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**IMMUNOHISTOCHEMICAL CHARACTERISTICS OF INVASIVE DUCTAL
AND LOBULAR CARCINOMAS IN WOMEN FROM THE ARAL SEA REGION**

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Breast cancer remains one of the leading oncological diseases among women worldwide and in the Aral Sea region. Metastatic breast carcinomas represent a clinically and morphologically complex group of malignancies, where tumor aggressiveness and patient prognosis largely depend on biological behavior. While conventional histological methods provide structural information, they are insufficient to fully reveal the molecular characteristics of tumors. Therefore, immunohistochemical (IHC) analysis plays a crucial role in modern oncopathology.

This study aimed to evaluate the immunohistochemical profile of invasive ductal and lobular breast carcinomas in women from the Aral Sea region. Biopsy and surgical specimens collected from regional oncology centers were analyzed using standard IHC protocols. Key markers assessed included HER2, estrogen receptor (ER), progesterone receptor (PgR), Ki-67, and E-cadherin.

The findings demonstrated variable expression of HER2, ranging from strong (3+, up to 90%) homogeneous membranous expression in invasive ductal carcinoma to moderate (2+, 40–50%) heterogeneous patterns and weak (1+, 10–15%) expression in lobular carcinoma. Strong ER positivity (up to 85–90%) was observed in a significant proportion of cases, indicating hormone sensitivity and potential responsiveness to endocrine therapy. Morphologically, tumors with high HER2 expression exhibited increased nuclear atypia, hyperchromasia, and fibrotic stromal changes, reflecting higher aggressiveness.

Invasive ductal carcinoma showed stronger expression of E-cadherin, confirming epithelial cohesion, whereas lobular carcinoma demonstrated weaker or absent expression patterns consistent with its known biological behavior. The study highlights that immunohistochemical profiling provides essential diagnostic and prognostic information and supports the selection of personalized therapeutic strategies.

Keywords: breast cancer, immunohistochemistry, HER2, estrogen receptor, invasive ductal carcinoma, lobular carcinoma, Aral Sea region, tumor markers, oncology