

CORRELATION BETWEEN CD45 EXPRESSION AND CLINICAL-PATHOLOGICAL VARIABLES IN INVASIVE DUCTAL BREAST CARCINOMA ASSOCIATED WITH TYPE 2 DIABETES MELLITUS

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Introduction. This study investigates the correlation between CD45 expression and clinical-pathological variables in invasive ductal breast carcinoma associated with type 2 diabetes mellitus. CD45, an immune regulator, was analyzed to assess its role in tumor progression and prognosis.

Materials and Methods. A descriptive, retrospective study analyzed 58 cases of NST invasive ductal breast carcinoma, diagnosed between 2021 and 2022 at the Oncology Institute of Moldova. Among these, 29 patients had carcinoma associated with type 2 diabetes mellitus (T2DM). The mean age in the T2DM group was 63.2 ± 6.5 years, while the non-diabetic group averaged 64.5 ± 7.9 years. Preoperative glucose was measured colorimetrically using Selectra Pro XL. A control group included mammary tissue from 30 women who died accidentally, without any oncological disease (mean age 64.2 ± 6.2 years). Statistical analysis used Spearman's correlation to assess CD45 expression relative to tumor grade, Nottingham score, nuclear atypia, mitotic activity, hormone receptors, Ki67, lymphovascular and perineural invasion.

Results. Intratumoral CD45 expression showed weak correlations with tumor grade ($r = 0.10$, $p = 0.30$) and Nottingham score ($r = 0.19$, $p = 0.16$). In contrast, peritumoral CD45 expression exhibited significant positive correlations with tumor grade ($r = 0.48$, $p < 0.01$) and Nottingham score ($r = 0.34$, $p = 0.03$). Furthermore, peritumoral CD45 CR expression negatively correlated significantly with estrogen receptor (ER; $r = -0.41$, $p = 0.01$), progesterone receptor (PR; $r = -0.41$, $p = 0.01$), and Allred ER and PR scores (ER $r = -0.43$, $p = 0.01$; PR $r = -0.46$, $p = 0.01$). A positive correlation with patient age ($r = 0.37$, $p = 0.02$) was also observed.

Conclusions. Peritumoral CD45 expression significantly correlates with tumor differentiation, hormonal receptor status, and patient age. These findings suggest that CD45 could be a valuable prognostic biomarker, particularly relevant for immune regulation in T2DM-associated breast carcinoma, warranting further research.

Keywords. CD45, tumor microenvironment, breast cancer, hormone receptors, immune response, T2DM, Nottingham score, mitotic activity, Ki67, peritumoral infiltration.