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Outcome evaluation in pre-trastuzumab era between different breast cancer phenotypes: a population-based study on Italian women

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ABSTRACT

Aims and background. Based on estrogen receptor (ER), progesterone receptor (PgR) and Her2/neu (HER2) expression, four breast cancer subtypes have been distinguished: luminal A (ER and/or PgR/HER2-, Ki67 <14%), luminal B (ER and/or PgR/HER2-, Ki67 ≥14% or ER and/or PgR/HER2), triple-negative (ER-/PgR-/HER2-), and HER2 (ER-/PgR-/HER2). Our aim was to evaluate the prognosis of these phenotypes in the pre-trastuzumab era in a large cohort of Italian women.

Methods and study design. We studied 2347 breast cancer patients, in stage I-II, registered by the Modena Cancer Registry from 1999 to 2006 in the Modena province, Italy. Overall survival, disease-free survival and second non-mammary tumors were evaluated.

Results. A total of 1868 luminal A (79.6%), 195 luminal B (8.3%), 205 triple-negative (8.7%) and 79 HER2 (3.4%) patients were identified. A better prognosis was observed for luminal A than for luminal B, HER2 and triple-negative subtypes (5-year overall survival, 91% *vs* 89% *vs* 87% *vs* 86%, respectively, P <0.001). Disease-free survival for pT1a and pT1b tumors was worse in HER2 (82%) than in triple-negative (90%), luminal B (95%) and luminal A (97%) (P = 0.013). Finally, luminal B patients had a significantly higher rate of second non-mammary tumors than the other groups.

Conclusions. In the pre-trastuzumab era, luminal A patients showed a better 5-year overall survival than luminal B, HER2 and triple-negative patients, but in terms of disease-free survival, HER2 subtype represented an unfavorable group over time, whereas the triple-negative group had an increased risk of relapse in the first 42 months and then decreased. Among each prognostic factor, ER <10%, Ki67 >14% and HER2 overexpression are considered as risk factors, but only HER2 positivity seems to preserve the role over time.

Key words: breast cancer, HER2, outcome, second tumor.

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