



Contents lists available at ScienceDirect

The Breast

journal homepage: [www.elsevier.com/brst](http://www.elsevier.com/brst)

Original article

## Impact of subtypes and comorbidities on breast cancer relapse and survival in population-based studies



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### ARTICLE INFO

#### Article history:

Received 19 May 2018

Received in revised form

11 July 2018

Accepted 29 July 2018

Available online 30 July 2018

#### Keywords:

Breast cancer subtypes

Distant relapse

Locoregional relapse

Breast cancer survival

Population-based study

Switzerland

### ABSTRACT

**Objective:** To study the impact of subtypes and comorbidities on breast cancer (BC) relapse and survival in the heterogeneous patients of the real world.

**Methods:** We identified patients diagnosed with BC between January 2003 and December 2005 from six population-based Swiss cancer registries. Clinicopathologic data was completed with information on locoregional and distant relapse and date and cause of death for over 10-years. We approximated BC subtypes using grade and the immunohistochemical panel for oestrogen, progesterone and human epidermal growth factor 2 (HER2) receptor status. We studied factors affecting relapse and survival.

**Results:** Luminal A-like subtype represented 46% of all newly diagnosed BC (N = 1831), followed by luminal B-like (N = 1504, 38%), triple negative (N = 436, 11%) and HER2 enriched (N = 204, 5%). We observed regional disparities in subtype prevalence that contribute to explain regional differences in survival formerly described. Disease relapse and BC specific mortality differed by subtype and were lower for luminal A like tumours than for other subtypes for any stage at diagnosis. After a median follow-up of 10.9 years, 1311 (33%) had died, half of them 647 (16%) due to another disease, showing the importance of comorbidities. Omission of systemic therapies in selected patients was not associated with poorer BC specific survival, BC subtype and life expectancy playing a role.

**Conclusions:** Information on tumour subtype is necessary for an adequate interpretation of population-based BC studies. Measures of comorbidity or frailty help in the evaluation of quality of care in the highly heterogeneous patients of the real world.