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Hospitalized breast cancer patients in Mato Grosso (2014–2024): factors associated with survival and mortality predictors

Samuel Sotero Lourenço[1], Thiago Bonafé[2], Matheus de Souza Ribeiro[2], Bruna Alves Perondi[2], Eduarda Amabile Pontes Pinotti[2], Gabriel Almeida Alves[2], Lourrany Lorena de Lima Silva[2], Paolla Couto Moraes[2]

[1]Centro Universitário do Planalto Central – Brasília (DF), Brazil.
[2]Centro Universitário de Várzea Grande – Brasília (DF), Brazil.

Objective: To analyze factors associated with the survival of breast cancer patients hospitalized in the state of Mato Grosso using Hospital Information System of the Brazilian Unified Health System (SIH-SUS) data, focusing on demographic and hospital characteristics. **Methods:** This retrospective cohort study analyzed 7,546 breast cancer patients (ICD C50 and subcategories) hospitalized between 2014–2024, using data from SIH/DATASUS and the Mato Grosso Health Department (DwWeb SES-MT). The outcome was time to death, measured in days from admission, with predictors including demographics and hospitalization factors (e.g., Intensive Care Unit [ICU] admission, service complexity, costs). Descriptive and bivariate analyses were conducted using RStudio, with incidence density for rate ratios (RR), Kaplan-Meier for survival curves, and Mantel-Haenszel chi-square for hazard ratios, considering $p<0.05$ as statistically significant. **Results:** The analysis included 7,546 breast cancer patients, of whom 98.6% were women. Most were under 60 years old (67.7%) and resided in the metropolitan region of Cuiabá (54.8%). The majority received high complexity care (56.9%) and 7.9% died during hospitalization. Predictors of mortality included male sex (RR 13.53; 95% confidence interval [CI] 7.72–23.72; $p<0.001$), age over 60 years (RR 1.22; 95%CI 1.04–1.42; $p=0.050$), medium complexity care (RR 27.37; 95%CI 15.08–49.66; $p<0.001$), above-average costs (RR 4.91; 95%CI 3.81–6.32; $p<0.001$), ICU admission (RR 2.06; 95%CI 1.67–2.53; $p<0.001$), public healthcare (RR 1.74; 95%CI 1.43–2.11; $p<0.001$), and clinical medical specialty (RR 9.89; 95%CI 7.43–13.16; $p<0.001$). **Conclusion:** Factors such as male sex, age over 60 years, medium complexity care, high costs, ICU admission, public healthcare, and clinical care were identified as predictors of mortality in breast cancer patients, highlighting the need for early interventions and efficient resource management.

Keywords: risk factors; hospitalization; survival analysis.