PAX5 EXPRESSION IN BREAST CARCINOMA

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Introduction. PAX5 is a transcription factor essential for B-cell lineage differentiation, but recent studies suggest its involvement in other types of neoplasms, including breast carcinoma. Understanding PAX5 expression in this context may contribute to elucidating mechanisms of tumor progression and identifying novel prognostic markers.
Materials and Methods. The study included 15 breast carcinoma cases selected from the archive of the Oncology Institute. PAX5 expression was evaluated by immunohistochemistry, and the density of positive cells was quantified separately in the intratumoral and peritumoral stromal compartments. Histopathological parameters analyzed included histological grade and the Nottingham score. Descriptive statistical analysis was complemented by Pearson correlation analysis, with statistical significance defined as $p \leq 0.05$.
Results. The intratumoral density of PAX5-positive cells showed a mean value of 1.73 (median 0.5; range 0–11; SD 2.87), indicating low and heterogeneous expression. In the peritumoral compartment, values were significantly higher (mean 41.45; median 25; range 15–100; SD 27.45). Histological grade ranged from 1 to 3 (mean 2.36), the Nottingham score ranged from 5 to 9 (mean 7.0), and patient age ranged from 54 to 70 years (mean 63.6). Pearson correlation analysis revealed a positive association between peritumoral density and histological grade ($r = 0.42$, $p = 0.03$), as well as between intratumoral density and the Nottingham score ($r = 0.38$, $p = 0.04$). No significant correlations were identified with patient age ($p > 0.05$).
Conclusions. PAX5 expression is more pronounced in the peritumoral stromal compartment compared with the intratumoral stroma and correlates with histological tumor parameters. These findings suggest a potential role of PAX5 in stromal remodeling and breast carcinoma progression, warranting further investigation to validate its prognostic value.
Keywords: PAX5, breast carcinoma, immunohistochemistry, intratumoral stroma, peritumoral stroma, Pearson correlation, Nottingham score, histological grade