Russian Federation, 2500 lives have been saved, 2.5 million cases of serous meningitis have been prevented, tens of thousands of cases of orchitis (the probability of male infertility), pancreatitis, and diabetes have been prevented.

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INFLUENCE OF THE NEWCASTLE DISEASE VIRUS ON SOME INDICES OF CELL-MEDIATED IMMUNITY IN TUMOR-BEARING RATS

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The use of oncolytic viruses for biotherapy of tumors is a promising approach. It is assumed that the administration of some kinds of viruses into the tumor-bearing organism induces both direct and indirect antitumor effect. The potential use of Newcastle disease virus (NDV) in this field attracts attention of the researchers.

Our aim was to study the effect of the administration of NDV vaccine strain on some indices of cell-mediated immunity in rats after transplantation of carcinoma.

The experiment was performed on 19 white mongrel male rats with Guerin's carcinoma. The NDV vaccine strain La-Sota was inoculated once 5000 doses paratumorally 2 times a week, 4 times in total: in the first group of rats the course of NDV was started after tumor transplantation, in the second group — one week before tumor transplantation. Tumor growth was observed and lymphocytes` subsets were counted in peripheral blood samples collected from the femoral vein of animals in the dynamics of the course of NDV administration. The per cent of T- and B-lymphocytes were estimated by flow cytometer BD CantoII. The results showed stimulating effect of the NDV on the T-cell link of rats` immune system and made it possible to establish differences in the type of the immunological changes developing in tumor-bearing rats, depending on the time of administration of the virus relative to the time of tumor transplantation and their possible significance for obtaining a prophylactic effect on transplanted tumors in some animals. So the administration of NDV previous to tumor transplantation caused a marked increase of $CD3^+CD25^+$ (T cells expressing an early activation marker) and $CD3^+CD4^+$ lymphocytes` levels which persisted after tumor transplantation while the levels of $CD3^+CD8^+$ and $CD3^+$RT1b (T cells expressing a late activation marker) cells were decreased. This was the only group where in some rats tumor formation after transplantation was not observed or early regression was detected. On the contrary, in the control animals the highest $CD3^+CD8^+$ and the lowest $CD3^+CD25^+$ cells` levels were observed during the whole period. Administration of NDV to the rats of the first group after tumor transplantation produced effect neither on tumor growth nor on potentially antitumor factors of cell-mediated immunity. Thus we consider that if NDV is able to induce any antitumor effect it should be used before tumor transplantation; activation of Th cells should be achieved.

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THE EFFECT OF PARVOVIRUS B19 INFECTION ON RESULTS OF CHEMOTHERAPY IN PATIENTS WITH LYMPHOMA

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Parvovirus B19 infection (B19V) can cause severe complications in patients with hematological malignancies which explains the importance of understanding the influence of B19V on the results of chemotherapy (CT). The purpose of the study was to reveal the prevalence of B19V in patients with lymphomas and the influence of B19V on the CT results.

The study included 41 patients aged 48.9±2.3 years: 12 patients with Hodgkin's lymphoma (HL) and 29 with Non-Hodgkin's lymphoma (NHL) (21 aggressive, 8 indolent). Patients received CT according to the tumor immunophenotype. B19V DNA was determined in plasma and in bone marrow (BM) by qPCR, B19V IgM and IgG in the serum by ELISA.

78.0% of patients had B19V IgG, mean concentration was 158.1±12.9 U/mL. B19V DNA in plasma was detected in 7.3%, in BM in 48.8%. Viral load in plasma was 68.7±35.8 IU/mL, in BM — 438 240.0±281 316.8 IU/mL. Seroprevalence and the mean concentration of B19V IgG was higher in NHL than in HL (79.3% vs 75.0% and 161.4±16.3 vs 153.6±20.5, $p>0.05$). In NHL, the number of seropositive patients and the mean level of B19V IgG were higher in aggressive than in indolent tumors (81% vs 75% and 177.9±19.3 U/mL vs 114.4±22.8 U/mL, $p = 0.052$). B19V IgM were not found. B19V DNA in plasma was found only in NHL patients (10.3%). The frequency of B19V DNA detection in plasma was higher in indolent (12.5%) than in aggressive lymphomas (9.5%), while DNA concentration was higher in aggressive lymphomas (102.5±20.5 IU/mL vs 1.0±0.0 IU/mL, $p > 0.05$). B19V DNA detection frequency in BM was similar in HL (50.0%) and NHL (48.3%, $p>0.05$), but the mean B19V DNA concentration was higher in NHL than in HL: 624 496.9±395 398.3 IU/mL vs 3640.5±1649.2 IU/mL, $p > 0.05$. In NHL, B19V DNA in BM was more frequent in indolent than in aggressive lymphomas (50.0% vs 47.6%), and the average concentration was higher in aggressive lymphomas (865 689.2±541 738.6 IU/mL vs 21 516.3±19 352.8 IU/mL, $p > 0.05$). Complete remission was observed in 68.3% of patients, partial remission 17.0%, stabilization 4.8%, progression 9.9%. CT results depended neither on serostatus and B19V IgG concentration nor on B19V DNA presence in BM or plasma ($p > 0.05$).

All parameters of the viral infection (B19V IgG, DNA) were higher in NHL than in HL ($p > 0.05$). The mean concentration of B19V IgG was higher in aggressive NHLs than in indolent ones ($p = 0.052$). B19V infection did not influence results of antitumor CT ($p > 0.05$).

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ASSOCIATION BETWEEN HERPES VIRUS INFECTION AND INDICATORS OF OXIDATIVE STATUS OF TUMOR TISSUE IN GASTRIC CANCER

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Viral infection and oxidative stress are recognized as aggravating factors contributing to the neoplastic tissue transformation. Our purpose was to determine the influence of viral infections of tissues on the processes of the free radical oxidation in stomach cancer (SC).

We studied tumor tissues (TT) and intact tissues from the resection line (IT) obtained from 25 SC patients (mean age 62.8±2.1 years). DNA of CMV, EBV and HHV6 was determined by qPCR. Levels of malondialdehyde (MDA) were measured to assess the intensity of the oxidative stress; the function of the antioxidant component was evaluated by catalase, superoxide dismutase and glutathione peroxidase activities and levels of reduced glutathione.