

Today the issue of abuse of narcotic drugs and psychotropic substances is very serious. According to the World Health Organization, drugs ranked first among the culprits of premature death and already ahead of cardiovascular disease and malignant tumors. The scale and pace of the spread of drug addiction in the country are putting a question about the physical and moral health of young people, the future of a significant part of it, the social stability of our society already in the near future.

According to the Ministry of health of the Republic of Belarus the majority of drug users – persons under the age of 35 years (84,5 %). Of them under 15 years is 2,9 %, 15–19 years is 10,3 %, 20–24 years – 22,4 % 25–34 – 48,9 per cent. The proportion of secondary school students and University students in the population of all consumers of surfactants is of 14,0 %, and among drug (toxic) maniac is 6,7 %.

The analysis of statistical data of health-care agency "Mogilev regional drug abuse dispensary" shows that from 2002 to 2005, there had been a decline in the number of drug addicts consisting on the account in a regional narcological dispensary (2002 – 368; 2003 – 340; 2004 – 312; 2005 – 291 people). Since 2006, it can be noted an annual increase of drug users, registered in a dispensary in 2006 – 301 people, 2007 – 378, 2008 – 394, 2009 – 417 people, 2010 – 503 people, 2011 – 549 people, 2012 – 601 people, 2013 – 682 people, in 2014 – 718. 01.01.2015 total number of registered drug addicts, substance abusers and consumers of psychoactive substances – 978.

In the Republic drug situation is deteriorated significantly in recent years. The spread of drug abuse occurs at an alarming rate and has a tendency to flare: increased the consumption of narcotic drugs and psychoactive substances, the steadily growing volume of drug trafficking and the number of crimes committed on the ground of drugs and drug addiction, drug abuse is rapidly getting younger, increasing the number of minors purchasing the "experience" consumption of narcotic and psychotropic drugs, increases in the number of female drug users, a new dangerous phenomenon is the appearance of "family drug addiction", involvement in the drug abuse of young children by their parents, has increased dramatically the incidence of HIV infection, increased mortality from drug use, especially among children.

MOLECULAR GENETIC PROLIFERATION OF METASTATIC MELANOMA

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In the course of the research the relationship between the expression level of mir-214 and sex, age of the patient, stage, localization, morphotype and intensity of pigmentation of melanoma was studied.

Keywords: melanoma, microRNA, gene expression, melanocyte nevus

An actual problem of clinical oncology is the increasing incidence of melanoma and the relatively poor prognosis of the disease in the common forms. Melanoma is responsible for 80 % of deaths from malignant skin neoplasms, although in the structure of morbidity is not more than 10 % of the diseases in this group [1].

Polymorphisms in the genes BRAF, NRAS, c-kit and signaling pathways RAS / RAF / MEK / ERK are associated with the occurrence and progression of melanoma [2].

In recent years, it became known that a non-coding RNA plays a special role in the development of malignant tumors. MicroRNAs constitute a recently discovered class of non-coding RNAs that play a key role in the regulation of gene expression. It is considered that a violation of miRNA expression leads to carcinogenesis. It is known that at a melanoma of the skin, the expression of certain microRNAs that act as an oncogene or a suppressor gene is increased or decreased [3].

The purpose of the research isto study aberrant expression of miRNAs in patients with melanoma for assessing the prognosis of the disease.

Materials and methods of a research

In a research examined the level of microRNA expression by PCR in the tissues of melanoma and melanocyte nevi. 32 samples of skin melanoma I (40,6 %), II (59,4 %) stages and 10 samples of melanocytic nevi were used. For amplification in real-time fragments of cDNA of the genes of miRNAs used a set of "miScript SYBR Green PCR Kit" (Qiagen, Germany).

Results

The study found that the expression level of mir-214 in melanoma samples decreased (30,9 rel. units [25,3, 35,3]) compared with melanocytic nevi (33,4 rel. [31,4; 34,9]).

Men have the level of expression of this microRNA (31,0 relative units [29,0; 33,6]) slightly higher than in women (30,7 rel. units [25,3; 35,3]).

The reduced level of expression of the studied genes of miRNAs was observed in patients aged 41–50 years – 30,2 rel. units [27,9; 34,1], increased is characteristic for persons in the age category 61–70 years – 31,7 rel. units [25,3; 34,4].

The level of expression of mir-214 in patients with I stage of disease was slightly lower 30,4 rel. units [25,3; 34,4] than in patients with II stage – 31,1 rel. units [26,8; 35,3].

Depending on the morphological structure of the tumor, there was a tendency to decrease the expression of the gene with lentigo melanoma – 29,4 rel. units [26,2; 31,3], increased expression is associated with the nodal form of tumor growth – 31,6 rel. units [29,1; 35,3].

The highest level of expression of mir-214 is diagnosed with poorly pigmented melanoma 32,8 rel. units [30,0; 35,3], and the smallest in the pigment – 30,6 Rel. units [29,1; 32,6].

The increasing the level of expression of mir-214 was detected in melanoma in the region of the upper limbs 31,8 rel. units [27,9; 35,3], while the decreasing level was found in the lower extremities – 29,8 rel. units [25,3; 33,5] depending on the localization of the primary tumor

Thus, the previously obtained data showed that the aberrant expression of microRNA is associated with clinical and morphological characteristics – sex, age of the patient, stage, localization, morphotype and intensity of pigmentation of melanoma, which in the future will allow an individualized prognosis of the disease to be assessed.

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DETECTION OF MOLECULAR-GENETIC AND IMMUNOLOGICAL MARKERS OF HERPES VIRUSES IN PATIENTS WITH A PRIMARY BRAIN TUMOR

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The incidence of malignant neoplasms of different localization is steadily increasing throughout the world and in particular in the Republic of Belarus. Over the past decade, there has been a tendency to increase the number of newly diagnosed cases of brain tumors and the central nervous system. If this indicator in 2006 was 470, then in 2015 621 cases were identified. As a consequence, rough intensive morbidity has been steadily increasing. If in 2006 it was 4,8 per 100,000 population, by it 2015 had increased to 6,5 per 100,000 population.

Keywords: herpesviruses, herpes simplex virus 1, 2 types, Epstein-Barr virus, cytomegalovirus, human herpes virus 6 type.

One of the reasons for the development of cerebral oncopathology is the presence of viral agents belonging to the *Herpesviridae* family: herpes simplex virus type 1, 2 types (HSV1,2), cytomegalovirus (CMV), Epstein-Barr virus (EBV) and human herpes virus 6 type (HHV 6). Viruses belonging to this family are able to induce and modulate oncotransformation of healthy cells causing the development of a tumor process. The detection of viral agents in patients with diagnosed oncopathology of the brain and central nervous system is possible using laboratory diagnostic methods, i. e. polymerase chain reaction (PCR) and enzyme immunoassay (ELISA) in various biological material: blood, serum, plasma, liquor, tumor tissue and others.

The aim of the study was to establish the presence of molecular-genetic and immunological markers of herpes viruses in the blood of patients with primary detected brain tumors.

Materials and methods. Whole venous blood for PCR and serum for ELISA were used as biological material for study in group of patients with a primary brain tumor. Enzyme immunoassay was performed using a semi-automated analyzer Tecan «Sunrise». The PCR method was performed with a hybridization-fluorescent detection in real time mode using BioRad CFX96 (USA) and Rotor-Gene 3000 (CorbettResearch, Australia).