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**BIOETHICAL PROBLEMS ASSOCIATED WITH THE DEVELOPMENT
AND USE OF CHIMERIC ANTIGEN RECEPTOR T-CELL (CAR T-CELL) THERAPY
IN CASE OF BLOOD CANCERS**

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Relevance. Malignant neoplasms are currently one of the most common causes of death in the world. For decades, the basic cancer methods have been surgery, chemotherapy and radiation therapy. However, the effectiveness of isolated use of each of the traditional treatments for malignant tumours has certain limitations. Therefore, development of new methods of preventing malignant neoplasms based on modern molecular biology and genetics is particularly relevant, one of them being Chimeric Antigen Receptor T-Cell (CAR T-Cell) therapy. This is an emerging immunotherapy treatment for cancer patients, which consists of using modified T-cells called chimeric antigen receptor T-cells to recognize and kill cancer cells. According to the latest research, CAR T-cells can specifically localize and eliminate tumor cells by interacting with the tumor-associated antigens expressing on tumor cell surface. It is known that CAR T-Cell therapy can be effective in various types of cancer and it enables physicians and patients to succeed in fighting against haematological malignant tumors. However, implementation of new treatment methods is accompanied by some side effects and bioethical problems.

Aim: the aim of this research is to consider the possible complications and main ethical problems of the use of CAR T-Cell therapy in the treatment of different types of cancer as well as to substantiate the rationality and effectiveness of its use.

Materials and methods. An overview of scientific literature including books, articles devoted to new methods of cancer treatment were analyzed and summarized. A survey of 148 respondents from Belarusian State Medical University was conducted to reveal their opinion about the presence of bioethical problems in the use of novel treatment techniques, including CAR T-Cell therapy.

Results and their discussion. CAR T-Cell therapy is a newly developed adoptive antitumor treatment. It has been successfully used in the treatment of patients with various types of blood cancer (lymphomas, some forms of leukemia, multiple myeloma). Unfortunately, there is a risk of side effects, primarily hypercytokinemia and non-specific cytotoxicity. They can lead to multiorgan deficiency syndrome, which could result in death.

Another significant issue of CAR T-Cell therapy is emerging ethical problems that can slow down the development of this therapy, including the problems of safety, discrimination, autonomy and limited use of CAR T-Cell therapy, as well as the necessity to consider the principles of public accountability and transparency, risk assessment, respect for privacy and confidentiality.

The survey carried out among 148 teachers and students of BSMU aged 17-50 has shown that 125 respondents (84,5%) consider the development of new methods of cancer treatment to be unavoidably accompanied by some bioethical problems, for example, the problems of safety and individual approach. 89 respondents (60%) think that in case of necessity they would sign an informed consent for a new method of treatment being tested, because they believe that in this case people take all the opportunities to survive. But 59 of the interviewed people (40%) stated that they wouldn't like to take part in testing novel methods of treatment, because they thought they might live longer without unproven methods of treatment.

Conclusions: the development of new methods of treatment is always associated with emergence of bioethical problems which should be carefully considered to prevent both physical and psychological harm to the patient. Strict laws should be developed regarding privacy and confidentiality of the patient's data, bedside manner and informed consent for patients. The findings of this research can be used in the educational process to teach medical students to treat patients with cancer, be patient and listen to patients' complaints carefully, support and encourage them at different stages of their disease.