

## Basal-like immunophenotype markers and prognosis in early breast cancer

Lina Cassol<sup>1</sup>, Marcia Silveira Graudenz<sup>2</sup>, Alice Zelmanowicz<sup>3</sup>, Anna Cancela<sup>4</sup>, Gustavo Werutsky<sup>1</sup>, Rodrigo Kraft Rovere<sup>1</sup>, and Bernardo Garicochea<sup>1</sup>

<sup>1</sup>Faculty of Medicine, Pontifical Catholic University of Rio Grande do Sul, Porto Alegre; <sup>2</sup>Department of Pathology, Federal University of Rio Grande do Sul, Porto Alegre; <sup>3</sup>Cancer Prevention Center, Santa Casa de Misericórdia Hospital, Porto Alegre; <sup>4</sup>South-American Office for Anticancer Drug Development (SOAD), Porto Alegre, Brazil

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### ABSTRACT

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**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 81 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](http://www.tumorionline.it)

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

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**Correspondence to:** Bernardo Garicochea, Faculty of Medicine, Head of Department of Oncology, São Lucas Hospital, Pontifical Catholic University of Rio Grande do Sul, Avenue Ipiranga 6690, room 228, Porto Alegre, Brazil. Tel +5551-33203319; e-mail [bgarico@terra.com.br](mailto:bgarico@terra.com.br)

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