MILITARY EPIDEMIOLOGY, INFECTIOUS DISEASES
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A CASE OF WEIL’S SYNDROME DEVELOPING STEROID RESISTANT IMMUNE HEMOLYTIC ANEMIA
Danaci Mehmet, Solmazgul Emrullah, Turhan Vedat, Unver Suat, Nalbant Selim, Turkey .......................................................... 243

ABOUT SOME DEONTOLOGICAL ASPECTS OF THE INFECTOLOGIST’S ACTIVITY IN MODERN CONDITION
Melnichenko P.I., Russia .......................................................................................................................................................... 243

ACUTE HEPATITIS A PREVENTION BY VACCINATION IN INTERNAL FORCES OF THE MINISTRY OF INTERNAL AFFAIRS OF RUSSIA DURING COUNTER TERRORIST OPERATION
Sabanin Yu.V., Rikhter V.V., Artyukov R.M., Russia ........................................................................................................................................... 243

ADVANCED DIAGNOSTIC METHODS AND EPIDEMIOLOGY OF HUMAN BRUCELLOSIS IN THE REPUBLIC OF MACEDONIA
Taleski V, Nikolovski B, Stojkoski S., Macedonia ............................................................................................................................................. 244

BIOTERRORISM & MILITARY PERSONNEL: POSSIBLE RESPONDS TO A REAL THREAT
Doust R.H., Iran ............................................................................................................................................................................ 244

CLINICAL ANALYSIS ON EFFICACY OF ARTEMETHER AND PRIMAQUINE IN TREATING 82 PATIENTS WITH MALARIA OF MULTINATIONAL PEACEKEEPING TROOPS
Ling L., Wang DL, Liu BJ, Hu GP, He XJ, China .................................................................................................................................................. 244

CLINICAL MANIFESTATIONS AND DIAGNOSTICS OF TUBERCULOSIS IN THE CONDITIONS OF MODERN LOCAL WAR CONFLICTS
Galitsky L.A., Dantsev V.V., Russia .............................................................................................................................................. 245

CURRENT SMALLPOX THREAT AND THE CZECH REPUBLIC PREPAREDNESS
Prymula, R., Czech Republic ......................................................................................................................................................... 245

DEFENSE AGAINST TOXINS AS BIOTERRORISM AGENTS
Wang L, Wu SH, Wang SJ, China ....................................................................................................................................................... 245

DESIGN AND DEVELOPMENT OF A DNA ARRAY FOR RAPID DETECTION AND GENOTYPING OF SEVEN KINDS OF PATHOGENIC MICROBES
Tao KH, Li YX, Jin HY, Zhang JH, Cao M., Zhou J., Tang Y., Zhu J., Guo HB, China ........................................................................................................................................................................ 246

DETECTION OF MYCOBACTERIUM TUBERCULOSIS RIFAMPIN-RESISTANT GENES BY MEMBRANE-REVERSE DOT HYBRIDIZATION
Jin XII, Yu CB, Liu TT, Liu YD, China .................................................................................................................................................... 246

DISTRIBUTION AND RISK FACTORS OF HEPATITIS B, HEPATITIS C AND HIV INFECTION IN A FEMALE POPULATION WITH ILLEGAL SOCIAL BEHAVIOR
Jahani MR, Alavian M, Shirzad H, Iran ................................................................................................................................................. 246

EFFECTIVENESS OF SINGLE IMMUNIZATION AGAINST VIRAL HEPATITIS A OF SERVICEMEN, PARTICIPATING IN PEACEMAKING OPERATION IN KOSOVO
Peleschok S.A., Russia ................................................................................................................................................................. 247

EFFICIENCY OF THE BETUALE AT THE CHRONIC VIRUS HEPATITIS C
Kovelenov A.J., Alisov P.G., Jurchenko I.V., Pavlova O.O., Russia .............................................................................................................................................................. 247

EFFICIENCY OF THE PNEUMOCOCCAL 23-VALENT POLYSACCHARIDE VACCINE USE IN RFAF SERVICEMEN
Zhogolev S.D., Ogarkov P.L., Russia ............................................................................................................................................... 248
EPIDEMIOLOGY OF INFLUENZA AND OTHER ARD IN MILITARY CONTINGENTS AND THEIR PROPHYLAXIS THROUGH MILITARY-CIVILIAN CO-OPERATION
Ogarkov P.I., Belov A.B., Russia ................................................................. 248

FORTALECIMIENTO DEL PROGRAMA DE PREVENCIÓN Y CONTROL DE LAS EST / SIDA EN LAS FUERZAS ARMADAS EN BRASIL
Martins da Silva, Brazil ................................................................. 249

GENOTYPING OF ORIENTIA TSUTSUGAMUSHI ISOLATED FROM THE NEW SCRUB TYPHUS FOCI IN SHANDONG PROVINCE, P R CHINA
Liu YX, Gao Y., Zhao ZI, Zhang JJ., Yang, ZQ, Wang YJ, Qiao ZF, Xu JJ, China ................................................................. 249

IS THERE A DIFFERENT PHENOTYPE FOR FAMILIAL MEDITERRANEAN FEVER (FMF) ARTHRITIS IN MID-ANATOLIA?
Danaci Mehmet, Solmazgul Emrullah, Tunca Yusuf, Naibant Selim, Turkey ................................................................. 249

MEDICAL EMERGENCY CARE FOR PATIENTS WITH INFECTIOUS DISEASES
Volzhanin V.M., Lobzin Yu.V., Russia ................................................................. 250

MILITARY- EPIDEMIOLOGICAL AND ECONOMICAL SIGNIFICANCE FECAL- ORAL ANTHROPONOSY FOR THE SERVICEMENS
Petuhov V.S., Podlesny I.V., Petuhova L.N., Russia ................................................................. 250

MILITARY IMMUNIZATION PROGRAMS: MAINTAINING PROTECTION AND RESPONDING TO EVOLVING RISKS
Dutta A., France ................................................................. 251

NEW WAY OF REHABILITATION OF PATIENTS WITH VIRUS HEPATITIS
Balchugov V.A., Suslov A.G., Russia ................................................................. 251

ORGANIZATIONAL PRINCIPLES OF BIOTERRORISM CONTROL IN THE ARMED FORCES OF THE RUSSIAN FEDERATION
Ogarkov P.I., Korolkov V.F., Russia ................................................................. 251

ORGANIZING HIV PROPHYLAXIS IN THE MILITARY UNITS AND INSTITUTIONS OF THE MINISTRY OF DEFENSE OF RUSSIA
Parshin M.Zh., Zoteev V.E., Andrievskiy V.I., Russia ................................................................. 252

PERFECTION OF MILITARY-MEDICAL EXAMINATION AT HIV-INFECTION AMONG SEPARATE CATEGORIES OF SERVICEMEN
Volzhanin V.M., Bolekhan V.N., Bulankov Yu.I., Zigalenko D.G., Karapats M.M., Russia ................................................................. 252

PRINCIPLES OF ANTI EPIDEMIC PROTECTION OF TROOPS IN LOCAL ARMED CONFLICTS
Kazakov A.N., Mandrik V.A., Russia ................................................................. 252

RATIONALIZATION OF PREVENTIVE MEASURE AGAINST PENETRATION OF HIV-INFECTION TO THE ARMED FORCES
Bolekhan V.N., Bulankov Yu.I., Zigalenko D.G., Karapats M.M., Russia ................................................................. 253

RESULTS OF ORGANIZATION OF SANITARY-AND-ANTIEPIDEMIC (PROPHYLACTIC) MEASURES UNDER CONDITIONS OF EXTREME SITUATION IN REPUBLIC OF INDONESIA
Melnichenko P.I., Volgin A.R., Russia ................................................................. 253

RISK FACTORS OF PNEUMONIAS AND MEASURE THEM PREVENTIVE MAINTENCE AT THE EDUCATIONAL CENTRE
Bilyov A.E., Martincev A.S., Polyakov S.G., Strukova E.A., Slavogorodsky V.S., Lukano N.A., Krilov I.K., Panin I.V., Russia ................................................................. 254

SMALLPOX AND OTHER ORTHOPOXVIRUS INFECTIONS: CURRENT PROBLEMS AND THE WAYS OF THEIR OVERCOMING
Ogarkov P.I, Raevsky K.K, Russia ................................................................. 254
STRATEGY OF PREVENTIVE MAINTENANCE OF THE ACUTE HEPATITIS A IN INTERNAL FORCES OF THE MINISTRY OF INTERNAL AFFAIRS OF RUSSIA
Subanin Yu.V., Rikhter V.V., Artyukov R.M., Russia .......................................................... 255

THE ACUTE STRESS REACTIONS OF HIV – INFECTED SERVICEMEN
Gabrilents M.A., Russia ........................................................................................................ 255

THE DEMANDS AND MEASURES OF ESTABLISHING THE REGULATIONS OF ANTI-BIO-TERRORISM
Guo SS, Xu SX, Zhang SH, Du K., Jin ZW, China ................................................................ 255

THE EPIDEMIOLOGICAL CHARACTERISTIC OF INTESTINAL INFECTION CONTAMINATIONS IN AF RF
Sokolovski N.A., Lachko K.V., Petuhov V.S., Petuhova L.N., Russia .................................... 256

THE EXPERIENCE OF ANTI-MALARIA ARRANGEMENTS IN PEACEMAKING MISSION OF MILITARY ELEMENTS
Kozlov S., Solovjov A., Russia .......................................................................................... 256

THE GENOMIC HOMOLOGY COMPARISON AND VIRULENT GENE ANALYSIS OF THE STRUCTURAL GENE OF THREE DENGUE VIRUS TYPE 2 STRAINS ISOLATED IN GUANGDONG, CHINA
Fang MY, Ren RW, Hong WY, Liu JW, Cheng GF, Tian XD, Lin LH, Jiang LH, China............... 257

THE INFORMATION SYSTEM OF EPIDEMIOLOGICAL SUPERVISION AFTER INFECTIOUS DISEASES (SESID)
Kurjanovich O.V., Koblikhin D.V., Ogarkov P.I., Ivanikov Yu.G., Russia ............................ 257

THE ITALIAN NAVY CONTRIBUTION IN THE STRUGGLE AGAINST BURULI ULCER
Vincenzo Martines, Italy ....................................................................................................... 257

THE MEDICAL SERVICE OF THE RUSSIAN FEDERATION ARMED FORCES IN THE BIOTERRORISM CONTROL SYSTEM
Kotenko P.K., Russia ........................................................................................................... 258

URGENT PROPHYLAXIS OF DANGEROUS INFECTIOUS DISEASES. PERSPECTIVE OF APPLICATION OF RECOMBINANT CYTOKINES
Stepanov A.V., Dobrinin V.M., Tsikarishvili G.V., Russia ..................................................... 258

USE OF PROBIOTICS, IMMUNOMODULATORS AND VACCINES FOR PREVENTION OF PNEUMONIA AND RESPIRATORY INFECTIONS IN RECRUITS
Polaykov A.S., Zueva N.V., Zhogolev S.D., Zhogolev K.D., Ogarkov P.I., Russia .................. 259

VACCINE PREVENTION OF TYPHOID FEVER
Dutta A., France .................................................................................................................. 259

VIRUSES AS A MAJOR INFECTIOUS THREAT TO THE PUBLIC HEALTH IN THE ANTIBIOTICS ERA
Netesov S.V., Sandakhchiev L.S., Russia ............................................................................... 259
A CASE OF WEIL’S SYNDROME DEVELOPING STEROID RESISTANT IMMUNE HEMOLYTIC ANEMIA

Danaci Mehmet, Solmazgul Emrullah, Turhan Vedat, Unver Suat, Nalbant Selim, Turkey

Introduction: Leptospirosis is a zoonosis caused by pathogenic leptospira strains, observed worldwide, and characterised by various clinical manifestations and complications. Also known as Weil’s syndrome in serious clinical form, the development of immune hemolytic anemia related to leptospira in human beings is a very rare clinical presentation, and we encountered only one case report in a scan of the literature.

Case report: A 20-year-old male patient, was admitted to the emergency unit of our hospital with complaints of significant fatigue, nausea, widespread muscle pain, inflamed eyes, bleeding wounds on the hands, feet and lower lip, yellowing of the whites of the eyes and reduced urine levels. By dark field microscopy on urine sample was the presence of spirochetes was reported. It was developed that hemolysis findings. The direct Coombs test resulted positive. With all these findings it was considered that this was a case of leptospirosis accompanied by immune hemolytic anemia. The serological antibody test (macroagglutination test) and leptospira culture results obtained subsequently were reported as positive. Because of findings of infection, pulse therapy was avoided and 1 mg/kg/day of methylprednisolone was initiated for immune hemolytic anemia. Despite 3-day steroid therapy and the improvement of the renal insufficiency findings, hemolysis could not be brought under control. Hemolysis was brought under control with intravenous immunoglobulin (IvIg) and there was no need for blood transfusion in the days that followed.

Discussion: In undeveloped and developing countries or tropical and endemic regions, leptospirosis must be borne in mind in patients with high fever illness and widespread muscle pain. As observed in our case, it must not be forgotten that immune hemolytic anemia can develop as a cause of anemia in leptospirosis, and it should be remembered that IvIg may play an effective role in the treatment of hemolysis.

ABOUT SOME DEONTOLOGICAL ASPECTS OF THE INFECTOLOGIST’S ACTIVITY IN MODERN CONDITION

Melnichenko P.I., Russia

Infectologist’s activity was always carried out and remains to be carried on the junction of two directions of medicine: clinical and preventive one; and as V.I. Pokrovsky et al. (2003) wrote: “… to break off these two areas of medicine as well as to tear off microbiology (a science about activators of infectious diseases) from them, it is impossible”. Hence, infectologist is not only compelled, but also is obliged to possess both clinical and preventive (first of all – epidemiological!) thinking.

Thus, under those circumstances, that the basic place of his stay is the infectious hospital, the mode of his thinking and actions in practice seldom falls outside the limits of clinic. Meanwhile the history of discovery the HIV infections, legionellosis, testifies that without knowledge of bases of epidemiological process it is possible for enough long time to be in “captivity” of false assumptions, proceeding only from clinical characteristics of illness.

It is especially important and crucial today when the threat of biological terrorism has increased.

The above mentioned testifies to the necessity of significant correcting the preparation and perfection of experts in infectology.

ACUTE HEPATITIS A PREVENTION BY VACCINATION IN INTERNAL FORCES OF THE MINISTRY OF INTERNAL AFFAIRS OF RUSSIA DURING COUNTER TERRORIST OPERATION

Sabanin Yu.V., Rikhter V.V., Artyukov R.M., Russia

Immunoglobulin prophylactics was conducted in all military personnel participating in counter terrorist operation in the Chechen Republic in December 1994, before the beginning of the campaign, in order to achieve immunity to the acute hepatitis A (HA).

However, rapid changing of the working conditions, constantly worsening sanitary-and-hygienic condition of territory of the Chechen Republic and accommodation of armies in field conditions had not allow to achieve the decrease of the HA incidence even with prescription of repeated doses of immunoglobulin. Epidemic process has got out of control in the middle of 1995.

It was possible to reduce the incidence of HA in a group of internal forces in the Chechen Republic (Group) only after application of specific vaccination.

Vaccines against HA “HAVRIX-1440” (GlaxoSmithKline, Great Britain), “GEP-A-IN-VAC” (Vector, Russia) and “AVAXIM” (sanofi pasteur, France) were used in internal forces using single dose schedule, without buster dose.

The incidence of HA, has decreased 6.6 times during the period from 1997 to 2001 when military personnel of the Group was immunized with vaccines “HAVRIX-1440” and “GEP-A-IN-VAC” in comparison with prevaccination period (1995-1996) and was equal to 4.15 ‰ in 2001 (in the general population of the Chechen Republic – 4.6 ‰).
Vaccine “Avaxim” was used in the Group from 2002 to 2004 what lead to decrease of the incidence level of HA 12.8 times in comparison with the first period of vaccination.

New cases of HA were not registered in the Group in 2003 (HA incidence among the population of the Russian Federation – 0.28 ‰, in the Chechen Republic – 1.1 ‰).

The level of HA incidence in the Group was equal to 0.13 ‰ in 2004, that in 1.7 times it is less than in internal forces as a whole (0.22 ‰) and 2.3 times less than among the population of the Russian Federation (0.30 ‰).

ADVANCED DIAGNOSTIC METHODS AND EPIDEMIOLOGY OF HUMAN BRUCELLOSIS IN THE REPUBLIC OF MACEDONIA

Taleski V, Nikolovski B, Stojkoski S., Macedonia

Brucellosis is a typical zoonotic infection of domestic and wild animals caused by organisms of genus Brucella. Humans become infected by ingestion of animal food products, direct contact with infected animals or inhalation of infectious aerosols. The disease remains a worldwide veterinary, medical and economical problem.

Brucella spp. is a potential biological agent. A very low number of bacteria (1000) can produce disease. Vaccines are still not available for use in humans.

Until 1980, the human brucellosis was rarely registered in the Republic of Macedonia. During the period 1980 to 2004 a total of 9720 cases were reported (approximately 400 cases per year). The number of human cases correlated with the intensity of the epizooty among sheep and goats. There were no registered cases among military personal.

Different tests (culture, serologic diagnosis and molecular diagnostic tests) are available. Mostly used serologic tests in the laboratories in Macedonia are: Slide Agglutination test (Rose Bengal, BAB), Tube agglutination test (Wright), Antihuman globulin test (Coombs) and ELISA.

In our studies sensitivity of ELISA (98%) was statistically significant higher than Wright (82%), and Coombs (89%), but no statistical significant differences in specificity was found out. By R.A.P.L.D.-PCR using primers for detecting BCSP-31 gene sensitivity was 56% and specificity 100%. The sensitivity was much higher for peripheral blood samples obtained in the beginning of the disease, when the bacteriemia was still present.

A total of 16 isolates (17,7%) were obtained from 90 cultivated samples of 90 PMC (polimorphonuclear cells). All isolates were confirmed by R.A.P.L.D.-PCR in 30 min. Determining the brucella DNA with PCR from cultures and blood-cultures is faster, more economical than the standard methods of isolation and identification, and enable to avoid the risk for employees from laboratory infections.

BIOTERRORISM & MILITARY PERSONNEL: POSSIBLE RESPONDS TO A REAL THREAT

Doust R.H., Iran

In the modern military activities, one could not exclude the threat of Mass Destruction Weapon (MDW) and Asymmetric Warfares (AW). National and regional security is mainly affected by the possible usage of MDW and AW in military and non-military scenario. The application of MDW and AW is not limited to the specific geographical and political parts of the world. Biological Agents (BA) have been considered as the main components of both MDW and AS. As a results, BAs in the bioterrorism form would play a vital role in future natural and manmade disaster. The military personal could be the main target of bioterrorism attack in national security point of view. The main questions are:

A) How should be the scenario of bioterrorism events in military organization?
B) What are the organic weakness in the military organizations which helps bioterrorists to act against?
C) What will happen if a bioterrorism attack hit the military personal in the military bases or at the front lines?
D) Are the conventional measures enough to protect the military personal from bioterrorism attack?
E) What is the role of regional and international inter-military cooperation in threat assessment and protection?

In this presentation, a scenario of bioterrorism attack upon military institutions will be introduced and the proposed program for minimizing of the threat in military personel will be discussed in details.

Keywords: Asymetric warfares, Mass destructive weapons, Bioterrorism, Biodefence, military personal.

CLINICAL ANALYSIS ON EFFICACY OF ARTEMETHER AND PRIMAQUINE IN TREATING 82 PATIENTS WITH MALARIA OF MULTINATIONAL PEACEKEEPING TROOPS


Objective. To study the medication on malaria patients of peacekeeping troops of the United Nations in the high prevalence district of Congo.
Methods. The injections of traditional Chinese medicine called Artemether were used to treat 82 patients with malaria of various types, the Primaguine was also used jointly in 21 severe patients.

Results. Among all patients, 80 cases recovered (accounted for 97.6%), 2 cases of severe patients improved (accounted for 2.4%). The relapse rate was zero within 28 days. The blood examination before discharging from hospital showed that 15 of 21 patients with malignant malaria (71.4%) became negative, 47 of 61 patients of other types (77.0%) also became negative, the overall negative rate was 75.6%.

Conclusions. The traditional Chinese medicine of Artemether can treat malaria effectively. When Artemether and Primaguine are jointly used, they have a good result in the treatment of severe malaria of high fever.

CLINICAL MANIFESTATIONS AND DIAGNOSTICS OF TUBERCULOSIS IN THE CONDITIONS OF MODERN LOCAL WAR CONFLICTS

Galitsky L.A., Dantsev V.V., Russia

To study features of clinical manifestations and diagnostics of tuberculosis in conditions of modern local war conflicts we have analyzed the case records of participants of antiterrorist operation on Northern Caucasus, contained in archives of the Military-medical museum, who fell ill with tuberculosis in 1994-1996 and 1999-2000. The control group was made up by 40 patients with a tuberculosis of the military men serving in units, constantly deployed in the North-em Caucasian military district, who did not take part in operations.

While carrying out the research the following features of clinical manifestations and diagnostics of tuberculosis have been revealed. Active revealing of tuberculosis in participants of operations has made up only 11.6 % which was connected with difficulties of the organization of preventive fluorographic inspection of the units dispersed in a mountain district.

As a result of the research prevalence of the acute onset of the disease in participants of war operations has been revealed - 53.4 % of cases, thus, the connection with overcooling was marked in 69.7 % of patients, that authentically differed from parameters of control group of 17.5 % and 20 % respectively (p <0.05). Marked clinical manifestations of tuberculosis and inflammation have been noted, with spread of specific injury that created significant difficulties in carrying out the differential diagnostics with pneumonia and was the reason of late reference to specialized medical establishments. Mycobacterium tuberculosis has been revealed only in 14.7 % of patients with pulmonary tuberculosis of the basic group.

Thus, in conditions of modern local war conflicts the tuberculosis is characterized mainly, by the acute onset, marked intoxication, prevalence of specific lung injury. In connection with the low percent of detection of Mycobacterium tuberculosis in the sputum of the patients, to duly reveal patients with tuberculosis it is necessary to observe terms of preventive fluorographic inspection strictly.

CURRENT SMALLPOX THREAT AND THE CZECH REPUBLIC PREPAREDNESS

Prymula, R., Czech Republic

In spite of fact the biological warfare misuse risk in peace time is very limited it still exists. Terrorists worldwide jeopardize daily life irrespective to all the principles of humanity. Bioterrorism plays the important role. Risk assessment of available biological agents brings into scope smallpox as deadly biological weapon. Existence of possible sources does not fully deny eventual release. After September 11, the homeland security system was completely redesigned in the Czech Republic considering terrorism as major threat. On governmental level there is a disaster board with representatives of various ministries (mostly ministers). To have a board of biological experts for decision making process available a biological expert group was established with experts representing both civilian and military organizations. Active elements consist of State institute for NBC security, State institute of public health and Regional institutes of health. If the range of biological events will exceed certain level military is included as well. The key epidemiological provision is immunization. During smallpox event free period only few lab people are immunized. The next stage applied for small events with predicted achievable control is the “ring immunization”. The final stage is a mass immunization of the whole population. The original Czech vaccine is available for everybody using multiple imprinting technique. The immunization teams are vaccinated immediately after risk of uncontrolled outbreak assessment. This process will be followed by vaccination of primary care physician and nurses and completed by the rest of the population. Role of military is discussed.

DEFENSE AGAINST TOXINS AS BIOTERRORISM AGENTS

Wang L, Wu SH, Wang SJ, China

Bioterrorism has recently come into focus due to the deliberate release of Bacillus anthracis via mail delivered in the USA. Never before has there been such a strong possibility that biological agents might be used indiscriminately on civilian populations. A number of biological toxins could be used in a terrorist attack. Novel and accessible technologies give rise to proliferation of biological toxins. Now, the malicious use of biological toxins is a continuing threat.
Although the threat of toxins of the future is formidable, the prospect of new and better medical countermeasures is brighter than ever before, including recombinant vaccines or human antibodies that are most effective. We need focus our medical biological defense resources on the development of medical countermeasures for those toxins that are most likely to face in bioterrorism in near future, including botulinum toxin, ricin, staphylococcal enterotoxin B and saxitoxin. On the other hand, medical defense against toxins requires constant vigilance. Good intelligence information, timely warning and real-time detection can, at a minimum, help leaders who must make decisions to immunize civilians. Therefore, as regards medical defense against toxins, a strong and effective information is both necessary and cost-effective.

**Key Words:** toxins, bioterrorism, defense.

**DESIGN AND DEVELOPMENT OF A DNA ARRAY FOR RAPID DETECTION AND GENOTYPING OF SEVEN KINDS OF PATHOGENIC MICROBES**

Tao KH, Li YX, Jin HY, Zhang JH, Cao M., Zhou J., Tang Y., Zhu J., Guo HB, China

Epidemic hemorrhagic fever, tsutsugamushi disease, leptospirosis, malaria, schistosomiasis, cholera, and hemorrhagic colitis are the main infectious diseases in many countries. In this paper, we have developed a DNA array for rapid and efficient detection of the above seven kinds of pathogenic microbes.

PCR and RT-PCR for amplifying the specific and relatively conserved fragments of the pathogenic genes were established firstly. The DNA probes were selected from the corresponding target genes respectively and arranged on the chip. Two probes from S gene of EHFV are used for distinguishing R22 from 76/118 strain, and four probes from SS rRNA of Plasmodium distinguishing P. vivax and P. falciparum, two conserved and specific probes could distinguish pathogens from non-pathogenic Leptospiries, two probes from 56KD protein gene of Orientia tsutsugamush are common among Gilliam, Karp, and Kato strains, four probes from ctxA and ompW could detect vibrio cholera specifically, and verotoxin-producing E.coli O157:H7 could be confirmed by four probes from rfbE, fliC, and the verotoxin gene. All of these probes have the same Tm value and no homology with other genes in GeneBank. They were synthesized chemically and modified with a NH2 at their 5’ terminus, they were printed on a glass slide for fabrication of a oligonucleotide DNA array.

The developed DNA array could be used for detection and genotyping of the pathogenic microbes simultaneously, and a large number of standard stains of the pathogens and specimens have been detected, the results showed that the DNA chip has high sensitivity and specificity.

**DETECTION OF MYCOBACTERIUM TUBERCULOSIS RIFAMPIN-RESISTANT GENES BY MEMBRANE-REVERSE DOT HYBRIDIZATION**

Jin XH, Yu CB, Liu TT, Liu YD, China

To investigate the rapid detection of resistance to rifampin in Mycobacterium tuberculosis by membrane –reverse dot hybridized technique. Five oligonucleotide probes of Rifampin-resistant genes (rpoB) were designed by Genebank. The probes were dropped on pyroxylin membrane for five dots. The primers which labeled with biotin amplified targets DNA fragments (rpoB) of Mycobacterium tuberculosis clinical isolates. The DNA fragments hybridized with probes on the membrane. Polymerase chain reaction-Single stranded conformation polymorphism(PCR-SSCP) and bacterium detection of drug resistance were used as the control. The rpoB genes in 52 clinical isolates were analyzed. 32 strains were rifampin-resistant and 20 strains were rifampin-sensitive. Of 20 rifampin -sensitive isolates, the results of PCR-SSCP and membrane-reverse dot hybridization were similar to the standard H37Rv. 30 of 32 RFP-resistance isolates were different with the H37Rv by PCR-SSCP and 29 of 32 RFP-resistance isolates were negative by membrane-reverse dot hybridization. The sites of mutation were 14 in 531, 533, 10 in 526, 4 in 513, 1 in 516. The rates of coincide with PCR-SSCP was 96.7%. So the membrane –reverse dot hybridized technique was simple and rapid and could be used to detect Rifampin-resistance of Mycobacterium tuberculosis.

**DISTRIBUTION AND RISK FACTORS OF HEPATITIS B, HEPATITIC C AND HIV INFECTION IN A FEMALE POPULATION WITH ILLEGAL SOCIAL BEHAVIOR**

Jahani MR, Alavian M, Shirzad H, Iran

**Introduction:** Parenteral exposure is a well-established risk factor for HCV infection. However, the role of sexual route in the transmission of hepatitis C has remained controversial. Few studies has been carried out to evaluate these two routes of transmission, in Iran. This study has been performed by Health department of Iranian police force to determine the distribution of HCV as well as HBV and HIV infection in a female population with illegal social behavior.
Methods and Materials: We surveyed 196 females arrested by Police force in an analytic cross-sectional study during summer of 2002. They were mostly suspected of drug addiction, drug dealing, prostitution and vagrancy. It is emphatically confirmed that there would be no additional penalty if anyone among the study population were not cooperative. Ten cases out of 206 females who had been initially selected for the study refused to be involved in the study. Other 196 females all gave written informed consent. All individuals were asked about potential risk factors of blood viruses’ acquisition according a voluntary interview. Then all were screened for anti-HCV antibody, HBsAg and anti-HIV antibody.

Results: The mean (+SE) of age was 29.3 ± 0.7 years. There were history of prostitution in 79.0%, non-IVDA (Intravenous Drug Abuse) in 15.3% and IVDA in 2.0%. A total number of six HCV positive cases (3.1%) and three HBsAg positive cases (1.5%) were found. There was no HCV positive case. HCV prevalence was significantly higher, merely in individuals with history of non IVDA and IVDA (P=0.01 and P=0.005 respectively). Out of 149 sex workers, with the mean (+ SE) period of prostituting equal to 11.3± 1.7 months, four cases (2.7%, 94% CI: 0.7% to 3.4%), were HCV positive and no case (0.7%, 95% CI: 0 to 1.7%) was HBsAg positive. There was no sexual contact related variable significantly associated with HCV seropositivity in sex worker population. Only one of these 4 cases with anti-HCV Ab positive had a history of non-IVDA and none of them had a history of IVDA.

Conclusion: Promiscuity was not shown up as an important risk factor for hepatitis C in our study because of the low HCV prevalence rate in general population in Iran (0.12%), the low rate of promiscuity in Iran due to the religious (Islamic) and social culture in Iran, the low mean period of prostituting in our study sample, the regular use of condom in almost all of the study population. Moreover, in our study none of HCV positive cases in sex workers population study had a history of IVDA while many of the studies failed to carefully exclude HCV acquisition from nonsexual sources. However, IVDA is a much more significant risk factor for hepatitis C infection than extramarital sexual contact in Iran. Therefore, screening for HCV infection is advocated in intravenous drug users in order to discourage high-risk behavior and prevent the spread of HCV.

EFFECTIVENESS OF SINGLE IMMUNIZATION AGAINST VIRAL HEPATITIS A OF SERVICEMEN, PARTICIPATING IN PEACEMAKING OPERATION IN KOSOVO

Peleschok S. A., Russia

According to the resolution № 1244 (1999) of UNO Security Council subdivisions of International Forces of 39 countries (KFOR) were disposed in Kosovo in Yugoslavia. Russian Military Contingent (RMC) was included in their corps. Sanitary epidemiically condition of regions where RMC was disposed could be estimated as unfavorable on acute intestinal infections (AII), viral hepatitis communicated by fecal-oral way and some other infections.

Vaccination of servicemen against viral hepatitis A (VHA) was made in September of 1999 within 5 days without discontinuing military service. Three groups of military vaccinators worked simultaneously. Before vaccination, medical and physical examination was made. Contraindications to vaccination were revealed in 2% of combatants. 96% of them were vaccinated.

Vaccination was made once with Havrix-1440 vaccine (1ml/day) on the background of AII and VHA in servicemen. 37% and 35% of vaccinated servicemen were examined and then underwent physical examination, accordingly, in 1 and 4 days after vaccination. In 14 days in 32% of servicemen and in 28 days after vaccination in 28% of servicemen doctors took blood from vein for determining antibody level to hepatitis A virus with immunofermental method. Then serum conversion was studied, and average geometric value of antibody titer (AGAT) was defined. Efficiency of vaccination was estimated by morbidity of servicemen (VHA) before and after vaccination during all period of their service in Kosovo (before leaving to Russia).

Local reactions to vaccination manifested in 1% of servicemen and common reaction - in 0,5% of examined ones. Vaccination didn’t influence on fulfilling of peacemaking tasks. In 14 and 28 days after immunization the rate of servicemen with serum positive reaction vaccinated with Havrix – 1440 vaccine was 95,1 ± 1,4 and 98,8 ± 11 % accordingly. In 14 days AGAT in vaccinated servicemen resulted in 168,2 (152,9-183,5) mMe/ml and in 28 days increased to 673,1 (432,9-913,2) mMe/ml. The rate of serum conversions, exceeding antibody titer to hepatitis A virus was 125 mMe/ml, in 14 and 28 days formed 61,4±2, 6 and 88,3±1,5, accordingly.

Among immunized combatants of contract military service cases of VHA were not registered during 6-18 months of their service in Kosovo (period of observation).

EFFICIENCY OF THE BETUALE AT THE CHRONIC VIRUS HEPATITES C

Kovelenov A.J., Alisov P.G., Jurchenko I.V., Pavlova O.O., Russia

Despite of significant progress in treatment of a chronic virus hepatitis C, achieved for last years (pegelivary interferons, ribavirin), this problem is still far from the sanction. The re-sults of treatment estimated on factor cost / efficiency, till now are not optimum.

One of the major directions of therapy of a chronic virus hepatites C is anti-inflammatory, directed on knocking over of the inflammatory reaction arising in a liver in reply to introduction of a virus or for the account of the autoimmune component. With this purpose at treatment of a hepatites various aetiology are traditionally applied hepatoprotectors (prepara-tions of a thistle, lipoic acid, essential phospholipides, bilious acids and so forth), on occassion - glucocorticosteroids.
One of the new means possessing powerful anti-inflammatory action is the biological additive to food — “Betual” («Dry birch extract»). The preparation represents the sum of biologically active substances received hi-tech extraction from an external layer of a bark of a birch. It contains nonlimiting pentacyclic triterpenic spirit — betulin, betulinic acid, lupeol and filler — lactose. The preparation renders anti-inflammatory, hepatoprotective and alcoxyl protective ac-tion, lowers a level of cholesterol in whey of blood. The anti-inflammatory effect of a preparation is caused by action triterpenic connections which on activity do not concede to not steroid anti-inflammatory preparations and even glucocorticosteroids due to inhibition of synthesis proinflammatory prostaglandines.

Efficiency of a preparation has been appreciated at 23 sick (15 women, 8 men in the age of from 20 till 78 years) with a chronic virus hepatitis C, caused by genotypes of a virus 1a, 1b, 3a and duration of disease from two till twelve years. As a rule, disease proceeded with little symptoms and came to light casually at detection of the raised level of aminotransferases (ALT, AST). Before assignment of a preparation as some patient (7 person) traditional antivirus ter-apy by preparations of interferons (reaferon, intron А) in a combination with ribavirin was car-ried out. However after the finishing of treatment has come the reactivation of a hepatites. Other patients were treated only by hepatoprotectors (essentiale, ursosan, preparations of a thistle) without result or with short time effect.

«Betual» was applied on two capsules three times day during meal within 25 days.

The estimation of efficiency of a preparation carried out on the basis of research of activ-ity aminotransferases in whey of blood of patients after the finishing of course of treatment.

After the carried out course of treatment at all patients improvement of appetite and re-duction of weakness is marked. At 19 patients with initially hyperactivity (in 1.5-3.5 times) of aminotransferases normalization of their activity is marked. At other patients reduction in activ-ity ALT and AST on the average in 1.8 times is registered in comparison with initial. At inspection of 11 patients through 1-2 months after the finishing of treatment the level of transami-nases was kept at a normal level.

Collateral reactions and negative influence of «Betual» on current of a hepatites it is not marked.

Thus, «Betual» shows the expressed anti-inflammatory effect at patients with a chronic hepatitis C, that is shown by authentic reduction in activity of aminotransferases in whey of blood of patients.

**EFFICIENCY OF THE PNEUMOCOCCAL 23-VALENT POLYSACCHARIDE VACCINE USE IN RFAF SERVICEMEN**

Zhogolev S.D., Ogarkov P.I., Russia

Because of the high level morbidity of community-acquired pneumonia (CAP) among servicemen in Russia which had mostly pneumococcal etiology, 14 thousand of recruits were vaccinated with the «Pneumo 23» vaccine in various regions of the country. Preliminary studies allowed us to establish that antigenic composition of the vaccine was almost adequate to the stains circulating in military populations, especially those of pneumococcal serotypes which cause CAP. The investigation of antigenic activity of the vaccine showed that it had a high immunogenity. The comparative study demonstrated that CAP incidence among the vaccinated persons during 5 months of post vaccinated period was 2-3.9 times lower than among unvaccinated subjects (efficiency being 62.2-74.2%). Simultaneous use of the influenza virus vaccine and pneumococcal vaccine appeared to be the most effective (78.5%). Pneumococcal vaccine was effective not only in CAP but in acute bronchitis, sinusitis, otitis which often were of pneumococcal etiology. Acute bronchitis among the vaccinated subjects were observed more seldom than among the unvaccinated persons (2.4-4.8 times, efficiency amounted to 57.5-79.1%) while acute respiratory disease was 1.3-2.0 times lower (efficiency – 48.7%). No acute otitis and sinusitis were recorded or their incidence was 2.5-4.3 times lower compared to the unvaccinated persons (efficiency being 59.5-76.7%). In the case of the disease developed in vaccinated patients the severity of the disease was lower than in unvaccinated persons.

**Conclusion.** The pneumococcal 23-valent polysaccharide vaccine is an effective means of preventing pneumococcal infection in military populations.

**EPIDEMIOLOGY OF INFLUENZA AND OTHER ARD IN MILITARY CONTINGENTS AND THEIR PROPHYLAXIS THROUGH MILITARY-CIVILIAN CO-OPERATION**

Ogarkov P.I., Belov A.B., Russia

General and military epidemiology department of Military Medical Academy in 30-year collaboration with specialists of Research Institute of Influenza and other organizations contributed greatly in understanding of these infections epidemiology in military communities, improvement of epidemiological surveillance and prophylactic measures. Correlation between rate of re-infections and signs of immunity deficiency was established. Simple tests for pre-morbidity indication of deviations in state of sustainability of military personnel were suggested. Recommendations on individual prophylaxis of re-infections in these groups involving treatment of chronic pathology, vaccination, urgent chemoprophylaxis during influenza epidemics and immuno-modulators application were developed. Besides different vaccines against influenza, adenovirus, mycoplasma, pneumococcal infections and other air-borne infections were evaluated. At present inactivated influenza vaccine is used for immunization of Army contingent according to epidemiological situation. Epidemiological situation in AF is evaluated with taking into account analysis of influenza morbidity and epidemic spread among
civilian population in Russia conducted by Federal Influenza Centre. Results of both clinical diagnosis and virological, serological and rapid immuno-fluorescent detection of viral antigens are used in analysis of epidemiological situation. On the base of short-term prognosis plans of urgent prophylaxis of influenza are realized, measures for outbreaks localization and prevention and further spread of infection are adopted. Fruitful collaboration of epidemiologists, clinicians and virologists of Ministry of Defense, Ministry of Public Health and Russian Academy of Medical Sciences enhances influenza surveillance in Russia and their experience can be used in global influenza-control system.

FORTALECIMIENTO DEL PROGRAMA DE PREVENCIÓN Y CONTROL DE LAS EST / SIDA EN LAS FUERZAS ARMADAS EN BRASIL

Martins da Silva, Brazil

Brasil, de acuerdo con el “2004- Report on the Gobal SIDA epidemic” de ONUSIDA, presenta el número más grande de casos estimados de VIH /SIDA en la América Latina (620.000).

De encuentro a esta adversidad, el Ministerio de Salud desarrolló un activo programa de prevención y control dirigido a toda su población, incluyendo sus Fuerzas Armadas.

Para su fortalecimiento, los Ministerios de Salud, Defensa y ONUSIDA firmaron, en 2004, un Protocolo de Intenciones para apoyo técnico y financiero para el desarrollo de un “Proyecto de Prevención y Control de las EST / SIDA en las Fuerzas Armadas”, con énfasis en los militares brasileños jóvenes y los futuros participantes en Misiones de Mantenimiento de la Paz de la ONU. Este Protocolo reafirma la Declaración de Compromiso en VIH / SIDA, firmado por el país durante la Sesión Especial de la Asamblea General de las Naciones Unidas en VIH / SIDA (UNGASS), cumplido en junio de 2001.

Las acciones estratégicas para el fortalecimiento del Programa en las Fuerzas Armadas serán: la formación de una red de educadores Interae; la inclusión de la Disciplina Prevención de las EST / SIDA en el plan de estudios de las Escuelas Militares y Cursos de Formación de Reclutas, la producción y distribución de material educativo y de prevención, como la tarjeta de orientación y preservativos.

Los Beneficiarios del Proyecto serán 200.000 reclutas, 107.500 estudiantes de las academias, escuelas y centros de formación militares y 6.800 participantes Misiones de Mantenimiento de la Paz de ONU.

GENOTYPING OF ORIENTIA TSUTSGAMUSHI ISOLATED FROM THE NEW SCRUB TYPHUS FOCI IN SHANDONG PROVINCE, P R CHINA

Liu YX, Gao Y., Zhao ZT, Zhang JL, Yang, ZQ, Wang YJ, Qiao ZF, Xu JJ, China

Aim: In order to identify the characteristics of Slnts56 gene types of the epidemic Orientia tsutsugamushi(Ort) from Shandong province.

Methods: Nested PCR was used to identify the gene types of 23 Ort isolates, and compared with international reference strains Gilliam, Karp and Kato. PCR/RFLP was used to analyze their restriction maps of the PCR products by group primers of Or-slnts56 gene. Sequencing analysis of the Slnts56 gene was also used to precisely identify the gene type.

Results: Of 23 isolates, 21 had the similar restriction maps with Japan Kawasaki strain, but they had not restriction site of Hha I, and thus had some differences in gene sequence compared with Japan Kawasaki strain; The other 2 had the similar restriction maps with Karp. These results were identical to that acquired by Nested PCR. The Or-slnts56 gene sequence homologies of 2 representative strains (B-16 and FXS2 strain) of the 21 isolates were 94.22%, 95.21% respectively to Japan Kawasaki strain, but they were less than 75.87% to other prototype strains, the Hha I site was mutated from GCGC to GTGC; The homologies of FXS4 and LHGM2 strain were 83.03%, 96.45% respectively to Karp stain. B-16 and FXS2 strain were designated as Japan Kawasaki strain type, FXS4 and LHGM2 strain as Karp strain.

Conclusions: In Shandong province, the gene types of epidemic Ort strains were similar to Japan Kawasaki type, but had some differences in gene sequence, in addition, Karp also existed.

Key words: Orientia tsutsugamushi; PCR/RFLP; Sequencing analysis

IS THERE A DIFFERENT PHENOTYPE FOR FAMILIAL MEDITERRANEAN FEVER (FMF) ARTHRITIS IN MID-ANATOLIA?

Danaci Mehmet, Solmazgul Emrullah, Tunca Yusuf, Nalbant Selim, Turkey

Objective: Familial Mediterranean Fever (FMF) is an autosomal recessive disease which primarily affects the population surrounding Mediterranean basin especially Turks, Armenians, Arabs and Sephardic Jews. Most severe complication of the disease is amyloidosis and frequency of this complication varies between societies and races. M694V mutation has been defined to be the most
common mutation in amyloidosis development. Periodic inflammatory attacks are the most characterizing clinical features of the disease and arthritis may be the only component of these attacks. The aim of this study is to search whether to display property of pyrin gene results, if display property, to search high activity of the water and alimentary factors of transmission of excitors allow to consider fecal - oral anthroponosy as a main route of the infection.

Material and Methods: Patients who have arthritis as primary clinical presentation without fever and abdominal pain were included to study. FMF was diagnosed by Livneh criteria. Clinical and geographic data were noted. M694V, M680I, E148Q and V726A mutations were analyzed with polymerase chain reaction.

Results: MEFV gene mutation was detected at least one locus in 25 (68%) of 37 patients included to study. Twelve (32%) patients had no mutation. Majority of patients who have gene mutation positive were from Corum (a city in Mid-Anatolia) and majority of them had M694V mutation.

Conclusion: MEFV mutations and phenotype may display differences for races and regions as published in several previous studies. However, FMF is an autosomal recessive disease; there is no real phenotype description for FMF. Cases with FMF arthritis alone, included to this study, from Corum showed very significant MEFV mutation instantly, somehow never described before. Thought it may be a new phenotype correlated with M694V mutation needs further studies.

MEDICAL EMERGENCY CARE FOR PATIENTS WITH INFECTIOUS DISEASES

Volzhanin V.M., Lobzin Yu.V., Russia

As a consequence of “natural” and “anthropogenic” accidents the limited and mass epidemics of infectious diseases are developed: it is more often the acute intestinal infection (viral hepatitis, abdominal typhoid, and cholera) and in some definite regions there are transmissive and natural nidi diseases (malaria, viral meningencephalitis, ricketsiosis, plaque et etc.).

In the first period of disaster relief in casualties care rendering it is necessary to provide some measures in order to localize anthropogenic point of infection.

In the second period – from the begining till the end of disasters – it is essential to carry out the complex of antiepidemic measures: it is also advisable the vaccination of personnel and civilian populaion against the most widespread infections in accordance with epidemic evidences.

In the third period when the epidemic has already developed the medical sorting and organization of specialized treatment for such patients in the medical military and civilian healthcare facilities play the main role. Because of severe course of such diseases due to the secdary immunodeficiency appearance with psychological and physical overtension it is necessary to apply the comprehensive and highly effective methods of intensive therapy.

MILITARY- EPIDEMIOLOGICAL AND ECONOMICAL SIGNIFICANCE FECAL - ORAL ANTHROPONOSY FOR THE SERVICEMENS

Petuhov V.S., Podlesny I.V., Petuhova L.N., Russia

At definition of problems of preventive maintenance of originating and the distributions(propagation) of contagions among a personal structure of Far East locale by us are determined the nosological forms of illnesses having the greatest military -epidemiological significance for the season(term) 2002 - 2003. For a personal structure on call-up among illnesses I of the class in 2002 by results of ranking parameters of primary negotiability also are most significant: 1. AHA (5,31 ‰). 2. Other illnesses which are included in 1 group I of the class (12,25 ‰). 3. Dysentery (5,84 ‰). For a personal structure under the contract among illnesses I of the class in 2002 by results of ranking parameters of primary negotiability also are most significant: 1. AHA (5,31 ‰). 2. Other illnesses which are included in 1 group I of the class (0,80 ‰). In frame of illnesses I of the class of the servicemen on call-up in 2002. The acute hepatitis A made 30,28 ‰, and all fecal - oral anthroponosy - 65,51 ‰ (of them intestinal infection contaminations (IIC) - 35,23 ‰), and for the servicemen under the contract all fecal - oral anthroponosy - 71,02 ‰ (from them AHA 55,10 ‰; IIC - 15,92 ‰). In 2003 fecal - oral anthroponosy - frame of illnesses I of the class of the servicemen on call-up made 61,60 ‰ (of them AHA 21,30 ‰; 40,30 ‰ and 61,73 ‰ (AHA 28,57 ‰ and IIC 33,16 ‰) for the servicemen under the contract. On predicted data (parameter of an ineffectiveness of usage of a personal structure) in 2002-2003. 40 - 80 persons, owing to disease IIC 26-38 persons daily in the course of the year did not participate in battle opening-up owing to disease A by hepatitis A about. By a straight line the economical damage from a hepatitis A has exceeded 15 million. In 2002 and 6 million roubles in 2003, whereas from IIC he has compounded 4 million. In 2002 and 2,5 million roubles in 2003 (the calculation is made on a technique by I.L. Shahanina with the co-authors in the prices for December, 2000). The reduced data, and also high activity of the water and alimentary factors of transmission of excitors allow to consider fecal - oral anthroponosy rather actual for AF Russian Federation. In 2003 there was statistically authentic reduction of the sick-rate AHA among the servicemens: 1) on call-up on 58,41 ‰ (p < 0,001), 2) under the contract on 66,10 ‰ (p < 0,001). The reduction of the sick-rate basically is connected to a vaccinal prevention of a hepatitis A. As a result of which only with straight line the economical damage from a hepatitis A in Far East locale in 2003 has decreased more than on 5 million roubles, Thus, at the high military-epidemological and economical significance fecal - oral anthroponosy the vaccinal prevention of a hepatitis A in conditions of heightened risk of transfer (transmission) of excitors HA is epidemiology expedient and economically effective.
MILITARY IMMUNIZATION PROGRAMS: MAINTAINING PROTECTION AND RESPONDING TO EVOLVING RISKS

Dutta A., France

Vaccines have had an impact on the outcomes of warfare throughout history; thus military personnel worldwide are vaccinated against a variety of infectious diseases. Military vaccines can be divided into: (1) those routinely administered to recruits; (2) deployment-specific vaccines for disease-endemic areas, (3) occupational vaccines for specific job-associated risks, and (4) limited use vaccines for special contingency situations. New vaccines based on technological advances and emerging infection risks must be considered to ensure effectiveness of military forces. Finally the threat of bioterrorism has focused attention on developing vaccines against potentially devastating infectious agents. Vaccination of recruits typically includes protection against well-known infectious diseases of children and young adults, such as DPT, MMR, poliomyelitis, or varicella. In addition, vaccines against infections with increased risk with crowding or poor sanitation, such as hepatitis A, typhoid, influenza, and meningitis are generally included. Questions of need arise from considerations of deployment to endemic areas, eg yellow fever, cholera, or rabies, or for vaccination against diseases which are endemic in the home country and exposure in early childhood may reduce the need for vaccination. Recently, bioterrorism risk has prompted military vaccination against both smallpox and anthrax, and required answering difficult questions of safety and efficacy of these vaccines, as well as approval by federal health officials. Finally decisions on future vaccines must be made following evaluation of both past experience and future risk. These include anti-diarrhea vaccines, dengue fever, vaccines against various viral diseases such as equine encephalitis (alphaviruses), rift valley fever, Q fever, tularemia, or botulism, all of which have potential benefits for military application.

NEW WAY OF REHABILITATION OF PATIENTS WITH VIRUS HEPATITIS

Balchugov V.A., Suslov A.G., Russia

Universal distribution of virus hepatitis, high frequency of chronic forms define the growing interest to development of new technologies in therapy of virus hepatitis at various stages of its treatment.

Our research was aimed at developing and clinical estimating low-intensity radiation EHF therapy made with the device “Amfit 0,2/10-01” in treatment of virus hepatitis convalescents. The method was based on the data that EHF-radiation causes a wide range of frequencies (EHF-THERAPY) in an organism that normalizes the immune answer and accelerates the processes of tissue regeneration.

We supervised 38 patients suffering from virus hepatitis A - 32, B - 3, S - 3. The diagnosis was made on the results of physical examination, definition of virus markers, enzyme activity and the data of liver ultrasonic scanning. All patients had been compared on age, sex, terms of treatment and accompanying diseases. The treatment was usually appointed in 5-10 days after decrease in enzyme displays in 2,5 times compared to initial figures. The patients received standard treatment without application of interferon. Besides the patients of basic group received 10 daily sessions of EHF-THERAPY on acupuncture points with “Amfit 0,2/10-01”. Each procedure lasted 25-30 minutes. Five acupuncture points were engaged in each procedure, each one for 3 minutes.

To 7th procedure asthenia decreased in all patients. By the end of the treatment all patients of the basic group had had normal biochemical parameters of blood. Thus, the research revealed high effectiveness of low-intensity radiation EHF-THERAPY with “Amfit 0,2/10-01” in patients with virus hepatitis.

ORGANIZATIONAL PRINCIPLES OF BIOTERRORISM CONTROL IN THE ARMED FORCES OF THE RUSSIAN FEDERATION

Ogarkov P.I., Korolkov V.F., Russia

The existing situation in the system of ensuring biological security of the RF Armed Forces urgently requires taking serious measures for its improvement at the federal level and in various agencies in the following basic directions:

- the working out and practical implementation of new rapid methods for the diagnosis of biologic agents (immunochemical, molecular-genetic, PCR-diagnostic tests etc.);
- the development of specific indicating equipment unified for Russia and compatible with the international standards;
- further studying the pathogenic peculiarities of especially dangerous infectious agents and searching new medicines for treatment and urgent prophylaxis;
- the development of vaccines against those biologic agents for which vaccines do not exist or are ineffective;
- the working out and practical implementation of new disinfectants and more advanced equipment to be used in complicated epidemiological situations;
- the modernization of sets for sample collection in the environment;
- the development of automatic highly sensitive detectors of biological agents.
For carrying out laboratory and diagnostic work under the conditions of biological, toxicological and radiological terrorism it is suggested to establish a special medical laboratory in the structure of the Main Sanitary-Epidemiological Center of the RF Ministry of Defense. Specifically for bioterrorism control activity, the laboratory should include an epidemiological section, a sanitary-epidemiological (biological) surveillance group, and biological agents indication and identification unit.

As a regular unit, this special medical laboratory can operate in the following three regimes: normal regime, higher readiness regime and extraordinary regime. The functions of the laboratory have been evolved in accordance with these operation modes.

The laboratory units must have advanced equipment and diagnostic preparations, including imported ones. New diagnostic means, laboratory equipment and methods of indication and identification should be tested there, which may be then used practically in the sanitary-epidemiological facilities of the Ministry of Defense of Russia.

ORGANIZING HIV PROPHYLAXIS IN THE MILITARY UNITS AND INSTITUTIONS OF THE MINISTRY OF DEFENSE OF RUSSIA

Parshin M.Zh., Zoteev V.E., Andrievskiy V.I., Russia

The structure of the system of HIV prophylaxis in the Army and Navy originated in 1987 along with a similar structure of the Health Ministry of Russia.

For tackling practical problems the Medical Service of the Ministry of Defense has following departments: the departments of AIDS prophylaxis and prevention in the infection immunology laboratory of the HCSSEC (The Head Center of State Sanitary-Epidemiological Control), scientific research laboratory of AIDS and infectious diseases in the Armed Forces of Russian Federation attached to the department of infectious diseases of the Medical Military Academy, infection immunology laboratories in the central and district (naval) institutions of prophylaxis and treatment (47 functioning institutions including 3 units of experts), 3 specialized departments and specialized wards in the isolation units of district naval hospitals.

The coordination of the activities of all afore-mentioned structural units is carried out by Head Governmental Sanitary Doctors of the Ministry of the Defense of Russia, branches of Armed Forces, commands and fleets along with the head specialist on AIDS prophylaxis of the Ministry of Defense. They analyze the data of sanitary-epidemiological inspection and of anti-epidemiological measures-taken, render methodological and practical assistance, supply information to the medical services and sanitary-epidemiological institutions (SEC) chiefs.

SEC chiefs ensure the implementation of sanitary-epidemiological supervision in their responsibility zones and are responsible for its quality and volume. Specialists of the lethal infections department in the district (naval) center of the SSEC are responsible for taking immediate measure, in the garrison centre –the specialists of SSEC department.

Medical Service chiefs of military units (ships) take part in implementing SE control over HIV infection along with epidemiologists of prophylaxis-and-treatment institutions, specialists of infection immunology laboratories and other doctors interested in the problem. These supervision and control measures become efficient if they are furthered by commanders, officers, military tutors, psychologists, representatives of the system of law and order and with constant interaction with institutions of Ministry of Health Care and Social Development along with non-governmental public organizations.

PERFECTION OF MILITARY-MEDICAL EXAMINATION AT HIV-INFECTION AMONG SEPARATE CATEGORIES OF SERVICEMEN

Volzhnin V.M., Bolekhan V.N., Bulankov Yu.I., Zigalenko D.G., Karapats M.M., Russia

Military-medical examination of HIV-infection in Russian Federation Armed Forces (AF) among soldiers (sailors) on call-up and engagement soldiers (sailors) assumes the following approach to the establishment of the validity category and further military service. If tests reveal HIV-infection, in peacetime both groups are dismissed from AF. Thus call-up soldiers (sailors) are classified not suitable for military service and removed from the military registration. Engagement soldiers (sailors) are admitted (under limited conditions) as suitable for military service and are transferred to the reserve.

Based on the results of our studies of the early stages of this disease and estimation of the quality of life of HIV-infected serviceman we discuss the reduction of restrictions for military service for call-up soldiers (sailors) and changing the validity category, equating them to engagement soldiers (sailors).

PRINCIPLES OF ANTI EPIDEMIC PROTECTION OF TROOPS IN LOCAL ARMED CONFLICTS

Kazakov A.N., Mandrik V.A., Russia

An analysis of causes and conditions of infectious diseases high incidence as well as the experience of anti-epidemic protection of troops, which participated in local wars and armed conflicts, make it possible to formulate several principles to be followed by the military medical service under such conditions:
1. The necessity of thorough assessment and prognosis of sanitary-and-epidemiologic situation in the areas of local wars (armed conflicts) and in the participating units as a basis for planning and realization of measures on preservation of personnel’s health and prevention of infectious diseases;

2. Clear definition of the tasks of the medical service in troops, of the procedures of sanitary-and-epidemiologic facilities (units) employment depending on the actual sanitary-and-epidemic situation;

3. Wide participation of commanding and material supplies authorities in carrying out prophylactic and anti-epidemic measures;

4. Detailed training of the personnel for activity under unfavorable sanitary-and-epidemic conditions.

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**RATIONALIZATION OF PREVENTIVE MEASURE AGAINST PENETRATION OF HIV-INFECTION TO THE ARMED FORCES**

Bolekh V.N., Bulankov Yu.I., Zigalenko D.G., Karapats M.M., Russia

In Russia young men are exposed to HIV testing in the interests of the Ministry of Defense when they are engage to the service, during admission to the military and cadet schools. At present there is a paradoxical situation in Russian Federation Armed Forces (AF) when approximately 90% of all cases of this disease are registered among the call-up’s, but they are not sub-jected to the HIV testing before enlistment according to Ministry of Defense guideline docu-ments. About 60% of infected servicemen are diagnosed HIV-positive within the first 6 months of their service in armed forces. Hence, these servicemen had been infected before conscription. In order to organize a counter-epidemic barrier for the HIV-infection, prevention of penetration and reduction of the spread of the disease in AF it is necessary to statute obligatory HIV-testing and examine all recruits during the draft campaign.

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**RESULTS OF ORGANIZATION OF SANITARY-AND-ANTEPIDEMIC (PROPHYLACTIC) MEASURES UNDER CONDITIONS OF EXTREME SITUATION IN REPUBLIC OF INDONESIA**

Melnichenko P.I., Volgin A.R., Russia

The president of Russian Federation has come to the decision of rendering the humanitarian aid to Republic of Indonesia (RI) suffered from tsunami in December 26, 2004. During a day and a half the RF MD Main Military Medical Headquarters formed the specialized (epidemiologic) medical care group (S(e)MCG) to render as-sistance in liquidation of disaster medical consequences.

On the base of preliminary evaluation of sanitary-and-epidemiologic situation in RI all specialists were vaccinated against virus hepatitis A, typhoid and cholera. The malaria chemoprophylaxis with lori-am according to the special scheme was started.

On arrival to RI in January 8, 2005, the interaction with local and interna-tional, military and humanitarian organizations, participants of disaster liquidation was organized. As a result the volumes of humanitarian assistance, the place of RF AF Medical contingent (MC) dislocation were defined and the process of Russia inte-gration into the global system of rendering the emergency care to the casualties suf-fered from disaster.

After MC organizational arrangement the S(e)MCG work was conducted in two directions: to provide the population sanitary-and-epidemiologic safety in disaster region (the province Achek RI) and to provide the favorable sanitary-and-epidemiologic situation for the MC staff.

While providing the population sanitary-and-epidemiologic safety in disaster region the efforts were concentrated on infectious disease monitoring among the population; on conduction of prophylactic vaccination against measles among the children (Banda Achek); on disinsection and deratization.

The most vivid example of international cooperation was the large Vaccina-tion Company against measles conducted under UNICEF aegis. Every day 2-3 physi-cian-and-nurse teams from MC took part in conduction of prophylactic vaccines. All children under 14 were vaccinated with live measles vaccine. During 2 weeks the MC specialists vaccinated more than 2100 children.

Due to the joint efforts of world cooperation countries it was possible to pre-vent the humanitarian catastrophe in RI during the very short period of time. The casualties’ material support was organized; the creation of extreme sanitary-and-epidemiologic situation was prevented. However the threat of mass infectious dis-eases was not completely eliminated.

While providing the favorable sanitary-and-epidemiologic situation for the MC staff the main efforts were concentrated on conduction of sanitary-and-epidemiologic observation in disaster region; on anti-epidemic protection of MC staff from epidemic infectious diseases; on laboratory support of prophylactic and treat-ment-and-diagnostic work; on disinfection, disinsection and deratization.

The aim to provide the favorable sanitary-and-epidemiologic situation for the MC staff during humanitarian mission was successfully fulfilled.
RISK FACTORS OF PNEUMONIAS AND MEASURE THEM PREVENTIVE MAINTENANCE AT THE EDUCATIONAL CENTRE

Bilyov A.E., Martincev A.S., Polyakov S.G., Strukova E.A., Slavogorodsky V.S., Lukanov N.A., Krilov I.K., Panin I.V., Russia

About 60% pneumonias it is necessary on the educational centers of military districts and fleet, where quite often there are epidemic situations, when each fifth cadet is sick. The epidemic flares are formed in December - January and July, that is in 1-2 months the ambassador of a beginning of acquisition of educational divisions.

In etiological structure of pneumonias dominates Streptococcus pneumoniae, a share and Staphylococcus aureus however is high which in a years (summer) season makes 5-16 %, and winter (on a background of epidemic rise by an influenza and others sharp respiratory by infections) grows till 24-38 of %.

Carried out epidemiological of research have shown, that conducting risk factors of occurrence pneumonias at the cadets of the educational centers are «cool stress» and inadequate physical loadings. The important meaning play hereditary predisposition, often bronchopulmonal of disease in anamnesis and lowered status of a feed, that requires the special attention on the part of a medical service.

However experience of the previous years shows, that the problem pneumonias can not be decided(solved) only by one military medicals. The basis of preventive maintenance should be made by organizational measures on a line of chiefs of the educational centers directed on creation of healthy conditions to life and a life of the military men:
- maintenance of the appropriate norms of accommodation on items of reception of personal structure and in the rooms of educational divisions;
- organization of high-grade ware maintenance according to a season of year;
- prevention of overcooling of personal structure during all transit from draft items military komissariats up to military parts, during constructions of divisions, in parks of arms and engineering, in field conditions, and also at shaving in banya;
- conformity of the quantitative and qualitative characteristics the food soldering to physical loadings and status of a feed of the cadets;
- slow increase of physical loading and its adequacy to physical development of cadets.

SMALLPOX AND OTHER ORTHOPOXVIRUS INFECTIONS: CURRENT PROBLEMS AND THE WAYS OF THEIR OVERCOMING

Ogarkov P.I, Raevsky K.K, Russia

Neither epidemics nor sporadic cases of smallpox (SP), this global anthroponosis constantly accompanying the mankind, have manifested themselves for almost three decades due to the program of total epidemiologic monitoring and immunization under WHO aegis. At the same time the eradication of this infection and abolition of obligatory vaccination have resulted in some disturbing consequences. At present the formerly insignificant part of SP (and other orthopoxviral infections, OPVT) - seronegative population has become dominant. Besides, the society has lost anti-smallpox vigilance, and public health services - their adequate diagnostic and treating skills. Necessary diagnostucums, vaccines, immuno-globulins and antiviral drugs have now disappeared from the arsenal of medical means.

Widespread circulation of OPVI pathogens in animals (monkeys, cows, camels and oth.), SP outbreaks in monkeys with 4-8 transmission levels, long retention of SP virus in cadaverous material (observation time being 130 years), and increased threat of using pathogens of particularly dangerous infections for terrorist purposes cause serious anxiety. According to American experts, “at least 10 countries have SP virus collections that can lead to accidental virus leakage with subsequent extreme situation for the world public health”.

Thus, governments and medical community should concentrate special attention on SP and other OPVI.

With the purpose of preventing SP transfer into the category of “returning” infections and counteracting the further “breakthrough” of the OPVI in human populations the following measures are considered to be urgent:
- careful sanitary and epidemiologic survey to reveal natural OPVI nodi and organization of monitoring in them;
- formation of vigilance among medical workers and society on the whole with regard to SP and other OPVI;
- improvement of diagnostic potentialities concerning OPVI on the basis of modern highly efficient methods of virological and serological analysis;
- resumption of regular preventive vaccination among high risk groups of population such as servicemen, medical workers, salvors, workers of pediatric institutions and personnel of some services (transport, trade, tourism etc.), and in the future after scientific study -resumption of primary vaccination from early childhood;
- perfection of medical means by developing (along with industrial mastery) the best samples of vaccines, immuno-globulins, and antiviral drugs (while screening new chemicals it is necessary to investigate their effect against Orthopoxviruses);
- development of national and possibly regional interstate reserves of SP vaccines, means for urgent OP VI prophylaxis and treatment;
- organization of medical personnel primary training in OPVI diagnosis, prevention and treatment as well as their retraining and professional development.
Solution of these urgent and expensive tasks suggests close international integration first of all in the field of military medicine because military troops are the first who enter the areas of disaster, technogenic accidents and catastrophe, terrorist foci and run the highest risk of infection; their work and everyday life conditions predispose to epidemic process activation.

**STRATEGY OF PREVENTIVE MAINTENANCE OF THE ACUTE HEPATITES A IN INTERNAL FORCES OF THE MINISTRY OF INTERNAL AFFAIRS OF RUSSIA**

Sabanin Yu.V., Rikhter V.V., Artyukov R.M., Russia

Sanitary and hygienic measures by internal forces of the Ministry of Internal Affairs of Russia were implicated to decrease the incidence of an acute hepatitis A (HA) did not give expected result.

The prophylactics of HA with immunoglobulin appeared to be inefficient.

The incidence of HA in internal forces reached 11.2 ‰ what is 9.1 times higher than a similar parameter among the general population of the Russian Federation (1.23 ‰) in 1995.

Since 1996 selective immunization is actively used in internal forces for preventive maintenance of HA. About 200 thousand military men were immunized with various vaccines against HA with a single dose schedule without revaccination.

The level of incidence of HA in internal forces had decreases to 1.3 ‰ after use of vaccines against HA “HAVRIX-1440” (GlaxoSmithKline, Great Britain) and “GEP-A-IN-VAC” (Vector, Russia), and was 3.7 times higher than the incidence among the population of the Russian Federation – 0.37 ‰ in 1998.

The use of vaccines “HAVRIX-1440” and “GEP-A-IN-VAC” was not reduce a level of HA in army further, it varied in range from 1.4 ‰ to 1.65 ‰ within 1999-2001.

The incidence of HA in internal forces decreased to 0.15‰ in 2003 and 0.22‰ in 2004 after introduction of the vaccine “AVAXIM” (sanofi pasteur, France) at the end of 2001. This parameter appeared below the same among the general population of the Russian Federation 1.8 and 1.3 times accordingly for the first time in history of armed forces of the country.

**THE ACUTE STRESS REACTIONS OF HIV – INFECTED SERVICEMEN**

Gabrilyants M.A., Russia

The information about the fact of HIV contamination is usually perceived as physical and social well-being threat. The state develops in a number of cases assignable in compliance with ICD-10 grading as acute stress reaction (F43.0). For the purpose to study of the given psychic disorder particularities and to devise optimal medical tactics we examined 536 HIV – infected service-men (all - a male, with latent stage of the disease) at age from 18 till 43. They were used standard clinic – psychopathological method, attention volume estimation, combinatorial abilities evaluation and visual - motor reaction velocimetry. The acute stress reaction symptoms were revealed of 50 persons (9,3%). The “psychic shock” sings such as confusion, detachment, apathy, despair, chaotic bustling, weeping were the most general. After several hours or immediately developed depression (51,8%), alert (40,7%), awe and annoyance (7,5%) on background psychic tension and/or emotional instability. During the following 2 - 5 day the force of the acute reaction had been decreasing and the rational conversion of the psychologic traumatic experience had been occurring, or neurotic fixation had been appearing. The last case was the result of compromised history (behavioural devia-tions or personality accentuated) as well as conflict situations because of colleague’s and com-mand’s rejection. Treatment regime includes immunostimulants, tranquillizers, antidepressants, complex of psychic self-regulation exercises on basis of biofeedback technology, intravenous ozo-notherapy. Efficiency of medical actions was confirmed by reduction of the clinical manifestations of psychic frustration and statistical reliable (p<0,05) increase of psychic capacity for work.

**THE DEMANDS AND MEASURES OF ESTABLISHING THE REGULATIONS OF ANTI-BIO-TERRORISM**

Guo SS, Xu SX, Zhang SH, Du K., Jin ZW, China

The epidemic situation of SARS in China in 2003 and the new occurred infectious diseases in the world give us a caution that mankind are confronted with a great threat of new infectious diseases. The anthrax incident in U.S. after Sept. 11, and the biological weapon project of Iraq Sadam administration warned us that the biological terrorism and biological war are still in existence. In order to having initiative in the anti-bio-terrorism and dealing with new infectious diseases, the military medical department must set up an emergency regulation system to copy with the biological terrorism attack. We consider the emergency regulation system include:

1. For enhancing the ability of command and correspond, we should establish the organizations of medical command that could meet the emergency support demands of anti-bio-terrorism. 2. For improving capability of detection, diagnosis and treatment, we
must perfect the organization system of medical treatment and medical epidemic prevention. 3. For enhancing the ability of medical
research, we should build up associating system of medical research on anti-bio-terrorism. 4. For improving capability of early-warning
and consciousness of people, we had better to perfect the regulations of epidemic situation inspection and early-warning report. 5. For
enhancing the ability of rapidly respond to biological terrorism, we need to work out the medical support programs of anti-bio-terrorism
in advance. 6. For meeting the special needs of materials, we need to strengthen the construction of the medical materials and equipment.
7. For enhancing the ability of personnel, we should organize the training course of emergency support.

The experience of anti-malaria arrangements in peacemaking mission of military elements

Kozlov S., Solovjov A., Russia

The prevention of malaria spreading among servicemen is very important for successful execution of peacemaking mission, which
are carried out in the endemic territories. The malaria natural habitat is characterized by heterogeneity; the parasite systems of its
separate parts are notable for functional features. On account of this cause there are no universal method for the prevention of malaria
up to the present. The effective protections are to be provided with a complex of different anti-malaria arrangements.

Some military elements, which were carried out the peacemaking mission in Afghanistan, Angola, Tajikistan, Indonesia, were
under our supervision. In every case the system of anti-malaria arrangements was worked out in conformity both with specifics of
parasite system functioning and with peculiarities of servicemen existence. The individual chemical preventive measures, lowering of
mosquito’s numbers and its stings prevention, patients revealing and treatment were basically tendency of anti-malaria protection.

The inculcation of anti-malaria arrangements complex favoured the prevention of malaria among servicemen and assured conditions
for their tasks execution. The consecutive realisation of anti-malaria arrangements prevented malaria infection delivery in Russia.
The analysis of our results testified to the possibility of effective anti-malaria protection for servicemen operating under the extreme condition with high risk of malaria infection. The experience of this work may be useful for the perfection of malaria sanitary epidemic inspectors system in the time of peacemaking mission realization.

THE GENOMIC HOMOLOGY COMPARISON AND VIRULENT GENE ANALYSIS OF THE STRUCTURAL GENE OF THREE DENGUE VIRUS TYPE 2 STRAINS ISOLATED IN GUANGDONG, CHINA

Fang MY, Ren RW, Hong WY, Liu JW, Cheng GF, Tian XD, Lin LH, Jiang LH, China

Objective: Through sequencing and structural analysis of structural genes, clarify the probable interrelation, variation, origin and virulent sites of three dengue virus (DEN2) isolates (GD06/93, GD08/98, GD19/2001) prevailed in Guangdong province since 1990.

Methods: According the genome sequence of dengue virus type 2 NGC strain, two pairs of primers are designed. The structural protein gene (C, PrM, E) of isolated dengue virus type 2 strains are amplified by reverse transcriptase-polymerase chain reaction (RT-PCR), then cloned into pMD18-T vector and sequenced.

Results: The structural gene of three dengue virus strains consists of 2325 nucleotides and encodes 775 amino acids. The nucleotide(amino acid) homologies were 96%(97%), 94%(97%) and 92%(94%) between GD06/93 and GD19/2001, GD06/93 and GD08/98, and GD08/98 and GD19/2001, respectively GD06/93 and GD19/2001 show a high homology with international standard strain TSV01(Australia), the nucleotide(amino acid) homology are all 98% (98%). Meanwhile the nucleotide(amino acid) homology is 98% (98%) between GD08/98 and ThNH-P28/93(Thailand). In three dengue virus strains, the amino acids at the virulence correlative site E383-385 are all GLU-PRO-GLY, and at E126 are all GLU. Compared with the reported virulence correlative sites, three dengue strains are according to the character of strong virulence strains only in the site of E 383~385 and E 203, but at other virulence correlative sites are not same as the reference reported.

Conclusion: GD06/93, GD19/2001 and TSV01 belong to the same genotype; GD08/98 and ThNH-P28/93 belong to another genotype. Compared with DEN2 strain 04, the second structure of 3 dengue virus strains in the III domain of E protein show a notable variance, these variances may be related with the virulence of different strains of dengue virus.

Key words: Dengue virus Structural gene Virulence correlative sites

THE INFORMATION SYSTEM OF EPIDEMIOLOGICAL SUPERVISION AFTER INFECTIOUS DISEASES (SESID)

Kurjanovich O.V., Kobilkhin D.V., Ogarkov P.I., Ivannikov Yu.G., Russia

The work is considering on the principles of working out the automated SESID using modern information technologies. These systems should carry out the data collection and transfer into global computer networks, the operational and retrospective epidemiological analysis, creating the epidemiological diagnostic criteria, epidemiological diagnosing, epidemiological situation estimation and the selection of the adequate antiepidemic and prophylactic measures.

While working out the information SESID for the Armed forces of Russia the following scientific organizational and methodical principles are used:

- The automated workplaces are formed at first for the lower level management of prophylactic and antiepidemic measures;
- The system should be open for perfecting and accumulating of informational, programming, technical and organizational provision;
- The unified database should be created; it should be formed of separate info units, that allows to activate them in any sequence and provides the extraction of maximum useful information from available basic data;
- The standardization principle should be applied to all data types, documents and application software so that the created lower level subsystems could be modified with the least work and time inputs conformably to the higher level subsystems requirements.

The SESID basic destination is help for a military epidemiologist in choosing the priorities while realizing sanitary-antiepidemic (prophylactic) measures.

THE ITALIAN NAVY CONTRIBUTION IN THE STRUGGLE AGAINST BURULI ULCER

Vincenzo Martines, Italy

Buruli Ulcer is an infectious tropical disease caused by Mycobacterium ulcerans. The causes of its transmission are still not well known at the present time.
Clinically it appears with a nodule that leads to a plaque or to a progressive massive ulceration that may attack the articulations and the bone tissue, resulting in possible invalidating effects.

The treatment is based on an antibiotic therapy often with modest results, and on surgical excision of the infected tissues.

In 2001, dr Franco Poggio, president of the Rotary Club in Milano Aquileia, acquires an hyperbaric chamber and asks the Italian Navy to support his initiative by training a medical team from Benin in the use of the hyperbaric chamber; the hyperbaric chamber is transported by ship and installed at the center for diagnosis and treatment of Buruli ulcer, in Allada, donated by the Follerau Foundation.

In June 2004, Lt Dr Gaetano De Bilio, a specialist in hyperbaric physiopathology, is temporarily deployed to Allada in Benin for check the conditions of the hyperbaric chamber and continues the training.

In August 2004, Dr Lt Commander Filippo La Rosa, a specialist in dermatology, is deployed to Benin, as the Italian Navy representative with the scientific and humanitarian expedition led by G. Leigheb.

The activation of the experimental protocol to treat people of Benin infected by Buruli ulcer by mean of hyperbaric oxygenation is expected to happen in spring 2005.

The research on possible vectors causing the infection continues at the Dermatology clinic of Novara University.
not exposed such a well-pronounced effects. Therefore, in the conditions of appearance of single cases of VCE and small-pox as well as their epidemic and use as agents of bioterrorism, Roncoleukin is definitely the medicine of choice together with means of specific prophylaxis (vaccines, immunoglobulins, serums etc) that will permit to prevent distribution of infections in mass scale.

Besides its prophylactic, effect Roncoleukin is effective mean of protection against AVI as a mean of etiotropic treatment. Use of Roncoleukin in scheme “once per day during 5 days” provided pro-tection of infected animal at the level of 40-50% without dependence on etiology of the disease. Taking into account known mechanisms of action of Roncoleukin on macroorganism level and, first of all, on immune system we have a supposition that protective features of the drug are caused by its effect of immune correction directed on restoration of functional valuable of immune reactiv-ity that is disturbed by infectious agents.

However, it is necessary to point that due to severity of most viral infections Roncoleukin should be used in complex therapy of AVI.

USE OF PROBIOTICS, IMMUNOMODULATORS AND VACCINES FOR PREVENTION OF PNEUMONIA AND RESPIRATORY INFECTIONS IN RECRUITS

Polaykov A.S., Zueva N.V., Zhogolev S.D., Zhogolev K.D., Ogarkov P.I., Russia

Some groups of recruits aged 18-20 (more than hundred of persons in each group) were given various prophylactic means against influenza, acute respiratory diseases (ARD) and pneumonia. They included: Grippol, Pneumo 23 vaccines (parenteral administration during first days after the unit arrival), IRS’19 (as aerosol, one dose in each nasal meatus, once a day for first 10 days), Thymogen (the same scheme), Dibazol (0.02 g) in combination with ascorbic acid (0.3 g) twice a day for 10 days, probiotic Vitalflor from two strains of Lactobacillus acidophilus as a milk-acid product (a cup t.d.s. for three days before vaccination by Grippol and Pneumo 23), Midal (the product from Mytilus, as a sauce taken at the breakfast and dinner, a tablespoon for 10 days).

The prophylactic drugs significantly improved immunologic indices in recruits, decreased a number of agent carriers compared to control groups. Vitalflor increased immunogenicity of vac-cines.

General incidence of influenza, other ARD, acute bronchitis and pneumonia in recruits who re-ceived the drugs was 2.2–3.1 times lower than in control groups. The most effective anti-pneumonia drug appeared to be IRS’19 as well as pneumococcal vaccine combined with influenza vaccine and probiotic (efficiency being 73.5% and 75%). The most cost-effective means were Dibazol in combination with ascorbic acid.

VACCINE PREVENTION OF TYPHOID FEVER

Dutta A., France

Typhoid fever remains a major public health problem in many parts of the world. It is estimated that typhoid fever causes 17 million cases and 0.5 million deaths annually worldwide. The mean incidence of typhoid fever varies from 0.2/100,000 population in North America and Western Europe to 530-1000/100,000/year in some of the developing countries. Mortality after treatment has been reported as <1% from developed countries, whereas, in the developing countries it can be as high as 10%.

The disease has been known to be common in children and young adults and constitutes a significant risk factor for troops deployed in endemic areas. Overall, around 20-77% of S. typhi isolates in Pakistan, 40-92% in India, 16-25% in Singapore, 50-88.7% in Vietnam, 50% in China, 5% in Kuwait and 37% in Iran are multi drug resistant (MDRT) and have been known to cause epidemics. A very high mortality can be observed during epidemics of MDRST and ranges from 7-16% as compared to <1% with susceptible strains.

Three types of typhoid fever vaccines are presently available; a whole cell killed vaccine (WCK), a live attenuated (Ty21a) oral vaccine and the Purified Vi capsular polysaccharide vaccine. The choice of a typhoid vaccine depends on the 4 C’s; cost, convenience, coverage and competence (efficacy). This presentation reviews these three vaccines and presents data on the safety and efficacy of the Vi vaccine. The new Vi-conjugate vaccine under development will also be briefly discussed.

VIRUSES AS A MAJOR INFECTIOUS THREAT TO THE PUBLIC HEALTH IN THE ANTIBIOTICS ERA

Netesov S.V., Sandakhchiev L.S., Russia

During the last 50 years the discovery of new etiological agents of infections lead to the understanding that viral infections are the main infectious threat to public health compared to the rest of infectious agents. In the same time it is clear that we have no sufficient choice of antiviral drugs and difficulties in the development of vaccines against some viral infections. All the viral infections might be classified into several groups:

a). Emerging infections (largely due to genome mutations in animal viruses and, therefore, their acquired ability to transmit over to humans as SARS-coronavirus and monkeypox virus in 2003, etc.);
b). Re-emerging infections (mainly because of unjustified changes in vaccination policies, e.g. measles in Russia in the 90’s);
c). Eradicated or would-be eradicated infections (because of possible leaks of pathogens from labs or because of the re-evolution of similar animal pathogens);
d). Infections associated with intravenous drug use and sexual revolution;
e). Infections engaged with worsening of hygiene conditions as a result of war or natural accidents like tsunami or earthquake;
f). Bioterrorism and biocrimes;
g). Unintentional creation of new pathogens based on genetic engineering methods (e.g. the construction of mousepox virus with an inserted interleukin-4 gene which kills mice (instead of their sterilization).

By referring to specific types and examples of threats, the need for strengthening pathogen stocks control at laboratories is emphasized as well as the need for updating biosafety and biosecurity procedures and protocols for such labs and a growing need for continuous genetic monitoring of the evolution of animal viruses taking into account their possible acquiring the ability of transmission to humans. The usefulness of an evolution study of human RNA viruses is shown, and, finally, the urgent need for the facilitation of research in the field of development of new effective antivirals, diagnostic tools, and vaccines. High effectiveness of existing international cooperation in combating infections is described, and a growing need for further development of this cooperation in pathogen research to permit more successful control of natural infections and bioterrorism.