

<https://doi.org/10.29289/25945394V36S11052>

1052 – Pharmacoeconomic analysis of second-line hormone therapy in advanced breast cancer in Brazil (2020-2025)

Lucas Xavier Boareto, Arthur de Sousa Silva, Marianne Alves Rodrigues, Maria Gabriela Bezerra de Souza, Valentina Pinheiro Marion, Jhonny Sobreira Farias, Caio Murilo dos Santos Pilicério, Cícero Felipe de Oliveira Xavier

¹Universidade Federal de Alfenas - Goiânia (GO), Brazil.

²Universidade Federal de Goiás - Goiânia (GO), Brazil.

Introduction: Endocrine resistance, operationalized as second-line endocrine therapy use in breast cancer, increases healthcare expenditure, yet its economic impact remains poorly characterized. This study evaluates the financial asymmetry between first- and second-line therapies in the Brazilian Public Health System (SUS), to quantify the economic burden of resistance.

Methods: Ecological, retrospective study following STROBE reporting guidelines using the DATASUS outpatient database (SIA-SUS/Oncology Panel) from 2020-2025. Procedure volumes and expenditures were analyzed for first (0304020346) and second-line therapies (0304020338/0304020354) per procedure. Trends were assessed using Joinpoint regression (Annual Percent Change, APC, with 95% confidence intervals). Differences in median cost per procedure (CPP), adjusted for inflation, were evaluated with the Mann-Whitney U test. A counterfactual analysis applied first-line median cost to second-line volume to estimate incremental expenditure.

Results: In total, 1,330,175 procedures were analyzed. First-line therapies accounted for 59.0% of the overall volume (n=784,992) and 27.6% of the total healthcare expenditures (R\$ 62.6 million), while second-line therapies represented 41.0% (n=545,183) yet consumed 72.4% (R\$ 164.3 million). Median CPP was R\$ 79.75 vs R\$ 301.51 (p=0.003). First-line use increased significantly (APC: +5.83%/year; 95%CI 4.47–7.23; p<0.001), while second-line therapies showed slower growth (APC: +1.84%/year; 95%CI 0.17–3.58; p=0.033). The incremental expenditure associated with second-line therapy was R\$ 120.9 million (mean annual: R\$ 20.2M).

Conclusion: Endocrine resistance imposes a substantial and disproportionate economic burden on the Brazilian Public Health System (SUS), with second-line therapies consuming most expenditures despite lower procedural volume. The incremental cost of R\$ 120.9 million reflects inefficiencies related to disease progression. These findings support prioritizing strategies to delay resistance, including optimization of first-line endocrine therapy, improved adherence, and cost-effective incorporation of novel agents. Interventions that prolong first-line effectiveness may reduce expenditures and improve sustainability in resource-constrained settings.

Ethics: Public data.

Keywords: hormone therapy; pharmacoeconomics; drug resistance; neoplasms; health care costs.