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Prognostic relevance of claudins 4 and 7 in invasive breast carcinoma subtypes

Angela Flavia Logullo Waitzberg
Federal University of São Paulo, Brazil

Aims: Recently, a new molecular subtype denominated "claudin-low" (CL) was described in breast cancer and correlated to worse prognosis and to CD44+/CD24- stem cell profile. Among 19 known claudin proteins, isotypes 4 (CL4) and 7 (CL7) are the most common in the breast biology. Our aim was to verify differences in CL4 and CL7 immunoexpression between Luminal A, HER-2, and triple-negative breast cancer phenotypes; and their association to CD44/24 status and tumor prognosis.

Methods: Estrogen and progesterone receptor status (ER/PR), HER-2, CL4 and CL7 expression and CD44/24 profiles were evaluated in 803 invasive ductal breast carcinomas arranged into four tissue microarrays (TMA) and results were correlated with prognosis and important clinical data.

Results: 503 (62.6%) cases were positive for CL4 and 369 (46.0%) cases for CL7. The majority (199/283, 70.3%) of CL4 negative cases were clustered in the luminal A subtype whereas 63 (22.3%) showed triple-negative profile and the remaining 21 cases (7.4%) exhibited positive HER-2 expression ($p<0.001$). Claudin 7 negative samples (44.2%) tended to follow the same pattern. CL4 positive expression was significantly associated to HER-2 expression, presence of lymph nodes and increased tumor grades and inversely correlated to ER and PR expression. However, there was no association between CL7 expression and any of these features. Both CL4 and CL7 did not show correlation to the stem cell markers (CD44+/CD24-) or worse prognosis (survival and disease-free interval).

Conclusions: Claudins 4 and 7 individual status did not provide additional prognostic information within breast cancer subtypes.

Biography

Angela Flavia Logulo Waitzberg is currently appointed as an adjuvant professor at University of Sao Paulo Sp Brazil in the department of pathology. Her research interest is Pathology, Immunohistochemistry and oncological tumours.

waitzberg.angela@gmail.com

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