Basal-like immunophenotype markers and prognosis in early breast cancer

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ABSTRACT

Aims and background. Basal-like breast cancer is a distinct group of tumors with heterogeneous behavior, and not all have a poor prognosis. The present study analyzed the prevalence and prognosis of early basal-like breast cancer.

Methods and study design. A total of 112 patients with stage I and II breast cancer were retrospectively analyzed using immunohistochemical stains for estrogen receptor, progesterone receptor, HER2, cytokeratin 5/6 and epidermal growth factor receptor. Basal-like tumors were defined as being estrogen receptor, progesterone receptor and HER2 negative and cytokeratin 5/6 and/or epidermal growth factor receptor positive.

Results. Of the 112 cases, respectively 13 (11.6%) were basal-like, 77 (68.8%) luminal A or B, 13 (11.6%) HER2 positive and 9 (8%) undefined. In basal-like tumors, epidermal growth factor receptor and cytokeratin 5/6 expression was positive in 5 patients (38.5%) and 12 patients (92%), respectively. There was no significant correlation between basal-like breast cancer and age ($P = 0.207$), lymph node status ($P = 1.0$) or clinical stage ($P = 0.53$). Among all tested biomarkers, positivity was found in 81 (72.3%) for estrogen receptor, 13 (11.6%) for HER2, 11 (9.8%) for epidermal growth factor receptor and 36 (32.1%) for cytokeratin 5/6. Epidermal growth factor receptor expression was significantly correlated with estrogen receptor-negative ($P = 0.01$) and HER2-positive ($P = 0.02$) tumors. During a median follow-up of 61 months, there were 26 (23%) disease relapses and 12 (10.7%) deaths. No significant difference relating to disease-free survival and overall survival was noted between basal-like breast cancer and subtypes luminal A and B, HER2 positive and undefined.

Conclusions. The addition of cytokeratin 5/6 and epidermal growth factor receptor defines a small subgroup of patients with basal-like tumors. In a population with early breast cancer, basal-like tumors did not have a prognosis different from the other subtypes. Neither was there a significant association with clinicopathological features. The high frequency of epidermal growth factor receptor positivity in estrogen receptor-negative and HER2-positive tumors represents a potential target in clinical trials. Free full text available at www.tumorionline.it

Key words: basal-like, breast cancer, immunohistochemistry, prognosis, tumor markers.

Acknowledgments: The study was supported by the Brazilian agency Conselho Nacional de Desenvolvimento Científico e Tecnológico (CNPq) as a grant to Lina Cassol’s Master of Science academic degree awarded by the Faculty of Medicine at Pontifical Catholic University of Rio Grande do Sul, Porto Alegre, Brazil. All the experiments comply with the current Brazilian laws. The abstract of this manuscript was published in the proceedings book of the 1st IMPAKT Breast Cancer Conference 2009 in Brussels, Belgium. The authors declare no conflict of interest.

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Received August 25, 2009; accepted May 18, 2010.