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1135 – Breast cancer trends and geographic inequalities in Sergipe, Brazil: evidence from 1996–2022

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Introduction: This study aimed to evaluate long-term temporal trends and spatial patterns of breast cancer incidence and mortality in Sergipe, Brazil, identifying regional inequalities in cancer control.

Methods: This population-based study used secondary, de-identified data of a broader research project approved by the Research Ethics Committee of the Federal University of Sergipe (CAAE 91685425300005546). Incidence data (1996–2017) was obtained through the Aracaju Cancer Registry and mortality data (1996–2022), from the Mortality Information System for the population of Sergipe. Age-standardized rates (ASR) were calculated using the World Standard Population, along with age-specific rates. Temporal trends were assessed using Join point regression, estimating the Annual Percent Change (APC) and Average Annual Percent Change (AAPC). Spatial analysis included Bayesian smoothing and Moran's Index to detect clusters and assess geographic inequalities. The mortality-to-incidence ratio (MIR) was calculated as a proxy for health service effectiveness.

Results: Between 1996 and 2017, the age-standardized incidence rate increased from 28.8 to 37.8 per 100,000 women. The age-standardized mortality rate also rose, from 7.1 (1996–2005) to 13.0 per 100,000 (2018–2022). Incidence trends showed a significant increase among women aged 15–39 years (APC=2.5%; $p<0.001$) and 50–69 years (APC=2.1%; $p<0.001$), with rates stabilizing among those aged 70 years or older. Mortality increased more sharply among women aged ≥ 70 years until 2010 (APC=8.4%; $p<0.001$), followed by stabilization. The MIR increased from 0.25 (1996–2005) to 0.34 (2013–2017), suggesting limited improvement in survival. Spatial analysis revealed significant regional disparities.

Conclusions: Breast cancer incidence and mortality rates have increased substantially in Sergipe. The rising MIR and marked spatial heterogeneity reinforce the urgent need for public health strategies. Future analyses using net survival are warranted to provide a more accurate assessment of survival outcomes.

Ethics: Research Ethics Committee Approval (CAAE 91685425300005546).

Keywords: breast neoplasms; incidence; mortality.