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Breast cancer classification according to immunohistochemical markers: clinicopathologic features and short-term survival analysis in a population-based study from the South of Switzerland.

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BACKGROUND: Breast cancer may be classified into distinct molecular subtypes based on gene expression profiling and/or immunophenotypic characteristics. Aim of the study was to investigate prevalence, clinicopathologic features and overall survival (OS) of molecular subtypes, in a large European population-based study.

PATIENTS AND METHODS: All invasive breast cancers from 2003 to 2007 were selected from the files of Ticino Cancer Registry. Molecular subtypes were defined by immunohistochemical markers. Clinicopathological characteristics and short-term OS were analyzed.

RESULTS: Of 1214 invasive breast cancers, 73.2% were luminal A subtype, 13.8% luminal B, 7.4% basal like and 5.6% Her2/neu. Basal like presented largely in premenopausal women and displayed aggressive features, such as large tumor size, poorly differentiated cancers, high Ki-67 proliferation index and the worst 24-month OS. Luminal A included the highest percentage of patients >70, the highest proportion of stage I tumors and well/moderately differentiated lesions. Her2/neu was more frequent in postmenopausal women and showed the highest percentage of positive lymph nodes and stage IV cases.

CONCLUSION: This is a comprehensive European population-based study on breast cancer molecular subtypes. We provide strong evidence that the molecular classification is useful for clinical management and superior to World Health Organization classification in terms of short-term prognostic value.