Abstracts of the articles

VV-1303-004
Herpes Viruses and Male infertility – is there any relationship?
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A relationship between the herpesviral infections and male reproductive health is of importance to both theoretical and practical medicine. the review contains the data on the frequency of herpes virus identification in sperm, the effect of the viruses on structure and function of male germ cells, potential vertical transmission of the herpes viruses with male gametes, and experimental models of study the effects of herpes viruses on spermatogenesis. From the analysis of these data it can be concluded that: 1) identification of herpes virus in sperm is associated with reduced fertility; 2) herpes simplex virus has a negative effect on spermatogenesis, which manifests itself in a decreased proliferative activity of spermatogonia, meiosis block and enhanced apoptosis of germ cells; 3) herpes viruses can be found intracellularly in male gametes; and 4) the analysis of the markers of widespread herpes viruses (HSV, CMV) should be included in examination of men attending infertility clinics.

Keywords: herpes simplex virus, cytomegalovirus, spermatogenesis, infertility

VV-1303-009
A summary of the Data about antigenic and genetic Diversity of rabies Virus circulating in the terrestrial Mammals in Russia
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The data about antigenic and molecular-genetic diversity of the rabies virus circulating in Russia are reviewed. Based on our studies and the literature data analysis circulation of two phylogenetic virus groups in Russia was revealed: arctic and cosmopolitic. The arctic group includes the subgroups of proper arctic and arctic-like viruses; the cosmopolitic – central Russian, northeastern European and steppe. It was found that the division into subgroups corresponded to the geographic distribution of rabies viruses.

Keywords: rabies, Russia, antigenic and genetic variants of rabies virus

VV-1303-017
Etiology of Fatal Pneumonia caused by influenza a(H1N1)pdm2009 Virus during the Pandemic in Russia
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The results of the study of the autopsy materials from 61 patients with the diagnosis of pneumonia received by virological and genetic methods are reviewed. The materials were studied at the influenza etiology and epidemiology center of the Ivanovsky institute of Virology, Ministry of health and social Development of the russian Federation, during epidemic seasons 2009-2010 and 2010-2011. The data were analyzed with respect to age, sex, comorbidity diseases and identified on the groups of the risk of severe forms of the disease. the presence of the pandemic influenza virus strain rna was confirmed in 70.5% of materials; rna of influenza B was detected in 1.2% cases. The co-infections caused by the bocavirus, adenovirus, parainfluenza virus type 2 and 4, rhinovirus, and streptococcus were detected only in 19.7%. In most cases, the influenza virus was the etiologic agent of lethal pneumonia, which justifies the necessity of the early etiological diagnosis and treatment with antiviral drugs.

Keywords: influenza A (H1N1) pdm09, influenza B, pneumonia, lethal cases, bocavirus, adenovirus, rhinovirus

VV-1303-021
Immunogenicity of recombinant Proteins including ectodomain of M2 influenza virus A
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Two recombinant proteins with three copies of the ectodomain of the conserved influenza protein M2 (M2e) of influenza viruses were developed: A (H1N1)pdm09, A/Kurgan/05/05 (h5n1), and M2e consensus sequence of the human influenza a virus (H1N1, H2N2, H3N2) based on flagellin and core antigen of hepatitis B (HBC). The first recombinant protein comprised flagellin fused to three tandem copies of M2e, the second preparation was based on non-covalent interaction between M2e peptides and HBC. The immunogenicity of two preparations was comparatively tested. A covalent linkage of flagellin with M2e significantly increased the immunogenicity of the target antigen compared with non-covalent interaction M2e and HBC. Flagellin as a protein carrier of M2e induced mainly IgG1 subclass, whereas HBC stimulated a more balanced Th1/Th2 response. Our study showed a decrease in the viral titers in lung tissues of immunized mice after lethal challenge of a/Pr/8/34 (H1N1). The study revealed a possibility to obtain a vaccine preparation with equal immunogenicity both against human influenza viruses and highly pathogenic avian influenza viruses.

Keywords: influenza, recombinant proteins, M2e, HBC, flagellin, immune response

The modern influenza virus subtypes h3n2, h5n1, and h1n1 reduced the metabolism of the endothelial cells within the range from 20% to 60% (compared with control). The degree of the activity of the dehydrogenase reduction depended on the dose of virus and time of virus reproduction. HA and NA also actively reduced the metabolism of the cells ranging from 5% to 60%, depending on the concentration of the proteins and time of their impact on cells. Neuraminidase was more active than hemagglutinin in the MTT test (at concentration 50 µg protein/ml).

Keywords: influenza virus, proteins, endothelium cells, metabolism, activity of dehydrogenases

In the present work, the immunoadjuvant properties of the influenza Δns1 vaccine virus after intranasal administration in combination with recombinant GBS polypeptides was tested in mice. According to our data, co-administration of recombinant GBS polypeptides and influenza Δns1 vaccine resulted in the increase in the immunogenicity and protective efficacy of bacterial proteins. Combined vaccination with the GBS polypeptides and influenza Δns1 vaccine has a potential to be used not only for prophylaxis infections caused by SGB, but also for prevention of the bacterial complications of influenza.

Keywords: streptococcus group B, influenza, vaccine, NS1

The astroviral infections are considered among the most common pathogens of gastroenteritis in children. The incidence, molecular epidemiology and clinical manifestations of the astrovirus infection in children hospitalized with acute gastroenteritis, in various areas of the Russian Federation from 2004 to 2010 was determined.

Keywords: human astrovirus (HASTV), molecular biology, taxonomy
Local antibody immune responses in influenza Patients and Persons Vaccinated with seasonal, Pre-pandemic, and Pandemic live attenuated influenza Vaccines


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Mucosal immunity is one of the most important factors of human anti-influenza defense. The data about local immune responses in influenza A (H3N2) patients and in persons vaccinated within 2000-2009 with different seasonal IAIVs, a (H1N1) pdm2009 IAIV, and a (H5N2) IAIV are discussed. The influenza infection resulted in the larger quantities of local IgA and igg conversions than seasonal IAIV vaccination. 56% of young (18-21 y.o.) persons had high titers (1:64) of IgA to a (H1N1) pdm2009 virus before its circulation. 19% of persons had anti a (H5N2) IgA before vaccination. two-fold vaccination with a (H1N1) pdm2009 and a (H5N2) IAIVs resulted in local antibody conversions in 54% and 27% of volunteers, respectively.

Both these vaccines increased local IgA avidity. The number of antibody conversions after vaccination with seasonal IAIVs was in inverse dependence on their titers before vaccination. These results make it possible to conclude that the intensity of local antibody immune response to any IAIV depends on the state of local immunological memory, particularly on the presence of the crossreactive antibodysecreting B cells.

Keywords: anti-influenza immunity, influenza A viruses, local immune responses

Efficiency of the influenza a and B Viruses isolation from nasopharyngeal swabs taken in the test tubes .-Virocult® (M40 compliant, sigma Virocult) and Virocult® (M40 compliant, Virocult) in 2010-2011 epidemic season

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The goal of this work was to compare the efficiency of the influenza A and B viruses isolated during 2010-2011 epidemic season. the clinical samples were taken in the test tubes with the transport medium on the basis of the medium eMeM and commercial test tubes .-Virocult® (M40 compliant, sigma Virocult) and Virocult® (M40 compliant, Virocult). the results of this work demonstrated higher efficiency of influenza a and B viruses isolation from nasopharyngeal swabs of the patients taken in the test tubes .-Virocult® (M40 compliant, sigma Virocult) and Virocult® (M40 compliant, Virocult) with the transport medium as compared with the efficiency of influenza strains isolation from nasopharyngeal swabs taken in test tubes with the medium eMeM with respect to all estimated indicators: efficiency of isolation, a passage of isolation and the titer of isolates. the possibility of the long-term storage of a clinical material at room temperature and at 4°C was confirmed, without resorting to freezing, which is significant in the absence of the necessary equipment.

Keywords: A (H1N1) pdm09 and B Influenza viruses, transport medium Virocult®, efficiency of isolation, duration and mode of storage of material

Detection of the Markers of herpesvirus infections in stomach Diseases of inhabitants of the republic of Mordovia

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The study included 120 patients with pre-cancer conditions of the stomach and 30 patients with gastric cancer stage ii–iV. The ELISA method in the blood serum was used to determine the markers of the infection caused by herpes simplex virus (HSV) types 1 and 2, cytomegalovirus (CMV), and Epstein-Barr virus (EBV). The majority of the patients exhibited high titers of markers of herpesviruses mixed infection. These data allow recommending the determination of igg antibodies to antigens of herpesviruses in patients with the diseases of the stomach and assigning the appropriate antiviral drugs.

Keywords: Herpes simplex virus, chronic gastritis, stomach cancer, ELISA assay