Real-World Treatment Patterns and Outcomes of Patients with Large B-cell Lymphoma Who Received Loncastuximab Tesirine Prior to Chimeric Antigen Receptor T-Cell Therapy

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Introduction

- CD19-directed chimeric antigen receptor modified T-cell (CAR-T) therapy is standard-of-care in relapsed/refractory diffuse large B-cell lymphoma (DLBCL).
- Loncastuximab tesirine (loncastuximab tesirine-lpyl [Lonca]) is a CD19-targeted antibody–drug conjugate approved for the treatment of DLBCL after at least two prior lines of systemic therapy.
- Data describing the efficacy of anti-CD19 CAR-T therapies in patients with DLBCL treated with prior CD19-directed therapies are limited.
- This study examined real-world treatment patterns and outcomes among patients in the US who received Lonca as either bridging therapy or the last line of therapy (LOT) prior to their first CAR-T infusion.

Patients

- Adults (≥18 years) with DLBCL who received Lonca as either bridging therapy or the last LOT before their first anti-CD19 CAR-T infusion.
- Patients with missing dates for LOT or mantle cell lymphoma were excluded.

Methods

- Patients who received Lonca between 2018 and 2022 were identified from the CIBMTR registry.
- Outcomes assessed included the best response to Lonca (i.e., complete remission, partial remission, stable disease/no response, progressive disease), best response to CAR-T, progression-free survival (PFS), overall survival (OS), and relapse/progression post-CAR-T, and cause of death.
- Kaplan-Meier estimates were determined for OS and PFS at 6, 12, and 24 months post-CAR-T without censoring subsequent hematopoietic cell transplant.

Conclusions

- In this small, observational, real-world study, treatment of patients with Lonca prior to CAR-T infusion did not preclude subsequent responses to CD19-directed CAR-T therapy.
- Studies in a large patient population are warranted to confirm the findings.

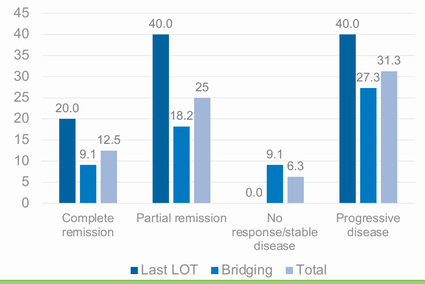
Characteristics

Variable	No. (%)
No. of patients	16
Demographic characteristics	
Age, median (range), yrs	63.2 (42.5-79.9)
Male	12 (75)
White	13 (81.3)
Not Hispanic or Latino	12 (75)
Sub-disease classification	
DLBCL	15 (93.8)
Follicular, unknown grade	1 (6.3)
Disease stage at diagnosis	
Stage I/II	3 (18.8)
Stage III/IV	11 (68.8)
Not reported	2 (12.5)
Therapy prior to CAR-T	
No. prior LOTs, median (range)	4.0 (2.0-7.0)
Prior hematopoietic cell transplant	4 (25)
Refractory to first LOT	
No	7 (43.8)
Yes	6 (37.5)
Not assessed	3 (18.8)
CAR-T product	
Axicabtagene ciloleucel	16 (100)
Disease status at CAR-T	
Refractory disease	10 (62.5)
Sensitive relapse	6 (37.5)
Lonca therapy	
Lonca as last LOT	5 (31.3)
Lonca as bridging therapy	11 (68.8)
No. of cycles, median (range)	1.0 (1.0-5.0)
Follow-up of survivors	
Median (range), months	24.2 (6.4-37.4)

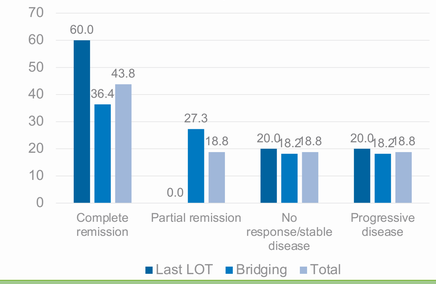
Outcomes

Time intervals and frequency of outcomes	Lonca therapy type: Last LOT n=5	Lonca therapy type: Bridging therapy n=11	Total N=16
Duration of Lonca line of therapy, days			
Mean (SD)	66.8 (33.17)	42.7 (19.99)	50.3 (26.32)
Median (Q1, Q3)	57.0 (57.0-91.0)	43.0 (24.0-43.0)	43.0 (33.0-57.0)
Range	22.0-107.0	22.0-95.0	22.0-107.0
Time from end of Lonca therapy to CAR-T, days			
Mean (SD)	146.8 (122.24)	22.7 (28.96)	61.5 (89.84)
Median (Q1, Q3)	211.0 (28.0-237.0)	13.0 (6.0-28.0)	16.5 (6.5-74.0)
Range	1.0-257.0	1.0-100.0	1.0-257.0
Time from apheresis to CAR-T, days			
Mean (SD)	29.4 (3.36)	39.0 (22.75)	36.0 (19.21)
Median (Q1, Q3)	28.0 (27.0-33.0)	33.0 (28.0-40.0)	31.0 (27.5-34.5)
Range	26.0-33.0	23.0-104.0	23.0-104.0
Time from start of lymphodepleting chemotherapy to CAR-T, days			
Mean (SD)	5.0 (0.00)	5.7 (2.45)	5.5 (2.03)
Median (Q1, Q3)	5.0 (5.0-5.0)	5.0 (5.0-5.0)	5.0 (5.0-5.0)
Range	5.0-5.0	4.0-13.0	4.0-13.0
Relapse/progression, without censoring subsequent HCT, No. (%)			
Alive and disease/progression free	2 (40.0)	2 (18.2)	4 (25.0)
Relapse/progression/treatment failure/death due to primary disease	3 (60.0)	7 (63.6)	10 (62.5)
Death due to other causes	0 (0.0)	2 (18.2)	2 (12.5)

Best response to Lonca LOT



Best response to CAR-T

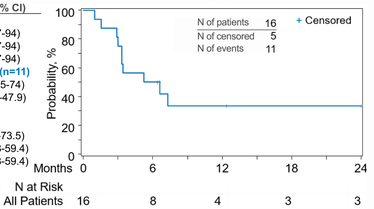


Outcomes of CAR-T

OS

Prob (95% CI)	
Last LOT (n=5)	
6 m	60 (18.7-94)
12 m	60 (18.7-94)
24 m	60 (18.7-94)
Bridging Therapy (n=11)	
6 m	45.5 (18.5-74)
12 m	15.2 (0.1-47.9)
24 m	NE
Total (N=16)	
6 m	50 (26.5-73.5)
12 m	33.3 (11.8-59.4)
24 m	33.3 (11.8-59.4)

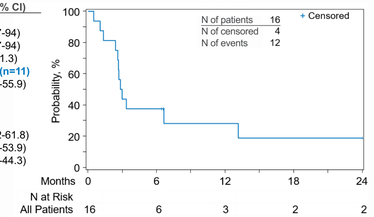
NE: not estimable.



PFS

Prob (95% CI)	
Last LOT (n=5)	
6 m	60 (18.7-94)
12 m	60 (18.7-94)
24 m	40 (6-81.3)
Bridging Therapy (n=11)	
6 m	27.3 (6.3-55.9)
12 m	NE
24 m	NE
Total (N=16)	
6 m	37.5 (16.2-61.8)
12 m	28.1 (8.4-53.9)
24 m	18.8 (2.8-44.3)

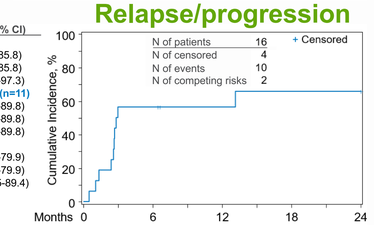
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Relapse/progression

Prob (95% CI)	
Last LOT (n=5)	
6 m	40 (3.4-85.8)
12 m	40 (3.4-85.8)
24 m	60 (12.8-97.3)
Bridging Therapy (n=11)	
6 m	63.6 (32-89.8)
12 m	63.6 (32-89.8)
24 m	63.6 (32-89.8)
Total (N=16)	
6 m	56.3 (31-79.9)
12 m	56.3 (31-79.9)
24 m	65.6 (36.5-89.4)

NE: not estimable.



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