CAPESESP

RWD143

REAL WORLD HEALTHCARE RESOURCE UTILIZATION AND RELATED COSTS ASSOCIATED WITH LUNG CANCER IN THE BRAZILIAN PRIVATE MARKET

Reis Neto, JP and Busch, JM

BACKGROUND

Lung cancer (LC) was the most frequently diagnosed cancer in 2022, responsible for almost 2.5 million new cases and over 1.8 million deaths worldwide, responsible for close to one in eight (12.4%) cancers diagnosed globally and one in five (18.7%) cancer deaths being the leading cause of cancer mortality worldwide. The disease ranks first among men and second among women for both incidence and mortality, with male-to-female lung cancer incidence and mortality ratios of around 2. According to the 2023 estimates by the Brazilian National Cancer Institute, LC is the third most frequent tumor type in men and the fourth in women and a major contributor to cancer mortality. Age-standardized incidence and mortality rates vary by region, with higher burdens in East Asia and historically in high-income countries but increasing incidence among women and never-smokers has been described globally. Smoking is the cardinal risk factor for the development of LC, with an estimated 85% of diagnosed cases being associated with the current or previous consumption of tobacco others risks factors include exposure to ambient air pollution, and occupational carcinogens.

The most frequently diagnosed cancer in 2022

Responsible for close **to 1 in 8 cancers** diagnosed globally

1 in 5 cancer deaths being the leading cause of cancer mortality worldwide.

The 3rd most frequent tumor type in men and the 4th in women

Major contributor to cancer mortality in Brazil in 2023

OBJECTIVES

LC is often diagnosed at advanced stages and are associated with direct high-cost expenses. This study aims to assess the epidemiological data and cost of LC within a Brazilian private market.

METHODS

This retrospective cohort study of patients identified with LC (ICD-10 code C34) from January 2019 to December 2024 across a nationwide health insurance claims database of 60,824 beneficiaries. The primary outcome focused on analyzing the median cancer-related healthcare resource utilization and direct costs per patient per year after diagnosis, until the discontinuation of chemo/immunotherapy or radiotherapy due to treatment-related toxicity, disease progression, or death. The staging of the disease (TNM UICC 1988) at the time of diagnosis and initiation of treatment was evaluated. Kaplan–Meier curves were used to estimate the cumulative survival rates. Chi-square and Fisher's exact and Student's t-tests for categorical/continuous measures were used. Statistical significance for $p<0.05$.

From January/2019 to December/2024

60,824 beneficiaries

HCRU
- **Treatment**
  - **Chemotherapy**
  - **Radiotherapy**
  - **Immunotherapy**
- **Cost**

RESULTS

In this analysis, the age-standardized prevalence rate of LC is 260 cases per 100,000 population (mean age 72 years; 53% female). Annual rates of procedures/per patient were visits 8.9, emergency room visits 2.5, tests 115.2 and hospitalizations 1.5. The average length of hospitalization was 10.1 days. Annual direct medical costs in our cohort (USD$ 52,029 per patient) are primarily driven by high-cost systemic therapies—PD-1/PD-L1 inhibitors accounted for >60% of drug spend—consistent with recent reports highlighting the disproportionate budgetary impact of immunotherapy in lung cancer care, other costs were accounted as: VEGF/VEGFR monoclonal antibodies (9.3%), EGFR protein kinase inhibitors (6.3%), antineoplastic antimetabolic agents (3.9%), EGFR monoclonal antibodies (1.7%) and others (18.7%). **Regarding the stage at diagnosis, majority presented at advanced stages (III–IV), consistent with late-stage diagnosis patterns reported nationally.** The cumulative 5-year survival rate was 20.1% in this cohort.

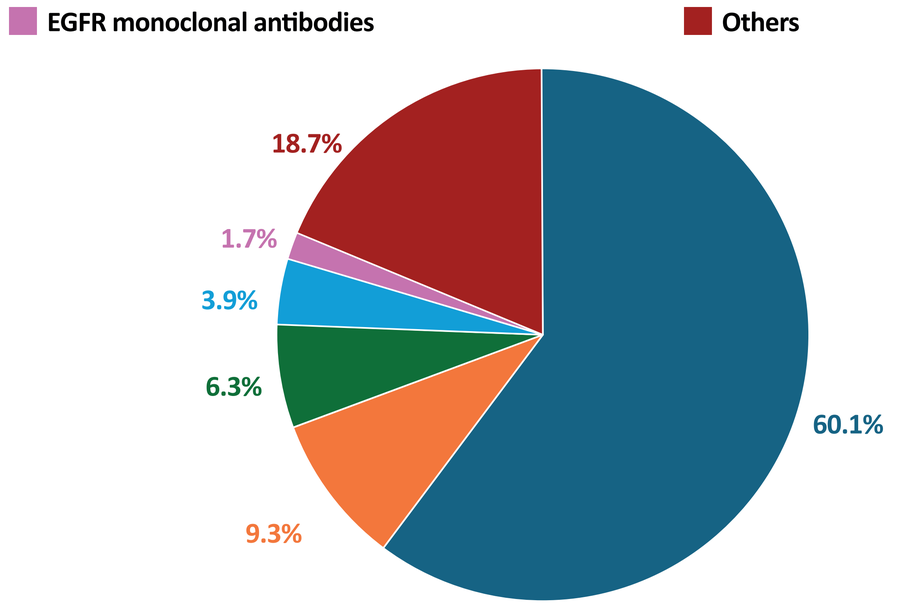
Annual Rates of Procedures

8.9	2.5	115.2	1.5
Visits	Emergency room	Tests	Hospitalization

Total Annualized Cost USD$ 52,029 / patient

The cumulative 5-year survival rate was 20.1% in this cohort

Immunotherapy in lung care



CONCLUSIONS

This real-world analysis demonstrates that lung cancer in the Brazilian private healthcare system imposes a substantial clinical and economic burden The study highlights the high prevalence of LC, with significant epidemiological impact, advanced-stage diagnosis, and poor survival in Brazil's private healthcare system. Globally, five-year survival from lung cancer tends to be below 20% in most countries, with little difference according to human development. Resource-intensive management drives substantial costs, primarily for molecular-targeted therapies. Price discrimination and volume discounts would help improve access. Further studies and discussion with all stakeholders are needed to identify patients who would benefit the most and to implement strategies to increase access to these potentially life-saving therapies.

REFERENCES

1- Bray F, Laversanne M, Sung H, Ferlay J, Siegel RL, Soerjomataram I, Jemal A. Global cancer statistics 2022: GLOBOCAN estimates of incidence and mortality worldwide for 36 cancers in 185 countries. CA Cancer J Clin. 2024 May-Jun;74(3):229-263. doi: 10.3322/caac.21834. Epub 2024 Apr 4. PMID: 38572751.

2- Estimativa 2023 : incidência de câncer no Brasil / Instituto Nacional de Câncer. – Rio de Janeiro : INCA, 2022.

3- Baldotto C, Aguiar WWS, Neto FM, de Lima VC, Mascarenhas E, Sousa TLF, Martins TC, Rocha-Junior MC, de Oliveira CKS, Correa-Netto NF, Prado GF. Cost-Effectiveness of Lung Cancer Screening in a High-Risk Population in Brazil. JCO Glob Oncol. 2025 Jul;11:e2500097. doi: 10.1200/GO-25-00097. Epub 2025 Jul 23. PMID: 40700665.

4- Sheehan DF, Criss SD, Chen Y, Eckel A, Palazzo L, Tramontano AC, Hur C, Cipriano LE, Kong CY. Lung cancer costs by treatment strategy and phase of care among patients enrolled in Medicare. Cancer Med. 2019 Jan;8(1):94-103. doi: 10.1002/cam4.1896. Epub 2018 Dec 21. PMID: 30575329; PMCID: PMC6346221.

5- de Nijs K, de Koning HJ, van der Aalst C, Ten Haaf K. Medical costs of lung cancer by stage, histology and first-line treatment modality in the Netherlands (2012-2021). Eur J Cancer. 2024 Sep;208:114231. doi: 10.1016/j.ejca.2024.114231. Epub 2024 Jul 18. PMID: 39047534.

6- Sardenberg RADS, Monteiro MR, Bognar CLFB, Gondim Teixeira VB, de Carvalho Moreira R, Sznejder H, Younes RN. Real-World Data on Metastatic Lung Cancer: Cost Analyses in Brazil From a Private Insurance Company's Perspective. JCO Glob Oncol. 2025 Mar;11:e2400253. doi: 10.1200/GO-24-00253. Epub 2025 Mar 28. PMID: 40153689.