

# Cemiplimab and Pembrolizumab for Advanced Non-Small Cell Lung Cancer With PD-L1 $\geq$ 50%: Number Needed to Treat and Cost of Preventing an Event in the Brazilian Private Healthcare System Perspective

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## Objective

- To analyze the number needed to treat (NNT) and cost of preventing an event (COPE) for cemiplimab (CEMI) and pembrolizumab (PEMBRO) as first-line treatments for advanced non-small-cell lung cancer with PD-L1  $\geq$  50%, under the Brazilian private healthcare perspective.

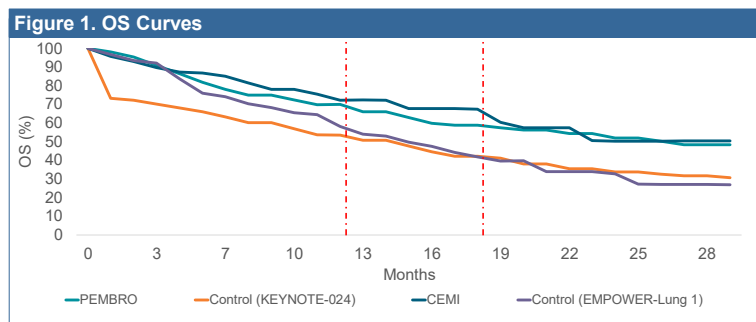
## Methods

- The NNT were obtained from the digitized survival curves of the pivotal trials (using Engauge Digitizer software): EMPOWER-Lung 1<sup>1</sup> (cemiplimab) and KEYNOTE-024<sup>2</sup> (pembrolizumab).
  - NNT was calculated as the inverse of absolute risk reduction (ARR)<sup>3,4</sup>.
  - NNT numbers were rounded to its closest integer.
  - Once the maximum available follow-up in EMPOWER-Lung 1 was 18 months, the 12 and 18-month timepoints were considered.
- Treatment costs were estimated using labelled dosing, median duration of treatment as proxy for treatment duration and drugs ceiling prices in the private setting (obtained from CMED<sup>5</sup>).
  - The median treatment duration used was 6.3 months for cemiplimab<sup>1</sup> and 7.9 months for pembrolizumab<sup>2</sup>.
- COPE was calculated as the treatment cost multiplied by the unrounded NNT.

## Results

### Number Needed to Treat

- The control groups (chemotherapy) had similar 12-month OS results (Figure 1):
  - 53.6% in the KEYNOTE-024 and 54.1% in the EMPOWER-Lung 1.



- The PFS and OS time points, as well as the ARR and NNT, are presented below (Table 1).

Outcome	KEYNOTE-024				EMPOWER-Lung 1			
	PEMBRO	Control	ARR	NNT	CEMI	Control	ARR	NNT
<b>OS (%)</b>								
12 months	70.1%	53.7%	16.442	6	72.5%	54.1%	18.405	5
18 months	59.1%	42.4%	16.621	6	60.4%	39.7%	20.733	5
<b>PFS (%)</b>								
12 months	41.6%	14.3%	27.309	4	40.7%	7.3%	33.337	3
18 months	31.9%	7.0%	24.873	4	28.0%	3.7%	24.354	4

- The rounded OS NNT were stable for both treatments (Table 1):
  - NNT 5 for cemiplimab and 6 for pembrolizumab in the two timepoints, respectively.
  - For cemiplimab, the rounded PFS NNT were 3 and 4 in the 12-month and 18-month timepoints, respectively;
  - For pembrolizumab, rounded NNT was 4 in both periods.

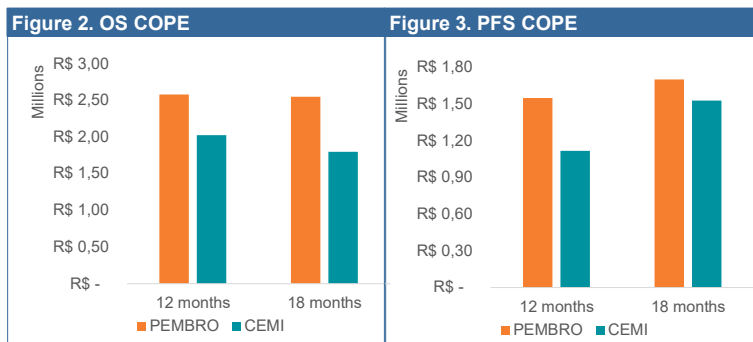
### Treatment Costs

- Considering the median treatment duration, the estimated cost per treatment was :
  - R\$ 371,833.28 for a median 6.3 months of treatment with cemiplimab;
  - R\$ 423,323.70 for a median 7.9 months of treatment with pembrolizumab.

### Cost to Prevent an Event

COPE values for OS in the 12 and 18-month timepoints were as follows (Figure 2) :

- R\$2,020,284 and R\$1,793,436 for cemiplimab;
- R\$2,574,648 and R\$2,546,920 for pembrolizumab.



For PFS, COPE values in the 12 and 18-month timepoints were (Figure 3):

- R\$1,115,377 and R\$1,526,785 for cemiplimab;
- R\$1,550,125 and R\$1,701,940 for pembrolizumab.

## Conclusion

Cemiplimab from EMPOWER-Lung 1 showed similar and numerically better NNT and COPE values compared to pembrolizumab from KEYNOTE-024. Longer follow-up from EMPOWER-Lung 1 will help to refine the analysis.

## References

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