The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

902.HEALTH SERVICES AND QUALITY IMPROVEMENT - LYMPHOID MALIGNANCIES

Cost-Effectiveness of Axicabtagene Ciloleucel Versus Mosunetuzumab in Relapsed/Refractory Follicular Lymphoma in the US

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Introduction

Anti-CD19 chimeric antigen receptor T-cell (CAR-T) therapies, including axicabtagene ciloleucel (axi-cel), and CD20 × CD3 T-cell-engaging bispecific monoclonal antibodies, such as mosunetuzumab (mosun), are novel therapies for 3L+ relapsed/refractory (r/r) follicular lymphoma (FL) that have recently been approved by the US Food and Drug Administration. This analysis assessed the cost-effectiveness of axi-cel compared to mosun in r/r 3L+ FL from a US third-party payer perspective.

Methods

A three-state (progression-free [PF], progressed disease [PD], and death) partitioned-survival model was used to compare the two treatments over a lifetime horizon in a hypothetical cohort of US adults (age ≥18) receiving 3L+ treatment for r/r FL. ZUMA-5 (NCT03105336) and GO29781 (NCT02500407) trial data were used to inform progression-free survival (PFS) and overall survival (OS) for axi-cel and mosun, respectively. Survival curves for axi-cel were estimated using an exponential distribution for both PFS and OS. In the base case analysis, 40% of axi-cel patients alive at 5 years were assumed to experience long-term remission (i.e., functional cure), and therefore followed general population mortality adjusted by a standardized mortality ratio. This assumption was informed by the literature. Mosun survival was modeled via hazard ratios (HRs) applied to axi-cel exponential survival curves. For PFS, the HR value was estimated via a matching indirect comparison to adjust for differences between the trial populations. As a conservative assumption, a HR of 1.0 was used to model mosun OS due to lack of published results. The mosun arm did not include the cure assumption at 5 years because long-term remission is not expected with monoclonal antibodies in r/r FL.

Health state utilities (HSU), healthcare resource use (HCRU), and treatment pattern inputs were obtained from literature. Costs for treatment and administration, adverse event management, monitoring resource use, HCRU, and end-of-life were included in the model. Key model outcomes included discounted (at 3% per year) total and incremental costs, life years (LYs), and quality adjusted life years (QALYs), as well as incremental cost-effectiveness ratios (ICERs). Scenario analyses were conducted on the cure assumption and all input parameters were individually varied by ±20% of their base case values in one-way sensitivity analysis (OWSA) to assess parameter uncertainty.

Results

Axi-cel use led to increases of 1.51 LY and 1.80 QALY (Table 1) compared to mosun. Progression-free survival for axi-cel patients was 7.11 LY compared to 1.80 LY for mosun, which resulted in a PF state cost increase of $215,045 primarily driven by the one-time cost of axi-cel treatment. Conversely, axi-cel costs were $63,000 less than mosun in the PD state, as patients spent less time with PD and had lower costs for subsequent treatment lines. Total incremental costs for axi-cel were $151,425, resulting in an ICER of $84,016/QALY gained.

Analysis of lower cure fractions indicated cost-effectiveness across a wide range of values. Additionally, the OWSA indicated the most impactful inputs for the ICER were mean patient age, the relative dose intensity (RDI) of mosun, PF and PD HSUs, and PD HCRU. Inputs with the largest impact on total incremental costs were RDI, HCRU, and CAR-T infusion hospitalization duration.

Conclusions

Axi-cel is cost-effective versus mosun in r/r 3L+ FL at an ICER of $84,016/QALY gained, which is far lower than the commonly-cited US willingness-to-pay threshold of $150,000/QALY. This analysis demonstrates the value of using axi-cel, reflecting the aggregate benefits of a one-time therapy, reduction in need for subsequent treatment lines, and population segment experiencing effective cure.

Table 1. Cost-effectiveness Model Results*

	Axi-cel	Mosunetuzumab	Difference (Axi-cel minus Mosunetuzumab)
Costs			
PFS costs	$497,514	$282,469	$215,045
PD costs	$115,582	$178,882	-$63,300
End-of-life costs	$877	$1,197	-$320
Total costs	**$613,973**	**$462,547**	**$151,425**
Health Outcomes			
PFS LYs	7.11	1.80	5.31
PD LYs	3.15	6.94	-3.79
Total LYs	**10.26**	**8.74**	**1.51**
PFS QALYs	5.72	1.45	4.27
PD QALYs	2.05	4.52	-2.47
Total QALYs	**7.77**	**5.97**	**1.80**
ICER: Δ$/ΔQALY			**$84,016**

PFS: Progression free survival; PD: Progressive Disease; LY: life years; QALYs: quality-adjusted life years; ICER: incremental cost-effectiveness ratio; *- Discounted results

Figure 1

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