VALUE OF AXICABTAGENE CILOLEUCEL VERSUS CHEMOTHERAPY IN THE LARGE B-CELL LYMPHOMA TREATMENT: HEALTH OUTCOMES BASED ON THE NUMBER OF PATIENTS TREATED IN SPAIN

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INTRODUCTION

- Diffuse large B-cell lymphoma (DLBCL) is the most common type of malignant lymphoma worldwide[1]. Approximately 30-40% of DLBCL will develop relapsed/refractory (R/R) disease[1,2], for whom the historical median overall survival (OS) is approximately 6 months[3].
- Axicabtagene ciloleucel (axi-cel), a chimeric antigen receptor (CAR)-T cell therapy, has demonstrated promising results in terms of survival and response rates[4], however the actual number of patients treated in Spain differs from epidemiology estimations.

OBJECTIVE

The study aimed to assess the value of axi-cel versus rituximab-based chemotherapy (CT) in the treatment of DLBCL R/R and primary mediastinal large B-cell lymphoma (PMBCL) after ≥2 lines of systemic therapy, in Spain, based on the number of patients treated.

METHODS

- In order to estimate the life years gained (LYG) and quality-adjusted life years (QALYs) for axi-cel and CT over a lifetime horizon, a partitioned survival mixture-cure model (PS-MCM) was used. The model, with monthly duration cycles, comprised the following health states: pre-progression, post-progression and death.
- The efficacy data for axi-cel was obtained from the ZUMA-1 trial after 4-year follow-up[5]. CT OS was derived from the SCHOLAR-1 study[3], after adjust the baseline characteristics of patients by a propensity score matching. As progression-free survival (PFS) was not collected in SCHOLAR-1, CT PFS was estimated based on PFS/OS axi-cel ratio derived from ZUMA-1.
- Axi-cel OS and PFS curves were extrapolated beyond the follow-up period by a log-normal and Gompertz distributions, respectively. OS curve for CT was adapted to a Gompertz distribution.
- The utility value assigned for pre-progression state (0.72) were obtained from ZUMA-1[6] and for post-progression state (0.39) from literature[7]. Under a conservative approach, a utility decrement of -0.05 was associated to the axi-cel related toxicities[6].
- In the base case, the incremental results of axi-cel versus CT were evaluated in a cohort of 183 patients, according to the number of cases treated reported in the "Spanish Plan to Tackle Advanced Therapies" (from May 2020 to June 2021)[8].
- In an alternative scenario, the results were analysed in a cohort of 490 patients, according to the number of patients with DLBCL eligible to be treated with axi-cel in Spain[9].
- Assumptions and parameters were validated by an expert panel in the haemato-oncology field.

RESULTS

- In the base case (n=183), over a lifetime horizon, axi-cel versus CT would generate an increase of 162% in LYG (1,313 LYG) and a 165% in QALYs (1,030 QALYs) (Table 1).

Table 1. Base case results (n=183 patients)

Health Outcomes	Axi-cel	Chemotherapy	Incremental
TOTAL LYG	2,122	809	1,313
LYG in pre-progression state	2,008	752	1,256
LYG in post-progression state	114	57	56
TOTAL QALYs	1,654	624	1,030
QALYs in pre-progression state	1,619	602	1,017
QALYs in post-progression state	44	22	22
QALY decrements due to AEs	-9	0	-9

AE, adverse event; Axi-cel, axicabtagene ciloleucel; QALY, quality-adjusted life year; LYG, life years gained.

- In the alternative scenario (n=490), the results could increase to 3,515 LYG and 2,759 QALYs with axi-cel versus CT (Table 2).

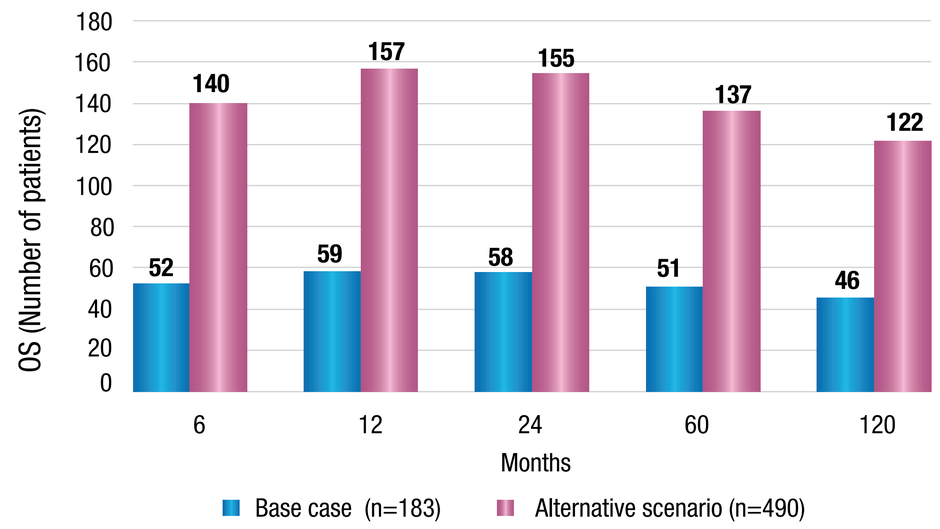
Table 2. Alternative scenario results (n=490 patients)

Health Outcomes	Axi-cel	Chemotherapy	Incremental
TOTAL LYG	5,681	2,166	3,515
LYG in pre-progression state	5,377	2,013	3,363
LYG in post-progression state	304	153	151
TOTAL QALYs	4,430	1,671	2,759
QALYs in pre-progression state	4,335	1,611	2,724
QALYs in post-progression state	119	60	59
QALY decrements due to AEs	-25	0	-25

AE, adverse event; Axi-cel, axicabtagene ciloleucel; QALY, quality-adjusted life year; LYG, life years gained.

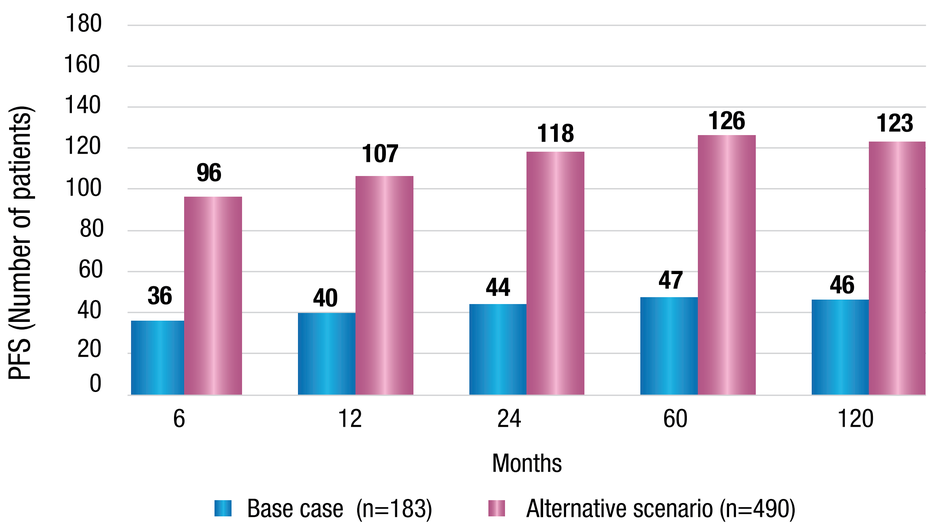
- Consequently, treating with axi-cel versus CT the entire population eligible to receive axi-cel (n=490) compared to the currently treated population (n=183), would result in an increase of 2,202 LYG and 1,728 QALYs.
- Considering the modelled efficacy data, axi-cel versus CT would increase, at 5 years, the number of patients in PFS by 195% (n=47 in the base case and n=126 in the alternative scenario) and the number of surviving patients by 194% (n=51 in the base case and n=137 in the alternative scenario) (Figure 1 and Figure 2).

Figure 1. Incremental number of patients in OS*



*Incremental number of patients with axi-cel versus CT in OS in the base case considering a cohort of 183 patients, and in the alternative scenario considering 490 patients.
OS, overall survival.

Figure 2. Incremental number of patients in PFS*



*Incremental number of patients with axi-cel versus CT in PFS in the base case considering a cohort of 183 patients, and in the alternative scenario considering 490 patients.
PFS, progression-free survival.

CONCLUSIONS

Since axi-cel would significantly improve health outcomes versus CT, it is crucial to make efforts to increase the number of patients treated with axi-cel in Spain.

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DISCLOSURES

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