

## **Breast cancer clinico-pathological indicators in the South of Switzerland from a pure opportunistic screening setting: a population-based study, 1996-2007**

### ***Background***

Although some clinico-pathological features, such as the incidence of in situ breast cancer (DCIS) and the diameter of invasive tumours, are sensitive indicators of the spread of early detection strategy, comprehensive population-based studies related to/concerning the effects of an opportunistic screening setting are still lacking. The aim of the study is to assess population-based temporal changes in indicators related to breast cancer screening in a pure opportunistic screening strategy in the South of Switzerland.

### ***Materials and methods***

Patients with DCIS or invasive breast cancer that were diagnosed between 1996 and 2007 were selected from the Ticino Cancer Registry (South of Switzerland). Time trends of age-adjusted incidence and mortality rate and as well as for main clinico-pathological features, such as tumour diameter, lymph node involvement, UICC stage, histologic grade, were analyzed.

### ***Results***

A total of 3047 incident cases of female breast cancer were identified: the proportion of DCIS with respect to invasive cases increased from 5.8% in the period 1996-2001 to 6.4% in the period 2002-2007. The median tumour size of invasive cancers decreased from 20mm in 1996-2001 to 18mm in 2002-2007 ( $p < 0.0001$ ). The median number of examined lymph nodes decreased from 2001 onwards, with an Annual Percentage Change of -18.7 (95%CI: -25.1; -11.8), whereas no change in the number of positive lymph nodes was observed. An increase of well differentiated invasive tumours (from 8% in the period 1996-2001 to 18% between 2002 and 2007;  $p < 0.001$ ) was detected.

### ***Discussion***

Although the incidence of DCIS increased, their proportion was lower than observed at the population-based level in countries where an organised screening is implemented. The median and mean tumour size decreased, but remained higher with respect to other countries. In Southern Switzerland early breast cancer detection seems well implemented but there is room for additional improvement. Our results indicate that high-resolution population-based clinico-pathologic features are less favourable in populations where an opportunistic screening strategy is implemented compared with populations where an organized programme is running.