

private IT company of CactusSoft. Recently, Dr. Reshetin has become involved in a new research computer simulation of different scenarios of radiological and biological terrorism events. To date, Dr. Reshetin has completed 11 research projects founded by the government of Belarus and one project founded by the EC.

56. FEATURES OF PATHOLOGY IN MICE EXPERIMENTALLY INFECTED WITH HIGHLY PATHOGENIC H5N1 INFLUENZA VIRUS

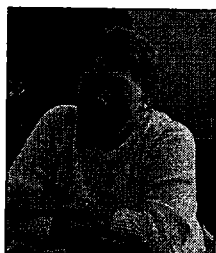
Prof. Elena I. Ryabchikova

Oleg S. Taranov
Dr. Elena M. Malkova
Oksana B. Gritsyk
Olga K. Demina

State Research Center of Virology and Biotechnology "Vector". Koltsovo, Novosibirsk region, 630559 Russia

Avian influenza became a new threat and has set people thinking about possibility of new influenza pandemic which may be caused by highly pathogenic H5N1 influenza virus. The virus could acquire ability of fast spreading between the humans and new pandemics could kill millions. Influenza virus H5N1 exhibited its deadly essence by taking out many millions of birds in nature and aviculture; other millions of chicks and ducks were killed to prevent spread of the epizootic. The strains isolated in Russia belong to Qinghai group of H5N1 influenza virus, and were imported to Russia by migratory birds. We examined time-course changes in mice blood and lungs after intranasal infection with strains A/Chicken/ Kurgan/ 05/2005, A/ Duck/ Kurgan/08/ 2005 and A/ Chicken/ Suzdalka/ Nov-11/2005 differing in virulence for this animal species. Development of leucopenia and severe damage of hemopoiesis were found in mice infected with all H5N1 influenza virus strains. Pathological changes in mice lungs during the infection with above mentioned strains, and strain-specific features have been examined. Main characteristics of lung pathology in all mice were focal nature of the alterations, severe damage of bronchial epithelium and pronounced alteration of lung vasculature. Strain A/Chicken/Suzdalka/Nov-11/2005 induced massive apoptosis of infected bronchial cells which may be a part of mechanism responsible for avirulent properties of this strain. The most interesting finding was absence of serious direct virus damage of the lung evidencing for principal role of the host humoral mechanisms in pathogenesis of H5N1 influenza in mice.

Key Words/ Phrases: H5N1 influenza virus, mice, intranasal infection, pathogenesis



Prof. Elena I. Ryabchikova in 1974 graduated from Novosibirsk State University, in physiology. In 1980 obtained Ph.D. degree in Anatomy, Embryology and Histology, in Moscow State University. Since 1982 works in State Research Center of Virology and Biotechnology "VECTOR". **Present position:** Head of Laboratory of Microscopic Researches. In 1998 obtained Dr. Science degree in Virology, Histology, Cytology and Cell Biology.

Field of expertise:

Electron microscopy of viruses, cells, animal tissues and organs; pathogenesis of viral infections.

Author more than 170 scientific publications including book "Ebola and Marburg Viruses: A View of Infection Using Electron Microscopy", published with Barbara Price.

57. INDONESIAN PERCEPTIONS ON THE IMPLEMENTATION OF THE CHEMICAL WEAPONS CONVENTION IN RELATION WITH BIOSECURITY AND BIOSAFETY

Samihardjo Isroil

Head of Planning Division
Centre for Defense Science
and Technology Research
Defense Department
Republic of Indonesia

April 29, 2007 was marked the 10 year anniversary of the Chemical Weapons Convention (CWC) entry into force and the creation of the OPCW. Many nations throughout the last year were celebrated its commemoration. Compared to the Biological Weapons Convention (BWC) which is now entering the 33rd year of its entry into force, the progress of CWC is running far beyond that convention because CWC is considered the most complete convention which is equipped with a comprehensive verification system. In contrast, up till now there is no formal verification regime to monitor compliance of the BWC. So the national legislation as well as biosafety and biosecurity procedures will be the best regime to prohibit the misuse of biological agents. To some extent, the strategy and method on implementing the provision of CWC are coincident with biosecurity and biosafety procedure due to their dual use characteristics. Concerning CWC, Indonesia which was ratified it in 30 September 1998 has always active in any multilateral meeting and as well as national activities on prohibiting the misuse of chemical weapons. Several courses have also been done in cooperation with OPCW such as Development of Response System Against Chemical Weapons, Basic Training Course for Response Team, National Industry Awareness Workshop, Advance Training for Response Team, National Emergency Response Workshop, as well as setting up 20 sets of individual protective equipments.

There have already 7 inspections done by OPCW in Indonesia during 2004-2007 which proved that there were no indications of misuse of chemical processes and its facilities for hostile purposes. However, it does not mean that there is no threat from the possible misuse of chemical and biological agents due to its dual use characteristics. Learnt from Indonesian experiences, there are several constraints on implementing the CWC as well as biosafety and biosecurity.



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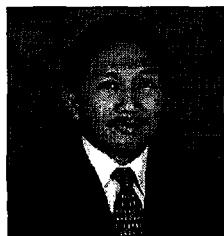


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First is the different perception on the biological and chemical threats. For example, some chemical or biological agents which are considered dangerous material for some countries, they are not considered danger for some peoples either due to the lack of awareness or their daily lifestyles which put security on a very low priority.

The second reason is that demographical and geographical condition of Indonesia which is very diverse and with more than 230 milion populations which are scattered throughout more than seventeen thousands islands makes it difficult to be controled. The other major challenge is that the danger of chemical and biological agents is not only a function of the pathogenity, tranmissibility and infectivity or toxicity of the agent, but also heavily depends on the person who is handling the agent.

So, the key to counter the threat coming from chemical and biological agent rests on our ability to detect the intention behind the possible threats whether they are deliberately used for peaceful or hostile purposes. For those reasons, the presentation will discuss five steps that have to be considered in order to counter the threats from the use of biological and chemical agents either in laboratories or the possible misuse by a potential terrorist. These are intention, trends, pre-actions, action, and post-action.



Samihardjo Isroil
Head of Planning Division
Centre for Defense Science and Technology Research
Defense Department of the Republic of Indonesia

58. TRANSBORDER COOPERATION ON THE PROTECTION, SURVEILLANCE AND CONTROL OF ENDEMIC DISEASES

Savov Encho

¹ B. Doganov, ² G.Kamenov, ³ K.Angelov, ¹ Zl.Kalvachev, ³ A.Rusev², J.Dimova¹

¹ Prof.dr., Military Medical Academy /MMA/
Sofia

Bulgaria

² Association " Social Health", Sofia Bulgaria

³ Ministry of Health, Sofia, Bulgaria

This paper discuss some concern and challenges regards the Bulgarian-Greec transborder cooperation with respect the protection, surveillance and control of some endemic for this transborder region diseases like: Q-fever, Brucellosis, Lyme disease, Crimean-Congo hemorrhagic fever and Marseilles fever. The study examines transborder activities, including a background for the infection diseases state for the period 2004-2007, the problems of training and

equipment of the specialists for sampling and identification of these diseases, development of strategy and conception for control of spreading of the infectious agents in 4 bulgarian regions / Blagoevgrad, Haskovo, Smoljan and Kardjeli/ and in the corresponding regions in Greece – Seres, Drama, Ksanti and Evro. Additionally, there is presented the role of local governmental representatives to manage these transnational border issues.

Key Words/ Phrases: transborder cooperation, endemic infectious diseases, infectious control and surveillance

Will not be presented



Professor Encho Savov is Head of Department of Military epidemiology and hygiene and Head of laboratory of microbiology in Military Medical Academy, Sofia, Bulgaria. Application of new genetical methods for diagnosis and epidemiological typing, bacterial resistance to antimicrobial drugs.

Publications: About 180 scientific papers.

59. TOXIC INDUSTRIAL CHEMICALS (TICs) AS ASYMMETRIC WEAPONS: THE DESIGN BASIS THREAT

Maj. Lars Skinner

USAR-Consequence Management Unit

APG, MD

USA

Asymmetric warfare concepts relate well to the use of improvised chemical weapons against urban targets. Sources of information on toxic industrial chemicals (TICs) and lists of high threat chemicals are available that point to likely choices for an attack. Accident investigations can be used as a template for attacks, and to judge the possible effectiveness of an attack using TICs. The results of a chlorine rail car accident in South Carolina, USA and the Russian military assault on a Moscow theater provide many illustrative points for similar incidents that might be carried out deliberately. Computer modeling of outdoor releases shows how an attack might take into consideration issues of stand-off distance and dilution. Finally, the preceding may be used to estimate with some accuracy the design basis threat posed by the used of TICs as weapons.

MAJ Skinner has worked on hazardous materials, WMD, and security issues for 20 years. He has been a member of civilian HazMat, urban search & rescue, and WMD response teams.