MOLECULAR BIOLOGICAL SUBTYPES OF BREAST CANCER

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Based on the data obtained, molecular biological subtypes of breast cancer were identified associated with the aggressive potential of the tumor and the prognosis of the course of the disease.

Keywords: breast cancer, molecular subtypes, estrogen and progesterone receptors, luminal type, basal-like, overexpressing type.

Breast cancer is one of the most common forms of cancer in the world, scientifically the most studied form of cancer. Over the past 20 years, breast cancer has ranked first in the structure of the oncological morbidity of the female population and second place in the structure of mortality. The success of treatment for breast cancer largely depends on the stage of the disease, molecular subtype, family history, as well as HER2 characteristics [1].

In recent years, the molecular taxonomy of breast cancer has been developing, which made it possible to distinguish four main molecular subtypes within the framework of this disease. These subtypes differ from each other in characteristic sets of molecular markers and actually represent different diseases - with different etiologies, molecular pathogenesis and prognosis, requiring specific therapeutic approaches. The indicated subtypes of tumors differ, firstly, by the cytokeratins expressed in them (basal or luminal), and secondly, by the presence or absence of HER2 gene amplification.

To date, the following clinical groups corresponding to the molecular subtypes of breast cancer are distinguished for choosing the optimal method of therapy: luminal A - positive estrogen and progesterone receptors, type 2 epidermal growth factor receptor (HER-2 / neu) - negative; luminal B - positive estrogen and progesterone recep-tors, Her-2 / neu - positive; Erb-B2 overexpressing - negative estrogen and progesterone receptors, Her2 / neu - posi-tive; basal-like - estrogen and progesterone receptors negative, Her-2 / neu - negative, which must be taken into ac-count to predict the course of the disease and the choice of treatment tactics [2].

Materials and methods

The material for the study was clinical data and tumor tissue of 150 patients suffering from breast cancer, aged 33 to 79 years, who were treated at the State Institution “Republican Scientific and Practical Center of Oncol-ogy and Medical Radiology named after N.N. Alexandrov. "

Results

The results of the study showed that Luminal A type, characterized by a high level of expression of estrogen and progesterone receptors, low (up to 14 %) proliferative activity and a low degree of differentiation (G3), was de-tected in 54 % of patients and is the most favorable form of breast cancer. Luminal B type, characterized by a low level of expression of estrogen and progesterone receptors, high proliferative activity (Ki67 > 14 %) and a high degree of differentiation (G1), was detected in 16 % of patients. Erb-B2 overexpressing type accounts for 22 % of all stud-ied cases of breast cancer. A basal-like type was found in 8% of patients with breast cancer, which is associated with a poor prognosis and the lowest survival rate of patients.

Thus, the division of breast cancer into subtypes is, first of all, a search for the features of relapse and distant metastasis, as well as an analysis of the possibilities of different approaches to the treatment of such a heterogeneous disease.

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