Budget-Impact Analysis of Encorafenib Plus Binimetinib As a Treatment for Advanced NSCLC with BRAFV600E-Mutation in Older Adults from Argentina

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Vega C., Negrotto S. & Rey Ares L.

Pfizer, Argentina.

Introduction

Lung cancer is the leading cause of cancer death worldwide for both sexes[1]. This is also the case in Argentina, where 15.3% of all cancer-related deaths in 2022 were due to lung cancer[2]. Most lung cancer patients are diagnosed at advanced stages of the disease, resulting in low 5-year survival rates.

Lung tumors can be classified into two main groups based on their histology: non-small cell lung cancer (**NSCLC**) and small cell lung cancer (SCLC). Approximately 80-85% of all lung cancer cases are of the NSCLC type[3]. About 1-3% of patients with NSCLC have a mutation in the BRAF gene, of which 50% present the BRAFV600E mutation[4-6].

Treatment depends on the stage of the cancer. Molecular characterization of key mutations targeted by specific treatments enhances benefits for patients. The standard of care treatment for these patients in advanced metastatic stages is based on BRAF y MEK tyrosine kinase inhibitors[7].

Encorafenib is an oral, selective, reversible small-molecule RAF kinase inhibitor, with a long dissociation half-life of >30 hours. Binimetinib is an oral, ATP-uncompetitive, reversible inhibitor of MEK1 and MEK2 activation. For patients with treatment-naïve and previously treated BRAFV600E-mutant metastatic NSCLC, encorafenib plus binimetinib showed a meaningful clinical benefit with a safety profile[5]. This oral treatment was approved earlier in April this year for adult patients with BRAFV600E mutated (BRAF-m) advanced NSCLC (aNSCLC) from Argentina.

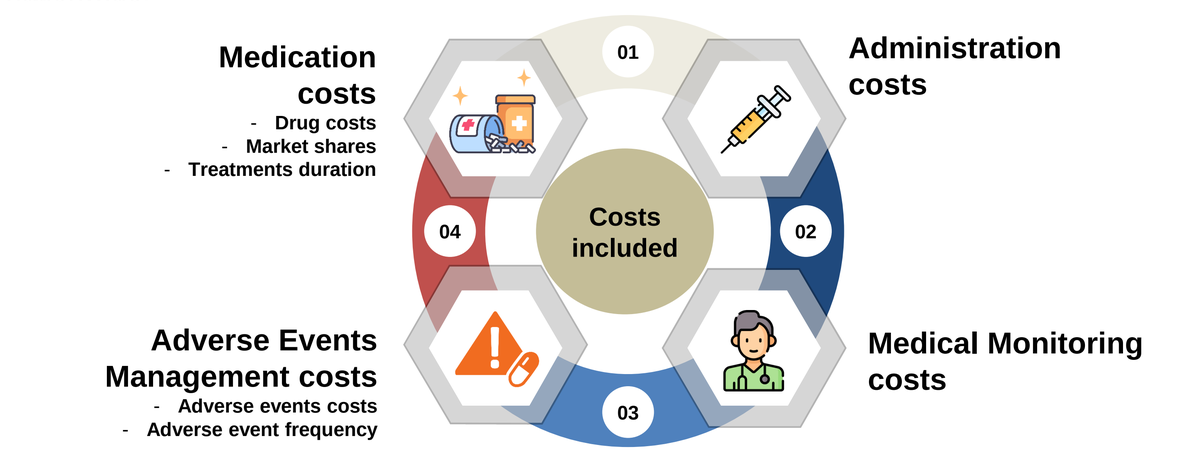
Objective

This study describes the budget impact of the reimbursement of encorafenib + binimetinib for the treatment of aNSCLC BRAFV600E mutated adult patients from the National Institute of Social Services for Retirees and Pensioners (INSSJP-PAMI) perspective in Argentina.

Methods

Model Overview

A budget impact model (BIM) was developed to compare a reference scenario reflecting the current market mix without encorafenib+binimetinib and a new therapy market mix scenario with encorafenib+binimetinib available. The budget impact includes a three years time horizon. PAMI provides social and healthcare services to around 80% of the elderly population nationwide.

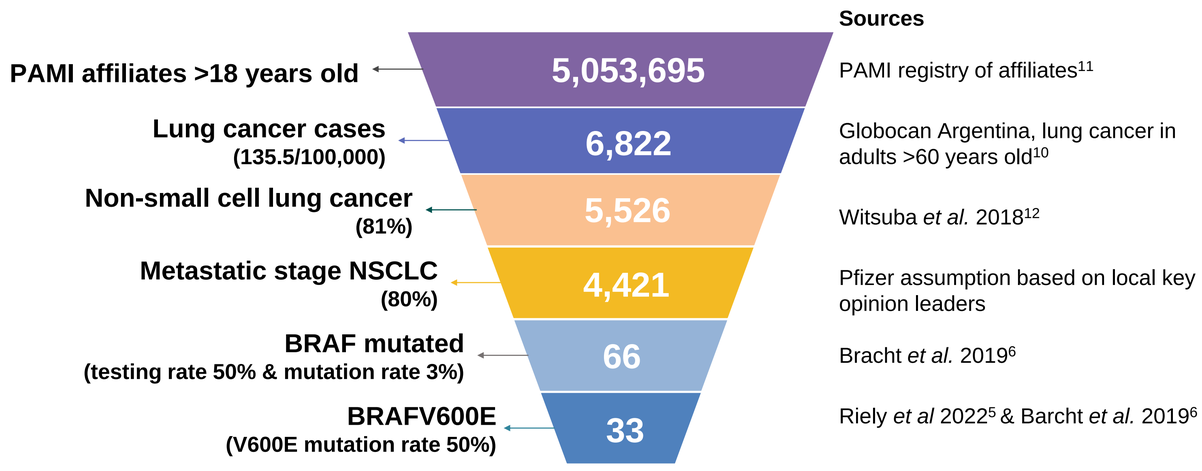


Key parameters were inputted based on published evidence and local expert opinion. All costs were considered from PAMI perspective and were expressed in 2024 US Dollars (average exchange rate: $873, May 2024). Healthcare resource use[8] and medication costs[9] were used form local sources.

Results

Eligible Population in PAMI

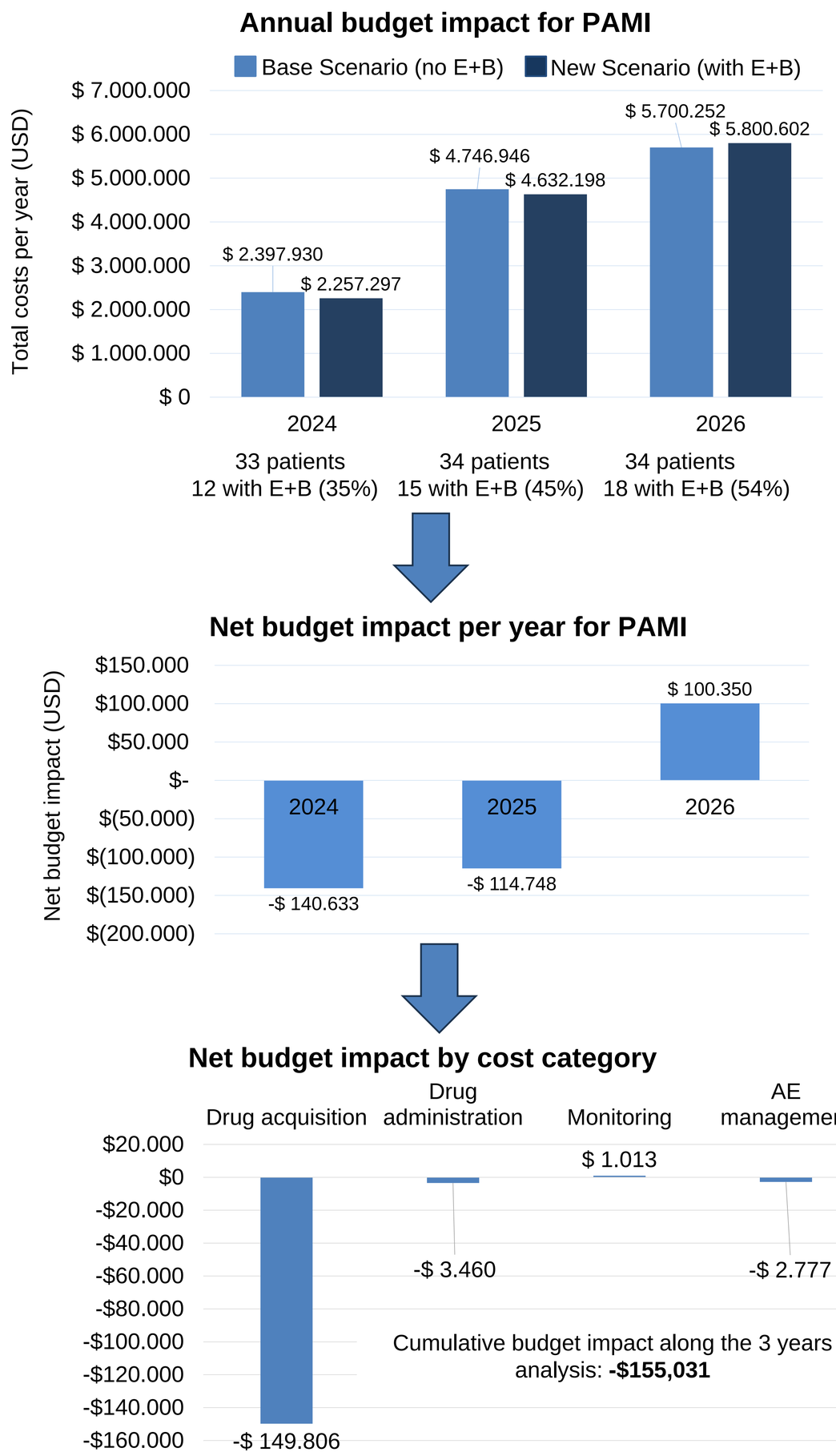
In Argentina, lung cancer incidence is 19.9 cases /100,000 inhabitants. As PAMI affiliates are predominantly adults over 60 years old, the corresponding incidence raises to 135.5 cases /100,000 inhabitants in 2022[10].



Epidemiological inputs were constant across the three years analysis. A 0.9%-year population growth[13] resulted in 34 patients for year 2 and year 3, adding a total of 101 eligible patients along the three-years time horizon.

Mean treatment duration by line and proposed market shares:

	Mean treatment duration	Anual market shares		
		2024	2025	2026
Encorafenib+Binimetinib	15.1 months[5]	35%	45%	54%
Dabrafenib+Trametinib	10.6 months[14]	30%	30%	30%
Immunotherapy	6.0 months *(KOL opinion)*	5%	5%	3%
Chemotherapy	6.0 months *(KOL opinion)*	5%	5%	3%
Immunotherapy + Chemotherapy	8.0 months *(KOL opinion)*	25%	15%	10%



Discussion

Along the three-year analysis, a total of 45 over the eligible 101 patients from PAMI would receive encorafenib + binimetinib. This represents savings for $155,031 for PAMI, mainly associated lower drug acquisition costs. As the number of patients receiving precision medicine-based therapies in years 2 and 3 of analysis growths, the cost of management of this pathology increases, requiring an investment towards the third year to incorporate more patients into therapies with a better safety profile and longer treatment duration.

The new scenario also shows savings in drug administration costs, as encorafenib and binimetinib are oral treatments that do not require hospital admission, improving patient experience and reducing treatment impact on their everyday activities. Furthermore, adverse events associated to encorafenib + binimetinib in these patients also represent savings compared to the base scenario. The most frequent adverse events in patients treated with encorafenib + binimetinib are increased levels of hepatic enzymes and diarrhea, with an easier to handle safety profile compared to the other available treatments.

Sensitivity analysis indicates that epidemiology inputs followed by drug acquisition costs are the variables with higher impact in the budget impact analysis.

Conclusions

This analysis indicates that incorporating more patients into BRAF-MEK inhibitor therapies represents savings for PAMI and results in a reduction in the healthcare resources allocated for the treatment of BRAF-m aNSCLC patients.

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