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1187 – Temporal trends in advanced-stage breast cancer at diagnosis across Brazilian macroregions: a nationwide ecological study, 2015–2024

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Introduction: Advanced-stage breast cancer at diagnosis remains a major public health challenge in Brazil, particularly in light of the pronounced regional inequities in access to timely diagnostic pathways. It was evaluated whether the relative frequency of stage III–IV breast cancer at initial staging decreased, stabilized, or increased across Brazilian macroregions from 2015 to 2024.

Methods: A nationwide ecological time-series study was conducted using databases from the Brazilian Unified Health System Informatics Department (DATASUS) from 2015 to 2024. The EpiWriting platform (Techtrials, Brazil) supported database standardization, consistency checks, analytical structuring, and scientific writing. Female breast cancer records with known initial stage (I–IV) were included. Advanced stage was defined as stage III–IV. For each macroregion and year, the relative frequency of stage III–IV was calculated among stage-coded records. Temporal patterns were assessed using annual proportions, absolute change from 2015 to 2024, and Spearman correlation with the calendar year. Estimates should be interpreted as frequencies among records with known stages rather than unique patients.

Results: No Brazilian macroregion showed a sustained reduction in the relative frequency of stage III–IV disease over the study period. Increasing patterns were observed in the Midwest (47.6% in 2015 vs. 66.1% in 2024; $\rho=0.95$; $p=0.001$), South (45.3% vs. 49.8%; $\rho=0.95$; $p=0.001$), and Southeast (46.9% vs. 50.6%; $\rho=0.95$; $p=0.001$). In contrast, the North (56.7% vs. 56.6%; $\rho=0.54$; $p=0.128$) and Northeast (48.3% vs. 47.6%; $\rho=0.33$; $p=0.365$) remained broadly stable.

Conclusion: From 2015 to 2024, the relative frequency of stage III–IV breast cancer records did not decline in any Brazilian macroregion. However, stage distribution was only assessed among records with a known initial stage and may be influenced by care pathway-dependent registration, treatment-related capture, and temporal variation in data completeness. These findings should therefore be interpreted as descriptive patterns in registered records rather than unbiased population-level estimates of stage at diagnosis.

Ethics: Public data.

Keywords: breast neoplasms; neoplasm staging; Brazil.