders**

111. *Akperov E.K., Velizhanin A.M., Khabarov I.Yu.* Mental Disorders in Patients with Acquired Valvular Defects who underwent Surgery in Artificial Blood Circulation Setting. 2009. N 5. P. 21–26. Puc. 5, Bibliogr. 10.

Mental disorders in patients with valvular defects which underwent surgery in artificial blood circulation setting were studied using clinical and psychopathological as well as experimental and psychological methods; the effectiveness of nimotop in combined pharmaceutical correction of postsurgical mental disorders was also evaluated. Prevalence of asthenic symptoms, depression and exogenous psychosis in the clinical picture of postsurgical mental disorders was established. Nimotop decreased intensity of asthenia symptoms; it also alleviated depression as well as prevented development of psychotic symptoms. Key words: valvular defects, artificial blood circulation, mental disorders, nimotop.

112. *Andreeva G.O., Barsukov I.N., Emelianov A.Yu.* Complex Therapy of Posttraumatic Humeral Plexopathies. 2010. N 2. P. 25–28. Pic. 2, Bibliogr. 9.

The high level of armed conflicts and technogenic accidents in the modern world entails increase in frequency of traumatic peripheral neuropathies, which are often accompanied by asthenic disorders. Inclusion of acupuncture in complex treatment of humeral plexopathies allows us to correct not only conditions of pe-

ripheral nerves, but also to reduce asthenic disorders. As a result, effectiveness of treatment considerably improves and treatment period decreases. Key words: traumatic humeral plexopathia, asthenic disorders, treatment, acupuncture.

113. *Barsukov I.N.* Dynamics of Mental Status of Patients with Chronic Diabetic Polyneuropathies during Comprehensive Therapy. 2009. N 3. P. 41–43. Pic. 4, Bibliogr. 15.

Clinical and psychological analysis of 85 patients with diabetes mellitus and chronic diabetic polyneuropathy is provided. Mean age of the patients at study was  $(61.5 \pm 2.8)$  years, mean disease duration was  $(14.3 \pm 3.1)$  years. There were 8.3 % patients with DM-1 and 91.7 % with DM-2. Psychological study revealed groups of patients with anxiety and moderate asthenic reactions, asthenic-hypochondriac manifestations and hysteric reactions; taking them into account facilitated alleviation of pathology symptoms and shortening of treatment duration. Key words: diabetes mellitus, chronic diabetic polyneuropathy, clinical and psychological analysis, MMPI.

114. *Barsukov I.N., Andreeva G.O., Tarasov A.Yu.* Complex Therapy of Algesic Forms of Diabetic Polyneuropathia. 2010. N 1. P. 43–45. Tabl. 1, Bibliogr. 11.

The article presents the data about the efficiency of anticonvulsant pregabalin in cases of pain syndrome in patients with diabetic polyneuropathy. Key words: diabetic polyneuropathy, therapy, pain syndrome, pregabalin.

115. *Emelin A.Yu., Vorobiev S.V., Kovalenko A.P.* Features of Clinical Diagnostics of Posttraumatic Cognitive Disorders. 2009. N 5. P. 15–17. Bibliogr. 10.

Cranio cerebral trauma (CCT) is one of the most frequent forms of neurologic pathology. According to data of the World Health Organization, the latest years demonstrated a constant rise of neurotraumatism which amounts of about 2 % a year. Among various clinical symptomatology observed in patients with CCT consequences, cognitive disorders which can considerably complicate clinical course of trauma are of a special medical and social-economical significance. Now there is no clear definition and classification of posttraumatic cognitive disorders. Presented is analysis of cognitive disorders features and refinement of their diagnostic criteria for CCT patients. This allows improving the therapy effectiveness and optimizing the tactics of medical and social rehabilitation of patients with brain injury consequences. Key words: craniocerebral trauma, cognitive disorders, cognitive rehabilitation, post-commotion syndrome.

116. *Grigoriev S.G., Klimenko D.G.* Prediction of Early Outcomes of Hemorrhagic Stroke Therapy in a Logistic Regression Model. 2009. N 2. P. 35–38. Pic. 1, Tabl. 2, Bibliogr. 15.

Significant role of limited cerebrovascular accidents in the morbidity, mortality and disability patterns in the current setting is shown. Development of reliable predictive models of the therapy outcomes at the early stages of stroke diagnostics and treatment is considered. A method for development of mathematical-statistical model based on logistic regression for prediction of therapy outcomes in patients with hemorrhagic stroke is presented. Problems to be addressed

during the model study are as follows: model quality assessment; effects of factors included into the model on the lethal outcome probability; risk assessment. Key words: cerebrovascular accident, stroke, hemorrhagic stroke, neurovisualisation, individual prediction, mathematical-statistical model, logistic regression, risk ratio.

117. *Kalinina N.M., Partsernyak S.A., Gertzev A.V., Ischuk V.N.* Influence of Severity of Anxiety and Depression Spectrum Disorders on Basic Neuroimmune Links of Pathogenesis in Patients with Combined Cardiovascular Pathology. 2009. N 3. P. 26–31. Pic. 4, Tabl. 1, Bibliogr. 11.

The research paper presents some results of study of influence of anxiety and depression spectrum disorders on basic neuroimmune links of pathogenesis reflecting the functions of the central nervous system, suprasedimentary area of vegetative nervous system and immunity in patients with combined cardiovascular pathology. The authors conclude that anxiety and depression disorders significantly influence regulation of neuropsychic adaptation, level of production of beta-endorphin, proinflammatory and anti-inflammatory cytokines in patients with combined cardiovascular pathology. Key words: combined cardiovascular pathology, anxiety and depression spectrum disorders, beta-endorphin, proinflammatory and anti-inflammatory cytokines.

118. *Khabarov I.Yu., Akperov E.K., Salamatov V.E.* Clinical Picture, Diagnostics, Treatment of Asthenic Disorders in Servicemen with Multitrauma. 2009. N 5. P. 8–11. Bibliogr. 17.

The clinical manifestations of asthenic disorders were studied in patients with multitrauma using clinical and psychopathological as well as experimental and psychological methods. The efficacy of mexidol, cortexine and vinpotropil was evaluated in the patients with asthenic disorders. The anxiety and depression as well as asthenic, hypochondriac, intellectual and mnestic disturbances prevailed in the clinical picture of asthenic disorders. Metabolic activator treatment leads to decrease of the psychopathological signs of asthenic disorders, first of all due to the positive impact on somatic and mnestic domains and also due to reduction of obsessive and affective symptoms. Key words: asthenia, asthenic disorders, fatigue, mexidol, cortexine, vinpotropil, multitrauma.

119. *Kostyuk G.P., Kurasov E.S.* Patterns of Differential Diagnostics of Mental Disorders in Emergency Cardiological Setting in Patients of Hazardous Professions. 2009. N 5. P. 18–21. Bibliogr. 7.

Patterns of differential diagnostics of mental disorders in cardiological emergencies (acute coronary syndrome, hypertensive crisis, arrhythmias), as well as anxiety-phobic and anxiety disorders in patients with hazardous work conditions have been studied. Influence of sociocultural prerequisites on development of such types of disorders and prevalence of females among the diseased was shown. Characteristics of clinical manifestations of anxiety disorders have been presented giving the opportunity to carry out early differential diagnostics with cardiological emergencies, timely combined treatment and to improve quality of life of these patients. Key words: cardiological emergencies, anxiety disorders, differential diagnostics.



120. *Kovalenko A.P., Vorobiev S.V., Emelianov A.Yu.* Rehabilitation of Patients with Craniocerebral Trauma: Methodical-Organizational Aspects. 2009. N 5. P. 6–8. Bibliogr. 14.

According to epidemiologic research data, incidence of craniocerebral traumas varies for townspeople from 218 to 720 cases per 100.000 of population. Improvement of evacuation characteristics, of resuscitation and neurosurgical treatment increases the percentage of survivors after severe craniocerebral injuries. Along with those positive moments, there arises a critical question of further aid organization for victims in order to reach their most adequate restitution to the previous level of vital activity or most optimal compensation of lost functions. This process oversteps the action limits of the existing subdivisions of medical and social type. At present in Russia there is no conception of comprehensive aid to patients in post-acute period of craniocerebral trauma. Therefore, search and suggestions on organization and methodical approach to rehabilitation of patients with craniocerebral injuries is a relevant problem of Russian medicine. Key words: craniocerebral trauma, rehabilitation, interdisciplinary rehabilitation team, conception of biopsychosocial approach.

121. *Marchenko A.A., Abritalin E.Yu., Chudinovskikh A.G.* Epidemiology of Neurotic Disorders in Servicemen. 2009. N 5. P. 12–15. Bibliogr. 8.

Epidemiological characteristics of neurotic disorders in the military personnel were studied over the period 1991–2006. Results were the following: neurotic disorders incidence in servicemen has begun to decrease gradually after a maximum in 2001. Pronounced annual variations of morbidity rates were registered in different military areas (navies). Annually not less than 65–75 percents of patients were hospitalized. Dismissal rates tended to increase. Neuroses percentage in general structure of mental disorders has decreased in officers and warrant officers during last 14 years and was 43.3 % in 2006. Adjustment disorders prevailed (46.0 %). Conclusion: based on results authors have postulated the necessity of development and application of the standardized methods of neurotic disorders diagnostics, optimization of their assessment criteria, as well as development of outpatient technologies. Key words: epidemiology, neurotic disorders, servicemen.

122. *Rzheusskaya G.V., Listopadov Yu.I., Bobrova M.V.* Clinico-psychological effects of «Symbalta» for Treating Anxiety-Depressive Disorders. 2007. N 1. P. 52–58. Pic. 4, Tabl. 3, Bibliogr. 8.

In emergency situations the participants and rescuers are likely to develop an anxiety-depressing syndrome. In this connection the clinical effectiveness of anxiety-depressive disorders treatment with «Symbalta» has been proved as well as regression of cognitive disorders. The conducted research allows the medicine be considered safe and effective for basic pharmacotherapy of affective and cognitive disorders of vascular genesis. Key words: anxiety-depressing syndrome, cognitive disorders, psychodiagnostics, anti-depressant, «Symbalta».

123. *Scherbuk A.Yu., Bashkov L.L., Donskov V.V.* Possibilities to Apply Innovation Neurorehabilitation Methods in Saint-Petersburg. 2010. N 2. P. 28–31. Bibliogr. 11.

The results of medical rehabilitation of neurosurgery and neurology patients in St.-Petersburg have been analyzed. The necessity of innovation technologies implementation in applied health institutions is indicated, the results of retooling of city hospitals with modern equipment are estimated, and examples of development of the effective corrective methods improving rehabilitation quality are presented. Innovation technologies usage made it possible to decrease the terms of temporary incapacity of patients for work and to reduce frequency of their disability. Key words: medical rehabilitation, nervous system diseases, disability, health care management.

124. *Sokolova N.A., Ivanova N.E., Ivanov A.Yu., Kozyreva L.V.* Vegetative Dysfunction Variants and Reactivity of Vegetative Nervous System in Nontraumatic Intracranial Hemorrhages on the Basis of Data Analysis of Heart Rate Variability. 2010. N 4, Pt. 1. P. 44–49. Pic. 3, Tabl. 2, Bibliogr. 11.

The method of evaluation of vegetative nervous system's reactivity is presented according to the analysis of heart rate variability in patients with non-traumatic intracranial hemorrhages of different etiology and severity during lumbar puncture (LP) in particular. The results of determination by contribution of very low frequency (VLF) of evaluation of suprasedgmental centers reactivity (adequate, insufficient, exhaustion) with the detection of the vegetative dysfunction variant are given. The correlation of exertion degree of suprasedgmental centers with hypertensive hydrocephalic syndrome has been revealed. Key words: nontraumatic intracranial hemorrhages, heart rate variability, vegetative dysfunction, reactivity.

125. *Tkachenko S.V., Bakhtin M.Yu., Alborov A.Kh., Sidorenko V.A.* Criteria of Predictability of Encephalopathy Development in Patients after Long-Lasting Operative Intervention. 2009. N 4. P. 28–31. Tabl. 2, Bibliogr. 8.

In our study we present retrospective data about 171 patients with esophageal cancer survived transpleural esophagectomy. Eleven prediction criteria for post-surgical encephalopathy development were identified. By using these criteria in our prospective study (56 clinical observations) we were able to significantly decrease frequency of post-surgical encephalopathy as compared with the group of retrospective observations (9.6 % vs. 16.3 %, respectively). Efficacy of our prognostic program was up to 80 %. Key words: esophageal cancer, transpleural esophagectomy, post-surgical encephalopathy, prognosis, prophylaxis.

See also 32, 34, 45, 48, 54, 126, 186, 203, 209.

### **2.6.7. Radiodiagnostics**

126. *Abritalin E.Yu., Marchenko A.A., Tarumov D.A.* Use of Functional Magnetic Resonance Imaging to Study Anxiety-Depressive Disorders. 2009. N 5. P. 32–35. Tabl. 2, Bibliogr. 8.

Two functional magnetic resonance imaging experiments were performed using original «cognitive strain» and modified Stroop tasks. We identified diffe-

rent patterns of brain reactions to intensified cognitive stimulation and frustration between anxious-depressive and normal subjects. We revealed that B.O.L.D.-signal (blood oxygenation level dependent) from the right amygdala is significantly lower in anxious-depressive group than in healthy participants. This structure has shown intensification of the activity during the pharmacological treatment. Patients also demonstrated less intensive B.O.L.D.-activity in response to frustration in left caudate nucleus head. Several structures have shown reductions of regional brain responses during the treatment, in particular left Rolandic fissura and right cuneus. Key words: depressive disorders, anxiety disorders, functional magnetic resonance imaging, neuroimaging, treatment control.

127. *Filippov D.V., Yalimov A.N.* Modern Minimally Invasive Diagnostic Methods of Solid Splenic Injuries in Children. 2008. N 3. P. 25–27. Pic. 2, Bibliogr. 5.

Examinations of 25 children who had been admitted to the surgically department from the period 2001 to 2007 with the clinical diagnosis of splenic injuries have been analyzed. All patients had blunt solid splenic rupture. We have determined high effectiveness of ultrasonography and computed tomography from the patients with blunt injuries of parenchymal organs. Key words: children's trauma, blunt abdominal trauma, splenic injuries, ultrasonography, computed tomography.

128. *Panfilenko A.F., Yakovlev S.A., Pozdnyakov A.V., Tyutin L.A.* Diagnostic Significance of Dynamic Contrast Enhanced Magnetic Resonance Imaging in Patients with Brain Tumours. 2008. N 2. P. 29–33. Pic. 4, Tabl. 1, Bibliogr. 13.

84 patients with different brain tumours were investigated. The conventional and dynamic contrast enhanced magnetic resonance imaging was performed in all the patients. Malignant tumours were characterized by fast increase of signal intensity, achievement of peak of contrast enhancement in 1–2 minutes with a subsequent tendency to eliminating contrast agent after 3–5 minutes, without a plateau phase. Meningiomas differed by a pronounced plateau phase. Benign tumours were mainly characterized by gradual accumulation of the contrast agent. Assessment of dynamics of accumulation and elimination of contrast substance by brain tumours at dynamic contrast enhanced MRI provides insight into tumour histology. Key words: magnetic resonance imaging (MRI), contrast agents, dynamic contrast enhancement, brain tumours.

129. *Sirotko O.V.* Opportunities of Ultrasound Diagnostics of Joint Lesion in Reactive Arthritis. 2010. N 2. P. 55–59. Pic. 2, Bibliogr. 10.

Features of ultrasonic diagnostics of joint and juxta-articular lesions were studied. 24 patients with reactive arthritis and 20 persons from control group were examined. It is established, that the ultrasonic research in comparison with radiological method is more informative for reactive arthritis diagnostics, as it allows us to estimate a condition of the ligamental apparatus, juxta-articular tendons and tissues. On the basis of the identified features of joint and juxta-articular lesions, ultrasonic criteria of reactive arthritis are defined: thickening, heterogeneity of structure, echogenicity reduction of entheses, ligaments, and

development of closing plate osteofluence (erosion) in a place of entheses attachment. Key words: reactive arthritis, osteoligamental apparatus, joint visualization, ultrasonography, entheses.

See also 53.

### **2.6.8. Medico-legal issues**

130. *Bozhchenko A.P.* Forensic Genetic Dermatoglyphic Analysis in Practice of Identification of Unknown Person: Administrative and Methodological Issues and Ways of Solving them. 2009. N 1. P. 44–49. Pis. 2, Bibliogr. 14.

Possibilities of identification of an unknown person based on forensic genetic dermatoglyphic analysis are considered. An original classification of dermatoglyphic features is presented; novel principles of comparative study based on multidimensional and interrelated feature space are described. Revealed patterns allowed developing an effective approach of blood relation establishing based on the dermatoglyphic analysis; the approach can be used in the forensic medical practice for indirect (via blood relation establishment) identification of an unknown person (alive or dead), and for establishment of fatherhood, motherhood and substitution of children. Main principles of such study arrangement in the expert institutions are stated; aspects of professional training are considered. Key words: unidentified corpse, identification of a person, blood relation, dermatoglyphics, forensic medical examination.

131. *Bozhchenko A.P., Moiseenko S.A., Tolmachev I.A.* Human Body Length Definition according to the Characteristics of Fingers and Palms Papillary Relief. 2008. N 4. P. 39–44. Pic. 1, Bibliogr. 12.

Authors described investigation outcomes of dermatoglyphic phenotype of fingers and palms depending on human body length. Taking into consideration specificity of forensic medical examination objects (insufficiency, low quality of dermatoglyphs), more than one hundred mathematic statistical diagnostic models, based on Bayesian approach and multiple regressive analysis, have been developed for solving the problem. Correct definition of stature group is possible in 75–95 % (depending on completeness of studying material and ability to consider common signs of an unknown man). Exact definition of body length by some patterns –  $\pm 4$ –5 cm. Considering high efficiency and simplicity, developed techniques can be applied in forensic medicine for defining great amount of unidentified bodies. Key words: the unidentified bodies, personality identification, personal characteristics, body length, dermatoglyphic.

132. *Khrustaleva Yu.A.* Evaluation of Expert Materials to Identify Causality in Case of Victims' Death on the Place of Occurrence. 2009. N 5. P. 76–80. Tabl. 2, Bibliogr. 15.

Expert materials to identifying cause-and-effect relation in case of death of victims on the place of occurrence were analyzed. Law-enforcement bodies' questions are defined, wherein they ask experts to identify relation between each damage and death, that presents significant expert interest. In conclusions forensic medical professionals do not always adduce proper argumentation of

identifying relation, amid increasing requirements to evidential force of expert document; such an approach to identifying cause relations is unacceptable. Key words: forensic medicine, expert's opinion, trauma, place of occurrence, cause-and-effect relations.

133. *Khrustaleva Yu.A.* Socially-Legal and Biomedical Significance of Ascertaining Cause-Effect Relations in Forensic Medicine Practice. 2009. N 3. P. 92–94. Bibliogr. 8.

The analysis of expert materials when ascertaining causation in cases of sufferers' death at scenes of accidents and in hospitals of the city (St.-Petersburg) has defined great numbers of expert reports (investigations) concerning ascertainment of sufferers' cause-effect relations with mechanical injuries; in this connection, cases with blunt traumas have been investigated more often than not and among the latter for the greater part – motor vehicle accidents. Medical assessors should remember that in medicolegal practice only medicobiologic problems are resolved; hence, it is necessary to ascertain the connection between a trauma and its consequences. Key words: cause-effect relations, forensic medical assessor, motor vehicle accident, trauma.

134. *Kuznetsov S.V., Tolmachev I.A., Tyurin M.V.* Forensic Medical Significance of Contact Blood Traces formed by the Blades of Sharp Objects on the Materials of the Scene Objects. 2010. N 2. P. 46–50. Bibliogr. 14.

The article considers the problem of improving the efficiency of forensic medical examination of blood traces according to their morphometric features. Also, here is given the analysis of blood traces classification, as well as analyses of accumulated perceptions of the terminology and concepts on this issue, an assessment of works carried out prior to the present research in this area, the results of our own research work are presented, on the basis of which the existing notions about classification of contact blood traces and mechanisms of their formation are supplemented. Stages of contact blood traces formation are shown, the morphometric features, which firstly determine the structural properties of materials used to wipe the blades of sharp objects, and then the individual features of these blades, are singled out and studied. Key words: scene objects, contact blood traces, properties of sharp object blades, wipe type, traceology.

### **2.6.9. Other medical issues**

135. *Kamyar Radgudarzi.* Pathology of Chewing Apparatus in Professionals Contacting Vibratory Devices. 2009. N 3. P. 51–54. Tabl. 2, Bibliogr. 7.

The study of mouth pathology in people professionally affected by vibration factors is presented. The study object were 134 workers of road-construction organization, 65 of them used vibratory compactors (VC). It is established, that in people directly contacting VC stomatological pathology is more severe compared to non-contacting professionals. Correlation has been revealed between need of stomatological care and VC experience. Key words: professional hazards, vibration, paradontosis, paradontitis, caries, pulpitis.

136. *Komlev A.D., Kuzyaev A.I., Laskin G.M., Kuzenkova V.E.* Influence of the I<sub>f</sub>-Channel Blocker Ivabradine on Pulmonary Function Test in Patients with Chronic Obstructive Pulmonary Disease during a Stable Clinical Course. 2010. N 1. P. 28–31. Tabl. 1, Bibliogr. 12.

The purpose of this study was to estimate the influence of ivabradine, I<sub>f</sub>-channels blocker, on airway obstruction and lung volumes in patients with chronic obstructive pulmonary diseases (COPD) at stable condition. In 59 patients with COPD we evaluated heart rate by ECG, bronchial resistance and pulmonary volumes by methods of spirometry and plethysmography, before and after 14-day ivabradine intake in a dose of 10 mg/day. Ivabradine is heart rate lowering agent that selectively inhibits the primary pacemaker I<sub>f</sub> current in the sinoatrial node of the heart. In the present study we demonstrated that Ivabradine has no significant effect on bronchial conduction and other parameters of lung function. Thus, this drug may be recommended for treatment of patients with combination of COPD and coronary heart disease (CHD). Key words: chronic obstructive pulmonary disease, I<sub>f</sub>-channels, ivabradine, pulmonary function test.

137. *Kuandykova M.V., Baranov V.L., Kharitonov M.A.* Effects of Bronchial Asthma and Current Therapy on Status of the Male Hypophysial-Gonadal System. 2009. N 1. P. 33–37. Pic. 3, Tabl. 3, Bibliogr. 14.

Bronchial asthma (BA) is a specific system disease associated with changes in virtually all systems and organs. We studied some aspects of hypophysial-gonadal system (HGS) functioning in male BA patients. It has been established that hypophysial-gonadal complex disorders started to manifest a moderate degree and reached marked levels in patients with a severe disease. Also it was revealed that inhalation glucocorticoids unlike system hormones do not influence HGS. Key words: bronchial asthma, hypophysial-gonadal system, glucocorticoids, libido, testosterone, erectile dysfunction.

138. *Ladin S.E., Yakovenko T.V., Alekseev T.V., Makalatiya L.G.* Clinico-Psychological Patterns in Patients with Postoperative Peritonitis. 2009. N 3. P. 48–50. Pic. 1, Bibliogr. 8.

Clinical and psychological patterns were studied in patients with postoperative peritonitis after rehabilitation. After discharge from the hospital, the abdominal pain syndrome persisted in 56 % clinical cases, in 43 % cases dyspepsia was reported. In 73 (57.5 %) patients during the postoperative rehabilitation stage the unhealed wounds of abdominal wall persisted, in 23 % external fistulas were reported. Only 27.5 % patients were able to start light work. 57.5 % patients needed prolonged treatment with surgery procedures. In long-term (within 5 years) post-operation period 5 patients died (9.3 %). Significant serious medical complications and difficulties with social adaptation after surviving peritonitis were the factors to decrease patient quality of live. Studied patient category needs medical and social rehabilitation. Key words: postoperative peritonitis, quality of life, rehabilitation.

## 2.7. AIDS prevention and treatment

139. *Aleksanin S.S., Zholobov V.E., Vinogradova T.N., Belyakov N.A.* HIV-Infection Incidence in Saint-Petersburg. 2009. N 5. P. 38–42. Pic. 3, Tabl. 2, Bibliogr. 19.

Analysis of clinical-epidemiological data on HIV-infection incidence in St.-Petersburg showed epidemic trends with three periods: 1st period (1987–1995) – incidence increased slowly and was observed mainly in homo- and heterosexuals; 2nd period (1996–2001) – HIV-infection incidence in drug users; 3rd period (2002 till present) – increase of heterosexual transmission suggesting epidemic generalization and increasing number of pregnant women. HIV-infection transmission from mother to the child (5.7–6.0 %) was shown, that is 5 times higher the measures in Western Europe and USA, but 2 times lower than average rates in Russia. Most common secondary and opportunistic infection were identified; among them tuberculosis is the most prevalent which is the main mortality cause in AIDS patients. Aggravation of HIV-infection with increasing number of patients diagnosed at the late stages is observed. Key words: HIV/AIDS-infection, incidence, drug users, pregnant women with HIV-infection.

140. *Dodonov K.N.* Issues of Clinical Examination and Treatment of HIV-infected children: Analysis of Current Situation in Russia. 2009. N 2. P. 50–54. Pic. 2, Tabl. 1, Bibliogr. 9.

The analysis of 903 outpatient case reports of HIV-infected children revealed a high level of the vertical transfer of HIV-infection (10 %), low rate of early diagnostics up to age of 1 year (40 %), and irrational use of modern molecular-genetic methods. It was established that 10 % HIV-infected children and women in studied regions actually had no access to public health services. Defects of clinical and laboratory monitoring were the reasons for delayed beginning of their therapy (28 % children started therapy with severe immunodeficiency) and a poor efficiency. After one-year therapy only 50 % children had reached an indefinable level of viral load. Shifts to other therapy schedules ungrounded by the laboratory resistance tests were recorded in 15 % children. Offered are the top-priority measures on the improvement of the quality of rendering medical aid to HIV-infected children, and development of up-to-date protocols for the diagnostics and treatment of children, and also a formation of the integrated database of all the HIV-positive children in Russia. Key words: HIV infection, HAART, diagnostics, dispensary observation, children.

141. *Dodonov K.N., Voronin E.E., Kryukova N.V., Fomina M.Yu., Davydova T.N.* Medico-Psychological Problems of Treatment of Children with HIV-Infection deprived of Parental Care. 2010. N 2. P. 60–67. Pic. 3, Tabl. 3, Bibliogr. 10.

Results of examination of 30 HIV-infected children aged 2–9 years old, deprived of parental care, and brought up in Republican clinical infectious hospital are analyzed. Clinical, laboratory and psychological data were studied; cognitive and emotional development of children and also speech over time was studied. It is shown, that only antiretroviral therapy is not enough to ensure harmoni-

ous development of the child. The system of corrective and developing work on the basis of full interaction and continuity of multidisciplinary experts is developed. The complex approach to solving problems of the medical, psychological and logopedic support directed at leveling of speech and mental development of children with HIV-infection brought up in the closed institutions is offered. Key words: HIV-infection in children, antiretroviral therapy, psychology, pedagogics, logopedics.

142. *Fomenkova N.V., Leonova O.N., Rakhmanova A.G.* Brain Lymphoma in Patient with HIV-Infection. 2009. N 2. P. 61–63. Pic. 1, Bibliogr. 8.

A case report of successful treatment of a brain B-cell lymphoma in a patient with AIDS (stage 4B/AIDS according to V.I. Pokrovsky classification (2001)). Key words: HIV/AIDS, HIV-infection, B-cell lymphoma, ARV-therapy, cytostatic polychemotherapy.

143. *Fomin Yu.A., Fomina M.Yu., Dodonov K.N., Voronin E.E.* Aspects of Combined Antiretroviral Therapies of a HIV-Infection in Children. 2009. N 4. P. 32–35. Tabl. 2, Bibliogr. 11.

For the purpose to decrease frequency of adverse side effects during therapy of HIV-infected children, the combined antiretroviral therapy was used including abacavir, other nucleotide reverse transcriptase inhibitors and protease inhibitors. Clinical, immunologic and virological data from 77 HIV-infected children aged from 2 to 16 years were studied in dynamics. High efficiency and safety of combined antiretroviral therapy was shown in children with HIV-infection both as a first-line, and subsequent lines of specific therapy. Key words: HIV infection in children, HAART, antiretroviral agents, complications.

144. *Fomina M.Yu.* Neurological Manifestations in Early-Age Children with Perinatal HIV-Infection. 2009. N 3. P. 57–59. Bibliogr. 5.

Results of research of the neurological status of children with perinatally transmitted HIV-infection are analyzed. In 455 patients, the neurological status, immunological and virological investigation data were studied; MRI-scan and psychometric testing were performed. It is shown that acute HIV-infection in children manifests as neurological disorders in most cases. Key words: HIV-infection in children, acute HIV-encephalitis.

145. *Fomina M.Yu., Scherbuk Yu.A., Voronin E.E., Rakhmanova A.G.* Characteristics of Nervous System Injury at Perinatal and Parenteral HIV-Infection. 2009. N 2. P. 55–61. Tabl. 1, Bibliogr. 6.

This study analyzed the results of a survey of patients with HIV-infection in different ways. We examined 599 children aged 0–18 years old. We studied the neurological status of patients, the immunological and virological surveys conducted MRI scan of brain. We show that there are clinical and immunological correlations at various stages of infection; we have analyzed the influence of antiretroviral therapy. Key words: HIV infection in children, HIV-encephalitis, distal symmetrical polyneuropathy.

146. *Rakhmanova A.G., Zholobov V.E., Yastrebova E.B.* Education and Methodic Complex Course of HIV-Medicine aimed at Training of



Specialists on Medical Social and Psychological Assistance. 2010. N 4, Pt. 1. P. 56–62. Pic. 3, Tabl. 1, Bibliogr. 5.

The article represents the didactical problems of composing the HIV-medicine course in Saint-Petersburg, problems of teaching doctors by other doctors of different specialties and forming the necessary knowledge and skills on HIV infection to improve the assistance to patients as a response to negative epidemiological situation on the mentioned nosology in Russia and particularly in Saint-Petersburg. During the educational periods of 2008/2009 and 2009/2010 266 doctors and 22 medical nurses received the state certificates on advanced training at HIV-medicine course. Key words: HIV infection, HIV-medicine course, education and methodic complex, postgraduate medical education.

147. *Regushevskaya E.V., Dubikaytis T.A., Kuznetsova O.Yu., Bo- lekhan V.N.* Socio-Economic Characteristics and Sexual Behavior of Reproductive Age Women in Saint-Petersburg. 2010. N 1. P. 59–63. Pic. 2, Tabl. 1, Bibliogr. 8.

The study examined correlation between socio-economic characteristics and unsafe sexual behavior among women of reproductive age in St. Petersburg. Young age, low education level, living without marriage and high personal income are associated with risky sexual relationships. Key words: women, reproductive health, sexual behavior, sexual education, socio-economic characteristics.

148. *Volova L.Yu.* Implementation of Secondary Prevention Programs as a Factor of Inhibition of HIV-Infection Epidemic in Yamal Territories. 2010. N 1. P. 54–59. Pic. 1, Tabl. 4, Bibliogr. 6.

Creation of service for HIV/AIDS prevention and rendering of specialized medical aid for HIV-infected patients, introduction of programs of secondary prevention of HIV-infection in groups of patients with parenteral hepatitis and consumers of IV drugs during initial stage of epidemic has allowed us to constrain rates of its development and to stabilize an epidemic situation with HIV-infection in Yamal-Nenets autonomous region. Key words: HIV-infection, virus hepatitis B and C, epidemic process.

149. *Volova L.Yu., Grezina L.A., Rakhmanova A.G.* Summary of HIV-1 Resistance Study and a Comparison of Mutation Rates for Different «Score» Values on the Yamal Territory. 2009. N 1. P. 50–54. Tabl. 5, Bibliogr. 9.

While assessing a genotypic HIV resistance by the sequence method the computer programs (ViroSeq HIV-1, HIV db Program) use the aminoacid sequence of the known strain HXB-2 related to the B subtype as a matrix of the «wild» strain. However, numerous studies determined that on the Russia territory non-B HIV subtypes widely prevail. Study results have shown that «low score»-mutation values in the Russian HIV-1 population are yet unknown, and undoubtedly draw a serious research interest and require further study. Key words: HIV-infection, laboratory diagnostics, HIV-1, mutations, sequence method, drug resistance, epidemiological process, antiretroviral therapy.

150. *Yastrebova E.B., Zholobov V.E., Rakhmanova A.G.* Risk Factors for HIV Mother-to-Child Transmission. 2008. N 4. P. 35–38. Tabl. 6, Bibliogr. 9.

2691 children were born from HIV-positive women in St.-Petersburg during the period of 1995–2007. Among them HIV-infection was diagnosed in 181 patients. 72 children receive highly active antiretroviral therapy. Major factors of HIV transmission from mother to the child were inadequate chemoprevention at all stages; the active use of intravenous narcotic substances during pregnancy, the long waterless period and physiological delivery with unknown level of virus load before delivery; and also prematurely born and low-weight children as markers of possible infection. Key words: HIV-infection, women, children, risk factors.

151. *Zholobov V.E.* Mortality Causes of HIV/AIDS Infected Patients according to Reported Statistics Data. 2010. N 4, Pt. 1. P. 53–56. Pic. 2, Tabl. 4, Bibliogr. 7.

The study shows the deaths dynamics of HIV infected patients and the increase of both morbidity and death rate among the Russian population. It presents the statistics data on morbidity in Saint-Petersburg, the rate of HIV infection spread is compared to average statistics data of Russia. The lethal outcome frequency in Saint-Petersburg in 2009 increased 3 times in comparison with the period of 2007–2008. Negative tendency of HIV morbidity development is characterized by AIDS infected patients increase, mortality rate increase because of secondary and accompanying diseases. Among those died of HIV for the period of 2008–2009 a high percentage belongs to socially unadaptated people, and to people who didn't pass regular medical check-ups and never received an antiviral therapy. Key words: epidemic, HIV infection, AIDS, mortality, Saint-Petersburg.

### 3. BIOLOGICAL ISSUES

#### 3.1. Biological safety

152. *Bayramov A.A., Novikova E.N., Komyakov B.K., Proshin S.N.* Influence of Prenatal Stress on Experimental Gender Behavior. 2008. N 2. P. 48–53. Pic. 3, Tabl. 1, Bibliogr. 29.

Results of research have shown that prenatal cholinergic drug exposure produces drastic disbalance in the neurotransmitter and their metabolites content in brain tissue of 20-day rat fetus. Comparative analysis has shown that the serotonergic mediatory system is more sensitive than dopaminergic system to influence of cholinolytics in prenatal period. Decreasing of 5-HT concentration and its turnover is reported during all «critical periods» of second half of gestation after exposure of both Metamizylum, and Gangleronum. The brain dopaminergic system of male and female embryos is turned to be more sensitive to n-cholinotropic drug Gangleronum exposure. Thus, prenatal exposure of cholinotropic drugs in pregnant female results in gender-related alterations in brain dopaminergic and serotonergic systems of 20-day rat fetuses. These alterations can be involved in etiopathogenesis of behavioural dysfunctions of rat offspring in puberty. Key words: prenatal stress, gender behavior, neurotransmitter systems.

153. *Marysheva V.V., Gavrev A.I., Proshin S.N., Shabanov P.D.* Protective Characteristics of Antihypoxic Remedies of Thiazole–Indole Group from Damaging Chemical Factors. 2008. N 3. P. 37–40. Tabl. 5, Bibliogr. 11.

The new four antihypoxic remedies produced from ancestor drug thiazole[5,4-b]indole have been extensively studied in experimental model elaborating hemic hypoxia, toxic wet lungs under phosgene and acute toxic liver damage under carbon tetrachloride. It has been shown that antihypoxic remedies possess strong protective activity in hemic hypoxia model as compared to amtzol which does not protect animals from death. The new four antihypoxic remedies stimulate survival of animals as compared to famous antihypoxic drugs – amtzol, bemetil and gutimin. The later were not found to have shown protective activity. The new remedies possessed protective activity like that essentielle did in a model of acute toxic liver damage. Key words: thiazole[5,4-b]indole, hemic hypoxia, toxic wet lungs, acute toxic liver damage, amtzol, essentielle.

154. *Mazrukho A.B., Kaminsky D.I., Telesmanich N.R.* Novel Nutrient Media Usage at the Stages of Training of Members of the Specialized Anti-Epidemic Teams (SAET) for the Work in Zones of Emergency Situations. 2010. N 3. P. 75–80. Tabl. 1, Bibliogr. 11.

Novel nutrient media for microbiological diagnostics of plague and cholera based on the bakery yeast pancreatic digest were tested in the stages of training of members of the Specialized Anti-Epidemic Team (SAET) within tactical special studies on specific indication of pathogenic biological agents (PBA) and monitoring of surface waters and sewage for the presence of cholera vibrios. The constructed media proved to be more effective than the analogs commonly

used in practice. These media are recommended to be included into the mobilization reserve of SAET for use during the work in zones of emergency situations. Key words: nutrient media, plague agent, *Vibrio cholerae*, microbiological diagnostic, Specialized Anti-Epidemic Team, emergency situations.

155. *Slozina N.M., Neronova E.G.* Genetic Consequences of Emergency Situations (Review). 2007. N 1. P. 32–40. Bibliogr. 50.

Main mutagenic components of emergency situations, problems of individual sensitivity with regard to ruinous environmental factors and possible consequences of emergency factors impact with reference to human posterity are considered. Key words: emergency situations, individual sensitivity, mutagenic, genetic effects.

156. *Starovoi A.V., Pastushenkov V.L., Shitov A.Yu., Myasnikov A.A., Starkov A.V.* Assessment of Effectiveness of Metabolic Cytoprotectors in Emergency Prevention of Acute Decompression Sickness in the Experiment. 2010. N 4, Pt. 2. P. 33–40. Pic. 3, Tabl. 7, Bibliogr. 18.

The data on the effectiveness of metabolic therapy by Remaxol® cytoprotector for emergency prevention of acute severe decompression sickness in the experiment on 45 mongrel male rabbits are provided. It is shown that a single intravenous administration of Remaxol® at a dose of 18 mg/kg of animal body weight (dose calculated for succinic acid) reduces the prooxidant effect of inadequate decompression, leads to the reduction in the frequency of deaths due to the acute decompression sickness, and increases the duration of survival of animals. Key words: emergencies, underwater medicine, acute decompression sickness, emergency prevention, Remaxol, antioxidant system, lipid peroxidation.

157. *Vorobieva V.V., Shabanov P.D.* Bioenergetic Phenomena in Stress Exposure of Local Vibration and Defensive Action of Succinate. 2010. N 4, Pt. 1. P. 87–92. Pic. 1, Tabl. 2, Bibliogr. 17.

The purpose of the paper was to study the activity of energy producing system of the rat myocardium, liver and kidneys after exposure of local vibration before and after course administration of succinate (100 mg/kg, 7 days). The energy dependent reactions of native mitochondria were investigated by means of polarographic method using Clark's closed membrane electrode. The intensity of oxydative processes was assessed according to activity of the lymphocyte succinate dehydrogenase and catalase of the blood. The energy producing system of the tissues studied was shown to be involved in response reaction of the organism on vibration exposure. In that case we observed the formation of the second phase of bioenergy hypoxia in the myocardium and kidneys and the first phase of hypoxia in the liver. The defensive action of succinate appeared in the form of the NAD-dependent activity recovery, regulatory inhibition of FAD-dependent chain of breath system of mitochondria, normalization of cellular and populational features of lymphocyte succinate dehydrogenase activity and decrease of catalase activity. Key words: vibration, mitochondria, energy metabolism, myocardium, kidneys, liver, bioenergy hypoxia, catalase, succinate dehydrogenase, lymphocytes, succinate.

See also 244, 248.

### 3.2. Radiobiology

158. *Bychkovskaya I.B., Egorova E.I., Igolkina Yu.V., Fedortseva R.F.* Non-Stochastic Effects as Indicator of Radiation Risk for Wildlife in Post Accident Situations. 2007. N 2. P. 32–37. Pic. 2, Tabl. 2, Bibliogr. 22.

The work represents a new approach to the study of risk of radiation contamination of the environment. The approach takes as a basis the discovery of the particular non-stochastic non-specific cell effects which qualitatively distinguish from cytogenetical effects according to the principle «all or nothing». On the model of the freshwater hydrobionts – infusorian *Spirostomum ambiguum* Ehrbg it is shown that the damage of such type is displayed also in the form of serious functional abnormalities – dose-independent disorders of motion. The express method which is used allowed during 1–2 hours detecting these changes. This method is suitable for use in natural conditions. Key words: radiation risk, wildlife, special cell effects, bio-test's express method, hydrobionts, disorder of motion's function.

159. *Bychkovskaya I.B., Fedortseva R.F., Antonov P.V., Dolinsky G.A.* Long-term Somatic Consequences of Low Dose Radiation. 2007. N 1. P. 26–32. Pic. 1, Bibli. 32.

A new conception of pathogenesis of the long-term non-cancer somatic consequences of low dose radiation is presented. The conception is based on the discovery of the special non-stochastic radiation cell effects of non-mutation origin. Key words: ionizing radiation, low doses, particular cell effects, pathogenesis of somatic consequences.

160. *Bychkovskaya I.B., Sarapultseva E.I., Igolkina Yu.V., Fedortseva R.F., Aleksanin S.S.* Non-Stochastic Effects as a New Radiation Safety Test for Biota in Post-Accident Situations Message 2. Inherited Forms of Injuries. 2010. N 3. P. 65–69. Pic. 3, Tabl. 1, Bibliogr. 17.

Proposed rationale for a new approach to the study of radiation hazards to biota pollution. The approach is based on discovery in different subjects (from protozoa to mammalian cells), the same type of damages that is induced even by low radiation. They are in contrast from the genotoxic effects not subject to the principles of stochastics. These damages are not based on the principles of stochastics (<http://irbb.ucoz.ru>). In model experiments on radioresistant unicellular aquatic organisms *Spirostomum ambiguum* Ehrbg was shown that these damages are inherited by offspring of animals irradiated at a dose of 0.01 Gy. The effect does not increase with increasing dose in a large dose range. It registered for different indicators – reduced viability, inhibition of spontaneous motor activity, the appearance of pathological forms of movement. The results are of interest in connection with the problem of the danger of low radiation doses on the biota. Key words: ionizing radiation, low doses, unicellular aquatic organisms, viability, motor activity, pathological forms of movement, inheritance, radiation hazards.

161. *Legeza V.I., Seleznev A.B., Zargarova N.I., Kondakov A.Yu.* Experimental Study of Medicoprophylactic Application of Interleukin-1 $\beta$

(Betaleukin) in Combined Radiation Injuries. 2010. N 4, Pt. 2. P. 41–45. Pic. 2, Tabl. 1, Bibliogr. 19.

In experiments on rats with combined radiation injuries (superficial and deep radiation burn combined with total  $\gamma$ -irradiation) it was shown that system application of recombinant human interleukin-1 $\beta$  (betaleukin) facilitates substantial mitigation of destructive processes in the wound and accelerates its healing. Possible mechanisms of radioprotective action of cytokines in combined radiation injuries are discussed. Key words: combined radiation injuries, betaleukin, medicoprophylactic radioprotective action.

162. *Nadyrov E.A., Malinovskaya Yu.V., Nikonovich S.N., Melnov S.B.* Value of Cytogenetic Markers for Breast Cancer Aggression Prediction. 2009. N 5. P. 46–49. Tabl. 2, Bibliogr. 9.

We performed cytogenetic analysis of tumor and peritumor tissues of invasive breast cancer in patients living in Gomel and Minsk regions of the Republic of Belarus. The results testify to essential distinction of cytogenetic indicators of tissue sample cells from the regions with different anthropogenic load (Gomel region is the most contaminated area of Belarus as a result of Chernobyl Nuclear Power Plant accident). Close connection between genome destabilization level and tumor malignancy degree has been detected. We show that cytogenetic disorder level in peritumorlike tissue among inhabitants of Gomel region is significantly higher than among those of Minsk region and that can be considered as precondition for late health consequences of Chernobyl Nuclear Power Plant accident for people. Key words: breast cancer, genetic instability, pathological mitoses, micronuclei.

163. *Proshin S.N.* Physiological Role of Gangliosides and Sialidases in Cells affected by Ionizing Radiation. 2007. N 2. P. 28–32. Bibliogr. 39.

Review is aimed to elucidate the role of gangliosides and modulating their sialidases in fate of irradiated cells. The significance of low- and high specious gangliosides is discussed in connection to bystander effect. Sialidase activity in irradiated cell is reviewed. The new data about signal-transduction molecules modulating by gangliosides are presented. Key words: gangliosides, sialidases, lipid rafts, ionizing radiation

164. *Proshin S.N., Fedortseva R.F.* Advantages and Drawbacks of Interphase Cytogenetics (Single Cell Gel Electrophoresis, Comet Assay) to Elucidate Genome Instability in Vivo and in Vitro induced by Ionizing Radiation. 2007. N 1. P. 41–44. Bibliogr. 16.

The paper is focused on considering advantages and drawbacks of single cell gel electrophoresis (Comet assay) to detect genome damages in somatic and reproductive cell populations. The exposure of 0.25 Gy is being discussed in terms of Comet assay to elucidate DNA damages in dose-dependent manner. The application of site-specific enzymes has been considered in connection with single cell gel electrophoresis. Key words: genome instability, single cell gel electrophoresis, ionizing radiation.

165. *Vishnyakova N.M.* Lifetime Radiation Risk of Stochastic Exposure Effects of X-ray Examinations for the Patients of Different Gender and Age. 2010. N 4, Pt. 1. P. 10–14. Tabl. 4, Bibliogr. 7.

The developed model for calculation of lifetime radiation risk of developing stochastic exposure effects during various X-ray procedures is based on the usage of equivalent doses in organs and tissues and calculated gender-age radiation risk ratios. Such approach considers dependence on gender and age of both dose and radiosensitivity related to the stochastic exposure effects, and thus it is principally different from the risk assessment with the usage of effective dose considering only dependence of dose on age. Key words: radiation risk, stochastic effects, equivalent dose, effective dose, X-ray procedure, gender, age, patient, radiation protection.

166. *Zugairova O.N., Konovalov S.S., Polyakova V.O., Kvetnoy I.M.* Dynamics of Proliferation and Apoptosis Processes of Human's and Rat's Thyroid Follicular Cells in Natural and Radiation-Induced Aging. 2009. N 4. P. 54–58. Pic. 7, Bibliogr. 14.

It has been shown, that the processes of cell proliferation in human thyroid gland at the age up to 75 years old are stronger, then the apoptosis process, but at the age of 90 years old the antiproliferative processes and apoptosis finally dominate over proliferation. This phenomenon is illustrated by the decrease of Ki-67 (marker of proliferation) expression and the increase of proapoptotic marker p53. Also, the increase of apoptosis has been registered in follicular thyroid cells after irradiation both in older and younger rats. At the same time, the number of mitotic cells strongly decreases. In all age groups after irradiation the balance of proliferative activity and apoptosis is biased to antiproliferative activity and cell death. These data give occasion to consider the radiation influence as the factor for stimulation of aging processes in thyroid as well as in other organs. Key words: thyroid gland, proliferation, apoptosis, Ki-67, p53.

### 3.3. Traumatic rhabdomyolysis

167. *Yunusov I.A., Zarubina I.V., Shabanov P.D.* Significance of Pain Sensitivity for Metabolic Activity of the Liver in Severe Compression Trauma. 2009. N 4. P. 59–61. Tabl. 2, Bibliogr. 12.

Animals with high pain sensitivity were experimentally shown to have the most pronounced manifestations of energy deficit and cytolytic syndrome. Individual differences in pain sensitivity play an important role in pathogenesis of severe compression trauma and can determine decompensation degree of liver functions. Key words: severe trauma, individual pain sensitivity, rats, adenine nucleotides, aminotransferases.

168. *Zarubina I.V., Yunusov I.A., Shabanov P.D.* Antioxidant Effects of Metabolic Protectors in Experimental Traumatic Toxicosis. 2010. N 3. P. 69–72. Tabl. 2, Bibliogr. 14.

Traumatic toxicosis (crush syndrome) was modeled in rats by means of compression of smooth tissues of legs in special press apparatus within 4 h. The efficacy of succinate, 2-ethylthiobenzimidazol and their combination (25 mg/kg) administered intraperitoneally immediately after trauma (in decompression period) in traumatic toxicosis was studied. The toxicosis developing in 12 h after severe compression trauma was accompanied with activation of lipid peroxidation processes and inhibition of antioxidant systems in the liver. Systemic administration of succinate, 2-ethylthiobenzimidazol and their combination decreased the level of lipid peroxidation products (malonic dialdehyde and dienic conjugates contents) and increased the activity of superoxide dismutase and the level of recovered glutathione in the liver that indicated on defensive effects of drugs in the development of traumatic toxicosis. The additive action of succinate and 2-ethylthiobenzimidazol allows recommend this combination as an effective and rational mixture to correct traumatic toxicosis subsequences. Key words: traumatic toxicosis, succinate, 2-ethylthio-benzimidazol, lipid peroxidation, antioxidant systems, liver, rats.

169. *Zarubina I.V., Yunusov I.A., Shabanov P.D.* Efficiency of Antihypoxants in Traumatic Toxicosis. 2009. N 2. P. 68–72. Pic. 1, Tabl. 4, Bibliogr. 13.

Experiments on rats has shown that traumatic toxicosis (crush syndrome) was accompanied with disorders of excretory and detoxifying functions of the liver and the increase of the urea, uric acid, creatinine and potassium contents in the blood serum. Substrate antihypoxant reamberine administered systemically to rats with trauma (10 ml/kg) elevated bromsulfaleine excretion from the blood, reduced hexo-barbital-induced sleep and decreased the level of toxic metabolites in the rat blood. All these indexes indicate that reamberine defends rats from traumatical toxicosis. Key words: traumatic toxicosis, crush syndrome, reamberine, antihypoxants, liver.



#### 4. CLINICAL LABORATORY DIAGNOSTICS

170. *Chubukina Zh.V., Bubnova L.N., Bessmeltsev S.S.* Prognostic Value of Apoptosis of Tumor Clone Bone Marrow Cells in Patients with Multiple Myeloma. 2009. N 5. P. 49–52. Pic. 3, Bibliogr. 15.

We have revealed the prognostic significance of apoptotic activity of bone marrow cells of patients with multiple myeloma (MM). Technique of determining of apoptosis is described in details. The presented data show evidence that efficacy of tumor cell apoptosis induced by specific therapy depends on baseline (spontaneous) apoptotic activity of cells. Initially lower index of spontaneous apoptosis of bone marrow plasma cells in MM patients is the sign of more favorable course of the disease, and it can be used as one of the predictors of response to specific therapy. While initially higher index of spontaneous apoptosis of plasma cells in MM patients is unfavorable predictive sign. Key words: multiple myeloma, plasma cells, apoptosis.

171. *Davydova N.I., Bychkova N.V., Kalinina N.M., Drygina L.B., Poyarkova N.A.* Features of Natural Resistance Disorders and Functional Activity of Gastric Mucosa in Firemen. 2010. N 1. P. 64–66. Tabl. 2, Bibliogr. 9.

We investigated innate immunity parameters in firemen with unhealthy conditions of work. Determined changes of neutrophil activation, NK-cells low cytotoxic activity, IgE high level in peripheral blood and sIgA in peripheral blood and saliva are evidence of permanent activation and innate immunity functional deficiency cause worsening of disease and participate in bronchopulmonary and gastroenterological disease pathogenesis. Pepsinogen I and gastrin-17 abnormal levels were informative tests in atrophic gastritis early diagnostics. Our data prove show that firemen health monitoring is obligatory. Key words: firemen, innate immunity, atrophic gastritis.

172. *Drygin A.N., Shustov S.B., Pastushenkov V.L.* Effect of Lipid Peroxidation Process Initiation on the Clinico-Laboratory Parameters of Intracellular Glucose Metabolism in Patients suffering from Diabetes Mellitus. 2010. N 2. P. 71–74. Tabl. 2, Bibliogr. 10.

The effects of lipid peroxidation (LP) stimulants and single reinfusion of photomodified autoblood (PMB) on the laboratory parameters of free radical oxidation (FRO), key enzyme activity of glycolysis and pentose cycle in erythrocytes, blood serum glucose level in patients suffering from diabetes mellitus (DM) were studied. It has been shown that the physiological effect of PMB is determined by LP stimulation changing the properties of the cell membranes, and the effect nature depends on the initial condition of LP processes in the erythrocytes of patients suffering from DM. It is possible to use PMB in the complex treatment of patients suffering from DM of the 2nd type as a factor activating the intracellular metabolism processes and improving glucose utilization in the tissues. DM of the 1st type is a relative contraindication for using PMB because the additional stimulation of LP processes may cause lowering of the activity of the intracellular enzyme systems involved in glucose metabolism. Key words: diabetes melli-

tus, tissue insulin resistance, lipid peroxidation, phosphofructokinase, glucose 6-phosphate dehydrogenase, glucose, reinfusion of photomodified autoblood.

173. *Drygin A.N., Shustov S.B., Pastushenkov V.L.* Neuro-Hormonal Regulation and Metabolism State in Patients with Diabetes Mellitus and Atherosclerosis. 2010. N 3. P. 48–53. Tabl. 4, Bibliogr. 10.

Patients with diabetes mellitus (DM) and atherosclerosis were tested for the amount of cyclic adenosine monophosphate (cAMP) and cyclic guanosine monophosphate (cGMP) in leukocytes, concentration of glucose, immunoreactive insulin (IRI), C-peptide, glucagon, somatotrophic hormone (STH), cortisol, and blood plasma lipidic spectrum before and after intravenous drop infusion of insulin. The study assessed the degree of erythrocyte resistance to initiating peroxide oxidation of lipids (POL) in vitro. In the process of insulin loading, patients with DM1 showed increase in cAMP and cGMP coefficients, while patients with DM2, to the contrary, showed some decrease. The study found that patients with DM2 and atherosclerosis had a number of common features: signs of tissue insulin resistance, tendency toward hyperinsulinemia, lowered insulin antioxidant action, retardation or perversion of insulin regulation of lipid exchange. Some 25 % of atherosclerosis patients showed metabolic reactions identical to those with DM2. Therefore atherosclerosis may be considered a marker of insulin resistance, in which case development of macroangiopathy precedes the onset of DM signs. Based on this conclusion we hypothesize that tissue insulin resistance plays an important role in forming the coronary atherosclerosis. Key words: diabetes mellitus, atherosclerosis, insulin resistance, insulin tolerance test, cyclic nucleotides, peroxide oxidation of lipids.

174. *Drygina L.B., Poyarkova N.A., Sablin O.A., Ellinidi V.N.* Non-Invasive Diagnostics of Functional Activity of the Stomach Mucous and Pre-Neoplasm Status in Patients with Non-Ulcer Dyspepsia. 2008. N 1. P. 80–84. Tabl. 5, Bibliogr. 4.

Based on the analysis of the serum level of pepsinogen I, pepsinogen II, and their ratio, gastrin-17, and also detection of antibodies to H. Pylori, we selected the group of patients with non-ulcer dyspepsia, demanding deeper examination to diagnose atrophic changes in the stomach mucous. The non-invasive data using the test system Biohit GastroPanel and histological study of gastrobiopsies were compared. Recommendations on the diagnostic algorithm are provided. Key words: non-ulcer dyspepsia, gastrin-17, pepsinogen I, pepsinogen II.

175. *Goreyko T.V., Drygina L.B.* Diagnostic Possibilities of Immunoblot Analysis (IB) in Diagnostics of a Chronic Infection of Epstein–Barr (EBV) Virus. 2010. N 3. P. 58–61. Tabl. 4, Bibliogr. 6.

Research objective was studying of diagnostic possibilities of a immunoblot analysis (IB) for diagnostics Epstein–Barr (EBV) virus of an infection and definition of a stage of infectious process. Results of an Enzyme-Immuno Assay (EIA) and IB for 27 persons with chronic EBV-infection are analysed and compared. Advantage of method IB to acknowledgement of the diagnosis of the EBV-infection and definition of a stage of infectious process before traditional EIA is

shown. Key words: infection of Epstein–Barr (EBV) virus, Enzyme-Immuno Assay (EIA), immunoblot analysis (IB).

176. *Grabeklis A.R.* Regional Characteristics of Content of Chemical Elements in Children's Hair as a Background for Elementosis Risk Assessment. 2009. N 2. P. 31–35. Tabl. 2, Bibliogr. 11.

Content of 22 chemical elements (Al, As, Ca, Cd, Co, Cr, Cu, Fe, K, Li, Mg, Mn, Na, Ni, P, Pb, Se, Si, Sn, Ti, V, Zn) was determined in hair of practically healthy children 7–14 years old, residing in large cities in different regions of Russian Federation, and in settlements of the Moscow region. Regional peculiarities of hair elemental profile were revealed, whose consideration can improve elementosis risk assessment, epidemiological data interpretation, and development of purposeful prophylactic arrangements. It was established that ecological conditions have a considerable influence on hair elemental profile only in territories with discomfortable natural settings. Key words: macro elements, trace elements, hair analysis, children, ecological and geographical peculiarities, elementoses.

177. *Kalinina N.M., Timchenko V.N., Bannova S.L.* Distinction Characteristic of the Cell Link Immuno-resistance at School and Pre-school Age Children infected with Mononucleosis Epstein–Barr Virus at the Height of Disease. 2010. N 3. P. 54–57. Pic. 2, Tabl. 2, Bibliogr. 5.

We investigate 76 children with Epstein–Barr virus infectious mononucleosis. Among them 38 children were at the age of 3–7 years old and at the age of more than 7 years old ( $n = 38$ ). The peculiarities of the cell link immuno-resistance and production of  $\beta$ -interferon in acute stage of disease were studied. More disturbances were found in preschool children. Clinicians should monitor such patients closely for revealing second immunodeficiencies in good time. Key words: the infectious mononucleosis, children at the school age, children at the preschool age, immuno-resistance, cell link.

178. *Kravtsov V.Yu., Grukhin Yu.A., Mazurova Ya.Ya., Surovtseva T.V., Nosov A.E., Proshin S.N., Mikhailova I.A., Kobiashvili M.G.* Cocco-Bacillary Transformation of Helicobacter Pylori in Gut and its Role in H. Pylori Infection Spreading. 2008. N 4. P. 45–48. Pic. 3, Bibliogr. 7.

Helicobacter pylori (HP) bacterial cells can be detected in spiral and coccoid forms in human stomach. It is considered that those forms are habitants of gut. We assayed spiral and coccoid forms in gastrobiopsies ( $n = 3100$ ), oral mucosa ( $n = 898$ ) and rectum ( $n = 601$ ) by immunocytochemical approach. Our results let make a suggestion that HP bacterial cells enter human gut as coccoids, colonize stomach mucosa as spirals and leave human gut for out as coccoids. Probably HP coccoids are forms of preservation and serve to preserve bacterial cells under non-permissive conditions. Thus our data strongly support hypothesis that HP infection spread and contaminate human gut through coccoid forms. Key words: Helicobacter pylori, coccoids, immunocytochemistry, HP-infection.

179. *Melnikova S.V., Drygina L.B.* Comparative Assessment of Post-vaccination Antibodies in Medical Personnel vaccinated against Hepati-

tis B under Standard and Emergency Schemes. 2010. N 4, Pt. 1. P. 67–69. Pic. 2, Bibliogr. 6.

The article deals the problem of vaccination against hepatitis B of the medical personnel of the multifield hospital. It was shown that level of postvaccinated antibodies depends on the terms after a complete vaccination course and vaccine injection schemes. Information about decrease of specific immunity 6–7 years after vaccination is presented. The annual decrease of group immunity was observed in both cases: in case of standard vaccination scheme and emergency one. Key words: viral hepatitis B, vaccination, specific immunity after vaccination, immunization, medical personnel, standard and emergency schemes.

180. *Mizgirev D.V., Duberman B.L., Polyarush N.A.* Aspects of Intestinal Flora Translocation in Patients with Severe Pancreatitis. 2009. N 3. P. 65–67. Pic. 1, tabl. 3, Bibliogr. 9.

The purpose: comparative estimation of infection agents of colon and pancreatic fluid collections, definition of the fact bacterial translocation in acute severe pancreatitis. The pancreatic fluid collection appeared to be infected in 80.6 % of positive bacteriological investigation of the stool. The allocated bacteria were submitted in pancreatic fluid collections in 51.6 % of cases. The strong direct correlation dependence between allocation of intestinal flora and pancreatic fluid collection infectious status ( $r = 0.594$ ;  $p < 0,001$ ) was revealed. The sensitivity appeared to be 92.6 %, specificity – 62.5 %. The definition intestinal flora allows to assume pancreatic fluid collection infection status with high share of probability. The inclusion of interstitial flora investigation in patient with acute severe pancreatitis is expedient. Key words: bacterial translocation, pancreatitis, fluid collection, intestinal flora.

181. *Semenov A.V., Vashukova S.S., Rakhmanova A.G.* Preliminary Results of Viral Hepatitis B and C Laboratory Diagnostics in the framework of Priority National Program «Health» in Saint-Petersburg. 2010. N 3. P. 61–64. Pic. 1, Tabl. 4, Bibliogr. 5.

The chronic hepatitis B and C laboratory markers prevalence were estimated between St.-Petersburg district dispensaries patients with previously estimated diagnosis chronic viral hepatitis B ( $n = 750$ ) and C ( $n = 1030$ ). Hepatitis B markers prevalence was 74.6 % ( $n = 526$ ) including 54.5 % ( $n = 384$ ) with chronic HBV infection laboratory markers and 20.1% ( $n = 142$ ) with laboratory markers of reconvalescence (HBsAb  $> 10$  IU/ml). HBV DNA PCR was positive in 21.6 % of cases, HCV RNA PCR – 59.8 %. Among patients with confirmed hepatitis B infection markers 20.1 % were found also HBsAb positive ( $> 10$  IU/ml). Only 3.2 % of HBsAg(+) patients was found positive for HDV Ab, while 60 % was found HBV DNA positive by PCR. The group of occult hepatitis B patients (HBsAg and HBsAb negative but HBcorAb+HBelgG or HBcorAb positive,  $n = 119$ ) was investigated by HBV DNA PCR. HBV DNA was found in 7.7 % and 4.8 % of cases respectively. Analysis of chronic viral hepatitis markers prevalence among district dispensary patients suggests that complex clinical laboratory investigation could significantly reduce the number of misdiagnosed cases.

Key words: chronic viral hepatitis, occult hepatitis, hepatitis markers, national program «Health».

182. *Sirotkina O.V.* Molecular-Genetic Mechanisms of Platelets' Activation and Sensitivity to Antiplatelet Therapy in Patients with Cardio-Vascular Disease. 2010. N 4, Pt. 1. P. 69–76. Pic. 1, Tabl. 1, Bibliogr. 50.

In this review the data of different authors and the own results of genetic analysis of key platelet's receptors GPIIb/IIIa, GPIba, GPIa/IIa, GPVI, P2Y1 and P2Y12 were discussed. The change of platelet's functional activity in carriers of different alleles and the genetic risk factors for cardio-vascular disease development were shown. Special attention was paid to genetic factors that influence efficiency of antiplatelet therapy. It was shown that Leu33Pro GPIIIa, Thr145Met GPIba, C807T GPIa and G36T P2Y12 are associated with high functional activity of platelets and can be the risk factors for cardio-vascular disease development. Moreover, the mutation Leu33Pro GP IIIa and high level of P2Y12 gene expression modulate the patients' individual sensitivity to antiplatelet therapy with clopidogrel and reduce its antiplatelet effect in repression of platelet aggregation. Key words: platelet's receptors GPIIb/IIIa, GPIba, GPIa/IIa, GPVI, receptors P2Y1 и P2Y12, genetic variants, cardio-vascular disease.

183. *Tishko A.N.* Cystatin C and its Significance in Diagnostics of Kidney Damage in Patients with Longstanding Rheumatoid Arthritis. 2010. N 1. P. 74–78. Tabl. 3, Bibliogr. 14.

We studied a group of patients with longstanding rheumatoid arthritis (27 patients), a group of patients with different degree of kidney insufficiency (8 patients), and 5 healthy people. We reviewed the main contemporary methods of kidney function examination and compared biochemical characteristics (serum creatinine level, cystatin C), calculated data of glomerular filtration rate (MDRD, cystatin C and Cockcroft-Gault formulas), results of screening for microalbuminuria and presence or absence of amyloid deposits in subcutaneous fat tissue. As a result of our investigation, we showed that a complex of laboratory methods should be used for kidney damage diagnostics. The most informative of them are serum cystatine C and calculation of GFR by MDRD and cystatin C formulas. Calculation of GFR by Cockcroft-Gault formula showed to be less informative. Key words: cystatin C, rheumatoid arthritis, kidney function failure.

184. *Vasina L.V., Lugovaya A.V., Petrishev N.N., Serebryanaya N.B.* Pathogenic Significance of Relative Alteration in V-binding Mononuclears and CD 59<sup>+</sup>-Lymphocytes of Peripheral Blood in Patients with Acute Coronary Syndrome. 2008. N 1. P. 74–80. Pic. 2, Tabl. 3, Bibliogr. 19.

The purpose of work was to study circulating annexin V<sup>+</sup>-mononuclears and CD59<sup>+</sup>-lymphocytes in order to clarify their role in pathogenesis of acute coronary syndrome. 67 patients with unstable angina, 16 patients with acute myocardial infarction and 14 healthy donors aged 49–56 (controls) were examined. Blood lipids, apolipoproteins A1, B, lipoprotein (a) and antibodies against oxidated low-density lipoproteins (LDL) were measured in all patients. Annexin V<sup>+</sup>-mononuclears and CD59<sup>+</sup>-lymphocytes were determined by a flow cytometry method. Significant increase of annexin V<sup>+</sup>-mononuclears and CD59<sup>+</sup>-lym-

phocytes in patient blood was identified. The data suggest activation in patients with acute coronary syndrome of anti-inflammatory mechanisms aimed at increasing resistance of circulating mononuclear membrane against complement-dependent lysis. Key words: acute coronary syndrome, lipids, annexin V-binding mononuclears, CD59 (protectin).

185. *Yarokhno N.N., Zyryanov A.V., Nikolaev K.Yu.* Evaluation of Heart Fatty Acid Binding Protein in Acute Myocardial Infarction using Immunohistochemistry Test. 2009. N 4. P. 24–27. Pic. 1, Tabl. 1, Bibliogr. 9.

Diagnostic capabilities of the new qualitative immunohistochemistry test for evaluation of heart fatty acid binding protein in acute myocardial infarction (AMI) were studied. There were examined 108 patients aged ( $64.9 \pm 12.6$ ) years with suspicion of AMI, which were urgently admitted to hospitals of Novosibirsk. It was established, that sensitivity and specificity of positive qualitative test of heart fatty acid binding protein (HFABP) in relation to AIM is 92.7 and 87.5 %, respectively. Besides, superiority of test for HFABP determination in early AIM diagnosis over conventional biomarkers of myocardial necrosis (total creatin-phosphokinase, CPK-MB, troponin I) has been demonstrated. Key words: acute myocardial infarction, heart fatty acid binding protein, diagnostics.

186. *Zakharova N.I., Tikhomirova O.V., Drygina L.B., Kozhevnikova V.V., Kindyashova V.V., Makarova N.V.* Consequences of Elevated High Sensitive C-reactive Protein and Homocysteine to Vascular Cognitive Impairment in Middle-aged Men. 2010. N 4, Pt. 1. P. 63–66. Pic. 1, Tabl. 2, Bibliogr. 13.

We studied 60 men aged 45–65 with vascular cognitive impairment (VCI) and 30 healthy men matched in terms of age, gender and education. All subjects underwent conventional CT, hs-CRP levels, serum concentration of total HCY. Cognitive impairment was tested by the Mini – Mental State Examination (MMSE) score, the Clock Drawing Test (CDT). The cerebrovascular reactivity (CVR) was tested using transcranial Doppler sonography (TCD). Both MMSE score and CVR were significantly associated with the hs-CRP levels ( $r = -0.359$ ;  $p < 0.05$  and  $r = -0.302$ ;  $p < 0.05$  respectively). No clear relationship was observed for homocysteine. These data provide preliminary evidence that Hs-CRP, but not homocysteine, is related to vascular cognitive impairment and cerebrovascular reactivity in middle-aged men. Key words: hsC-reactive protein, homocysteine, cerebrovascular reactivity, cognitive impairment.

187. *Zhirnova N.A., Zybina N.N.* Findings of Hemodynamics, Systemic Transport and Acid-Base Status in the Diagnosis of Acute Period of Severe Associated Injury. 2009. N 3. P. 60–65. Pic. 2, Tabl. 3, Bibliogr. 11.

159 patients with severe associated injury treated in field surgery department at Kirov Military Medical Academy, have been studied. Based on the clinical form of acute period of their traumatic disease the patients have been divided into 4 groups: those with traumatic shock, acute respiratory and cardiac insufficiency, and traumatic coma. On admission all the patients underwent the evaluation of their hemodynamic findings, systemic oxygen transport and its consumption, blood gases, acid-base status, arterial and venous blood lactate

level. Significant differences in the findings being studied were found depending upon the acute period form of the traumatic disease. Key words: severe associated injury, clinical forms of traumatic disease, hemodynamics, oxygen transport, acid-base status, blood gases.

See also 36, 46, 47, 69, 117, 137, 244.

## 5. PSYCHOLOGICAL AND SOCIAL ISSUES

### 5.1. Extreme psychology

188. *Aleksanin S.S., Rybnikov V.Yu., Tsutsieva Zh.Ch.* Concept, Principals, Psychological Mechanisms and Structural-Functional Model of Forming and Correcting the Posttraumatic Stress Disorder in Children Victims of Terroristic Acts. 2010. N 4, Pt. 1. P. 93–98. Pic. 1, Bibliogr. 16.

The article presents the author concept, principals and structural-functional model of forming and correction of posttraumatic stress disorders at children victims of terroristic acts. It explains psychological forming mechanisms of posttraumatic stress disorders at children victims of terrorist acts based on cognitive theory of coping conduct of the individual in stress. Key words: emergency situation, terroristic act, children, concept, correction, coping conduct, principals, posttraumatic stress disorder, stress, structural-functional model.

189. *Belko A.A., Lytaev S.A.* Comparative Research of Clinico-Psychological Characteristics of Critical States. 2010. N 1. P. 85–89. Pic. 4, Bibliogr. 8.

Presented is an analysis of experimental psychological research of both patients with diagnosis «response to a severe stress and dysadaptation» (F 43, ICD-10), and forced migrants from Chechnya. Acute and chronic experience of critical state after psychotraumatic situation leads to development of anxiety, depression and phobia symptomatology, hostility, anger, obsessive painful reminiscences, avoidance of everything associated with psychotraumatic situation, reduction of social contacts, dysadaptation. Key words: posttraumatic stress disorder, critical state, forced migration, psychotraumatic situation.

190. *Burmistrova E.V.* Service of the Emergent Psychological Help in Educational System, its Organization and Basic Spheres of Activity. 2009. N 4. P. 71–79. Pic. 1, Bibliogr. 8.

Clause is devoted to questions of the organization and the maintenance of activity of service of the emergency psychological help. In the article main principles of rendering and the organization of the emergency psychotherapeutic, psychological and psychiatric help which also in time, the past from the moment of when they have been designated for the first time, have undergone known changes are considered. Key words: traumatic society, psychological safety, emergency psychiatric care, especially organizations in the education system.

191. *Gubin A.I., Gubina O.I., Deryabin I.M., Tsennykh E.A.* Evaluation Experience of Psychological Adaptation among Individuals in Stress Activity Conditions. 2008. N 1. P. 59–61. Pic. 1, Tabl. 3, Bibliogr. 6.

Mental adjustment among 582 students of institutions of higher education was studied using the special procedure of mental health evaluation (MHE). The correlation analysis of the expert appraisals of a progress in studies, health status and discipline showed statistically significant positive relationship with the parameters of constructiveness, adaptiveness and activity of an individual identified by the method of MHE, and negative relationship with the scores of destructiveness and deficiency. Key words: mental adjustment, procedure of mental health evaluation, students of institutions of higher education.

192. *Kondratiev A.Yu., Shamrey V.K.* Organizational and Practical Aspects of Medical and Psychological Assistance in Emergency Conditions (Post-Event Analysis of Measures taken during Kursk Nuclear Submarine Accident). 2008. N 1. P. 61–67. Pic. 1, Tabl. 3, Bibliogr. 6.

The following is the post-event analysis of organizational and practical aspects of medical and psychological assistance provided for relatives of Kursk submarine deceased members of crew and Vidyaevvo military personnel engaged in rescue operations during disaster recovery. We have outlined the factors crucial for successful implementations of recovery measures and disclosed wrong actions and psychotherapeutic methods used in conditions when public grief is experienced. Key words: emergency, relatives of deceased members of the submarine crew, military personnel, medical-psychological assistance, psychotherapeutic methods.

193. *Shoigu Yu.S.* Research and Methodology Issues of providing Urgent Psychological Assistance. 2008. N 1. P. 33–38. Pic. 1, Bibliogr. 8.

An increased risk of emergencies (technogenic accidents and ecological disasters) leads to a necessity of developing conceptual issues of providing emergency psychological assistance. Tasks, principles, stages and ways of providing urgent psychological assistance to those in emergency situations are presented. Key words: emergency situations, urgent psychological assistance, rescue workers.

194. *Sokolova E.A.* Multidisciplinary Approach to Juvenile Delinquency Study. 2010. N 2. P. 75–80. Bibliogr. 15.

In the article medical-biological and social-psychological aspects of juvenile delinquency are considered. Necessity of primary offence preventive maintenance group allocation is proved. Formation of illegal behaviour is shown over time, beginning from a family of the teenager. Multidisciplinary assistance to teenagers from the risk group is considered. In relation to the specified group, necessity is proved, on the one hand, to help them to adapt to the environment, on the other hand, to create more favorable environment. Directions for preventive work with teenagers in imprisonment on prevention of recidivism are offered. The conclusion is made about necessity of more effective interaction between law-enforcement, medical, social, psychological, and other structures for the solution of a problem of juvenile delinquency. Key words: teenagers, ag-



gression, behaviour model, risk group, juvenile delinquency, medical-psychological correction, social care.

195. *Yusupov V.V., Korzunin V.K.* Role of Suggestibility in Developing of Panic Disorders. 2008. N 1. P. 45–49. Pic. 1, Bibliogr. 13.

A behavioral pattern and categorization of panic disorders is provided. Possibility and nature of panic disorders, their incidence, severity and clinical course depend on numerous factors: nature of emergency situation (its severity, suddenness, duration); preparedness of individual people to perform in adverse settings depending on their personality-typological abilities, professional psychological resistance, psychological resistance, will and fitness; activity coordination and consistency in extreme settings; support of people around; role models of difficulty overcoming. Resulting factor of panic development is an individual suggestibility, which is a personality feature and constantly evolves depending on both mental status and environment. Key words: panic status, panic attack, emergency situation, extreme settings, increased suggestibility, addict disorders.

See also 85, 86, 248, 250.

## 5.2. Info-psychological safety

196. *Aleksanin S.S., Rybnikov V.Yu., Melnitskaya T.B.* Info-Psychological Safety from a Risk of Radiation Effects: Concept, Model, Psychological Mechanisms, Disorders. 2009. N 3. P. 68–75. Pic. 1, Tabl. 3, Bibliogr. 11.

The concept and model of information psychological safety of population in the setting of radiation effect risk are presented. Results are provided concerning specific mechanisms of psychological defense and behavior strategies of coping with stressogenic situations in population of the central regions of Russia. Unfavorable affective and personality findings were observed due to subjective radiation risk perception. Key words: information psychological safety, risk of radiation effects, concept, coping behavior, coping resources, coping strategies, model.

197. *Marchenko T.A., Prokh E.V., Melnitskaya T.B.* Social-Psychological Patterns of Perception of Information and Info-Psychology Protection of People residing on the Territories with Nuclear Objects. 2009. N 2. P. 73–77. Pic. 1, Bibliogr. 12.

Social-psychological patterns of perception of radiation risk by inhabitants of territories with scientific nuclear objects were studied. Recommendations on information and psychology protection of population from inadequate psychotraumatic information related to potential radiation effect are validated. Key words: radiation risk perception, information and psychology safety of population, information and psychology protection of population.

198. *Melnitskaya T.B.* Psychological Consequences and Correction of Radiation Risk Experience in Population of Radiation-Contaminated Territory of Russia. 2008. N 1. P. 50–55. Tabl. 5, Bibliogr. 6.

Socio-psychological consequences of radiation risk experience were identified in the population of Kaluzhsky, Bryansky, Orlovsky and Tulsy region with reported adverse emotional personality changes due to subjective features of radiation threat perception (risk group). The test sample consisted of 2322 respondents. In the general sample risk groups (n = 982) and normal subjects (n = 1340) were selected. These studies demonstrate significant differentiation of typical radiation-related anxieties and feelings in respondents of the risk group depending on residence area. However, study did not reveal a direct relationship between severity of these feelings (factor signs) and contamination level of residence area of the risk group respondents. Key words: Chernobyl Nuclear Power Plant accident, radiation threat, radiation-contaminated areas, subjective perception.

199. *Rybnikov V.Yu., Melnitskaya T.B., Marchenko T.A., Prokh E.V.* Info-Psychological Safety of Individuals and Role of Radiation Factor in its Disturbance. 2008. N 2. P. 56–61. Pic. 1, Bibliogr. 10.

Information-psychological security is considered as a state of immunity of individual, group, or community awareness against information factors (hazards) causing dysfunctional social processes in the society and an individual activity. Research category is directly related to a problem of radiation risk perception and information-psychological immunity of individuals against possible effect of radiation factor. Key words: security, information security, radiation risk perception.

### **5.3. Psychotherapeutic treatment and psychological correction**

200. *Fedorov Ya.O.* Milieu Therapy as a Preventive Measure of Socially Dangerous Behavior in Paranoiac Patients. 2009. № 1. P. 38–43. Bibliogr. 6.

The problem of prevention of socially dangerous behavior of mentally sick is described in the article. Clinical cases show that milieu-therapy can be a very important factor of prevention of illegal actions in mentally ill. This problem is important today because the paranoiac delusion is hardly curable with medication. Milieu-therapy facilitates developing feelings of trust to medical staff, subliming own destructive impulses and making interaction between the society and the patient much more constructive as well. Comprehensive approach (pharmacotherapy and milieu-therapy) in the outpatient psychiatry practice lets to increase a curability of the psychopathologic syndromes and as well helps to improve compliance and presents itself as effective prevention of illegal actions of mentally ill patients. Key words: milieu-therapy, socially dangerous behavior of mentally sick, prevention of illegal actions of mentally ill patients, paranoiac delusion.

201. *Fedorov Ya.O.* Psychotherapist's Negative Experiences in Countertransference. 2008. N 3. P. 57–58. Bibliogr. 3.

The article describes experiences of the psychotherapist (countertransference) which have arisen at working of psychotherapeutic group with the specialists who were taking part in liquidation of consequences of tragedy in Beslan. The author investigates unconscious mechanisms of a psychic trauma: regression, repression and denial. It is shown, that negative consequences of stressful situations at psychologists and psychotherapists (connected with their professional work) can be overcome by personal psychotherapy, trainings, supervisions. Key words: psychotherapy of crisis states, negative countertransference, supervision, debriefing.

202. *Grigorieva I.V., Igumnov S.A.* Medico-Psychological Assistance and Internal Disease Picture in Patients with Thyroid Cancer. 2009. N 5. P. 27–32. Pic. 2, Tabl. 1, Bibliogr. 15.

Study of internal disease picture has become one of the most important directions of present-day research in the field of psychotherapy and clinical psychology. The patients who survived thyroid cancer surgery are referred to a risk group because of a wide spectrum of psychopathological disorders. Within this study we used Behterev institute's personality questionnaire (LOBY) in 90 patients survived thyroid cancer surgery. The study showed considerable decrease in quality of life of the given patients in comparison with the control group. The most expressed changes were observed in physical, psycho-emotional and social domains. This study allows of timely revealing the problems of psychological and psychopathological level in the given cohort of patients and of improving the existing and developing innovative programs of psychological help. Key words: thyroid cancer, Behterev institute's personality questionnaire (LOBY), internal disease picture, psychotherapy.

203. *Marchenko A.A.* Medico-Psychological Rehabilitation of Combatants with Comorbid Posttraumatic Stress and Substance Related Disorders. 2009. N 3. P. 82-84. Tabl. 2, Bibliogr. 9.

Substance related disorders are among the most frequent pathology complicating PTSD clinical picture and course. However, there is no common approach to rehabilitation of such patients. On the basis of studying dynamics of a mental state of 30 former military men with PTSD and comorbid addictive disorders the algorithm of the medical and psychological rehabilitation was offered. The latter is based on four consecutive and interconnected stages: regenerative; correctional and developing; integrational; stabilizational. Efficiency of the given algorithm was proved by decrease of dependence severity (SDS scale) and intensity of PTSD symptoms (by CAPS). The reduction of psychopathological semiology promoted improvement of patients' quality of life. The offered algorithm is recommended for implementation to practice of rehabilitation work of the interested departments. Key words: combatants, PTSD, substance related disorders, comorbidity, rehabilitation.

204. *Sorokin N.V., Gordienko A.V., Leontiev O.V.* Structure of Patients with Coronary Heart Disease at the Hospital Stage of their Reha-

bilitation and Efficiency of the Group Psychotherapy. 2010. N 1. P. 46–48. Pic. 2, Tabl. 3, Bibliogr. 10.

The analysis of rehabilitation measures in 140 patients with coronary heart disease (CHD) is provided. Evaluation of quality of life (QL) using the Russian version of MOS SF-36 questionnaire as the main method was performed. QL parameters were compared between patents of group 1 (n = 30) undergone group behavior psychotherapy and subjects from control group 2 (n = 30). It was established that a course of group behavior psychotherapy statistically significantly improves some QL measures in CHD patients during rehabilitation. Key words: heart disease, coronary heart disease, rehabilitation, quality of life, behavior psychotherapy.

#### **5.4. Psychological support to specialists of extreme professions**

205. *Alekhin A.N.* Stages of Psychological Adjustment to Extreme Conditions in Humans. 2009. N 3. P. 76–81. Bibliogr. 14.

The article presents results of a study of psychological adjustment to unusual activity conditions – long-term working in a closed small group in hermetic object with simulated habitation characteristics. On the bases of the analysis of the dynamics of psychophysiological, psychological and psychosocial characteristics four typical stages of adjustment to such experimental conditions were identified. Psychological content of each stage was described; psychological analysis of psychogenic factors in experimental conditions was performed. The role of expected time-period of the experiment in the dynamics of psychological adjustment was demonstrated. The correlation of functional state, working ability and psychological state in the identified stages was shown. It was found that cumulative dynamics of diagnostic characteristics reflects the optimization process of the individual's relationships with environment. Key words: psychological adjustment, stress, isolation, extreme working conditions, psychological strain.

206. *Ashanina E.N.* Stress Overcoming (Coping) Behavior of Personnel of the State Fire-Fighting Service, EMERCOM of Russia. 2007. N 2. P. 54–57.

The leading personal coping resources are determined as well as the significance of individual psychological personal qualities in determination of adaptive and non-adaptive types of coping behavior in 175 staff members of the State Fire-Fighting Service of EMERCOM of Russia. The major individual psychological personal qualities of firefighters are defined which characterize their motivational, emotional, cognitive, pathopsychological and typological features and determine the adaptive type of coping behavior in emergencies. Key words: firefighters, coping behavior, extreme working conditions, stress factor.

207. *Bedernikova I.V., Chugunova L.N.* Psychological Picture of a Specialist working at the State Firefighting Service, EMERCOM of Russia. 2008. N 2. P. 62–66. Tabl. 1, Bibliogr. 7.

Provided are some sociological characteristics of fire-fighters. The main views of fire-fighters of the profession are revealed: motivation for vocational guidance, aims and goals of the profession, professional ethical aspects, professional attitudes and values. A question has been considered about presenting to fire-fighters a picture of an expert and non-expert in the profession. Key words: fire-fighter, expertise, professional values and attitudes.

208. *Chermyanin S.V., Chugunova L.N., Staroverova G.A.* Psycho-physiological Patterns of Successful Professional Work of Servicemen of Civil Defense Units, EMERCOM of Russia. 2007. N 2. P. 38–45. Pic. 4, Tabl. 3, Bibliogr. 12.

The characteristics of professional work of servicemen of civil defense units of EMERCOM of Russia and psycho-physiological patterns of their successful work are studied. The professionally important qualities are identified using a complex psycho-physiological and social-psychological examination. The professional work of servicemen of civil defense units of EMERCOM of Russia is accompanied by the development of signs of neuropsychological instability, which requires urgent measures of psychological correction. The mathematical model («decisive rule») for use in the professional psychological selection of candidates for staffing of civil defense units of EMERCOM is elaborated. Key words: servicemen, civil defense, stressor factors, neuropsychological tension, professionally important qualities, professional psychological selection.

209. *Chermyanin S.V., Korzunin V.A., Yusupov V.V.* Methodological Aspects of Nervous-Psychic Instability Diagnosis in Specialists of Extreme Professions. 2008. N 4. P. 49–53. Bibliogr. 8.

This article describes different approaches to defining «nervous-psychic instability» conception (NPI). It interprets that NPI does not attribute to border-line mental disturbances and corresponds to complex mental personal properties and characterizes the state of system regulation of nervous-psychic adjustment. As other personality traits, it can become apparent at a concrete moment of evaluation as decreased nervous-psychic stability. Key words: nervous-psychic instability, border-line mental disorders, extreme conditions, prenosological mental state.

210. *Chermyanin S.V., Kostin D.V., Levshakova V.I., Ivanov O.S.* Characteristics of the Readaptation Process in Servicemen after Activities under Extreme Conditions. 2009. N 1. P. 55–61. Pic. 3, Tabl. 3, Bibliogr. 14.

Combat activities lead to psychological traumatic experience manifesting with psychologic and behaviour disorders in combatants. As a result of combat stress a syndrome of posttraumatic stress disorder develops. Time of stay in the combat zone as well as personality adaptation capabilities of a military man affects the process of readaptation to conventional everyday life. Key words: combat stress, posttraumatic stress disorder, psychological state of combatants, personality adaptation potential, ethical standards, addictive behavior, abdominal distress, readaptation of servicemen.

211. *Chermyanin S.V., Shubin A.V., Ivanov O.V.* Correction of Functional State of Military Pilots after Combat Mental Trauma. 2008. N 1. P. 38–44. Pic. 2, Tabl. 2, Bibliogr. 13.

Presented are results of studies conducted in real combat settings. Abnormalities of functional state and psycho-emotional reactions in pilots developing disorders are shown. Special attention is given to these disorders. Indications for medico-psychological correction and main principles of psychocorrection activities are described. As an example, an experience of Breier method of psychocorrection in combination with medications is considered. Efficiency of correction work with individuals suffering combat mental trauma and prevention of post-traumatic stress syndrome is characterized. Key words: combat mental trauma, desadaptation, medico-psychological correction, psychophysiological features, functional state.

212. *Evdokimov V.I., Marischuk V.L., Shevchenko T.I.* Development of Negative Emotional States in the Activities of the State Fire-Fighting Service Staff, EMERCOM of Russia. 2007. N 2. P. 46–54. Pic. 4, Tabl. 1, Bibliogr. 20.

Professional activities of firefighters are accompanied by negative emotional states in the form of emotional strain, posttraumatic stress disorders and emotional exhaustion. A mechanism of development of emotional disorders is presented. Psychological examination of 97 firefighters detected the risk factors of emotional exhaustion on personal level. It creates a necessity to optimize industrial activities of firefighters through organizational measures, including increase of the level of social security of firefighters as well as psychological support. Key words: firefighters, emotional state, emotional tension, posttraumatic stress disorder, emotional exhaustion, psychological diagnostics.

213. *Kolov S.A., Ostapenko A.V.* Trait Profile of Combat Veterans with Posttraumatic Stress Disorder. 2009. N 5. P. 53–56. Pic. 1, Tabl. 1, Bibliogr. 16.

The investigation in question was aimed at evaluating the full range of personality disorders in combat veterans with the help of the structured psychiatric interview according to the criteria of the ICD (10th edition). For this purpose 38 veterans with posttraumatic stress disorder (PTSD) and 158 patients without this diagnosis were interrogated. The obtained results were compared with the data on 205 healthy males in the control group. The analysis showed that the personality disorders in participants of localized conflicts were significantly different from the healthy men. The patients with PTSD revealed a specific profile of personality disorders with dominating features of paranoid, borderline and impulsive types. The finding of a higher and specific level of personality anomalies in combatants may serve as the first step to work out the medical-rehabilitational interventions for this combination of treatment-proof psychiatric disorders typical for combat veterans. Key words: personality disorders, post-traumatic stress disorder (PTSD), combat veterans, clinical standardized interview.

214. *Kozlova Yu.V.* Prospect Technologies of Interethnic Tolerance Formation in Cadets studying at the Universities of EMERCOM of Russia. 2009. N 5. P. 56–61. Tabl. 1, Bibliogr. 7.

Now in Russia, as well as all over the world, the growth of ethnic self-consciousness, an aggravation of international relations, occurrence of conflicts

and contradictions on the ethnic basis are reported. In this connection we have developed the approximative program of interethnic tolerance formation in the Russian EMERCOM cadets. Key words: tolerance, interethnic tension, program of interethnic tolerance, social-psychological training.

215. *Marischuk V.L., Lunkin A.N.* Correction of Emotional Tension in Cadets studying at the Universities of State Fire-Fighting Service, EMERCOM of Russia. 2007. N 2. P. 58–60. Pic. 1, Bibliogr. 4.

The information presented about interactions between external manifestations of emotions in case of emotional tension accompanied by the changes in mental and psycho-motor processes, professional performance as well as the possibility of correction of negative reactions in the cadets of the universities of EMERCOM of Russia during their physical training classes. Key words: emotional stability, emotional tension, external manifestations of emotions, firefighters, professional success.

216. *Poroshin A.A., Shishkov M.V., Bobrinev E.V., Galkina E.Yu.* Computer System for Analysis of Social and Psychological Climate in Fire-Fighting Teams. 2009. N 4. P. 62–70. Pic. 12, Tabl. 3, Bibliogr. 5.

Proposed is a model of research of social and psychological climate in fire-fighting teams. The computer program for analysis of social and psychological climate in fire-fighting teams is described. Key words: sociometry, social and psychological climate, fire-fighting teams.

217. *Rybnikov V.Yu., Ashanina E.A.* Theoretical Rationale and Psychological Mechanisms of Coping Behavior of Individual of Professional Activity. 2008. N 1. P. 68–73. Pic. 5, Bibliogr. 33.

Theoretical rationale and psychological mechanisms of stress-overcoming (coping) behavior of an individual in the society and as a subject of professional activities are provided in the paper. Current views of coping strategies and coping resources, stress-factor pattern and mechanisms of protective and coping behavior are described in details. Key words: stress, coping behavior, stress-factors, coping resources, coping strategies, crisis condition, personality, professional activities.

218. *Sharov R.A., Kozlova I.Yu., Ivanov E.Yu.* Some Features of Military-Professional Adaptation of Cadets to Training Conditions in Military University. 2009. N 3. P. 44–47. Pic. 1, Tabl. 2, Bibliogr. 13.

Research of features of adaptation in cadets of military high school in initial stage of training has been conducted. Proceeding from representations about adaptation as a process of formation of an adequate functional condition of the organism providing accomplishment of the primary goals of activity at admissible level of an expenditure of functional reserves, 4 variants of development of adaptable process were identified. It is shown that more than half of cadets experience difficulties of military-professional adaptation manifested in low success of professional activities and/or in a high physiological payment for this activity. Key words: military-professional adaptation, professional activities of cadets, functional condition, physiological cost of activity.

219. *Shevchenko T.I., Makarova N.V.* Hardy Coping of Specialists with Hazardous Professions within the Theory of Notional Performance Regulation. 2009. N 1. P. 71–75. Pic. 3, Tabl. 3, Bibliogr. 5.

Parameters of hardy coping of specialists of risky professions within the theory of meaning psychology are reviewed. High values of hardy coping in fire-fighters were revealed and their direct relationship with parameters of notional performance regulation was determined. However, the study identified a risk group of specialists with low hardy coping parameters. Notional performance regulation help to coordinate objectives and means of performance with motives, needs, values and attitudes of an individual and inadequate comprehension of own life can lead to mental deadadaptation. Key words: specialists of the State Fire-Fighting Service, extreme performance conditions, life comprehension, purpose-in-life orientation, hardy coping, control locus.

220. *Shubin A.V.* Typology of Psychophysiological Reactions in Military Officers in Stressogenic Environment. 2008. N 1. P. 55–58. Bibliogr. 12.

Different types of behavioral reactions in persons performing professional activities in emergency settings are presented. Relationship of these signs and psychophysiological features is shown. The material is based upon both studies conducted in experimental setting, and data from actual accidents and disasters. Determination of reaction types is confirmed by revealing of personality features and physiological parameter changes. Identified «basic» signs make it possible to predict with certain degree of reliability an efficiency of individual behavior in extreme environment. Behavioral differences in short-term and remote consequences of extreme impacts are shown. In particular, persons with less effective and even destructive reactions are more prone to posttraumatic stress disorder. Key words: emergency situations, psychophysiological reactions, posttraumatic stress disorder, professional activity, stress factors, extreme states.

221. *Tsvetkov Yu.V., Yusupov V.V.* Professionally Important Qualities of Officers-Tutors in General Educational Military Institutions of the Ministry of Defence of Russia. 2010. N 1. P. 79–84. Tabl. 1, Bibliogr. 8.

At the present stage, essential improvement of selection of officer personnel for education of teenagers is probably possible only based on methodological and instrumental elements of professional psychological selection of officers-tutors. In terms of the results, estimation of organizing qualities; intellectual qualities (thinking, speech, attention, memory), communicative abilities, moral and adaptive qualities of the person, visual acuity, the physical endurance, special knowledge are expedient when carrying out professional psychological selection of officers for the posts connected with education of teenagers. Key words: professional psychological selection, officer-tutor, professionally important qualities, defence and law enforcement ministry and agencies, extreme conditions.

222. *Yusupov V.V., Zakharova E.M.* Occupational Psychological Accompanying Measures of Foreign Armies Servicemen and Defence-Law Enforcement Ministries and Agencies of Russia (Review). 2008. N 4. P. 54–63. Bibliogr. 27.



Analysis of up-to-date literature on experience of conducting of servicemen occupational psychological accompanying in foreign armies colleges and universities of RF defence and law enforcement ministry and agencies makes possible to conclude that describing problems can be successfully executed only in integrated approach and consolidating efforts of all specialists responsible for maintenance of servicemen health. Key words: occupational psychological accompanying, psychological help, defence and law enforcement ministry and agencies, extreme conditions.

See also 5, 55, 61, 63, 73, 88, 244, 245, 247, 248, 250, 253.

## **5.5. Psychological and medical issues of psychological dependency**

223. *Leontieva M.V.* Peculiarities of Drug Consumption in Educational Milieu of Arkhangelsk City. 2010. N 1. P. 90–92. Pic. 2, Tabl. 1, Bibliogr. 6.

Study of drug situation was held via anonymous survey in schools, secondary professional and higher educational institutions of Arkhangelsk city. In 2005 2319 persons were questioned, in 2006 – 3738 persons. It was established that 20–25 % of schoolchildren and students of all the educational institutions tried drugs once or use them on as regular basis. Among drugs cannabis preparations are the most popular. It should be noted that a mean age of drug exposure in youngsters is 15–17 years. Key words: psychoactive substances, drugs, narcomania, monitoring of drug situation.

224. *Rybnikov V.Yu., Litvinenko O.V., Yurenkova V.A.* Spread of Dependence on Computer Games in Megapolis Population. 2008. N 4. P. 72–76. Pic. 1, Tabl. 5, Bibliogr. 9.

Assessment data on the prevalence of dependence on computer games in different megapolis population groups, including children and adolescents are provided, along with the most preferable types and kinds of computer games, value orientations and negative consequences. Assessment results are based on anonymous questioning and survey of 737 persons. Key words: survey, dependence on computer games, computer game, prevalence, megapolis population.

225. *Sablin O.A.* Alcohol and Diseases of Upper Parts of Gastrointestinal System. 2007. N 2. P. 24–28. Pic. 2, Bibliogr. 14.

The modern views on pathological mechanisms of the effect of alcoholic beverages are presented, i.e. direct cytotoxic effect of alcohol on mucous membrane and indirect effect due to injury of cell protection mechanisms. The secretory effects of ethanol and components of alcoholic beverages, dyskinetic effect of alcohol, effect of alcohol on carcinogenesis, *Helicobacter pylori* and rheological properties of blood are demonstrated. The approaches to management of erosive and ulcerative processes in gastro-esophageal area as well as the role of eradication therapy are developed. Key words: alcohol, wine, beer, gastroe-

sophageal reflux disease, gastritis, cytoprotection, eradication, proton pump inhibitors.

226. *Shantyr I.I.* Spread of Tobacco Consumption and Health Indicators of Nicotine-Addicted Individuals. 2007. N 1. P. 49–51. Pic. 3, Tabl. 1, Bibliogr. 3.

An epidemiological investigation on tobacco consumption distribution among the able-bodied population has been carried out and its dependence on the social status of a worker has been determined. Some data on health condition and the number of idle days caused by illness among nicotine-addicted and non-smokers have been obtained. Some restricting measures are proposed. Key words: tobacco consumption, prevalence, health, working incapability.

227. *Volova L.Yu., Nikitina D.V.* Results of Sociology Research among IV-drug Consumers in Yamal Nenets Autonomous Okrug (YANAO) in 2007–2008. 2009. N 4. P. 36–41. Tabl. 6, Bibliogr. 12.

Results of sociological research performed in 2007–2008 among IV-drug consumers hospitalized in psycho-neurological dispensaries of Yamal Nenets Autonomous Okrug (YANAO) show a combination of risky IV and sexual behavior among individuals using IV drugs: non-sterile toolkits for drug administration, considerable quantity of sexual partners, including commercial sexual services, high percentage of non-protected sexual contacts. Our research confirms that during the last six years in YANAO and in Russia as well, sexual HIV transmission from vulnerable groups to common population has become more active. The majority of respondents–addicts had sexual contacts with partners who were not drug abusers. Key words: injection addicts, non-protected sexual contacts, HIV infection, AIDS.

228. *Zaitsev V.V., Evdokimov V.I.* Pathological Gambling Addiction: Methodology, Spread, Development and Treatment. 2008. N 2. P. 67–74. Pic. 3, Tabl. 4, Bibliogr. 18.

Social characteristics of addictions in Russia form a background for an emergency occurrence. It has been stated that a pathological gambling addiction is observed in 0.5–1.5 % of population in developed countries. General characteristics of diagnostic criteria for gambling addiction along with disease stages, convalescence and gambling cycle structure are provided. Key words: addiction, pathological gambling addiction, gambling cycle, psychotherapy, remission.

See also 64.

## 6. SUBMARINE OBJECTS SAFETY

### 6.1. Divers and submariners safety issues

229. *Andrusenko A.N., Zverev D.P., Shitov A.Yu.* Functional State of Cadets of Higher Naval Schools and Submariners during Rescue Training. 2010. N 4, Pt. 2. P. 22–27. Tabl. 2, Bibliogr. 17.

We examined the functional state during rescue training in 78 cadets of higher naval schools and 17 sailors and petty officers performing military service under the contract at the nuclear submarine. Baseline functional states of cadets and submariners were similar. In conducting rescue training, more evident decrease in reserve capacity of the cardio-vascular system and reducing the strength of excitatory processes in their central nervous system were observed in submariners. Key words: divers, submariners, ship's hygiene, functional state, rescue training, cardiovascular system, central nervous system.

230. *Malygin S.V., Grebenkov S.V.* Provision for Microbiological Safety at Diving. 2009. N 2. P. 47–49. Pic. 1, Tabl. 1, Bibliogr. 5.

Microbiological contamination of diving equipment is one of the most important risk-factors of the development of the infectious diseases in divers. Disinfection agent 1 % water solution of chlorhexidine is established to provide higher-level sanitary-hygienic processing of the equipment for underwater descent. Non-contact application of a disinfecting solution by irrigations improves processing efficiency. Key words: diving equipment, disinfection, chlorhexidine, irrigation.

231. *Medvedev L.G., Sovetov V.I., Dmitruk D.I., Statsenko A.V., Nikonov S.V.* Safe Terms of Submariner Stay in Compartments of a Sunk Submarine. 2010. N 4, Pt. 2. P. 28–32. Pic. 5, Bibliogr. 5.

In model research with participation of divers, safe terms of submariner stay in compartments of a sunk submarine on the depth up to 100 m were identified. By extrapolation of the animal research, the critical terms and terms of personnel death were estimated. Phase pattern of changes of the body functional state in accident-related conditions was determined. Key words: submariners, sunk submarine compartments, terms of submariner survival in accident-related conditions.

232. *Medvedev L.G., Sovetov V.I., Statsenko A.V., Nikonov S.V.* Prospects and Opportunities to Improve Efficiency of Submariner's Rescue. 2010. N 2. P. 68–70. Tabl. 2, Bibliogr. 5.

During the experiments on large animal tolerance of compression speed with the duplication of pressure every following 2 seconds, abilities of the organism were researched. In the experiments with participation of divers, terms of their survival under increased pressure 10 kgf/cm<sup>2</sup> of the compressed air were grounded; valid indexes of the psychological status of students-submariners, which go down during rescue training, were revealed. The possibility in principle to increase maximum depth of submariner self-rescue up to 500–600 m was justified. Key words: submariner, submarine, compression, decompression, rescue of wreckings.

233. *Medvedev L.G., Statzenko A.V.* Medico-Social Aspects of Professional Activity of Divers and Submariners. 2008. N 2. P. 19–23. Pic. 1, Tabl. 1, Bibliogr. 8.

It is established through the complex medical and physiological research, that the existing benefits in pension age limit for divers and submariners are consistent with a degree of diminished level of functional state under stress and unfavorable military conditions. Methods are proposed to calculate a conventional biological age and an index of functional readiness, available for using in land unit and shipboard conditions for comparative estimation of diver and submariner health state. Keywords: diver, submariner, functional body state, biological age, index of functional readiness.

234. *Sovetov V.I.* Future of Medical Support during the Russian Navy Operations on Rescue of Military Personnel of Damaged Submarines using Free Ascent Method. 2010. N 4, Pt. 2. P. 51–53. Tabl. 1, Bibliogr. 5.

Simulation studies presented safe conditions of military personnel free ascent out of sections of damaged submarines resting on the bottom at depths up to 200 meters. Critical and dangerous variants of free ascent of military personnel from the depths up to 250 meters were calculated by method of mathematical simulation of the body tissues nitrogen in gassing – off gassing, extrapolation of the studies' results to animals and carrying out tests with the divers' assistance. Key words: submariners, search and rescue supply, free ascent, the body nitrogen in gassing – off gassing, decompression sickness.

235. *Statsenko A.V.* Biophysical Model of Lung Form of Oxygen Poisoning in Divers and Submariners. 2008. N 2. P. 53–55. Bibliogr. 9.

A model of oxygen poisoning at electron, molecular and system level is considered. The model is based on the hypothesis of eligibility of calculations of the energy transformations in the breathing circuit using such property of a substance as electron affinity. Applying this property of oxygen molecules in calculations allows correlating the energy transformations with quantitative measures of oxygen partial pressure. Key words: oxygen poisoning, breathing circuit,  $\pi$ -electron, electron affinity, active oxygen-containing radicals.

236. *Statsenko A.V.* Features of Hyperbaric Stress at Long-Term Oxygen Intoxication. 2008. N 1. P. 7–10. Tabl. 1, Bibliogr. 7.

It has been found the correlative relation between indexes of somatic and psycho-physiological disorders during diving operations on compressed oxygen. It has been presented a conception of the hyperbaric stress at system and molecular levels, based on a view of organism hypoenergization as a result of cell respiration depression in compressed oxygen medium. Key words: diving operation, compressed oxygen, hyperbaric stress, tissular breathing.

237. *Statsenko A.V., Sovetov V.I.* Criteria of Divers' Safety during Diving with Oxygen Usage. 2010. N 1. P. 67–69. Tabl. 2, Bibliogr. 7.

Reasonability of decreased values of common dose of lung intoxication (CDLI) during sea dive using oxygen has been established. Statistically significant correlations were identified between parameters of cardiorespiratory system functional state and exposure of diving calculated by value of CDLI and

amount of energy that is blocked by oxygen in the respiratory chain. Key words: divers, oxygen, common dose of lung intoxication.

See also 156, 247, 253.

## 6.2. Environmental issues of water areas safety

238. *Bobritskaya Yu.M.* Specialists Training for Development of International Projects in the Field of Medico-Sociological and Geocological Research and Participation in their Realization. 2010. N 4, Pt. 2. P. 66–70. Bibliogr. 5.

Expert training for work on international projects is one of the main conditions of their successful development and realization. The possible ways of experts training intensification through raising their motivation for studying foreign languages in higher school are discussed. Key words: motivation determinants, cognitive motives, professional motives.

239. *Fokin D.P.* Assessment of Geocological Condition Influence on Spawning Grounds of Commercial Fish Species in Eastern Part of the Gulf of Finland (according to the Federal Monitoring Data). 2010. N 4, Pt. 2. P. 70-74. Pic. 5, Bibliogr. 8.

In recent years, anthropogenic load of water areas has increased dramatically that inevitably leads to contamination of environment with such dangerous substances as heavy metals, oil products, etc. In our case, a study object was near-bottom waters and bottom sediments. During the past ten years, the information on pollutants in these media was obtained. It allows revealing trends and a level of influence on spawning grounds of some fish species in the Nevsky and Luzhsky bays of the Gulf of Finland, near Krasnogorsky raid, due to activation of different human activities. The results of monitoring testify the dramatic change of granulometric composition of bottom sediments, increase in heavy metal and oil product content in near-bottom waters and bottom sediments. Ecological deterioration leads to a loss of natural places of fish residence and spawning; and it, in turn, results in increased diseases and decreased number of young and mature specimens.

240. *Grigoriev A.G., Vladimirov M.V.* Main Tendencies in Distribution of Major Natural and Technogenic Radio-Nuclides in the Bottom Sediments from the Eastern Part of the Gulf of Finland. 2010. N 4, Pt. 2. P. 57–61. Pic. 3, Tabl. 1, Bibliogr. 9.

In this paper, based on the results of analytical data processing and methods of mathematical statistics the authors show that: 1) facies conditions exert a significant influence on the conditions of migration and distribution of radionuclides in bottom sediments of the Gulf of Finland; 2) the main factor affecting the characteristics of accumulation of  $^{137}\text{Cs}$ ,  $^{40}\text{K}$ , and  $^{232}\text{Th}$  in bottom sediments of the Gulf of Finland is their lithological composition; 3) in deposits of areas with weak accumulation of sediment, radiocesium is mainly accumulated due to its

sorption immediately from the bottom water, and in sediments of sedimentary basins – mainly in clay sediments that adsorbed radiocesium on the ground, and then were washed out in the waters of the Gulf, 4) the main factor affecting the characteristics of  $^{228}\text{Ra}$  accumulation in bottom sediments of the Gulf of Finland is mainly the presence of alkali and sorption geochemical barrier at the water-bottom interface. Key words: Gulf of Finland, radionuclides, bottom sediments, characteristics of accumulation.

241. *Ivanov G.I., Efremkin I.M., Ponomarenko T.V.* Estimation Methods of Arctic Shelf Geoecosystems State. 2010. N 4, Pt. 2. P. 62–65. Pic. 2, Tabl. 1, Bibliogr. 4.

A problem of methodological choice for estimation of a geosystems condition of the Arctic shelf (differentiated and integrated) is considered. Along with already used methods of analytical control and biomapping, the method of biotesting by means of the *Tetrachymena pyriformis* protozoa culture is proposed. The detailed description of a technique both at a field stage, and as a laboratory part is given. On an example of the Barents Sea the high sensitivity of a method verified by direct hydrochemical and lithological-mineralogical supervision is shown. Key words: microbiology, biotesting, *Tetrachymena pyriformis*, condition estimation, ecosystem, Arctic shelf, Barents Sea.

242. *Vladimirov M.V., Kholmyansky M.A.* Expert Prediction System of Studying Potentially Dangerous Submarine Objects. 2010. N 4, pt. 1. P. 71–80. Bibliogr. 6.

Prediction system of studying the under-water potentially dangerous objects is under construction by a modular principle on the basis of modern GIS technologies. Implementation of self-trained principles and expert estimations during making administrative decisions turns them by the most proved ones. The system can be used for minimization of negative consequences. Key words: prediction system, expert estimation, negative consequences.

243. *Vladimirov M.V., Kholmyansky M.A., Snopova E.M.* Classification of Potentially Dangerous Submarine Objects. 2010. N 4, Pt. 2. P. 54–57. Pic. 1, Bibliogr. 6. There was developed a classification of underwater potentially dangerous objects according to their own characteristics and a wide complex of features normalizing their relations with surrounding environment. On the basis of classification, five groups of the danger caused underwater potentially dangerous objects are determined. Key words: features, underwater potentially dangerous objects, danger, emergencies, classification, features, characteristics.

See also 11, 25.

## 7. SCIENCE OF SCIENCE. ANALYSIS OF RESEARCHES

244. *Aleksanin S.S., Evdokimov V.I., Rybnikov V.Yu.* Analysis of the Activities of Dissertation Boards at the Nikiforov Russian Center of Emergency and Radiation Medicine, EMERCOM of Russia, in 1998–2009. 2010. N 2. P. 81–89. Pic. 18, Tabl. 5, Bibliogr. 11.

Dissertation boards at the Nikiforov Russian Center of Emergency and Radiation Medicine, EMERCOM of Russia, have reviewed 132 dissertations in 1998–2009; doctor dissertations comprised 19.7 %. In 1999–2009,  $(12 \pm 1)$  dissertations were reviewed annually, including  $(2.0 \pm 0.5)$  doctor dissertations and  $(9 \pm 1)$  candidate dissertations. On the specialty 05.26.02 «Safety in emergency situations» 81 dissertations were reviewed, including 47 medical, 3 biological, and 28 psychological ones. On the specialty 14.03.10 «Clinical laboratory diagnostics» 51 dissertations were reviewed, including 12 medical, and 39 biological ones. Unreduced number of accidents and disasters necessitates optimization of research studies on safety in emergency situations, extension medical biological and psychological research trends in the passport of the 05.26.02 specialty, restructuring dissertation boards that accept for consideration dissertations on the specialty 05.26.02 «Safety in emergency situations», and stimulating interest to field research conduct in candidates for degrees. Key words: science of science, dissertations, dissertation board, safety in emergency situations, clinical laboratory diagnostics.

245. *Goryachkina T.G., Evdokimov V.I., Shalimov P.M.* Assessment of Functional State of Specialists of Extreme Professions: Analysis of Patent-Associated Literature. 2007. N 2. P. 61–68. Pic. 5, Tabl. 1, Bibliogr. 11.

The study of scientific methodological aspects of assessment of functional state of specialists of extreme professions was carried out using domestic patents for inventions registered with the Federal Institute of industrial property of Russia. The analysis of patents for assessment of functional state revealed the decrease of research and development work in Russia in the period from 1990 to 2004, as well as low innovation perspectives of the inventions. The use of the principle of diagnostics of «level» and «range» of possible changes in psycho-physiological and autonomic indicators in the inventions will help to optimize the assessment of functional state and ensure reliability and safety of the professional extreme work. Key words: functional state, extreme conditions of work, inventions, innovations.

246. *Grigoriev S.G., Evdokimov V.I.* Evidence-Based Medicine: Methodology and Current Situation. 2008. N 3. P. 59–69. Pic. 4, Tabl. 3, Bibliogr. 23.

The conceptual aspects of evidence-based medicine are presented. The quantitative and quality analysis of the published papers on evidence-based medicine for the period of 1980–2007 was carried out. The problems of data search and conducting reseraches are discussed. Key words: science, evidence-based medicine, publications' flow, research work, statistical methods.

247. *Evdokimov V.I.* Acute Professional Issues of Submariners and Divers: Bibliographical List of Dissertations Abstracts (for the Period of 1994–2009). 2010. N 4, Pt. 2. P. 83–89.

Ninety dissertations abstracts reviewed by dissertation boards of Russia in 1994–2009 are presented. Bibliographical description is made according to state standard GOST 7.1–2003. In addition a number of scientific papers published by a dissertation author and storage codes of the abstract in Russian State Library (Moscow), Russian National Library (Saint-Petersburg), Central Scientific Medical Library (Moscow) are given.

248. *Evdokimov V.I.* Analysis of Dissertation Studies performed in 1995–2008 on a Specialty: 05.26.02 – «Safety in Emergency Situations». 2009. N 1. P. 76–80. Pic. 3, Tabl. 5, Bibliogr. 4.

The analysis of 462 dissertation abstracts on issues of the safety in emergency situations in 1995–2008 is presented. 93.1 % of dissertations were performed on a specialty: 05.26.02 – «Safety in emergency situations». A proportion of dissertations on administrative and legal issues was 16.5 %, and 24.4 % were technical, 42.6 % medical, 8.6 % biological, 7 % psychological studies. Annually an average number of  $(32 \pm 4)$  dissertations is submitted, about one third of the studies are multidisciplinary (two-specialty). Dissertations submitted to compete for the academic degree of the Doctor of Science accounted for 23.6 %. Polynomial trend of dissertations according to the model predictivity ( $R^2 = 0.87$ ) and significance demonstrates some decrease of dissertation studies on issues of the safety in emergency situations in the last years. Key words: safety in emergency situations, dissertation studies.

249. *Evdokimov V.I.* Bibliographic List of Books on Evidence-Based Medicine Issues. 2008. N 2. P. 75–76. Bibliogr. 31.

Presented is a bibliographic list of books, materials of conferences, dissertations abstracts and scientific journals published during the period of 1999–2006 and devoted to the issues of evidence-based medicine. Bibliographic description is complemented with shelf codes of documents in departments of Russian National Library (Saint-Petersburg).

250. *Evdokimov V.I.* Physiologo-Hygienic Problems of Professional Occupation, Health Assessment and Treatment at Rescuers and Firefighters: Bibliographical List of Dissertations Abstracts. 2010. N 3. P. 18, 26, 30, 80, 85–86.

Forty seven dissertations abstracts, reviewed by dissertation boards of Russia in 1998–2009 are presented. The present list doesn't include abstracts devoted to study of health state at liquidators of Chernobyl atomic power station (CAPS) accident. They will be presented in a separate bibliographical list. Bibliographical description is made according to state standard GOST 7.1–2003. In addition a number of scientific papers published by a dissertation author and storage codes of the abstract in Russian State Library (Moscow), Russian National Library (Saint-Petersburg), Central Scientific Medical Library (Moscow) are given.



251. *Evdokimov V.I.* Disaster Medicine Management: Bibliographic List of Books. 2009. N 2. P. 78–82.

The bibliographic list of books and booklets in alphabetical order, published in Russian in Russia in 1994–2007 (95 references) on the disaster medicine management (planning, prediction, main activity arrangement, estimation of need for strength and resources, logistics, accountability, psychophysiological support of participants of mitigation of consequences of emergency situations) is presented.

252. *Evdokimov V.I.* Psychological Aspects of Emergency Situations: bibliographic list of books published in Russian for the period of 2007–2008. 2009. N 3. P. 9, 21, 31, 34, 40, 50, 84, 91.

The list includes bibliographic record of 64 books received by National Book Chambr of Russia as a legal deposit. Bibliographic list includes number of issues, ISBN and shelf codes in Russian State Library (Moscow, <http://www.rsl.ru>), Russian National Library (Saint-Petersburg, <http://www.nlr.ru>).

253. *Evdokimov V.I., Goryachkina T.G.* Overview of Innovations in the Sphere of Personnel Safety on Submarine Objects. 2010. N 4, Pt. 2. P. 46–50. Pic. 6, Tabl. 3, Bibliogr. 13.

The study presents general data on innovative activity in Russia and on submarine potentially hazardous objects. It shows the procedure of searching in electronic databases of Rospatent the items of industrial property. For the period of 1994–2009 there were studied 183 inventions' patents in the sphere of safety for personnel activity on underwater facilities. Methods and devices on study and assessment of functional state of divers and submariners amount to 13 %, on submarine and special equipment – 17 %, on oxygen-breathing equipment – 27 %, on migration and communication – 14 %, on rescue works – 29 %. 70 % of studied patents referred to the section B 'Various technological processes, transporting' according to international patent classification. In structure of patents belonging to this section 91 % referred to class B63 'Water and other floating crafts, their equipment', among which 60 % were patents of subclass B63C 'Building slips and docks equipment, inwards and outwards of the watercrafts from docks and slips, rescue means on water, diver equipment, equipment for rescue and detecting the objects under water'. 10–12 % of patents are considered to have low possibility of industrial usage. Key words: innovations, Russian inventions, submarine potentially hazardous objects, safety of personnel activity, submariners, divers

254. *Evdokimov V.I., Druzhinina V.N., Bigunets V.D.* Information Supply of Scientific Research in Studying Medico-Biological and Socio-Psychological Problems of Safety in Emergency Situations. 2007. N 1. P. 64–73. Pic. 3, Tabl. 2, Bibliogr. 3.

A way of scientific data search in the field of safety issues in emergency situations in the universal state and industry indexes and abstract journals, in the catalogues of scientific libraries and in the Internet is presented. An algorithm of search of normative documents and patents on inventions has been

introduced. Key words: research on research, information supply, scientific work, safety in emergency situations.

255. *Khanmagomedova G.A., Evdokimov V.I., Lysenko S.A.* Foreign journals of disaster medicine, liquidation of emergency aftermath, and emergency medicine. 2010. N 2. P. 90–94.

Imprints and e-mail addresses of 25 foreign journals of disaster medicine, liquidation of emergency consequences, and emergency medicine are provided.

## 8. OFFICIAL INFORMATION

256. *Aleksanin S.S., Rybnikov V.Yu., Tarita V.A.* The Nikiforov Russian Center of Emergency and Radiation Medicine: Yesterday, Today, Tomorrow. 2008. N 3. P. 3–10. Bibliogr. 20.

The main stages of the establishment and development of the Nikiforov Russian Center of Emergency and Radiation medicine and its leading units are presented. Clinical, research and educational work are described. The main achievements of the staff and future development prospects are presented. The data presented are based on regulating documents listed in the references. Key words: EMERCOM of Russia, The Nikiforov Russian Center of Emergency and Radiation medicine, emergency situations, Chernobyl NPP accident, rescue workers.

257. *Main* outcomes of the Russian EMERCOM activities in 2007. 2008. N 4. P. 77–85. Pic.16, Tabl. 2.

258. *Brief* biographical information on those celebrating anniversaries:

Professor Sergey Aleksanin, Honoured Doctor of the Russian Federation, Doctor of Medicine, celebrates his 50-year anniversary. 2007. № 1. P. 79.

Professor Viktor Rybnikov, Honoured Scientist of the Russian Federation, Doctor of Medicine and Psychology, celebrates his 50-year anniversary. 2007. № 2. P. 79.

Professor Alexander Akleev, Honoured Scientist of the Russian Federation, Doctor of Medicine, celebrates his 50-year anniversary. 2008. № 3. P. 75.

Professor Albert Novitsky, Doctor of Medicine, celebrates his 75-year anniversary. 2010. № 1. P. 99.

Professor Igor Suvorov, Honoured Doctor of the Russian Federation, Doctor of Medicine, celebrates his 75-year anniversary. 2010. № 3. P. 90.

Professor Roman Baevsky, Honoured Scientist of the Russian Federation, Doctor of Medicine, celebrates his 80-year anniversary. 2008. № 3. P. 74.

Professor Boris Ushakov, Honoured Doctor of the Russian Federation, Doctor of Medicine, celebrates his 80-year anniversary. 2009. № 5. P. 87.

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Evdokimov V.I. Information and scientific activity on issues of safety in emergency situations. – SPb. : Politekhniko-servis, 2009. – 190.

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