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PROGNOSTIC VALUE OF CLINICAL, LABORATORY AND MOLECULAR PREDICTORS IN THE FORMATION OF PERSONALIZED APPROACHES TO BREAST CANCER TREATMENT

ABSTRACT. Background. The death rate from breast cancer in the past 10 years has increased steadily and has won first place in frequency among women. Despite advances in modern oncofarmakology, there is a heterogeneous tumor response to treatment between different patients. The objectives of our study were to evaluate the relationship between tumor response to systemic therapy and general and histological characteristics of patient's tumors, including molecular subtypes of breast cancer, identify patterns between antropometric parameters of patients, comorbidities, and tumor response to the treatment; to study the effect of hematological, blood biochemical parameters on the results of the treatment of breast cancer. **Methods.** Molecular subtypes of breast cancer were established among 7521 patients, their changebility or stability in 67. Overall survival data was available for 491 patients with metastatic disease, peculiarities of development of metastases based on RECIST 1.1. criteria - 306. Retrospectively reviewed medical records of 110 patients with inoperable breast cancer (breast cancer) who received systemic therapy for the standard scheme. In the course of treatment were studied indicators such as: medical history of patients, life history, hematology, blood biochemistry, the results of primary and repeated histological and immunohistochemical studies of tumors, determination of molecular subtypes of breast cancer. **Results.** The distribution of the molecular subtypes of patients were as follows: A luminal - 69% luminal B - 9%, HER-2 / neu-positive - 7%, triple negative - 15%. Accounting factor Ki-67 (≥14%) led to an increase in the frequency of luminal B subtype from 9% to 19% by reducing the luminal A. In 44.8% of patients it was noted a change of molecular subtypes. Targeted therapy (Herceptin) in these patients allowed to overcome unfavorable prognostic background - results in median survival from them (41,3±4,5 months) were higher than in the group without Herceptin (27,4±3,4 months) and higher than the HER-2 / neu-negative patients (38,1±3,0 months). The value of coefficient Spearman rank correlation to tumor response and the factor of menopause, age, general condition of the patient were - 0.174; -0.222; -0.250 ($P < 0.05$), in accordance. The status of regional nodes N and tumor response have the correlation coefficient: - 0,265; ($P < 0.05$), the status of the primary tumor T and metastases M - 0.107; and -0.071 ($p > 0.05$), in accordance. In the presence of neutropenia at 1 week after treatment it has been revealed significantly better tumor response to treatment - the correlation coefficient: 0.204 ($p < 0.05$). **Conclusion.** Molecular subtypes detection had shown that HER-2/neu-positive and tripple negative breast cancer demonstrated the most aggresive course of disease. It was found that a more pronounced tumor response to combination chemotherapy can be expected in young patients, pre-menopausal, high ECOG status. The presence of neutropenia has a significantly positive impact on the results of treatment of patients with metastatic breast cancer.

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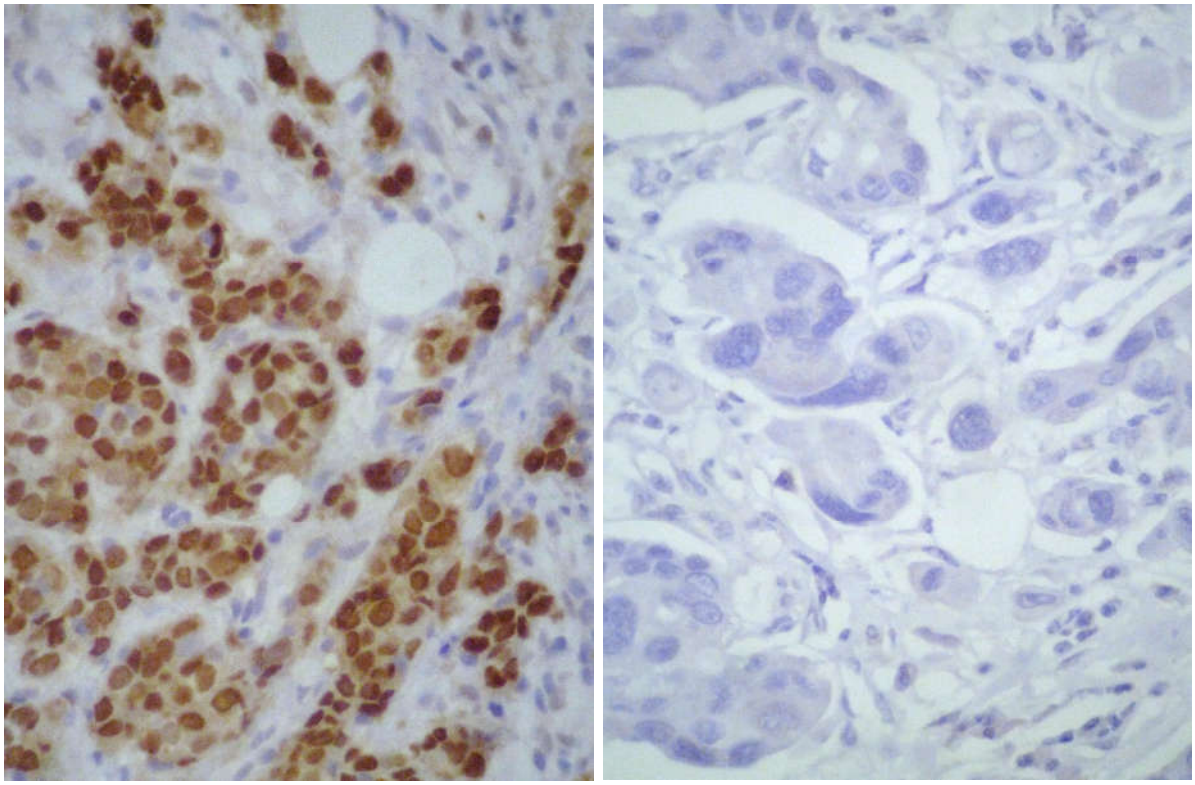

Fig. 1. Positive (left) and negative (right) reaction with antibodies to estrogen receptors. Immunohistochemical method, counterstain with Mayer's hematoxylin. ×400.

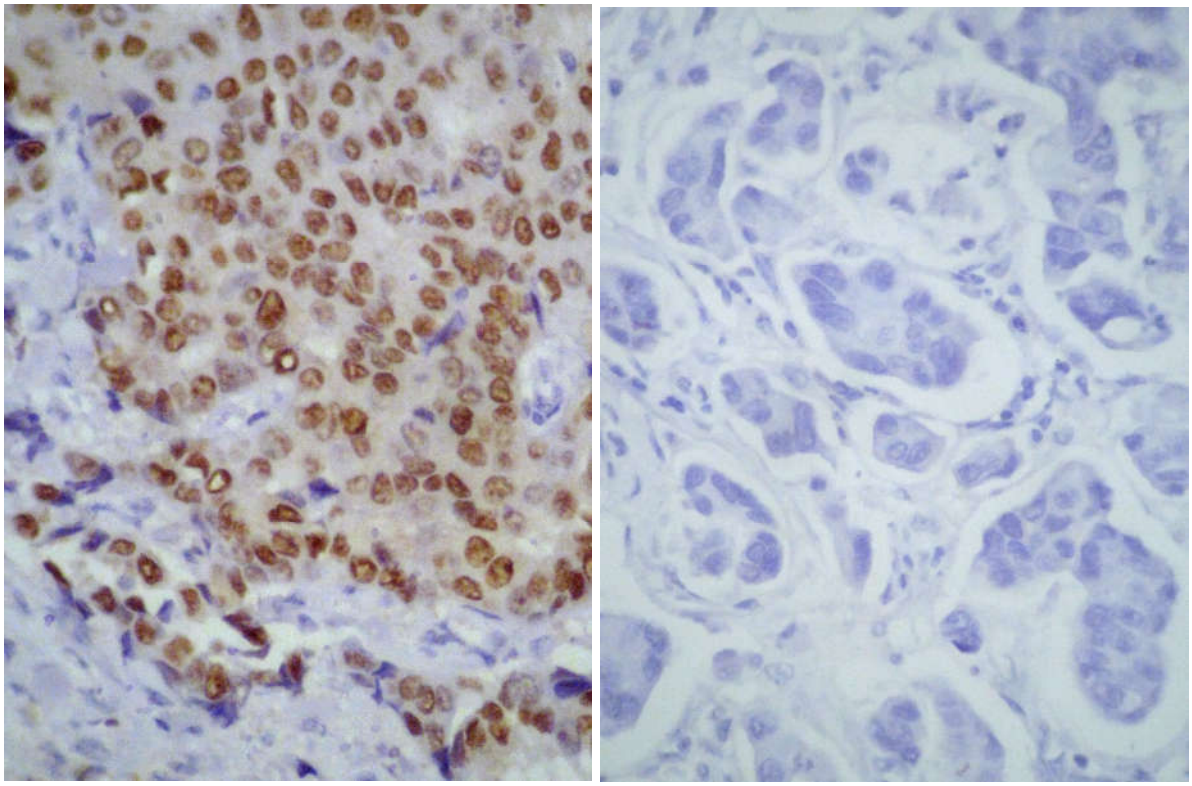

Fig. 2. Positive (left) and negative (right) reaction with antibodies to progesterone receptors. Immunohistochemical method, counterstain with Mayer's hematoxylin. ×400.

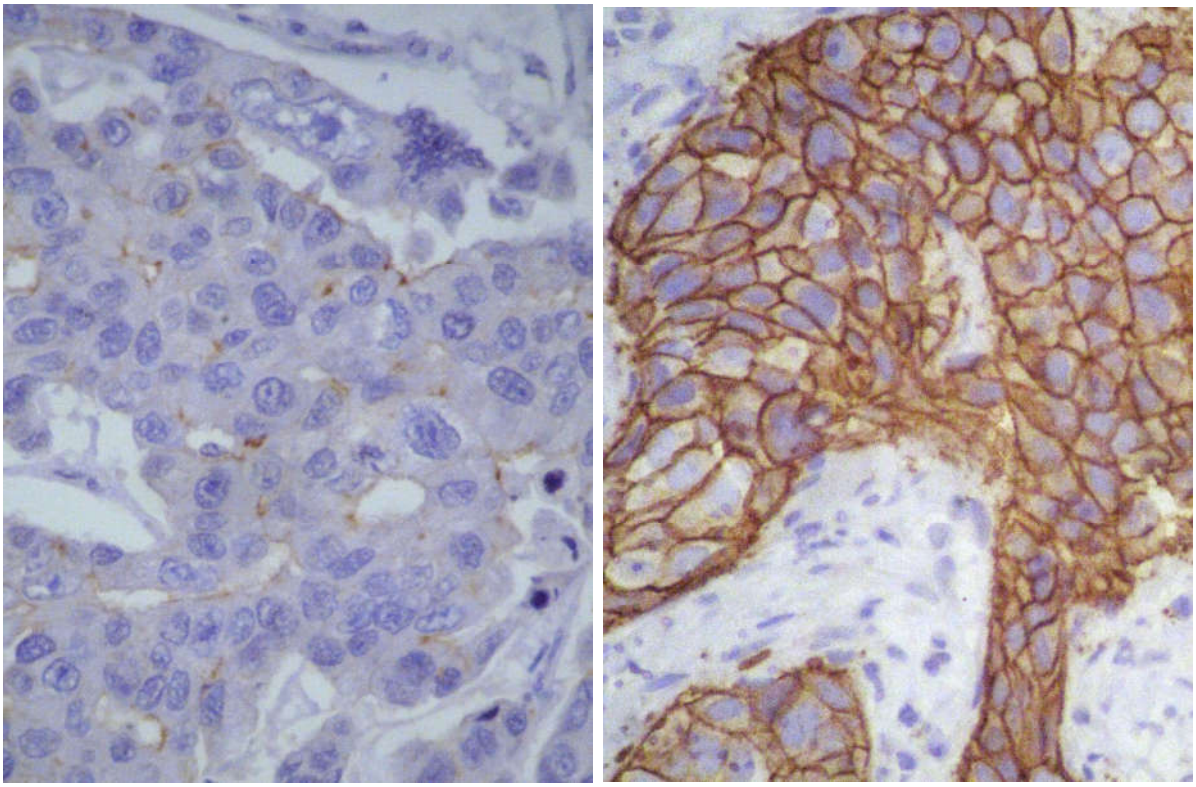

Fig. 3. Positive (right) and negative (left) reaction with antibodies to epidermal growth factor. Immunohistochemical method, counterstain with Mayer's hematoxylin. ×400.

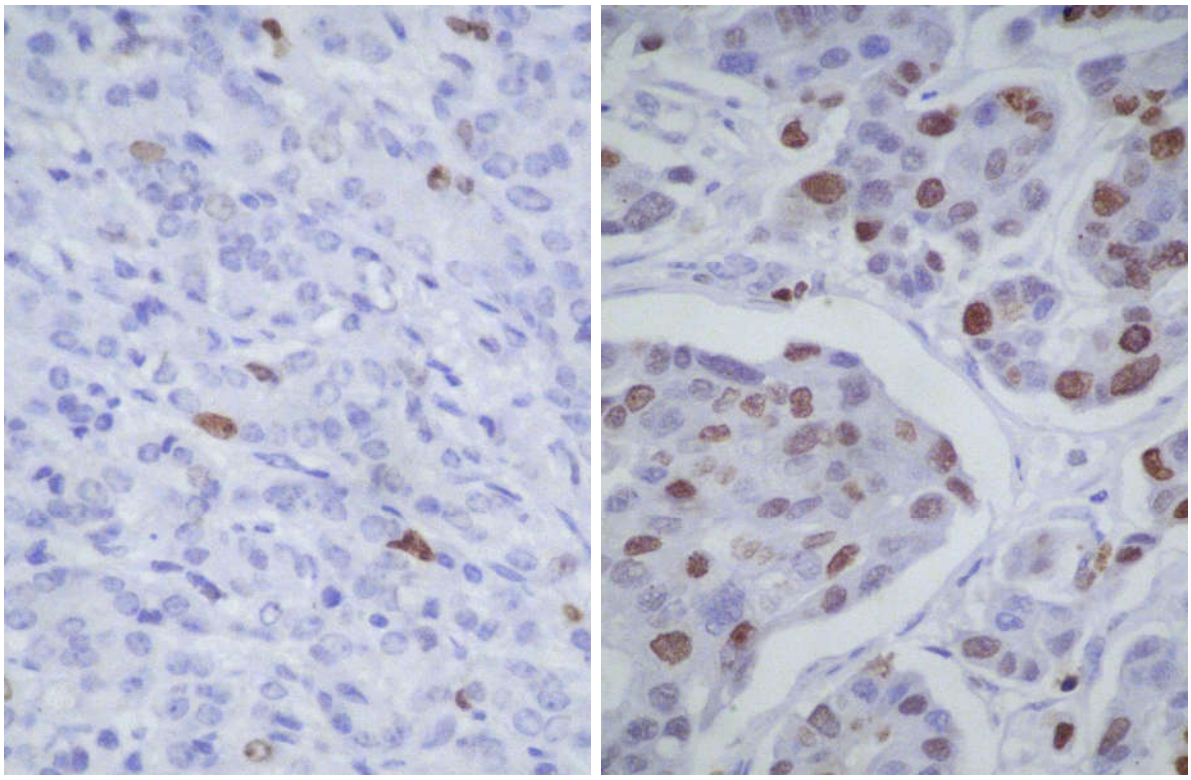

Fig. 4. Low (left) and high (right) intensity of reaction with antibodies to proliferation marker. Immunohistochemical method, counterstain with Mayer's hematoxylin. ×400.

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