

Conclusion. The differences in alterations of memory T-cells subsets in neurodegenerative diseases are revealed: MS and PD patients have increased number of TEM with prevalence of TEMRA cells while healthy donors are dominated by TCM. The results of this study confirm the pathogenic role of TEM and TEMRA cells in NDD patients and what may be used as laboratory criteria for the development of the neurodegeneration as well as autoimmune reactions and monitoring the effectiveness of NDD treatment.

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STUDY OF GENETIC MARKERS OF RADIOSENSITIVITY AS A WAY TO IMPROVE HUMAN SAFETY IN CONTACT WITH IONIZING RADIATION

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Now, genetic markers of radiosensitivity acquire great urgency. They allow assessing the resistance of the organism at the cellular level. In general, they can be used for setting norms in cases of forced contact with radioactive radiation.

Keywords: radiation, radiosensitivity, genes, organisms, risk, emergence of, role, human, impact, activities, individual, ionizing, research, cells.

As known, the problem of radiosensitivity is one of the central problems of radiobiology. Radiosensitivity is the susceptibility of organisms to the effects of ionizing radiation, the ability to react to it in a certain way. It is an individual feature of the body and depends on many factors. This problem is multifaceted and can be considered at both micro and macro levels.

According to the literature, the most promising areas of radiation genetics is the study of individual human radiosensitivity at the cellular level.

The strength and duration of ionizing effects play a key role in the occurrence of effects in the human body.

Thus, in individuals with chronic exposure, the risk of malignant tumors increases, the number of cells with a cell cycle block increases, and TCR mutations increase, and the frequency of chromosomal aberrations increases.

Radiation-induced instability of the genome can lead to the emergence of distant effects such as the occurrence of genetic changes in descendants of irradiated cells.

There are DNA repair systems in the human body that serve as a protective mechanism for radiation exposure. It is used correctly; these systems can prevent malignant transformation of cells.

Not one work is devoted to the topic of genetic markers of radiosensitivity. Among the candidate radiosensitivity genes, according to various studies, there are: reparation genes (RAD51, RAD52, XRCC4, XRCC1, XRCC5, XPG, XPD, OGG1, BRCA1, BRCA2, LIG4, PRKDC, DCLRE1); cell cycle and apoptosis control genes (TP53, ATM, ATR, Nbc1, NF- κ B, c-jun, Erg-1); gene responsible for the metabolism of nitric oxide and the induction of mechanisms of radio protection (NOS), genes for detoxification of xenobiotics (CYP, GST, NAT).

Research of the role of these genes in the realization of radiosensitivity is important in connection with the increasing role of radio emission in our daily lives.

The greatest danger of radiation damage exists for people who are directly exposed to radiation because of their professional activities. Radiation risk caused by the activity of enterprises of the nuclear industry and energy, the functioning of radiation research laboratories, medical institutions of radiation diagnostics and treatment, etc.

Profession of increased radiation risk may accompanied by the development of various diseases, including cancer, which necessitates the improvement of radiation protection equipment.

People undergoing treatment with radiotherapy and a number of other treatments using radio emission are also in the zone of increased radiation risk.

Thus, the study of genes that play a key role in the radiosensitivity of the organism can help establish or adjust individual doses for treatment, norms for workers whose activities related to contact with ionizing radiation, etc. All this in general can help to maximize human safety and reduce the risk of adverse effects in contact with radiation.

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DETERMINATION OF THE MOLECULAR-BIOLOGICAL PROFILE IN BREAST CANCER

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In the course of molecular biological studies of 150 patients with breast cancer it was established that luminal type A was detected in 81 patients, luminal B type in 24, Erb-B2 overexpressing type 33, with predominant infiltrative protocol cancer with moderate degree of differentiation (G2). Basal type was found in 12 patients with breast cancer, with this type of diagnosed infiltrative protocol cancer with a low degree of differentiation (G3).

Keywords: breast cancer, molecular subtypes, immunohistochemical method, tissue antigens.

The steady growth of malignant diseases can be associated with the worsening of ecological situation in the Republic of Belarus. Breast cancer (BC) is the most widespread oncological disease in women. With this pathology, around one million new cases of the disease are diagnosed annually in the world [1].

In modern clinical oncology, before beginning treatment of breast cancer in order to determine not only the optimal tactics, but also the methods of its therapy, immunohistochemical examination is necessarily performed. Results of immunohistochemical study of the level of expression of estrogen and progesterone receptors determine the molecular subtype of breast cancer, which allows selecting the most effective method of treatment, as well as evaluating the prognosis of the course of the disease.

Patients with breast cancer expressing tissue antigens were divided into 4 molecular-genetic subtypes: the **luminal A** – receptors of estrogens and progesterone are positive, the receptor of epidermal growth factor-2 (HER-2 / neu) – negative; **luminal B** – receptors of estrogens and progesterone positive, Her-2/neu – positive; **Erb-B2 overexpressing** – estrogens and progesterone receptors are negative, Her2/neu – positive; **basal-like** – the receptors of estrogens and progesterone are negative, Her-2/neu – negative, which must be taken into account for the prognosis of the course of the disease and the choice of treatment tactics for patients [2].

Material and methods. The material for the study was clinical data and tumor tissue of 150 women suffering from breast cancer, aged 33 to 79 years who were on treatment at the Republican Scientific and Practical Center of Oncology and Medical Radiology. N.N. Alexandrov "from 2015 to 2018 years.

The level of expression of tissue antigens to women suffering from BC was performed by immunohistochemical method using DAKO reagents (Denmark) and visualization system (EnVision +).