

Cost-Effectiveness Analysis of Tisagenlecleucel for the Treatment of Relapsed or Refractory Diffuse Large B-Cell Lymphoma Patients in Taiwan

Kuan-Wei Lai¹, Ming Yao², Bor-Sheng Ko³, Sze-Hwei Lee⁴, Jui-Che Chen³, Hui-Chu Lang¹. ¹National Yang Ming Chiao Tung University, Taipei, Taiwan ²Division of Hematology, Department of Internal Medicine, National Taiwan University Hospital, College of Medicine, Taipei, Taiwan ³Department of Hematological Oncology, National Taiwan University Cancer Center, Taipei, Taiwan ⁴Department of Laboratory Medicine, National Taiwan University Hospital, Taipei, Taiwan

ISPOR 2025 May 13-16, 2025 Montreal, Canada

EE270

Background

- Diffuse large B-cell lymphoma (DLBCL) is the most common and aggressive subtype of B-cell non-Hodgkin lymphoma, accounting for approximately 30% of all cases.
- Tisagenlecleucel, a chimeric antigen receptor T-cell (CAR-T) therapy, has shown favorable efficacy in clinical trials and is reimbursed under Taiwan's National Health Insurance (NHI) for adult patients with relapsed or refractory DLBCL (R/R DLBCL) who have failed two or more lines of therapy.
- Despite its availability, no real-world costeffectiveness analysis specific to Taiwan has been conducted.

Objectives

• To evaluate the cost-effectiveness of tisagenlecleucel compared to allogeneic hematopoietic stem cell transplantation (allo-SCT) with R/R DLBCL patients from the payer's perspective in Taiwan.

Methods

- A three-state partitioned survival model was developed from the payer's perspective to assess the cost-effectiveness of tisagenlecleucel compared to allo-SCT.
- Clinical efficacy and costs data were obtained from the National Taiwan University Hospital data center, while utility values were sourced from the published literature.
- A 10-year analytic horizon was applied, with both costs and outcomes discounted at 3% annually.
- The willingness-to-pay (WTP) threshold was based on Taiwan's 2024 per capita GDP.

Results

- The base case analysis showed that tisagenlecleucel resulted in incremental costs of NT\$7,524,216 and additional effectiveness of 2.29 QALYs. The ICER was NT\$3,292,826/QALY.
- One-way sensitivity analysis demonstrated that the model was most sensitive to the cost of allo-SCT hospitalization and the price of tisagenlecleucel.
- In probabilistic sensitivity analysis, at a WTP threshold of NT\$3,310,284/QALY, tisagenlecleucel had a 43.8% probability of being cost-effective.

Table 1. Demographics

Characteristics	Tisagenlecleucel (N=29)	Allo-SCT (N=24)	р	
Median age (range)	63 (19-83)	56 (38-71)	0.1392	
Sex (%)				
Male	18 (62.07)	19 (79.17)	0.1171	
Female	11 (37.93)	5 (20.83)		
Numbers of previous				
lines of treatment (%)				
2	5 (17.24)	1 (4.17)	0.1269	
3	9 (31.03)	6 (25.00)		
≥4	14 (48.28)	17 (70.83)		
Unknown	1 (3.45)	0 (0.00)		
Prior HSCT (%)				
Yes	9 (35.71)	6 (25.00)	0.6274	
No	20 (64.29)	18 (75.00)		
HSCT, hematopoietic stem cell tr	ansplantation			

Table 2. Base case results

Treatment	Total Costs (NTD)	Total QALYs	Incremental Costs (ΔC)	Incremental QALYs (ΔΕ)	ICER (ΔC/ΔE)
Tisagenlecleucel	\$9,638,982	5.25	\$7.524.216	2.29	\$3,292,826
Allo-SCT	\$2,114,767	2.96	\$7,324,210		



Figure 1. Deterministic sensitivity results



IRB: 202501075RIND



Conclusions

 Tisagenlecleucel appears to be a cost-effective treatment option compared to allo-SCT for adult patients with relapsed or refractory DLBCL in Taiwan, based on real-world data and from the perspective of the national payer.