

con il patrocinio di



SIE
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di Ematologia

La rivoluzione terapeutica nel **linfoma** e nel **mieloma**

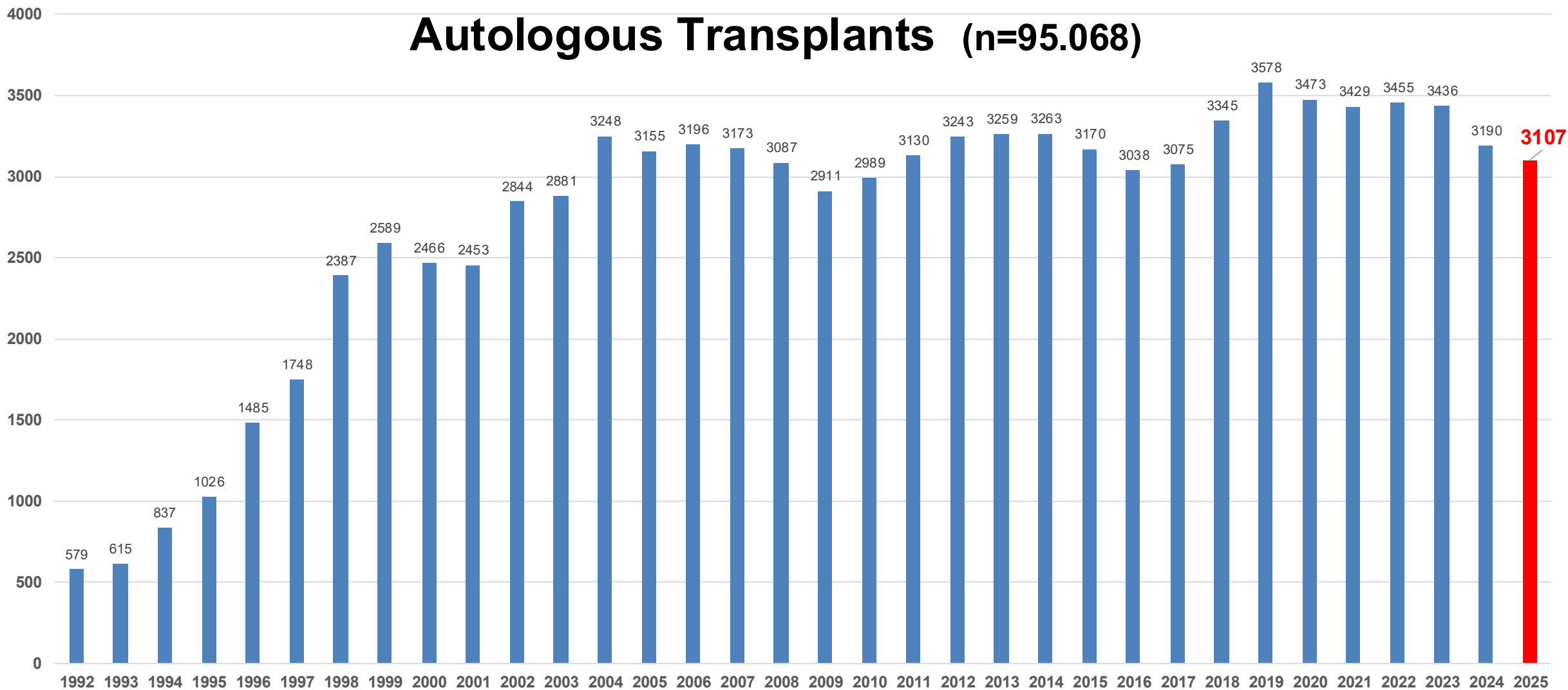
Napoli, Hotel Royal Continental • 14-15 Maggio 2026



The big debate:
**CAR-T vs bispecifici nei LNH B cell
aggressivi ed indolenti**

Autologous Transplants (n=95.068)

N. of Transplants

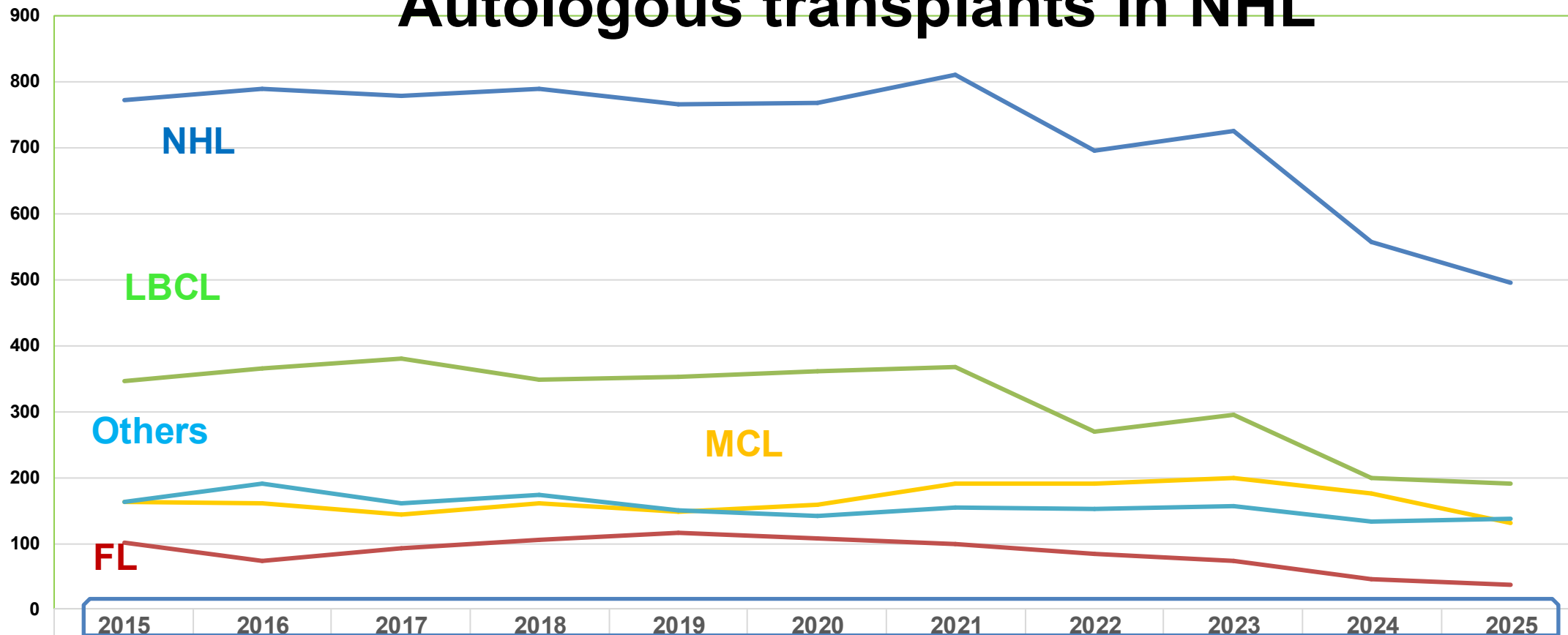


Years

2023 vs 2025: -9.6%
2024 vs. 2025: -2.6 %

Autologous transplants in NHL

N. of Transplants



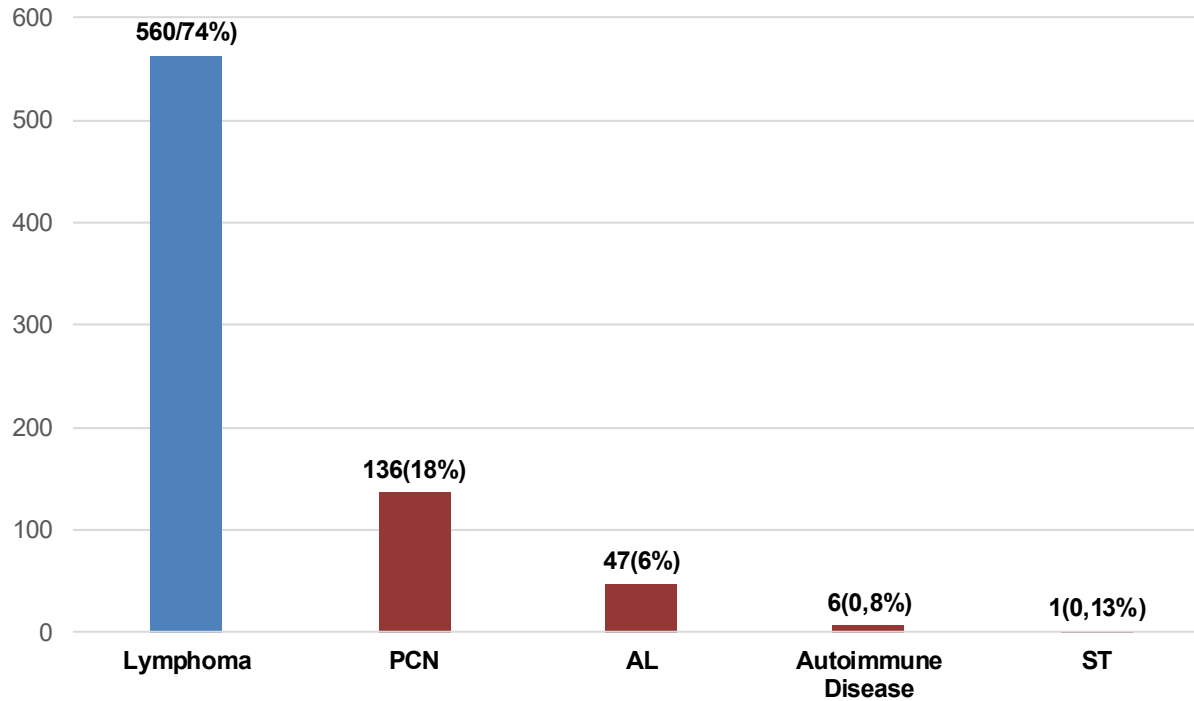
	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
NHL	773	790	779	789	765	768	811	696	725	556	496
Follicular	102	73	93	105	115	108	99	84	73	46	38
LBCL	347	366	381	349	353	360	368	269	295	200	190
Mantle	162	160	144	161	147	158	190	190	200	176	131
others	162	191	161	174	150	142	154	153	157	134	137

Autologo: variazione percentuale per tipo di linfoma tra il 2020 e il 2025

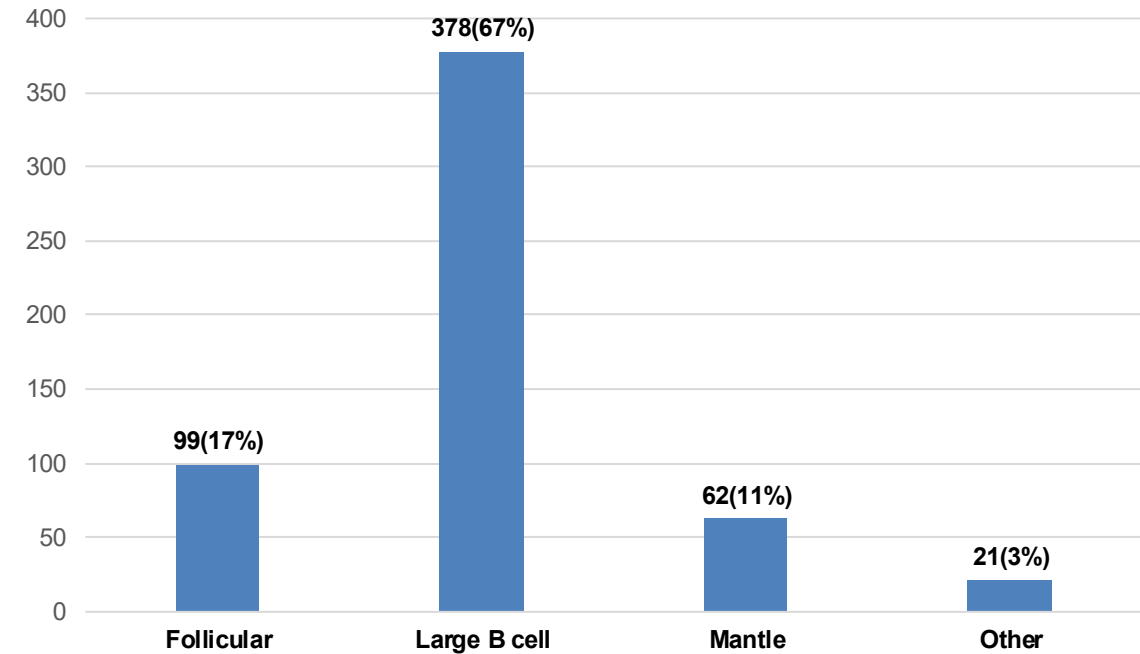
Tipo	2020	2025	Variazione
NHL (totale)	768	496	-35,4%
Follicolare (FL)	108	38	-64,8%
LBCL	360	190	-47,2%
Mantle (MCL)	158	131	-17,1%
Others	142	137	-3,5%

2025: CAR-T procedures by disease

N. CAR-T

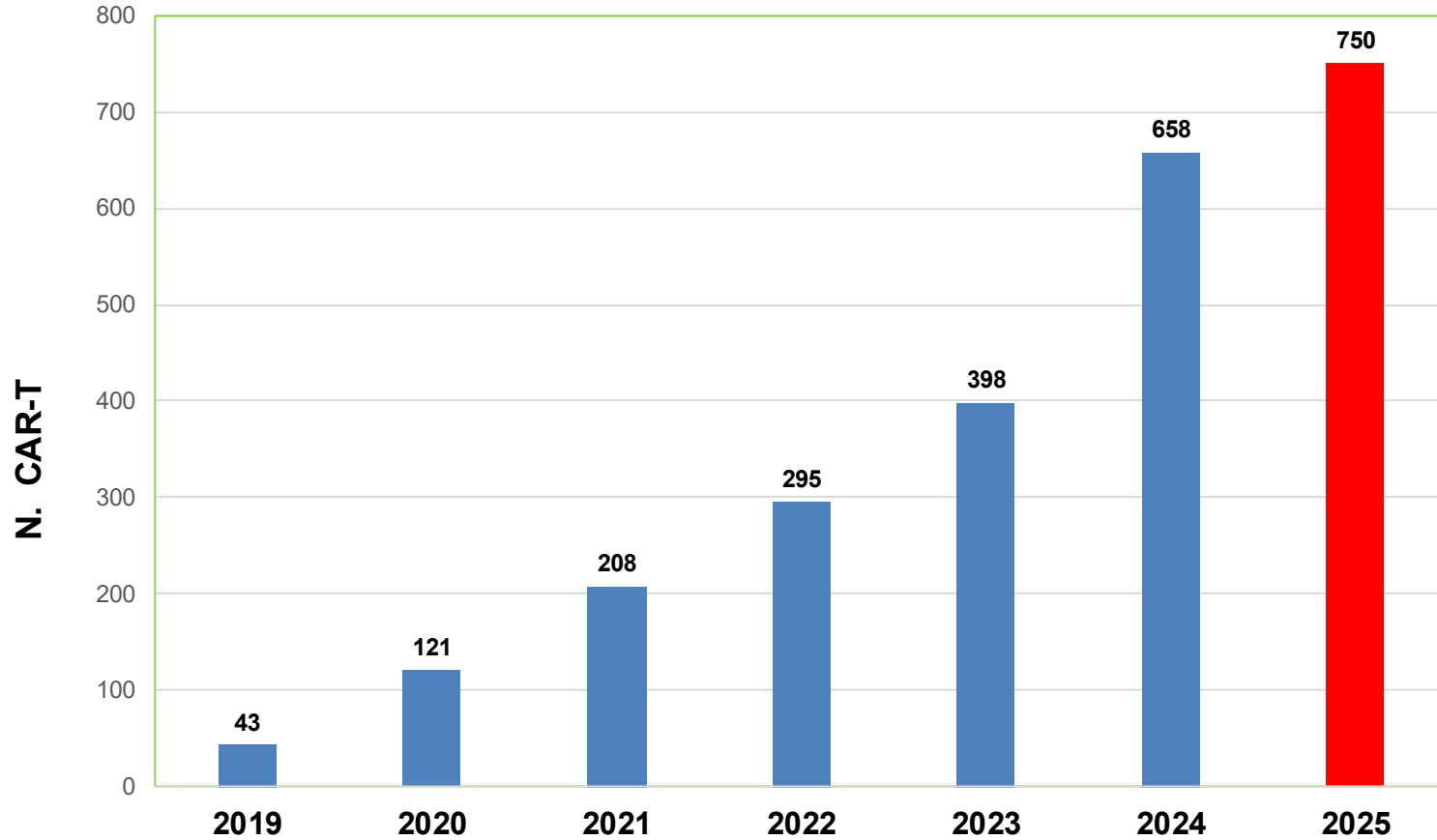


Disease

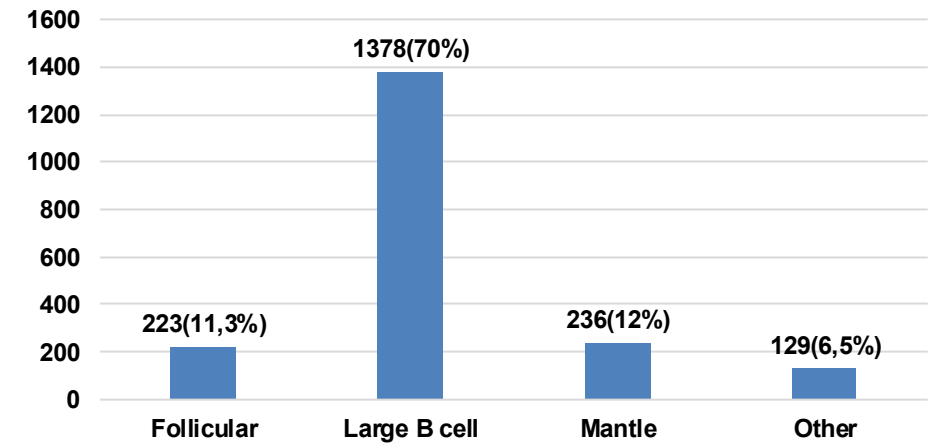
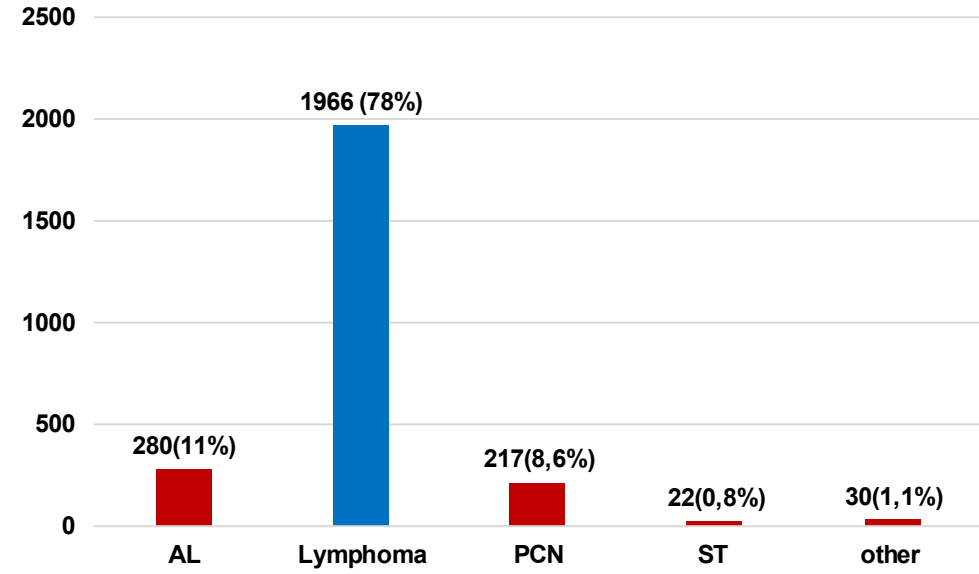


Lymphoma

CAR-T procedures by year (n=2515)

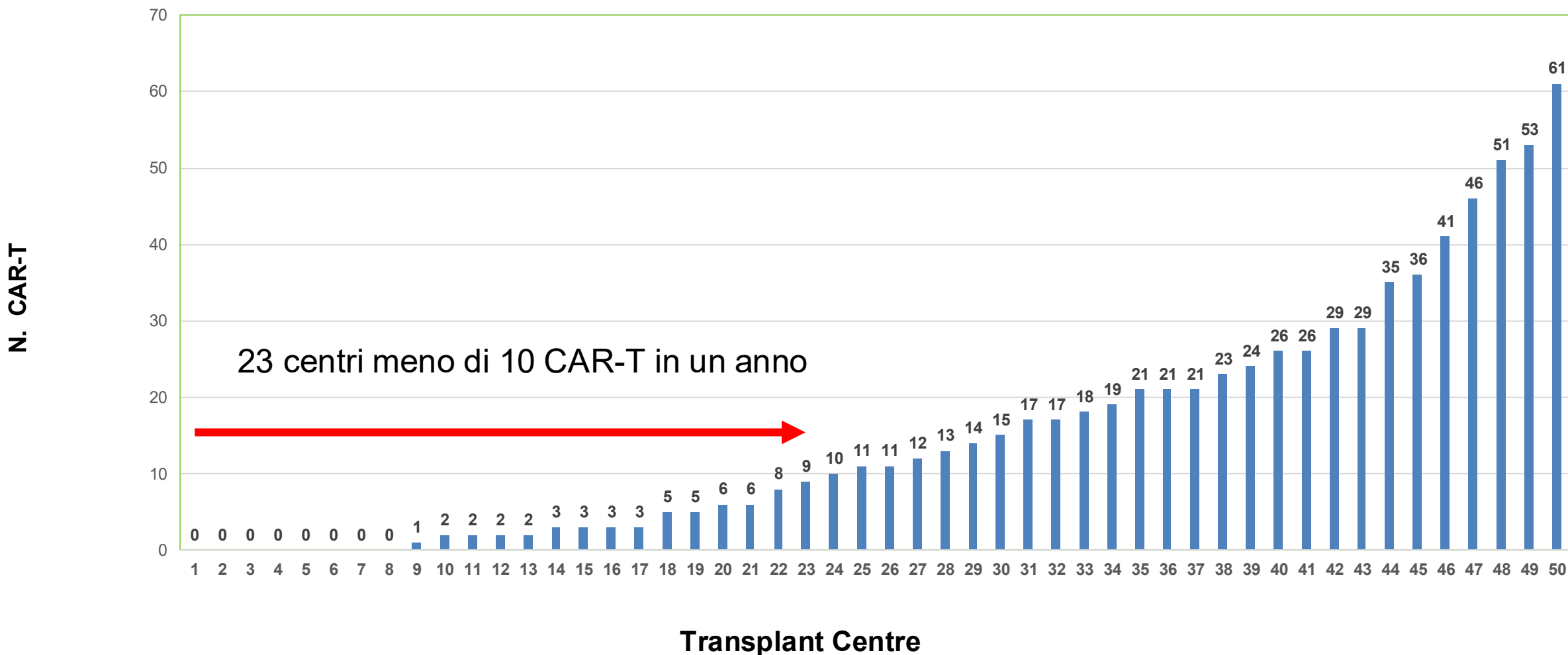


2024 vs 2025: + 14%



Lymphoma

2025 CAR-T procedures by Transplant Centre



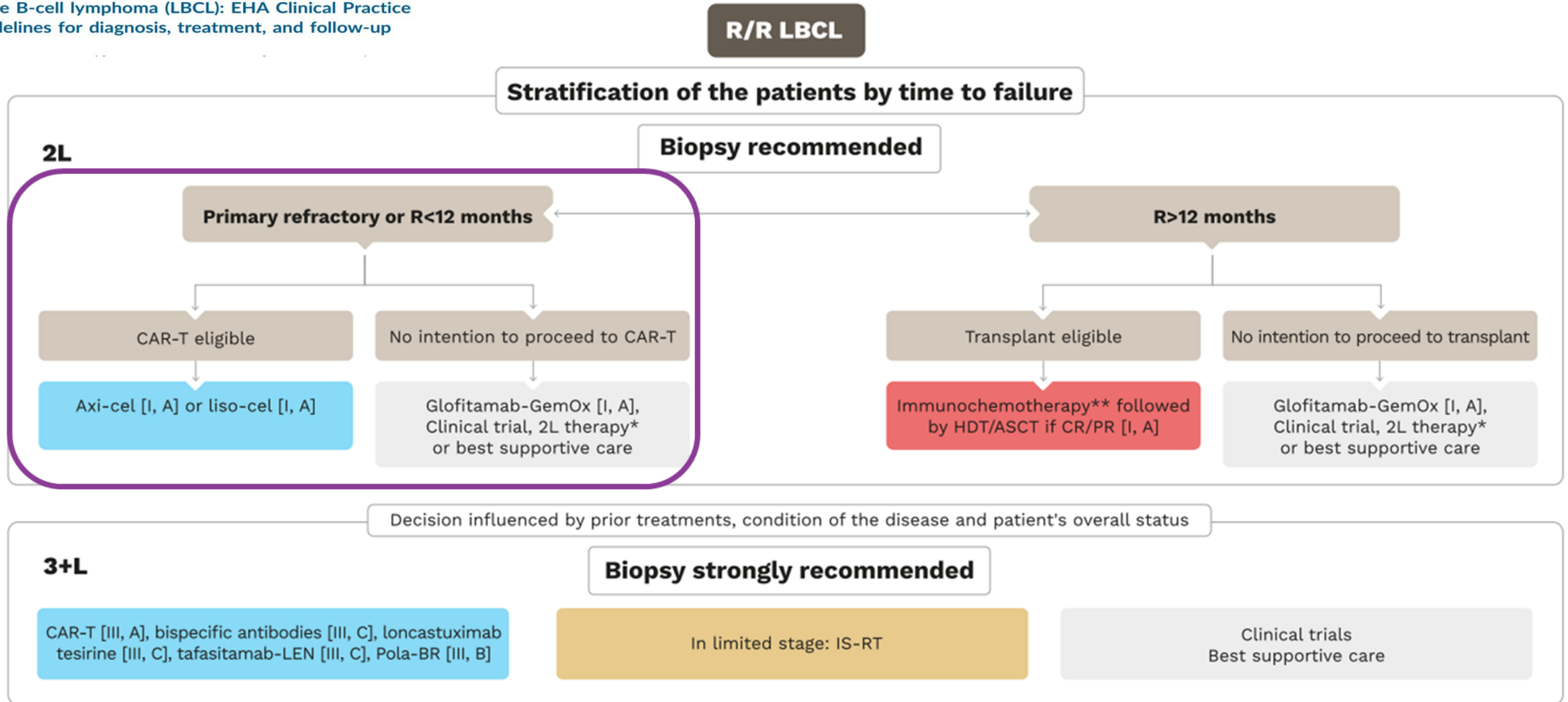
CD19-Targeted CAR T-Cell as SoC 2L Therapy of LBCL

DOI: 10.1002/hem3.70207

GUIDELINES · EXPERT OPINION

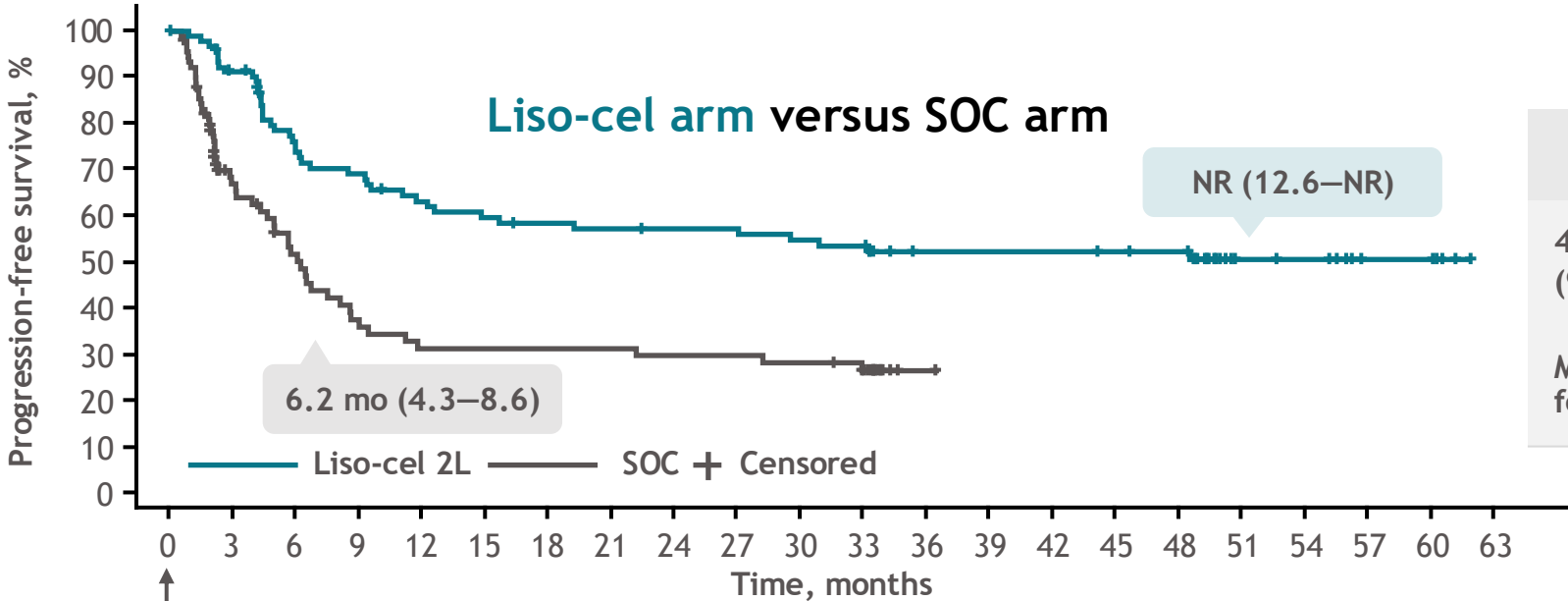
HemaSphere  eha

Large B-cell lymphoma (LBCL): EHA Clinical Practice Guidelines for diagnosis, treatment, and follow-up



Liso-cel continued to demonstrate high PFS rates over SOC in 2L, with median PFS not reached in the liso-cel arm

3-year follow-up results from TRANSFORM



	Liso-cel 2L (n = 92)	SOC (n = 92)
48-month rate (95% CI)	52.2% (41.5–62.8)	NA (NA–NA)
Median (95% CI) follow-up	49.4 months (48.7–50.3)	33.2 months (32.9–33.6)

No. at risk

Time (months)	0	3	6	9	12	15	18	21	24	27	30	33	36	39	42	45	48	51	54	57	60	63	
Liso-cel	92	81	63	59	53	50	48	47	46	46	44	43	35	35	35	34	33	15	14	8	8	0	
SOC	92	45	33	23	20	20	20	20	19	19	18	15	1	0									

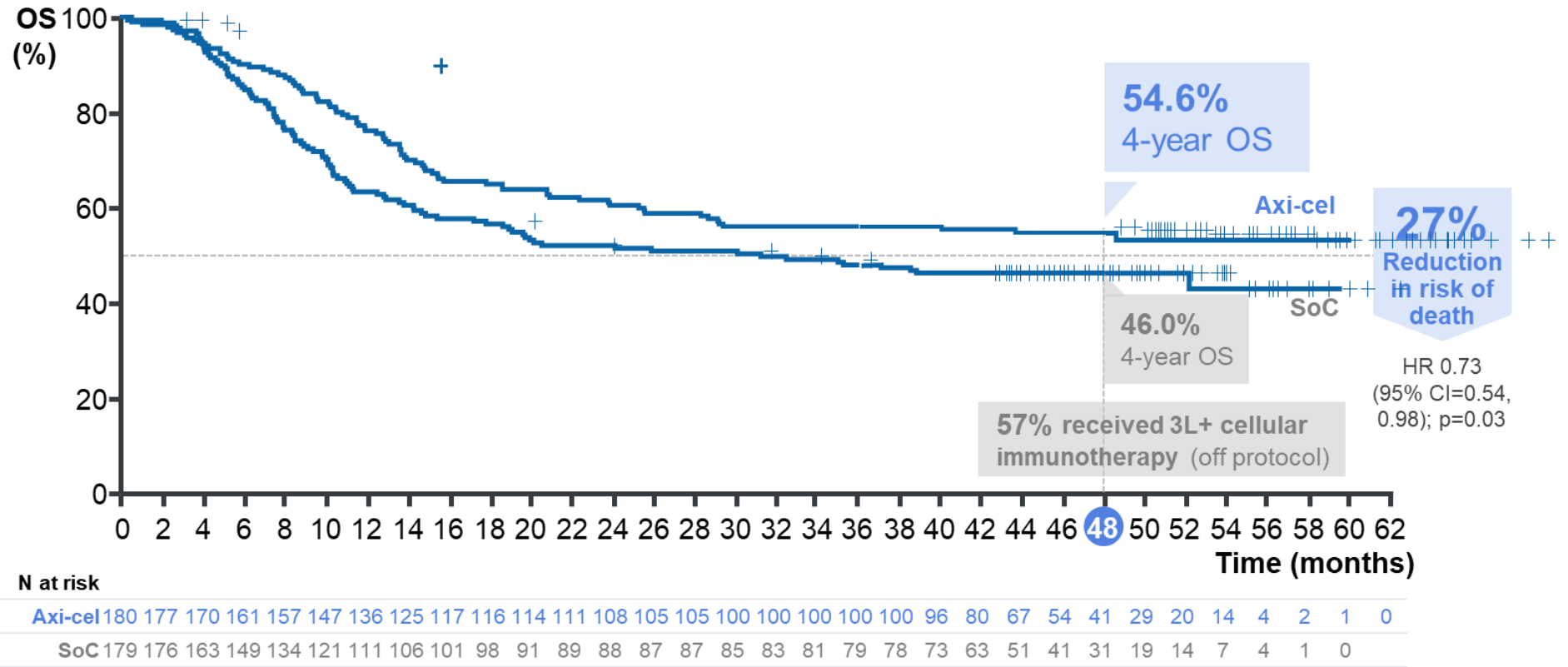
Kamdar M, et al. ASH 2025. Poster number 3710

NA, not available.

ZUMA-7 - Curative Potential in 2L - Axi-Cel is the first CART product with a statistically significant OS benefit

ZUMA-7

mFU: 47.2 months
 OS: axi-cel (n=180)
 vs. SoC (n=179)
 p=0.03



Axi-cel significantly improved overall survival vs. SoC, and median OS was not reached at 47.2 months' median follow-up

• NR: not reached
 Westin JR, et al. *N Engl J Med* 2023; 389: 148-157.

Axi-cel efficacy in transplant eligible and ineligible pts: combined results from ZUMA 7 and ALYCANTE
CAR-T efficacy is confirmed also in 2L DLBCL ineligible patients

Endpoint	Pooled (%)	ZUMA-7 (%)	ALYCANTE (%)
CMR, mese 3	55,6	51,2	67,7
ORR, mese 12	46,0	46,5	46,0
DOR, mese 12	61,6	60,8	62,1
EFS, mese 24	45,2	45,2	44,6
PFS, mese 24	47,6	46,7	46,8
OS, mese 24	64,9	62,8	70,8

- Efficacy analysis included 178 and 69 leukapheresed patients from ZUMA7 and ALYCANTE of which 170 (on 178) and 62 (on 69) received axi-cel
- Axi-cel delivers similar outcomes regardless of ASCT-eligibility in second line R/R LBCL

Adapted from Houot et al. presented at ASH 2025, abs#7583

ZUMA-1: curative potential with axi-cel in 3L+ R/R DLBCL

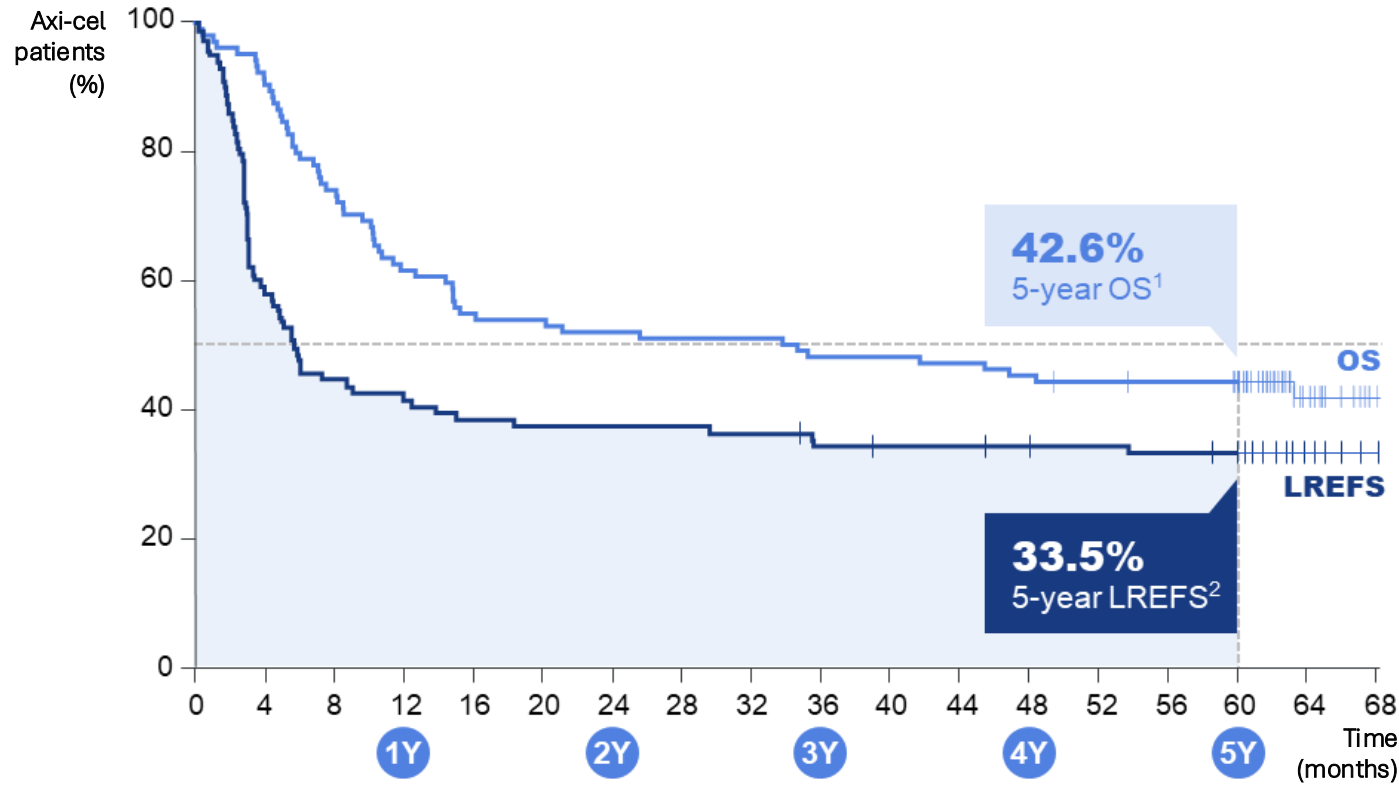
ZUMA-1

3L+

mFU: 63.1 months

Exploratory, long-term survival assessment of axi-cel in patients with R/R DLBCL (N=101)^{1,2}

Primary endpoint: ORR = 83%¹



Approx. 4/5

patients who responded and are alive at 5 years after axi-cel are potentially cured.

2L: second line; 3L+: third line or later; DLBCL: diffuse large B-cell lymphoma; LREFS: lymphoma-related event-free survival; mFU: median follow-up; ORR: objective response rate; OS: overall survival; R/R: relapsed/refractory; Y: year.

1. Neelapu SS, et al. *Blood*. 2023;141:2307–2315; 2. Neelapu SS, et al. ASH 2023 (Abstract 4864; poster).

Axi-cel has demonstrated curative potential in 3L+ R/R DLBCL^{1,2}

ZUMA1: Duration of Complete Response (DoCR)

Duration of Response by Complete Response at or After Week 4 Postinfusion

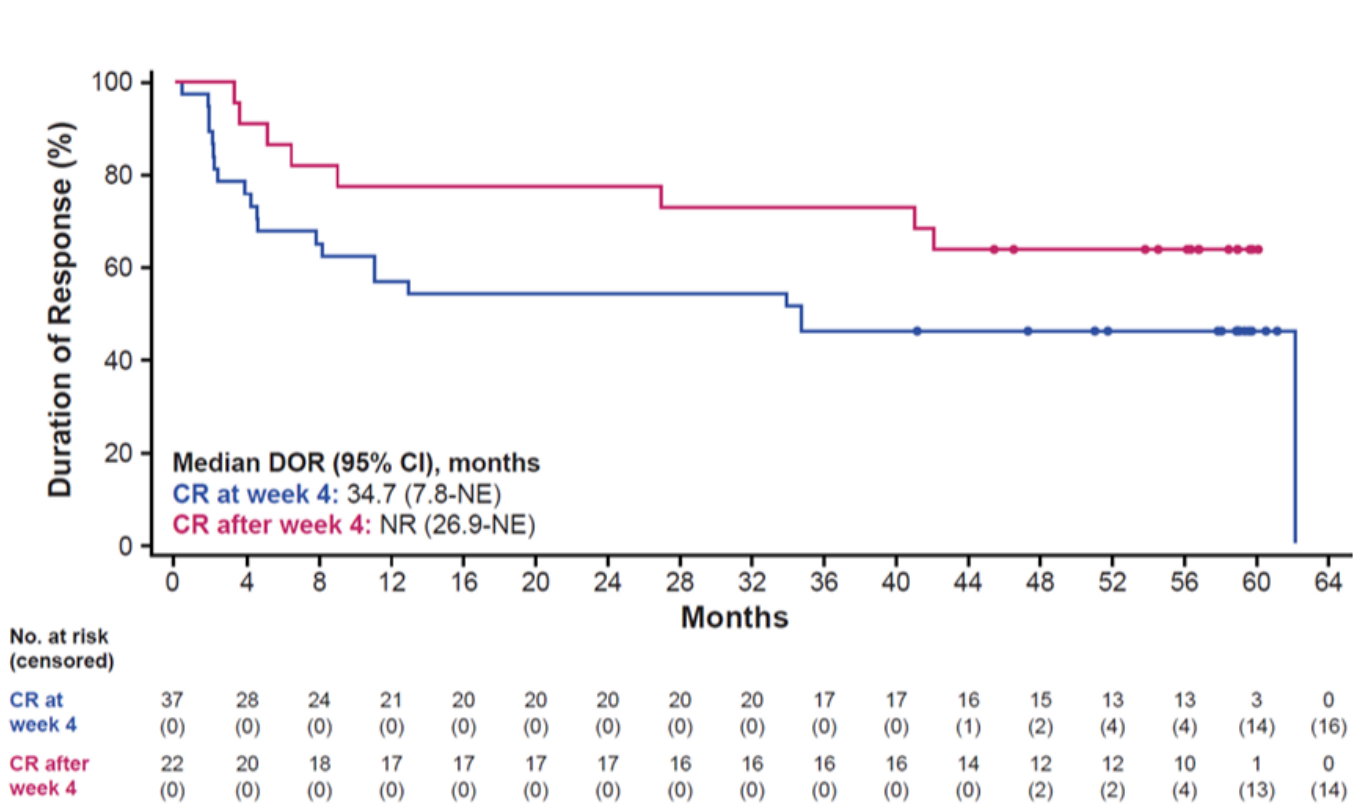


Table 2. Investigator-assessed response

	N = 101
Best response, n (%; 95% CI)	
Objective response	84 (83, 74-90)
CR	59 (58, 48-68)
PR	25 (25, 17-34)
SD	10 (10, 5-17)
PD	5 (5, 2-11)
Not done	2 (2, 0-7)
Ongoing response, n (%)	31 (31)
CR	30 (30)
PR	1 (1)
DOR (95% CI)	
Median DOR, mos	11.1 (4.2-51.3)
Median duration of CR, mos	62.2 (12.9-NE)
Median duration of PR, mos	1.9 (1.3-2.1)

This figure shows Kaplan-Meier estimates of DOR in treated patients with LBCL (n=101) in Cohorts 1 and 2 of phase 2 who had a complete response to axi-cel, either at the week 4 disease assessment or afterward. Axi-cel, axicabtagene ciloleucel; CR, complete response; DOR, duration of response; LBCL, large B-cell lymphoma; NE, not estimable.

Adapted Neelapu et al. Blood 2023 and Suppl Mat.

QoL recovery was faster for patients receiving axi-cel vs. SoC treatment

ZUMA-7

2L

mFU: 24.9 months

Phase 3, randomised, multicentre trial of **axi-cel** vs. **SoC** (chemo + HDCT ± ASCT) as 2L treatment in patients with R/R LBCL (N=359)

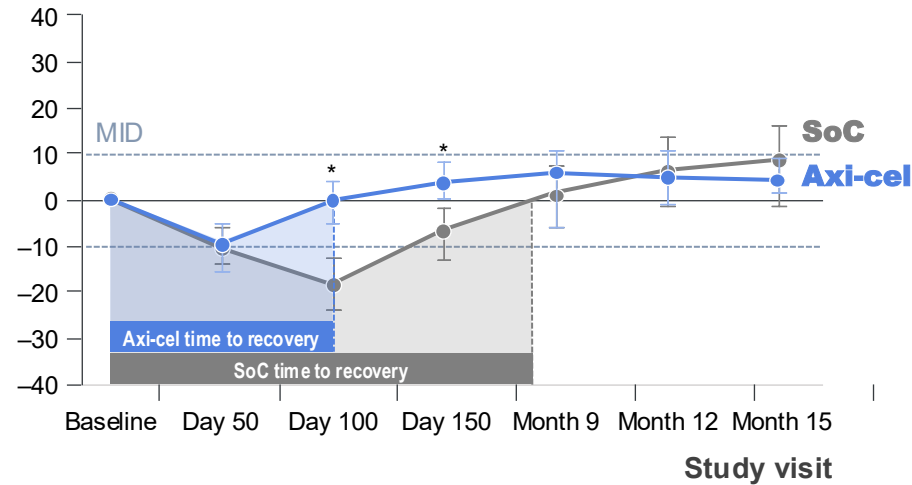
EORTC QLQ-C30 (prespecified secondary outcome):

Axi-cel vs. **SoC** (N=296)

*p<0.05

EORTC QLQ-C30 Global health status/QoL

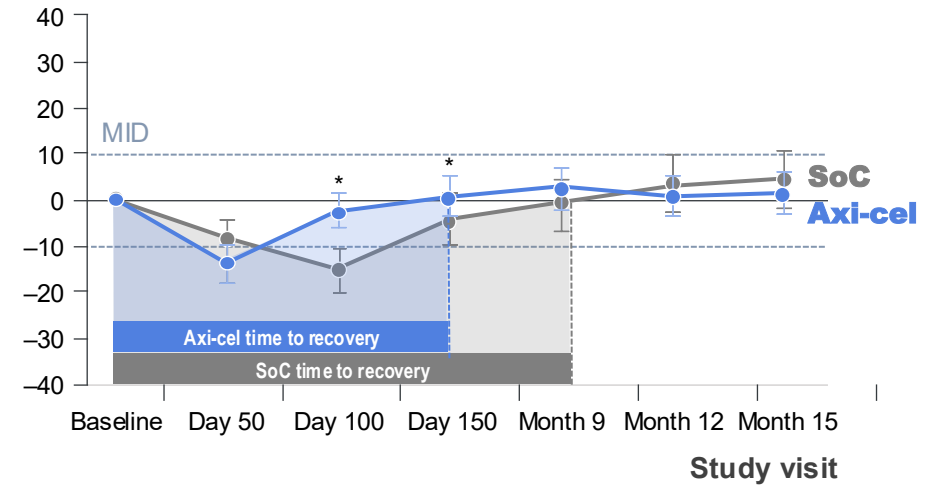
Estimate (95% CI)



	Baseline	Day 50	Day 100	Day 150	Month 9	Month 12	Month 15
Axi-cel	165	163	146	110	88	79	67
SoC	130	125	62	56	40	33	26

EORTC QLQ-C30 Physical functioning

Estimate (95% CI)



	Baseline	Day 50	Day 100	Day 150	Month 9	Month 12	Month 15
Axi-cel	164	163	146	109	88	79	67
SoC	131	126	64	56	40	33	26

Prespecified MMRM analysis including variables for treatment, time, and treatment by time interaction (primary analysis) and controlled for response to 1L therapy (primary refractory, relapse ≤6 months vs. >6 and ≤12 months of 1L therapy) and age-adjusted IPI (0-1 vs. 2-3)

1L: first-line; 2L: second-line; ASCT: autologous system cell transplantation; EORTC QLQ-C30: European Organisation for Research and Treatment of Cancer Quality of Life Questionnaire-Core 30; HDCT: high-dose chemotherapy; IPI: International Prognostic Index; mFU: median follow-up; MID: minimally important difference; MMRM: mixed model for repeated measures; QoL: quality of life; R/R LBCL: relapsed or refractory large B-cell lymphoma; SoC: standard of care.

Elsawy M, et al. *Blood* 2022; 140:2248-2260.

Real World Data confirm pivotal outcomes for CAR-T in 2L

CIBMTR US

US CIBMTR RW

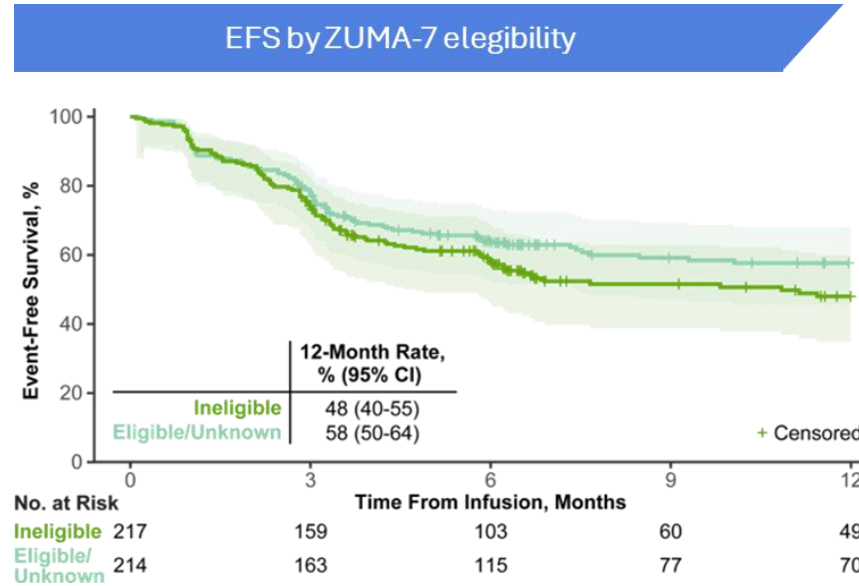
N = 446 pts

48% ZUMA7-eligible

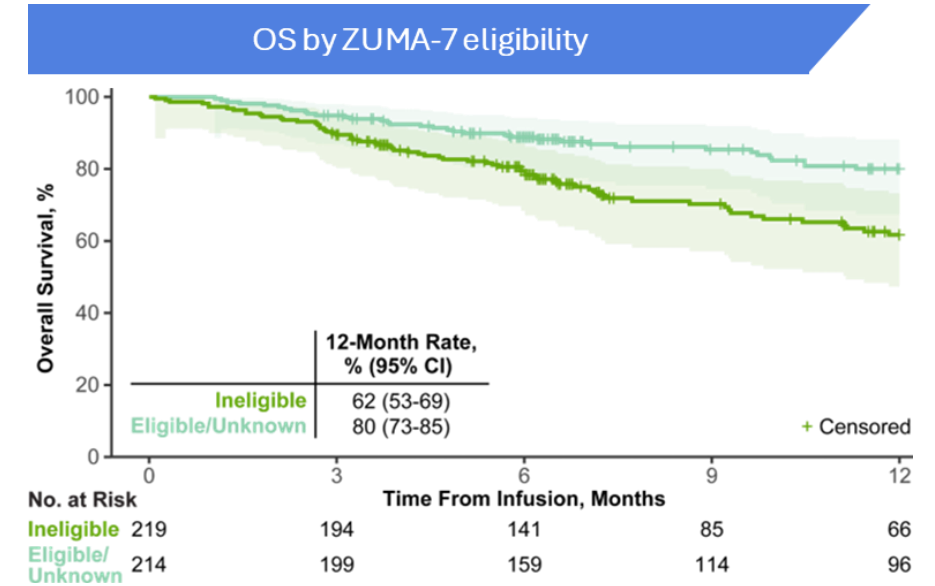
49% ZUMA7-inelegible

mFU: 12.0 mo

April 2022 - July 2023



- Among all patients, the 12-month EFS rate was 53%
- 12-month EFS: 48% in ZUMA-7 ineligible patients
- 12-month EFS : 58% in ZUMA-7 eligible patients



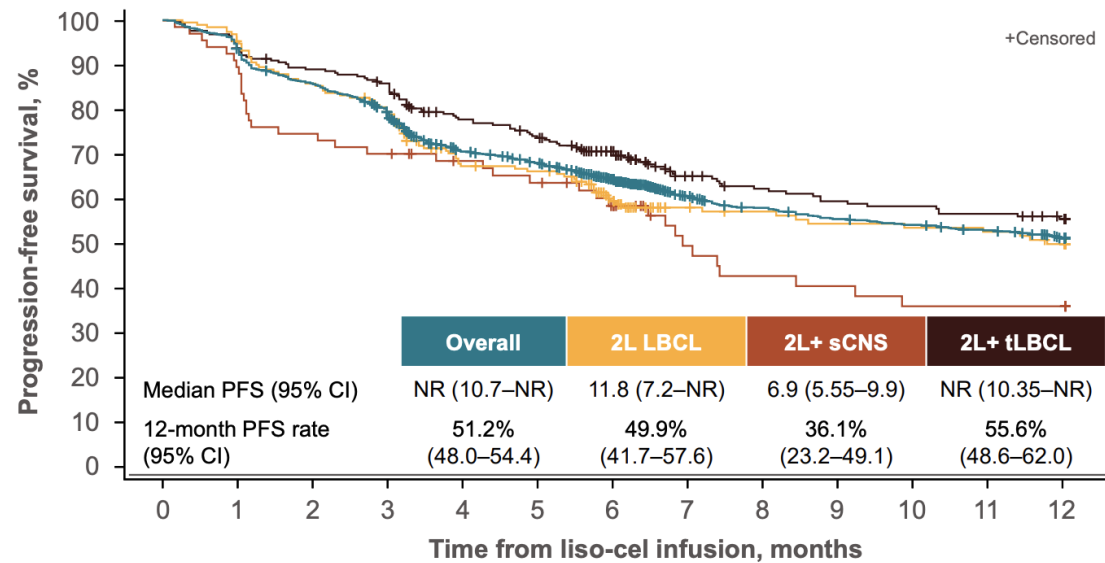
- Among all patients, the 12-month OS rate was 62%
- 12-month OS: 62% in ZUMA-7 ineligible patients
- 12-month OS : 80% in ZUMA-7 eligible patients

In this large real world study where 446 pts had been treated with axi-cel as 2L, about half of patients (52%) would have been ineligible for ZUMA-7.

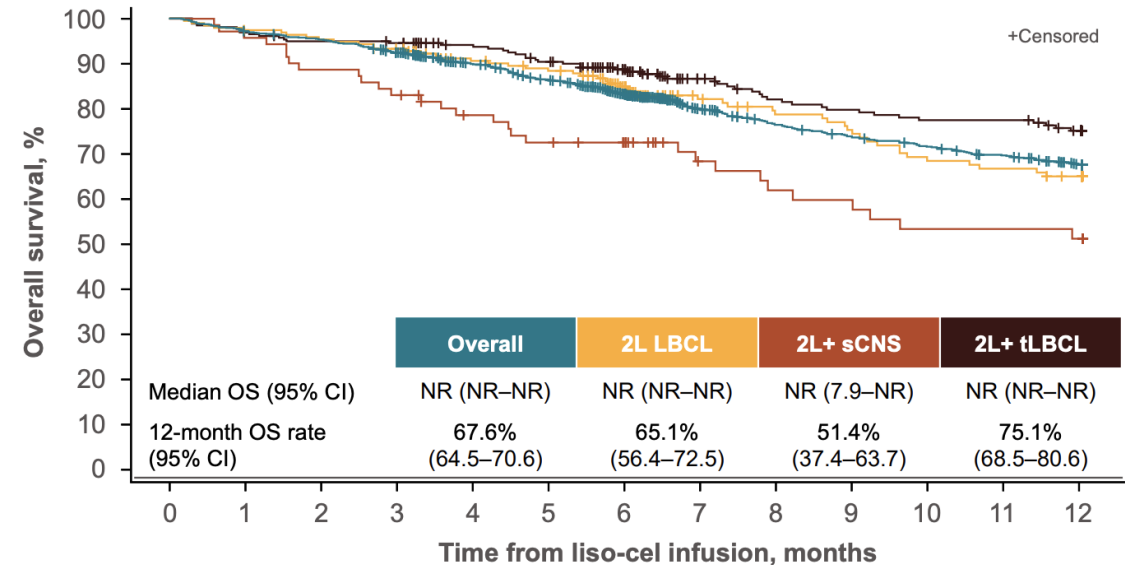
Despite a broader patient population beyond the ZUMA-7 trial, effectiveness and safety outcomes at median follow-up of 12 months were consistent with those observed in ZUMA-7

Real-world outcomes for lisocabtagene maraleucel in patients with relapsed or refractory large B-cell lymphoma

A



B



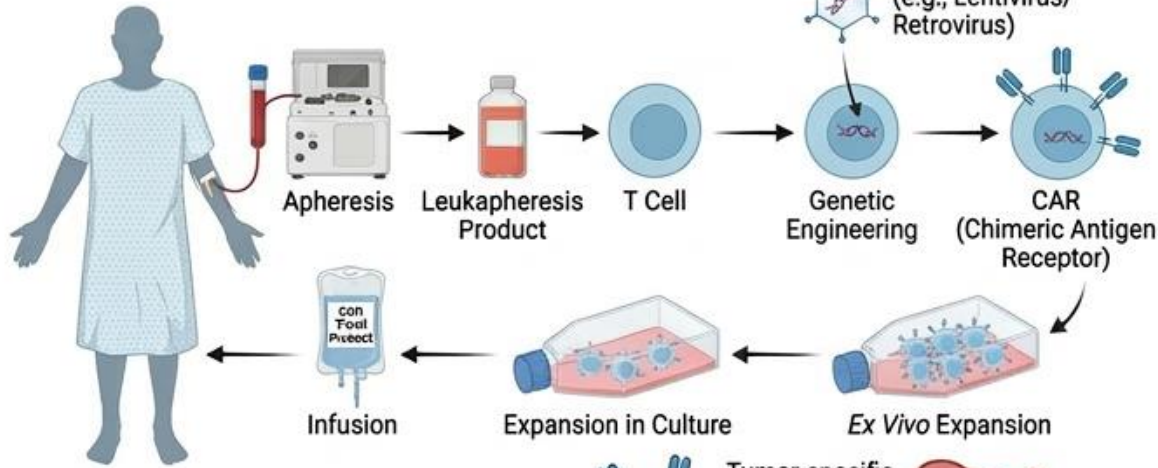
	Overall	2L LBCL	2L+ sCNS	2L+ tLBCL
Overall	1096	1025	939	860
2L LBCL	191	181	163	149
2L+ sCNS	67	60	50	47
2L+ tLBCL	256	239	226	217
	733	698	617	473
	698	617	473	443
	617	473	443	423
	473	443	423	412
	443	412	412	399
	423	399	399	373
	412	373	373	373
	399	373	373	373
	373	373	373	373

	Overall	2L LBCL	2L+ sCNS	2L+ tLBCL
Overall	1116	1084	1062	1021
2L LBCL	195	189	185	179
2L+ sCNS	71	68	63	59
2L+ tLBCL	257	248	242	240
	951	904	813	645
	904	813	645	603
	813	645	603	581
	645	603	581	561
	603	581	561	541
	581	561	541	507
	561	541	507	507
	541	507	507	507
	507	507	507	507

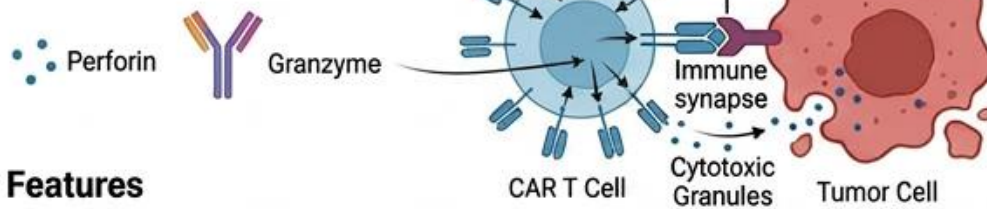
CAR T-Cell Therapy vs. Bispecific Antibodies: Simplified Mechanism & Features

CAR T-Cell Therapy

Source & Engineering



Mechanism of Action

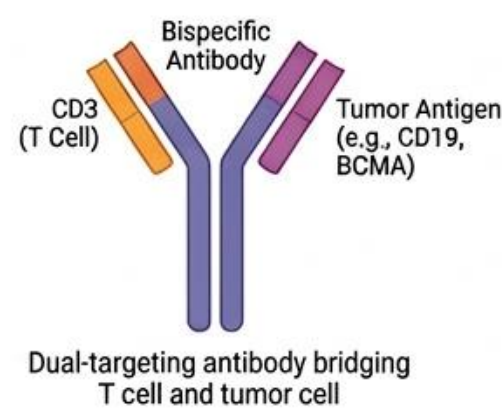


Key Features

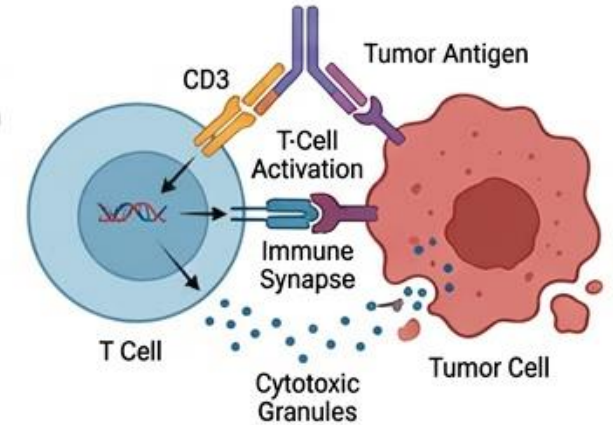
- Efficacy:** High (e.g., blood cancers)
- Safety:** CRS, Neurotoxicity Risks
- Manufacture:** Personalized, Complex, Long

Bispecific Antibody

Design of Antibody



Mechanism of Action



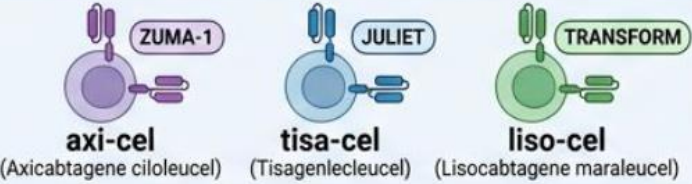








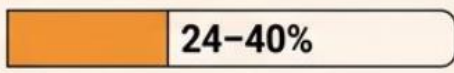



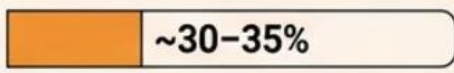



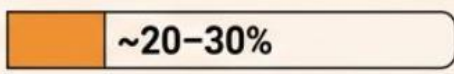




Key Features

- Efficacy:** Effective in certain tumors
- Safety:** CRS, lower neurotoxicity risk
- Manufacture:** "Off-the-shelf", Standardized, Quick
- Access:** More viely available, less personalized

Direct Comparison

	Manufacturing	Administration	Time	Accessibility	Safety
CAR T-Cell	Personalized	Single Infusion	Long	Limited	High Risk
Bispecific Antibody	Off-the-shelf	Repeat Dosing	Short	Widespread	Lower Risk

Efficacy of CAR-T Cell Therapies vs Bispecific Antibodies in Aggressive B-cell Lymphomas (DLBCL, ≥2L)

CAR-T Cell Therapies  axi-cel (Axicabtagene ciloleucel) tisa-cel (Tisagenlecleucel) liso-cel (Lisocabtagene maraleucel)	Bispecific Antibodies 
ORR% (Overall Response Rate)   52-83%	ORR% (Overall Response Rate)   38-63%
CR Rate (Complete Response Rate)   40-65%	CR Rate (Complete Response Rate)   24-40%
PFS at 12 months   ~40-44%	PFS at 12 months   ~30-35%
Durable Response at 2 yrs   ~30-40%	Durable Response at 2 yrs   ~20-30%
Key Clinical Trials  ZUMA-1, JULIET, TRANSFORM	Key Clinical Trials  EPCORE NHL-1, NP30179
Approved Setting  2L+ ≥2L DLBCL	Approved Setting  3L+ ≥3L DLBCL

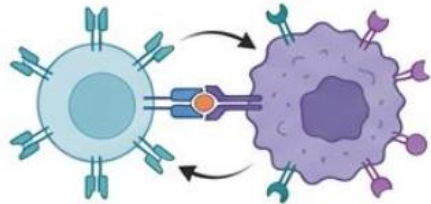
CAR-T Advantages  Superior CR & durable response  Potential for long-term remission

Bispecific Highlights  Immediate availability  Simpler administration in some settings

No Prospective RCT: CAR-T vs Bispecifics in DLBCL – Structural Barriers

① Current Indications (Side-by-side comparison)

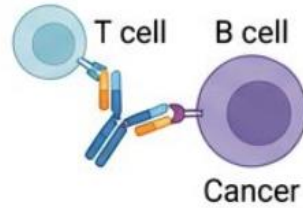
CAR-T Cell Therapy



Indicated for **≥2nd-line** (≥2L) DLBCL

Requires JACIE-accredited center

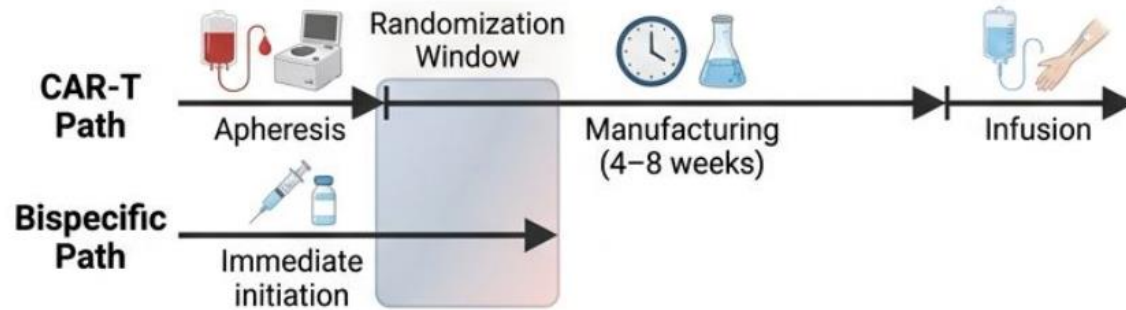
Bispecific Antibodies



Indicated for **≥3rd-line** (≥3L) DLBCL

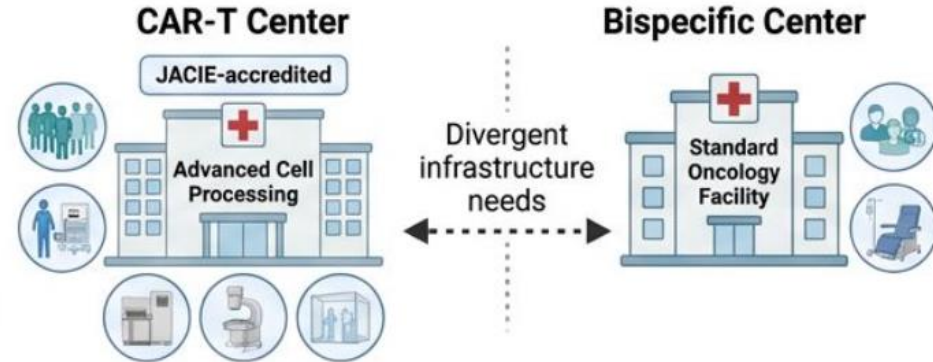
Broader accessibility

② Lead-time Incompatibility



Unmatched logistics hinder a unified randomization window

③ Divergent Infrastructure Requirements



④ Central 'No RCT' Summary



No prospective, head-to-head RCT exists – and unlikely to ever exist in classical form.

Take-home Box: Direct head-to-head comparison of CAR-T versus bispecifics in DLBCL is structurally precluded by differing indications, incompatible timelines, and divergent infrastructure.



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Regular Article

LYMPHOID NEOPLASIA

CAR T cells vs bispecific antibody as third- or later-line large B-cell lymphoma therapy: a meta-analysis

Jinchul Kim,¹ Jinhyun Cho,¹ Moon Hee Lee,¹ Sang Eun Yoon,² Won Seog Kim,^{2,3} and Seok Jin Kim^{2,3}

¹Department of Hematology-Oncology, Inha University College of Medicine and Hospital, Incheon, Korea; ²Division of Hematology-Oncology, Department of Medicine, Samsung Medical Center, and ³Department of Health Sciences and Technology, Samsung Advanced Institute for Health Sciences and Technology, Sungkyunkwan University School of Medicine, Seoul, Korea

10.1182/blood.2023.148111

16 trial con 1347 pazienti con DLBCL r/r trattati in $\geq 3L$

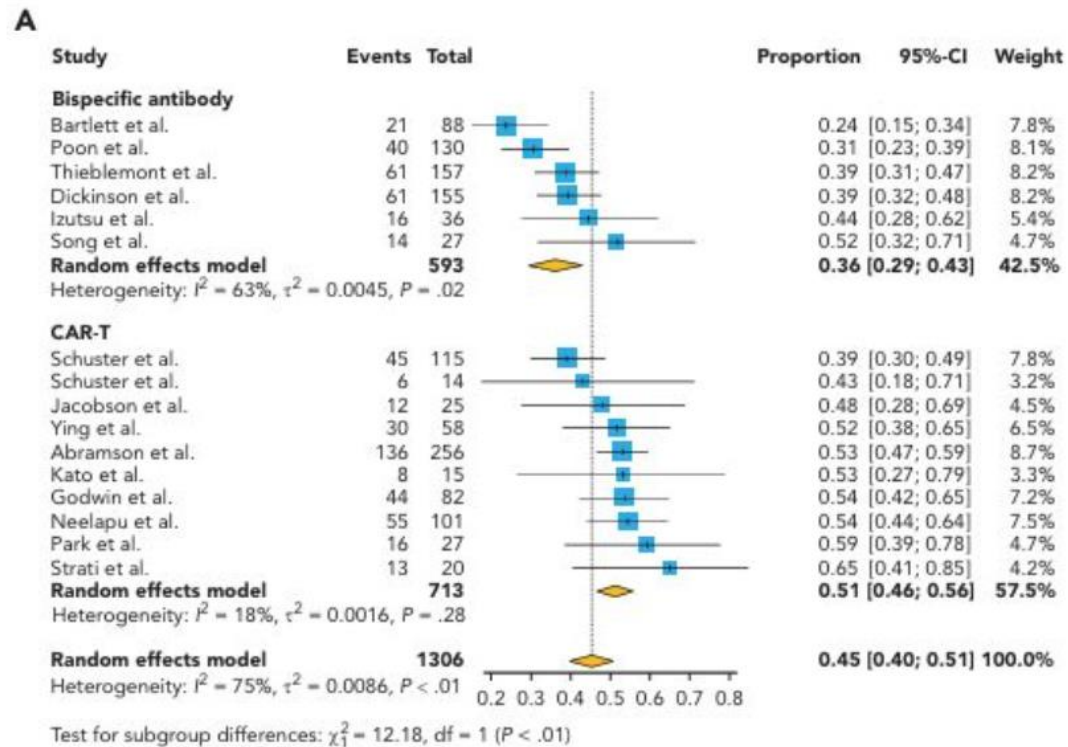
Kim et al. (*Blood* 2024; 144:629-638),

Table 1. Baseline characteristics of included studies

Trial name	Authors (trial identifier)	Phase	Regimen	No.	Median age (range), y	DH/TH lymphoma, %	Stage III/IV, %	Median no. of previous therapy (range)	Prior ASCT, %	Refractory to last prior treatment, %
Bispecific antibody										
EPCORE NHL-1	Thieblemont et al ¹⁵ (NCT03625037)	2	Epcoritamab	157	64 (20-83)	0.131	0.752	3 (2-11)	0.197	0.828
NR	Dickinson et al ¹⁴ (NCT03075696)	2	Glofitamab	154	66 (21-90)	0.129	0.753	3 (2-7)	0.182	0.857
NR	Bartlett et al ¹⁸ (NCT02500407)	2	Mosunetuzumab	88	66.5 (24-96)	0.193	0.841	3 (2-13)	0.17	0.795
ELM-2	Poon et al ¹⁷ (NCT03888105)	2	Odronezumab	140	66 (24-88)	0.193	0.80	2 (2-8)	0.157	0.864
NR	Song et al ²⁰ (NCT04657302)	2	Glofitamab	30	57.5 (20-82)	NR	0.90	2 (2-6)	0.10	0.90
EPCORE NHL-3	Izutsu et al ²¹ (NCT04542824)	2	Epcoritamab	36	68.5 (44-89)	0.0	0.778	3 (2-8)	0.194	0.806
CAR T cell										
NR	Schuster et al ¹¹ (NCT02030834)	2	Tisa-cel	14	58 (25-77)	0.214	0.643	3 (1-8)	0.5	0.86
ZUMA-1	Neelapu et al ¹⁰ (NCT02348216)	2	Axi-cel	111	58 (51-64 [IQR])	0.095	0.775	3 (2-4)	0.189	0.604
JULIET	Schuster et al ¹² (NCT02445248)	2	Tisa-cel	115	56 (46-84)	0.27	0.765	3 (2-6)	0.487	0.548
TRANSCEND NHL 001	Abramson et al ¹³ (NCT02631044)	Seamless	Liso-cel	269	63 (54-70)	0.134	NR	3 (2-4)	0.335	0.673
RELIANCE	Ying et al ¹⁹ (NCT04089215)	2	Relmacabtagene	59	56 (18-75)	0.051	NR	2 (2-7)	0.102	0.814
NR	Kato et al ²⁰ (JapicCTI-183914)	2	Axi-cel	16	58 (44-70)	0.067	0.5	3 (NR)	0.375	0.625
NR	Park et al ²¹ (NCT04148430)	2	Axi-cel/tisa-cel	27	62 (25-77)	NR	0.61	3 (2-5)	0.19	0.71
NR	Jacobson et al ²⁶ (NCT03954106)	2	Axi-cel	25	68 (31-78)	NR	NR	2 (1-6)	0.20	0.84
NR	Strati et al ²⁷ (NCT04432506)	1	Axi-cel	20	58 (26-81)	NR	0.95	3 (2-8)	0.05	1.00
OUTREACH	Godwin et al ²⁵ (NCT03744676)	2	Liso-cel	82	66 (28-86)	0.18	NR	2 (2-6)	0.16	0.91

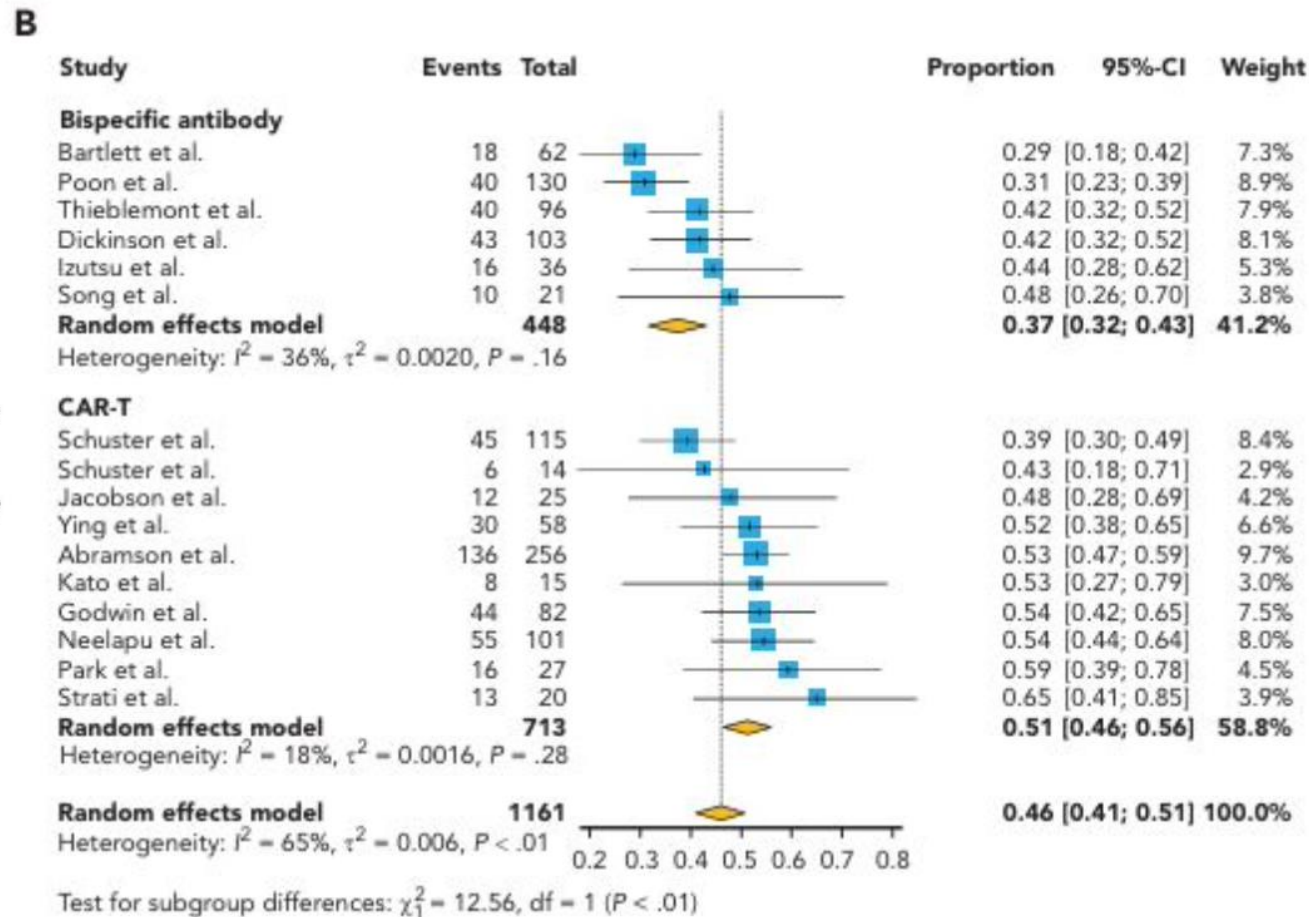
DH, double-hit; IQR, interquartile range; TH, triple-hit.

- CAR T-cell therapy demonstrates superior efficacy to bispecific antibody in DLBCL treatment, with higher CR rates.



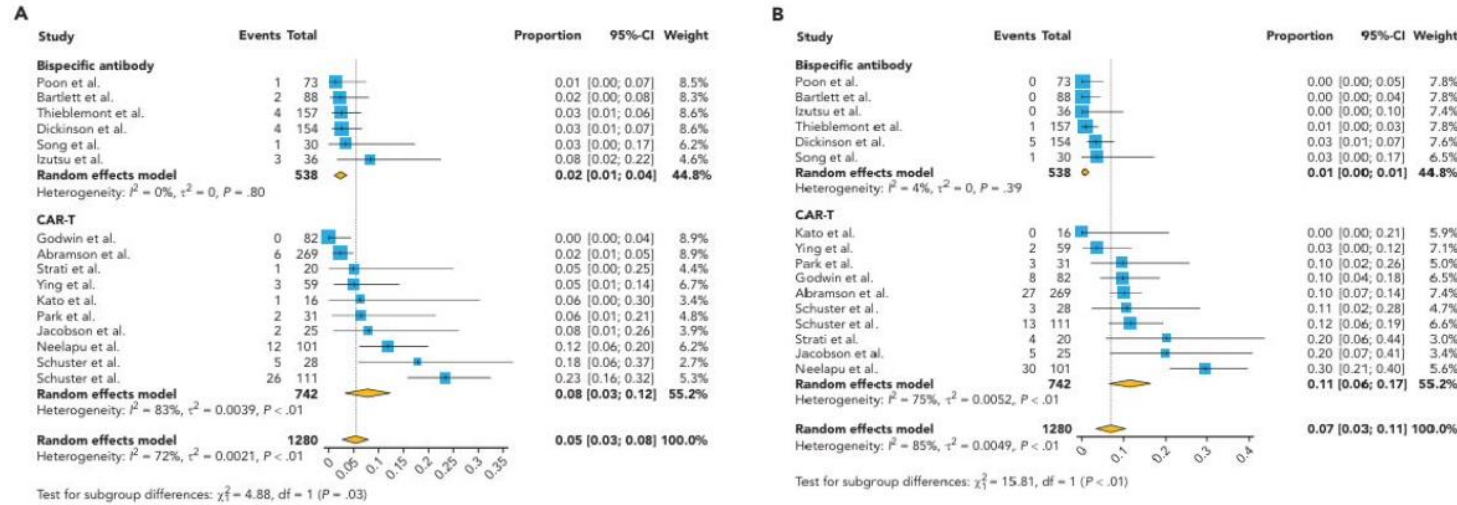
The overall pooled proportion of CR was 0.45 (95% CI, 0.40-0.51). There was significant difference in CR rate between the bispecific antibody and CAR T-cell therapy ($P < .01$); 0.36 (95% CI, 0.29-0.43) in the bispecific antibody group and 0.51 (95% CI, 0.46-0.56) in the CAR T-cell group

- CAR T-cell therapy demonstrates superior efficacy to bispecific antibody in DLBCL treatment, with higher CR rates.

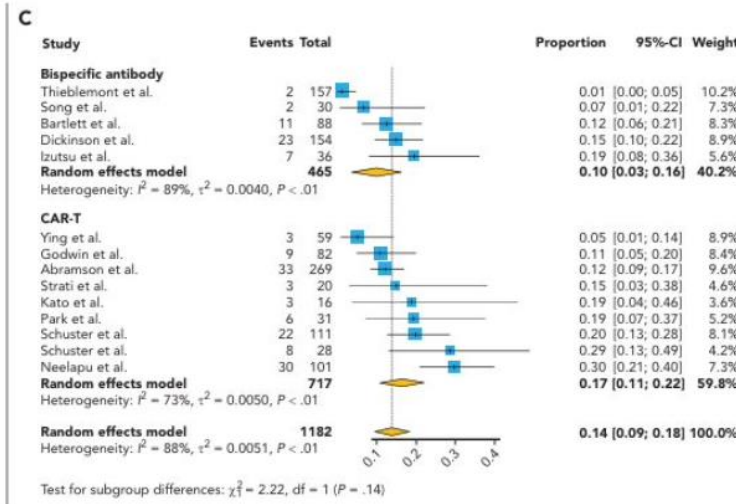


Even when limiting the bispecific antibody group to patients who had not previously undergone CAR T-cell treatment, there was a significant difference between the 2 groups

Pooled grade ≥ 3 adverse events rate by the treatment category. (A) CRS, (B) neurotoxicity, and (C) infection



● **CAR T-cell therapy exhibits higher incidence of grade ≥ 3 adverse events than bispecific antibody.**



Cosa abbiamo: la meta-analisi Kim et al., *Blood* 2024

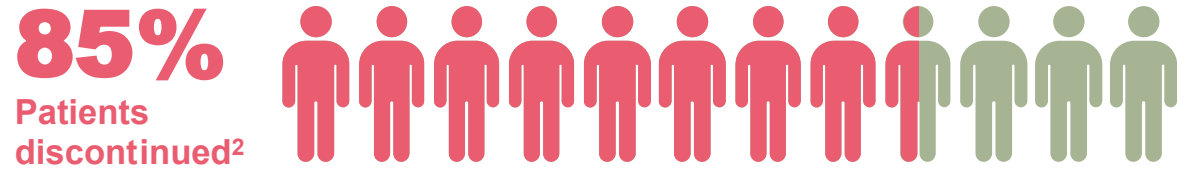
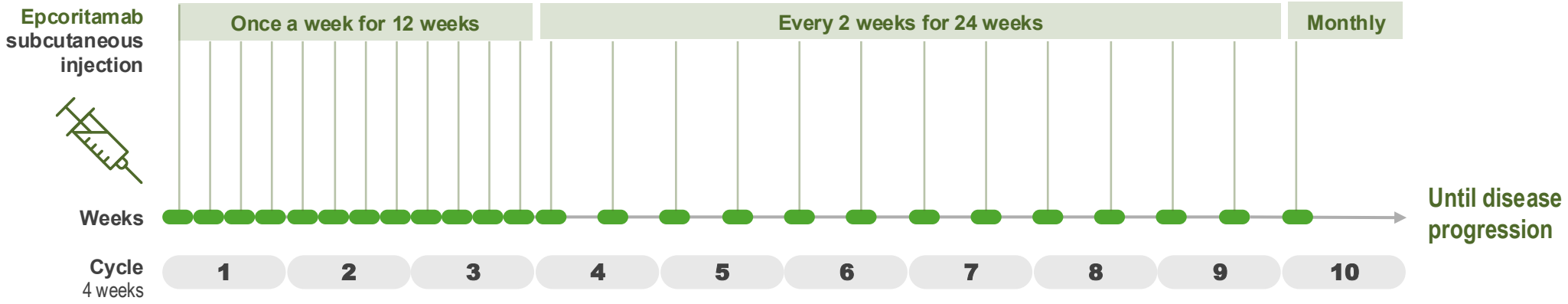
- CR rate poolato: 0.51 (95% CI 0.46-0.56) per CAR-T vs 0.36 (0.29-0.43) per bispecifici (p<0.01)
- PFS a 1 anno: 0.45 per CAR-T vs 0.37 per bispecifici (p=0.02)
- CRS G \geq 3 e ICANS G \geq 3 significativamente più frequenti nel braccio CAR-T.

Limiti metodologici

- eterogeneità delle popolazioni (diverso numero di linee pregresse, proporzione di double-hit, bridging diversity)
- follow-up diverso tra i trial dei due gruppi,
- la maggioranza dei pazienti nei bracci bispecifici erano già stati esposti a CAR-T
- La multivariata ha confermato la superiorità del CAR-T con aggiustamento per proporzione di DHL, e la superiorità persisteva anche nel sottogruppo CAR-T naïve nel braccio bispecifici (CR 0.37, 0.32-0.43).

How many patients completed epcoritamab monotherapy in the 3L clinical trial?

- **Dose expansion cohort of EPCORE NHL-1:¹**
- **mFU: 30.6 months²**
- Phase 1/2, single-arm, open-label trial of **epcoritamab** in patients with R/R LBCL and ≥ 2 prior therapies (N=157)¹



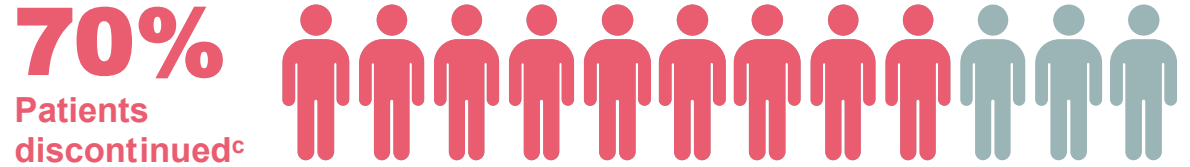
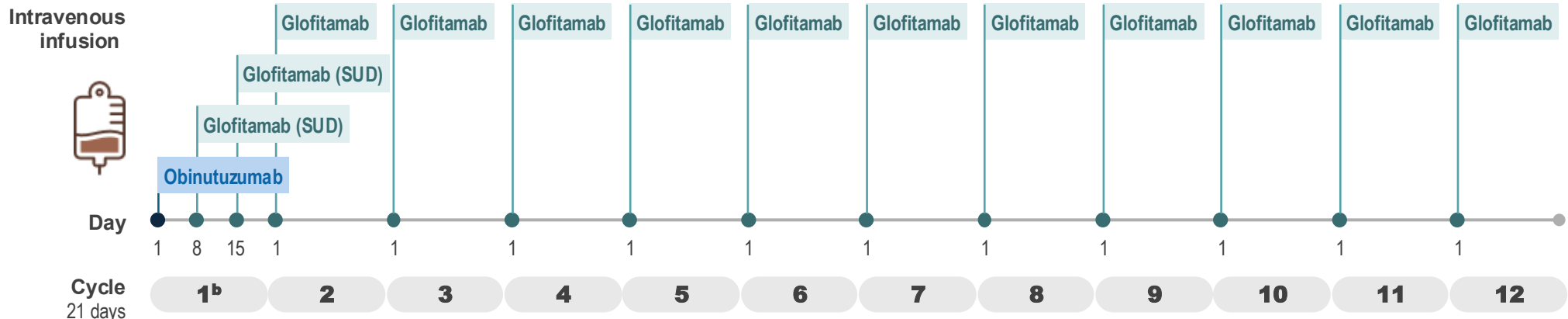
- Reasons for discontinuation²
- ▶ PD: n=90
 - ▶ AE: n=23
 - ▶ Allo-transplantation: n=7
 - ▶ Subject withdrawal: n=6
 - ▶ Maximum clinical benefit:^a n=1
 - ▶ Other: n=6

- Epcoritamab treatment continues until disease progression,
- at 30.6 months mFU, 85% of patients had discontinued

^aDecision due to investigator assessment that maximum clinical benefit was obtained.
^{3L}: third-line; AE: adverse event; mFU: median follow-up; PD: progressive disease; PR: partial response;
 R/R LBCL: relapse/refractory large B-cell lymphoma.
 1. Thieblemont C, et al. *J Clin Oncol.* 2023;41:2238–2247; 2. Karimi Y, et al. ASCO 2024; Abstract 7039 (poster presentation).

How many patients completed glofitamab monotherapy in the 3L clinical trial?

- **Dose expansion cohort of NP30179:**
- Phase 2, open-label, interventional trial of **glofitamab** monotherapy in patients with R/R LBCL and ≥ 2 prior therapies (N=155)^a



- Reasons for discontinuation^b
- ▶ PD: n=63
 - ▶ Death: n=10
 - ▶ AE: n=11
 - ▶ Physician decision: n=9
 - ▶ Subject withdrawal: n=5
 - ▶ Other: n=9
 - ▶ Protocol deviation: n=1

• **Treatment with glofitamab continues for up to ~8.5 months, in the clinical trial only one in four patients completed treatment**

^aOne patient was enrolled in error (was not screened) and did not receive study treatment. ^bInpatient infusion occurs once every 7 days in Cycle 1. ^cCombined treatment group including patients who had received either corticosteroid or dexamethasone pretreatment.

3L, third-line; AE: adverse event; mFU: median follow-up; PD: progressive disease; R/R LBCL: relapsed/refractory large B-cell lymphoma; SUD, step-up dosing.

1. Dickinson MJ, et al. *N Engl J Med.* 2022; 387:2220–2231 (incl. suppl. appendix).

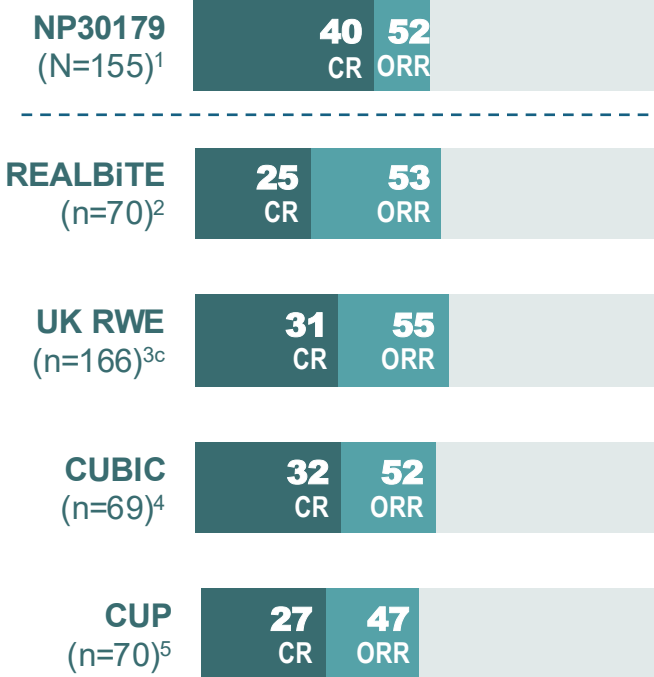
Dati RW in 3L+
(Epcoritamab – Glofitamab)

How do the real-world BsAbs effectiveness compare vs clinical trials?

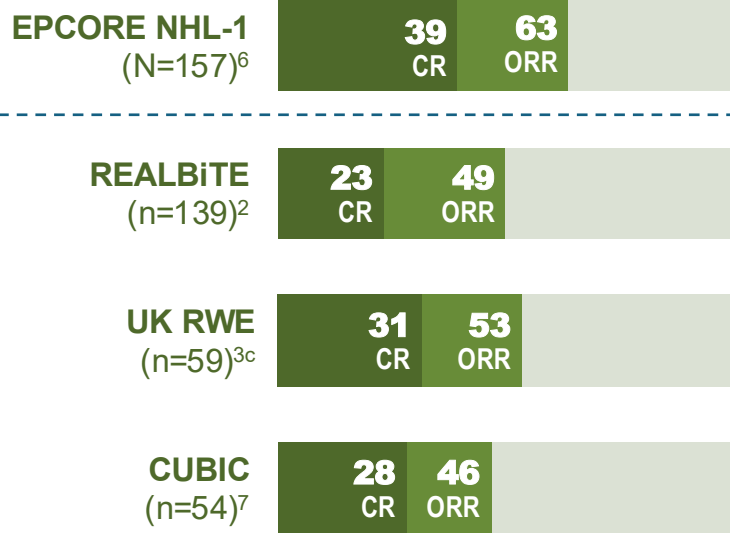
BsAbs trials + RW 3L+

- NP30179 mFU: 32 months^a
- Phase 2 trial of **glofitamab** monotherapy (N=155)^{1,b}
- **REALBiTE RWE mFU: 5 months**
- Retrospective multicentre study of **epcoritamab** (n=139) and **glofitamab** (n=70)²
- **UK RWE mFU: 9.9 months**
- Retrospective analysis of **glofitamab** (n=217) and **epcoritamab** (n=113); (N=330)³
- **CUBIC mFU: 5.6 months**
- Retrospective analysis of **glofitamab** (N=69)⁴
- **CUP Germany, Austria, Switzerland mFU: 5 months**
- Retrospective analysis of **glofitamab** (N=70)⁵
- **EPCORE NHL-1 mFU: 20 months^a**
- Phase 1/2 trial of **epcoritamab** (N=157)⁶
- **CUBIC mFU 12.9 months**
- Retrospective analysis of **epcoritamab** (N=54)⁷

Glofitamab (%)



Epcoritamab (%)



• **With a broader patient population, real world data suggests lower CR rates with glofitamab and epcoritamab in R/R LBCL compared with clinical trials**

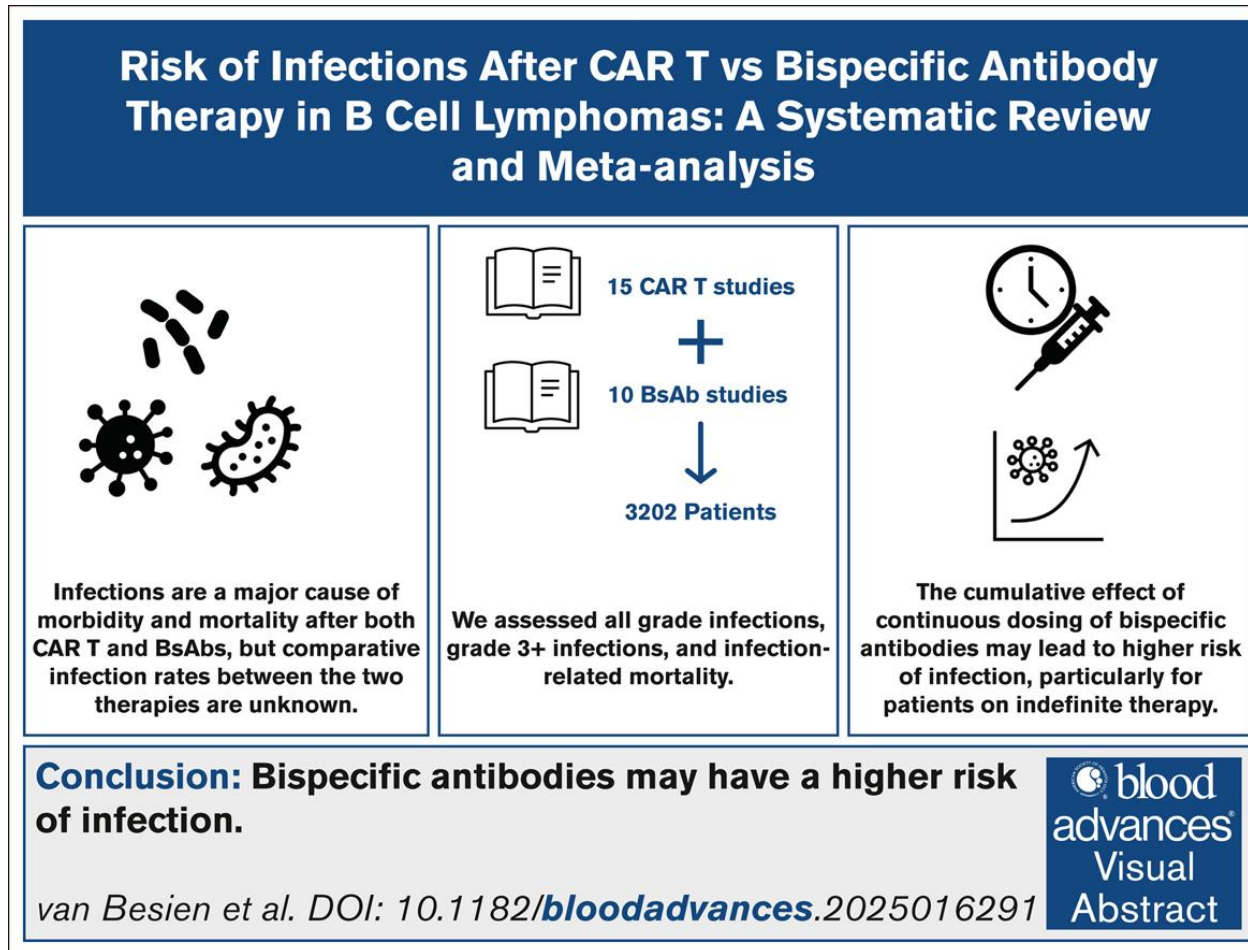
Real world effectiveness of BsAbs in R/R LBCL: a comparison of clinical trials and real-world data. J Clin Oncol. 2023;41(12):1457-1465. doi:10.1200/JCO.2022.41.12.1457. © 2023 by American Society of Clinical Oncology. All rights reserved. This article is intended solely for the personal use of the individual user and is not to be disseminated broadly. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording, or by any information storage and retrieval system, without permission in writing from the American Society of Clinical Oncology. For more information, contact ASCO at asco.org.

Comparative infection risk in CAR T vs bispecific antibodies in B-cell lymphoma: a systematic review and meta-analysis

Herman van Besien,^{1,*} Neela Easwar,^{1,*} Michelle Demetres,² Michelle Pasciolla,³ Tsiporah Shore,¹ John Leonard,¹ Juliet Barker,¹ Peter Martin,¹ and Samuel Yamshon¹

¹Division of Hematology/Oncology, Department of Medicine, Weill Cornell Medicine, Cornell University, New York, NY; ²Samuel J. Wood Library & C.V. Starr Biomedical Information Center, New York, NY; and ³Department of Pharmacy, New York Presbyterian Hospital/Weill Cornell Medical Center, New York, NY

Blood Adv (2025) 9 (23): 6063–6075.



Key Points

- A meta-analysis of trials of approved BsAbs and CAR T in B-cell lymphomas was performed to assess infection risk.
- Standardizing infection rates per patient-month reveals a significantly greater infection risk for BsAbs, particularly grade 3+ infections.

DLBCL — Quando CAR-T, Quando Bispecifici: Guida Clinica

Scenario / Paziente	→ CAR-T	→ Bispecifici	Nota
Fit, ≥2L, centro JACIE, malattia stabile	✓ PRIMA SCELTA axi-cel o liso-cel	Alternativa se non eligibile	CR+OS superiore. Plateau documentato. Bridging accettabile.
High-risk early relapse (< 12m da 1L) o refrattario a R-CHOP	✓ PREFERITO liso-cel/axi-cel in 2L	Solo se non eleggibile CAR-T	TRANSFORM: EFS 1yr 44% vs 24% SoC. liso-cel approvato in 2L.
Malattia rapidly progressive non permette bridging 4-8 sett.	Non praticabile (lead-time troppo lungo)	✓ PRIMA SCELTA Risposta rapida C1-2	Epcoritamab/glofitamab: risposta in 4-6 settimane. Ponte verso CAR-T.
Anziano ≥70aa o comorbidità (cardiaca, neurologica, cognitiva)	ICANS 10-32% rischio inaccettabile	✓ PRIMA SCELTA ICAN <2%, ambulat.	Profilo tossicità favorevole. No requisito caregiver. Setting spoke.
PS ECOG ≥2 o fragilità non candidabile a ricovero	Non eleggibile standard	✓ PRIMA SCELTA	Trial registrativi bispec includono PS2. Step-up ambulatoriale.
≥3L post-2 linee compreso CAR-T failure	Già eseguito o non ripetibile	✓ PRIMA SCELTA ORR ~30-40%	Nessuna cross-resistenza completa. Attività preservata post-CD19 CAR- T
Bridging verso CAR-T durante attesa manifattura	In attesa	✓ OPZIONE come bridge	Dati rassicuranti su CD19 downregulation (<5% impatto clinico).
Double-hit/triple-hit lymphoma (MYC + BCL2/BCL6)	✓ PREFERITO CR rate documentato	Attivo ma dati limitati in DHL	Meta-regressione Kim 2024: vantaggio CAR-T persiste in DHL.
No accesso a centro JACIE o in area geograficamente remota	Non disponibile praticamente	✓ UNICA OPZIONE praticabile	Bispec erogabili in centri spoke. Riduzione gap di accesso.

STARGLO trial in 2L+
e sottopopolazioni

STARGLO: Glofitamab plus gemcitabine and oxaliplatin (Glofit-GemOx) in patients with R/R DLBCL

Study design

Baseline patient characteristics

Key eligibility criteria

- R/R DLBCL NOS after ≥1 prior systemic therapy
- Patients with one prior line must be transplant ineligible
- ECOG PS 0–2

Stratification factors

- Relapsed vs refractory disease^a
- 1 vs ≥2 prior lines of therapy

R 2:1

Glofit-GemOx^b (n=183)

Step-up dosing in Cycle 1, 30 mg administered on Day 1 from Cycle 2 onwards

Cycles 1–8
(21-day cycles)

Glofitamab

30 mg administered on Day 1 of each cycle

Cycles 9–12

R-GemOx^c (n=91)

Administered on Day 1 of each cycle

Characteristic, n (%) unless otherwise stated	R-GemOx n=91	Glofit-GemOx n=183
Median age (range)	69 (20–84)	68 (22–88)
Age ≥65 years	57 (62.6)	116 (63.4)
Race	Asian	86 (47.0)
	White	51 (56)
	Black or African American	33 (36.3)
	Unknown	82 (44.8)
Number of prior lines of therapy: 1 / ≥2	1 (1.1)	2 (1.1)
ECOG PS: 0 or 1 / 2	6 (6.6)	13 (7.1)
Number of prior lines of therapy: 1 / ≥2	57 (62.6) / 34 (37.4)	115 (62.8) / 68 (37.2)
R/R status to last therapy: relapsed / refractory	37 (40.7) / 54 (59.3)	71 (38.8) / 112 (61.2)
Primary refractory	47 (51.6)	106 (57.9)
ECOG PS: 0 or 1 / 2	(n=88) 80 (90.9) / 8 (9.1)	(n=180) 160 (88.9) / 20 (11.1)
Bulky disease (≥10 cm)	(n=90) 14 (15.6)	(n=183) 23 (12.6)
Prior CART-cell therapy	8 (8.8)	14 (7.7)

Some high-risk patients, such as those with HGBCL, DH and TH LBCL, were excluded from the study
PRIMARY REFRACTORY disease was defined as disease that did not respond to, or that progressed within 6 months after completing therapy

^aRelapsed disease: recurrence following a response that lasted ≥6 months after completion of the last line of therapy; refractory disease: disease that did not respond to, or that progressed <6 months after completion of the last line of therapy. ^bGemcitabine 1000 mg/m² and oxaliplatin 100 mg/m². In Cycle 1, obinutuzumab pre-treatment was administered on Day 1, GemOx on Day 2, followed by Glofit 2.5 mg on Day 8 and Glofit 10 mg on Day 15. In Cycles 2-8, Glofit 30 mg and GemOx were administered on Day 1. ^cRituximab 375 mg/m².

Estratto criteri di inclusione STARGLO trial

- Patients who had failed only one prior line of therapy and were not a candidate for high-dose chemotherapy followed by autologous stem cell transplant by meeting at least one of the following criteria:
 - Left ventricular ejection fraction $\leq 40\%$
 - Creatinine clearance or glomerular filtration rate ≤ 45 mL/min
 - Eastern Cooperative Oncology Group performance status of ≥ 2
 - Age ≥ 70 years
 - Patient refused high-dose chemotherapy and/or transplant
 - Patient had insufficient response to pre-transplant chemotherapy to be able to proceed to transplant
 - Other comorbidities or criteria that precluded the use of transplant based on local practice standards or in the investigator's opinion



STARGLO: Glofitamab plus gemcitabine and oxaliplatin (Glofit-GemOx) in patients with R/R DLBCL

	Non-Asian Region N=143	Asian Region N=131
Age		
Median Age, y (range)	71 (20, 88)	62 (22, 82)
<65y, n (%)	30 (21)	72 (55)
≥65 to <75y, n (%)	66 (46)	41 (31)
≥75y, n (%)	47 (33)	18 (14)
Race, n (%)		
Asian	6 (4)	131 (100)
Black	3 (2)	0
White	115 (80)	0
Unknown	19 (13)	0
Ethnicity, n (%)		
Hispanic	13 (9)	3 (2)

Reason for Transplant Ineligibility	Non-Asian Region N=143 n (%)	Asian Region N=131 n (%)
Age	86 (60%)	30 (23%)
Performance Status	2 (1%)	0
Comorbidity	11 (8%)	0
Insufficient response to salvage	19 (13%)	8 (6%)
Failed prior transplant	9 (6%)	3 (2%)
Lack of access to transplant center	0	2 (2%)
Patient refused transplant	10 (7%)	85 (65%)
Other*	4 (3%)	2 (2%)
None listed	2 (1%)	1 (0.8%)

*other: non-chemosensitive disease, too chemo refractory, risk of many adverse events, expected insufficient response; not ≥2 prior lines of treatment, insufficient response to pre-transplant chemotherapy

STARGLO: Glofitamab plus gemcitabine and oxaliplatin (Glofit-GemOx) in patients with R/R DLBCL



Prior Therapy Characteristics: Different Prior Treatment Exposures

Prior Therapy	Non-Asian Region N=143 n (%)	Asian Region N=131 n (%)
Median lines (range)	1 (1-5)	1 (1-5)
Component of Prior therapy		
Anthracycline	139 (97)	129 (98)
CD20 (ritux, obinu) or taf [CD19]	142 (99)	128 (98)
Platinum	31 (22)	36 (27)
Lenalidomide	5 (3)	22 (13)
Polatuzumab (pola-BR)	8 (6)	2 (2)
Radiotherapy	33 (23)	15 (11)
CART	19 (13)	2 (2)
ASCT	7 (5)	4 (3)
Other (PD1i, BTKi, Selinexor, etc)	3 (2)	19 (15)

➤ **Asian-enrolled** patients: higher % exposed to lenalidomide-containing regimens and “other therapy”

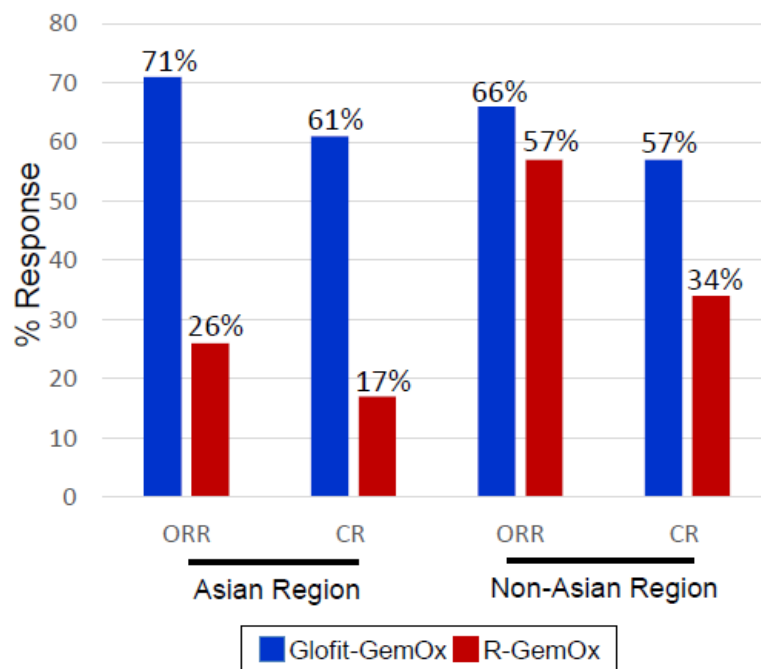
➤ **Non-Asian enrolled** patients: higher % CAR-T

www.fda.gov Abbreviations: Ritux: Rituximab; Obinu: Obinutuzumab; Taf: Tafasitamab; Pola-BR: polatuzumab+bendamustine+rituxumab; ASCT: autologous or allogeneic stem cell transplantation; BTKi: Bruton Tyrosine Kinase inhibitor; PD1i: Programmed-cell Death inhibitor

STARGLO: Glofitamab plus gemcitabine and oxaliplatin (Glofit-GemOx) in patients with R/R DLBCL



Differential ORR/CR Rates Across Regions



	Asian Region N=143		Non-Asian Region N=131	
	Glofit-GemOx N=84	R-GemOx N=47	Glofit-GemOx N=99	R-GemOx N=44
CR rate^a, n (%)	51 (61)	8 (17)	56 (57)	15 (34)
[95% CI]	[49,71]	[8,31]	[46,67]	[20,50]
ORR, n (%)	60 (71)	12 (26)	65 (66)	25 (57)
[95% CI]	[61,81]	[14,40]	[55,75]	[41,72]

^aKey secondary endpoint
Source: FDA Analysis; Data cutoff: Feb 2024

www.fda.gov

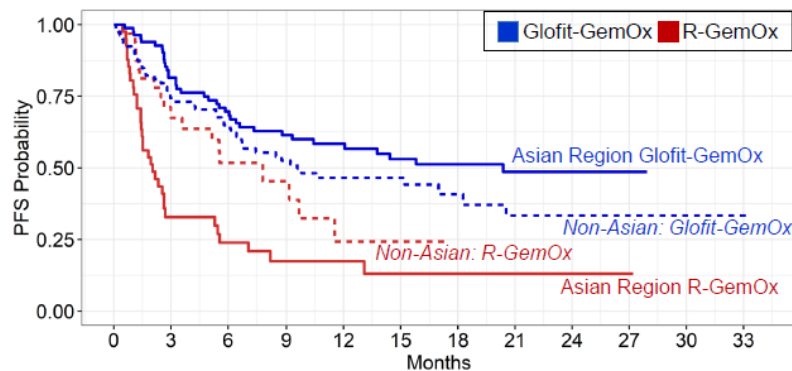
Abbreviations: ORR: Overall response rate; CR: Complete response; CI: Confidence interval 58

STARGLO: Glofitamab plus gemcitabine and oxaliplatin (Glofit-GemOx) in patients with R/R DLBCL

Differential PFS Effects Across Regions



Kaplan-Meier Plot of PFS by Region



Number at risk		0	3	6	9	12	15	18	21	24	27	30	33
—	47	11	8	4	4	3	1	1	1	1	0	0	0
- - -	34	18	11	7	3	2	0	0	0	0	0	0	0
—	84	64	52	44	33	30	24	17	8	5	0	0	0
- - -	84	57	48	38	28	20	11	7	6	5	2	1	1

PFS	Non-Asian Region	
	Glofit-GemOx N=99	R-GemOx N=44
Median PFS	9.2 mo	7.8 mo
HR (95%CI)	0.81 (0.48, 1.35)	

PFS	Asian Region	
	Glofit-GemOx N=84	R-GemOx N=47
Median PFS	20.4 mo	2.0 mo
HR (95%CI)	0.25 (0.15, 0.41)	

Source: FDA analysis; Data Cutoff: Feb 2024

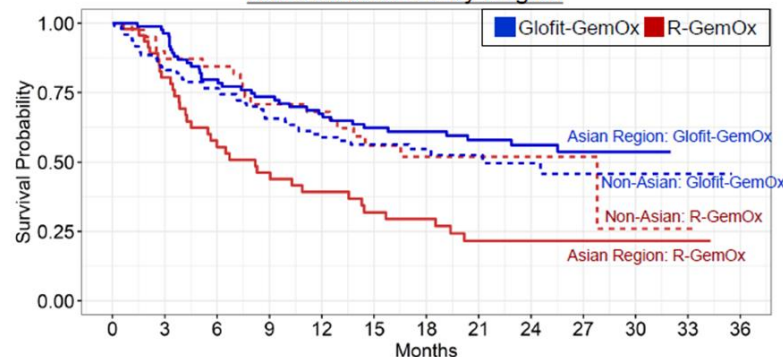
Abbreviations: PFS: Progression-free survival; mo: Months; HR: Hazard ratio; CI: Confidence interval

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Differential OS Effects Across Regions



KM Curves of OS by Region



Number at risk		0	3	6	9	12	15	18	21	24	27	30	33	36
—	47	36	24	20	17	13	12	7	5	5	2	1	0	0
- - -	44	32	31	26	23	16	11	7	5	3	1	1	0	0
—	84	81	65	60	55	47	45	33	27	17	5	0	0	0
- - -	99	78	70	59	49	39	26	18	13	9	6	3	0	0

www.fda.gov

Abbreviations: Glofit-GemOx: Glofitamab, Gemcitabine and Oxaliplatin; R-GemOx: Rituximab, Gemcitabine and Oxaliplatin; HR: Hazard Ratio; CI: Confidence Interval; NE: Not estimable

Source: FDA analysis
Data Cut-off: 2024

7

OS	Non-Asian Region	
	Glofit-GemOx N=99	R-GemOx N=44
Median OS	21.2 mo	27.8 mo
HR (95%CI)	1.06 (0.61, 1.84)	

U.S. HR 2.62 (0.56, 12.34)

OS	Asian Region	
	Glofit-GemOx N=84	R-GemOx N=47
Median OS	NE	8.2 mo
HR (95%CI)	0.39 (0.25, 0.63)	

STARGLO — perché i pazienti asiatici vanno meglio?

■ Vantaggio asiatici ■ Svantaggio non asiatici ■ Dato neutro / HR

Variabile	Asia (48%)	Non-Asia (52%)	Impatto
CARATTERISTICHE BASELINE			
Età mediana	62 anni	71 anni	Più fit
Motivo ASCT-ineleggibilità: rifiuto paziente	65%	7%	Selezione più fit
Malattia primariamente refrattaria nel braccio sperimentale	Bilanciata	Squilibrata (↑ nel braccio glofit)	Confounding
EFFICACIA (HR OS GLOFITAMAB VS RITUXIMAB)			
Asia + Australia ("resto del mondo")	HR 0.41 (95% CI 0.27–0.64)		Netto beneficio
Europa	HR 1.09 (95% CI 0.54–2.18)		Nessun beneficio
Nord America	HR 2.62 (95% CI 0.56–12.34)		Trend sfavorevole
PFS HR Asia vs non-Asia	0.25	0.81	p = 0.0006
ΔCR rate (glofit vs rit)	+44%	+22%	p = 0.06
IPOTESI ESPLICATIVE			
Braccio di controllo più debole in Asia	Meno accesso a terapie salvage post-progressione	Più opzioni post-progressione disponibili	Confounding OS
Razionale farmacologico	Nessuna differenza PK identificata da Genentech		Non spiegato

I punti chiave sono tre: i pazienti asiatici erano più giovani e più fit (molti erano ASCT-ineleggibili solo perché *rifiutavano* il trapianto, non per comorbidità), il braccio di controllo con rituximab + GemOx era intrinsecamente più debole in Asia per scarsità di terapie salvage alternative, e c'era uno squilibrio prognostico nel braccio glofitamab americano (più malattia primariamente refrattaria). Nessuna spiegazione farmacocinetica è stata identificata.

FDA ODAC votes 8-1 glofitamab trial does not apply to US patients

BY LEAH SHERWOOD | MAY 20, 2025 | 0 COMMENTS | 1 MINUTE READ | 12 MONTHS AGO



A federal advisory panel voted 8-1 Tuesday that results from the global STARGLO trial, which was intended as the confirmatory trial for full approval of glofitamab-gxbm, were not applicable to the US patient population.

The central concern was the regional variation in the trial's outcomes. While glofitamab showed a significant overall survival benefit in patients with relapsed or refractory diffuse large B-cell **lymphoma** (DLBCL), nearly half of the 274 participants were enrolled in Asia, where the benefit was most pronounced. In contrast, only 9% were from the US and high hazard ratios in that subgroup raised concerns.

"Are the STARGLO population and trial results applicable to the proposed US patient population?" was the panel's voting question.

"While I'm a strong proponent of drug development, strong proponent of access to therapies, the question that was asked of me is, are the results from the trial applicable to the US general population? I'm not convinced with the data that is provided by the sponsor that it is applicable to the general population," said Ajay Nooka, MD, MPH who voted no.

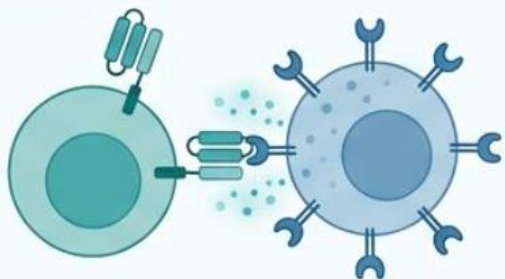
The sole yes came from patient representative Paul Majkowski, Esq, who provided the rationale for his "yes" vote.

"While it is on the sponsor to meet the burden of proof, maybe I was willing to relax that burden of proof for the considerations of the patient perspective," he said.

Efficacia nei Linfomi B Indolenti (FL, MZL): Confronto tra CAR-T e Anticorpi Bispecifici

“Dati principali su efficacia, follow-up, approvazioni e schemi terapeutici.”

CAR-T (axi-cel in FL $\geq 3L$)



~92%
ORR

~74%
CR rate

~57%
PFS a 24m



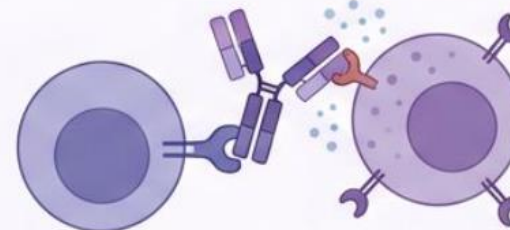
Risposta stabile:
3-4 anni

ZUMA-5

FDA/EMA
approvato FL $\geq 3L$

Follow-up lungo: Risposte stabili a 3-4 anni.

Bispecifici (mosunetuzumab, epcoritamab in FL $\geq 2L$)



~80%
ORR

~60%
CR rate

~40%
PFS a 24m



GO29781
(mosune)

EPCORE
FL

FDA approvato
(mosune FL $\geq 2L$)

Mosunetuzumab: 8 cicli fissi (schema fisso)

Efficacia Comparata nel FL r/r — Dati dei Trial Chiave

Dati aggiornati 2024-2025 · Confronto indiretto (nessun RCT head-to-head disponibile)

▶ CAR-T cells — anti-CD19

Trial / Agente	Linee	N	ORR	CR	PFS med.	DOR med.	FU med.	Schema / Setting
Axi-cel ZUMA-5	≥3L	104	92%	74%	NR (≥38m)	NR	38m	Infusione singola IV · ricovero req.
Tisa-cel ELARA	≥3L	97	86%	69%	NR	NR	24m	Infusione singola IV · ricovero req.

▶ Anticorpi Bispecifici — CD20×CD3

Trial / Agente	Linee	N	ORR	CR	PFS med.	DOR med.	FU med.	Schema / Setting
Mosunetuzumab GO29781	≥2L	90	78%	60%	24.0m	46.4m	49m	FISSO 8 cicli IV · ambulatoriale · recovery B-cell a 18m
Epcoritamab EPCORE FL	≥2L	128	82%	63%	17.9m	22.8m	17m	Continuo fino a PD · sottocutaneo · ambulatoriale

▶ PI3K Inibitori — status regolatorio 2025

Trial / Agente	Linee	N	ORR	CR	PFS med.	DOR med.	FU med.	Schema / Setting
Copanlisib CHRONOS-1	≥2L	104	59%	14%	11.2m	12.7m	—	IV day-hosp. 3/4 sett. · unico PI3Ki rimasto (USA)
Idelalisib / Duvelisib / Umbralisib	—	—	—	—	—	—	—	⚠ RITIRATI — morti da infezioni e colite autoimmune fatale

CAR-T Cell Therapy



Advantages



Superior ORR & CR rates



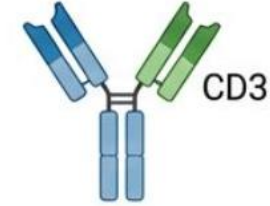
Long follow-up data

Logistics & Setting



Inpatient / Specialized Centers

Bispecific Antibodies (Mosunetuzumab Focus)



Advantages



Fixed regimen
(mosunetuzumab: 8 cycles)



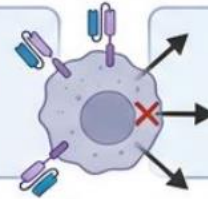
Lower toxicity

Logistics & Setting

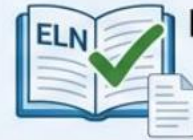


Outpatient / Community Setting


Double-refractory patient




If fit:
Prefer CAR-T



ELN 2024: Both options
valid after ≥ 2 lines
post-rituximab


If unfit:
Consider bispecifics

Systematic review and meta-analysis: CAR-T vs bispecific antibody as third or later-line therapy for follicular lymphoma

Lawrence Cheng Kiat Ng^{1,2,6,32}, Xiu Hue Lee^{1,2,6}, Yan Chin Tan^{1,2}, Kye Ling Wong^{1,2}, Johnny Chung Yue Chow¹, Victor Wei Teik Ling^{3,4}, Edwin Wei Sheng Thong^{3,4}, Esther Han Li Chan^{3,4}, Wee Lee Chan^{3,4}, Miny Samuel^{3,4,7} and Michelle Li Mei Poon^{3,4,7}

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There is currently no clear consensus on the standard of care for relapsed or refractory follicular lymphoma (FL) beyond third-line therapy, where both anti-CD19 CAR-T-cell therapy (CAR-T) and CD3×CD20 bispecific antibodies (BsAbs) have demonstrated efficacy. This study aimed to examine their efficacy and toxicity profiles. Relevant studies published between January 2010 and June 2025 were identified through major databases. Of 3960 records screened, 12 studies met the inclusion criteria—7 involving CAR-T and 5 involving BsAbs. The pooled overall response rate (ORR) and complete response rate (CRR) were 93% and 82% for CAR-T, compared with 82% and 67% for BsAbs ($p = 0.0002$ and $p = 0.005$, respectively). Among patients with POD24, the CRR was 75% for CAR-T and 69% for BsAbs ($p = 0.56$). This translated into improved progression-free survival (PFS) with CAR-T: 6-month, 1-year and 3-year PFS rates were 85%, 74% and 54%, respectively, compared with 74%, 62%, and 42% for BsAbs ($p = 0.006$, $p = 0.002$ and $p = 0.009$, respectively). A trend toward higher 3-year overall survival (OS) was observed with CAR-T (80%) versus BsAbs (73%) ($p = 0.48$). Grade ≥ 3 immune effector cell-associated neurotoxicity syndrome (ICANS) occurred more frequently with CAR-T (8% vs. 0%, $p = 0.04$), whereas grade ≥ 3 infections were numerically higher with BsAbs (17% vs. 9%, $p = 0.31$). One-year non-relapse mortality (NRM) was similar between groups at 3%. Overall, CAR-T demonstrated potentially higher efficacy in this non-comparative meta-analysis, while the two therapies exhibited noticeable differences in toxicity profiles.

The pooled overall response rate (ORR) and complete response rate (CRR) were 93% and 82% for CAR-T, compared with 82% and 67% for BsAbs ($p = 0.0002$ and $p = 0.005$, respectively).

Among patients with POD24, the CRR was 75% for CAR-T and 69% for BsAbs ($p=0.56$)

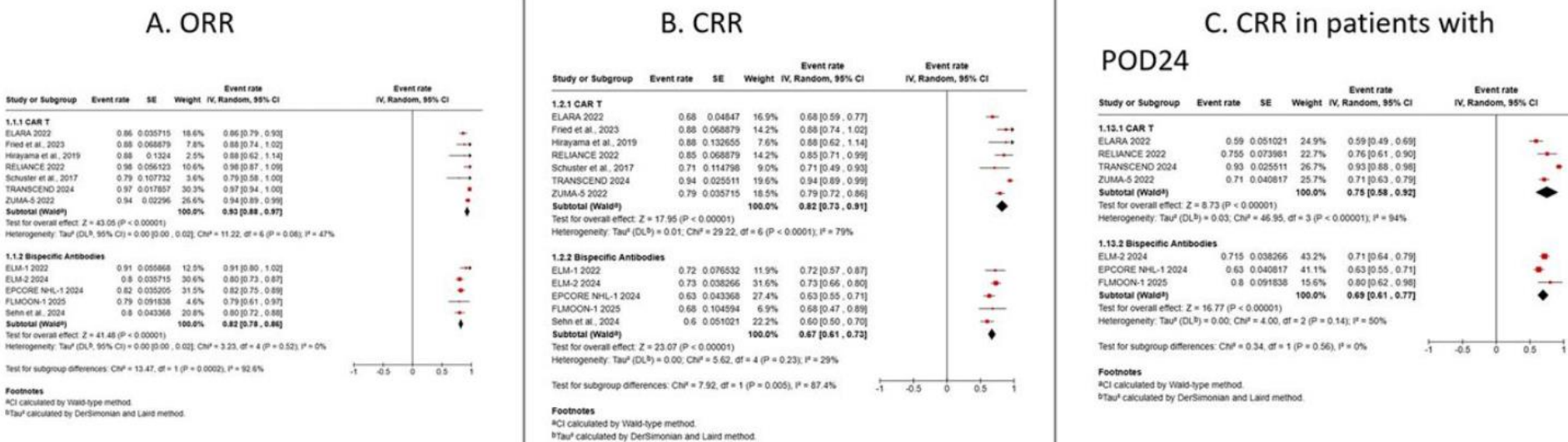


Fig. 2 Meta-analysis of response rate. A Overall response rate (ORR), B complete response rate (CRR), C CRR in patients with POD24.

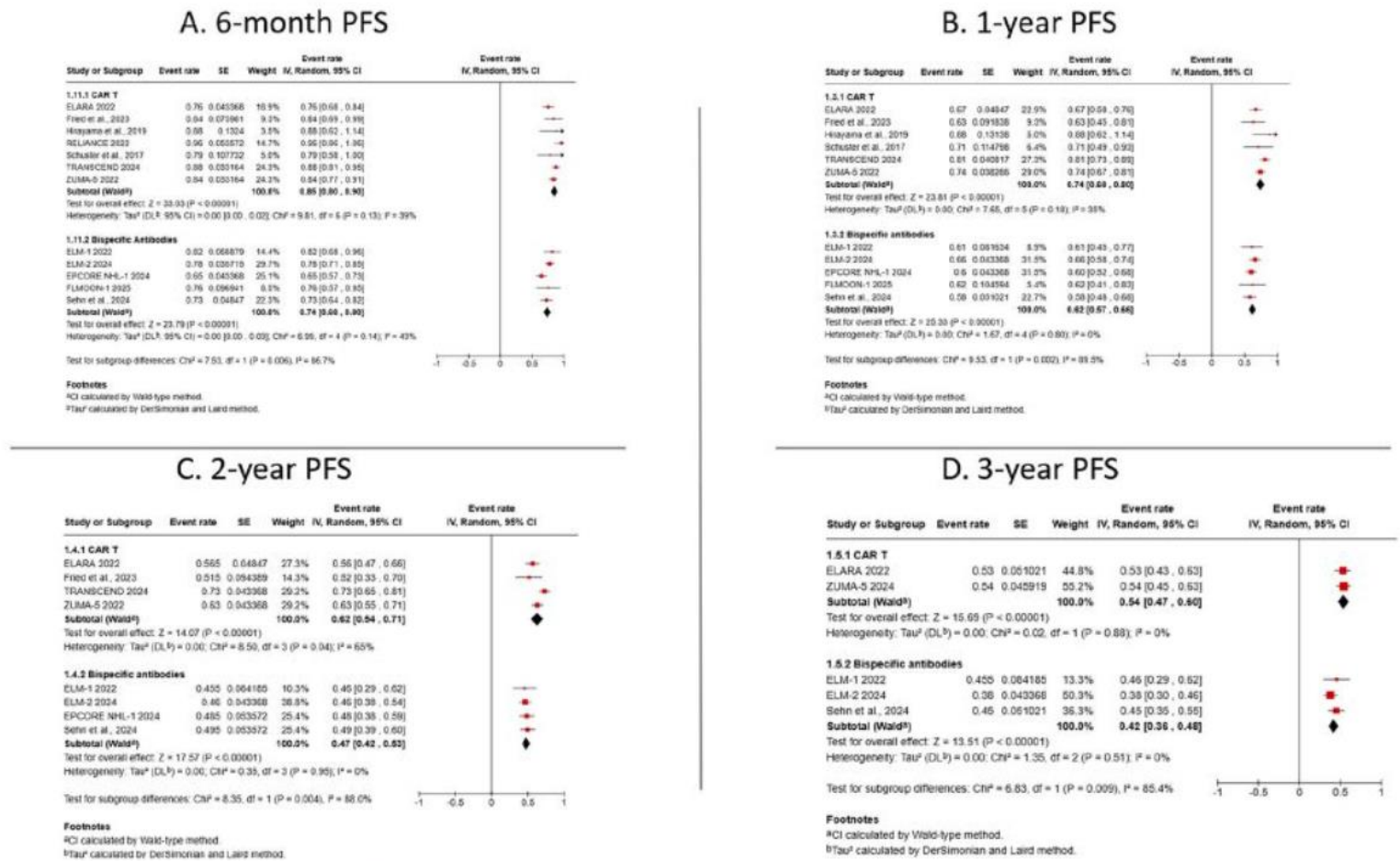
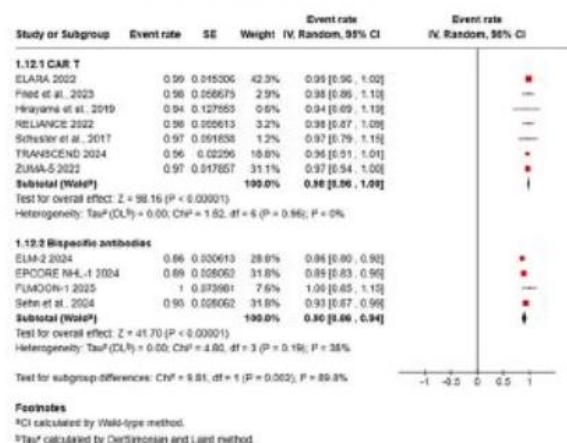


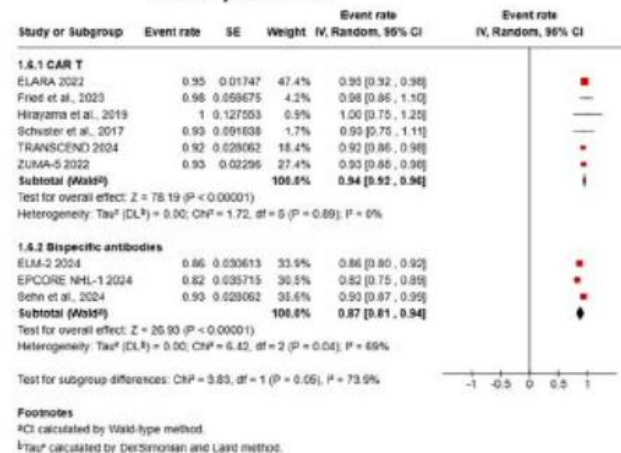
Fig. 3 Meta-analysis of progression-free survival (PFS). A 6-month PFS, B 1-year PFS, C 2-year PFS, D 3-year PFS.

improved progression-free survival (PFS) with CAR-T: 6-month, 1-year and 3-year PFS rates were 85%, 74% and 54%, respectively, compared with 74%, 62%, and 42% for BsAbs ($p=0.006$, $p=0.002$ and $p=0.009$, respectively).

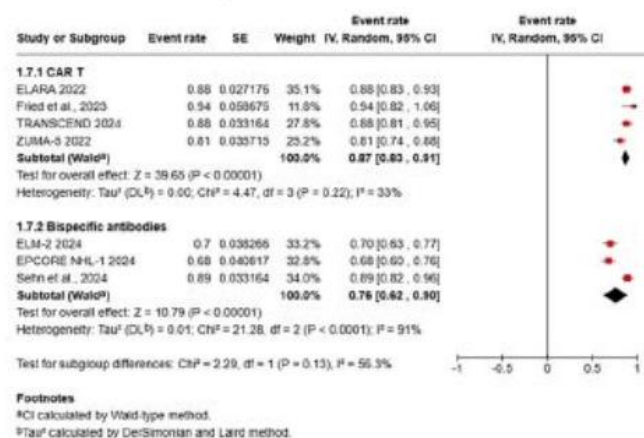
A. 6-month OS



B. 1-year OS



C. 2-year OS



D. 3-year OS

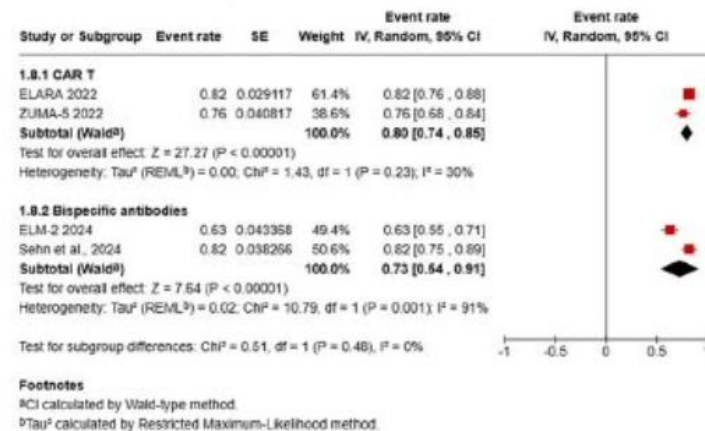


Fig. 4 Meta-analysis of overall survival (OS). A 6-month OS, B 1-year OS, C 2-year OS, D 3-year OS.

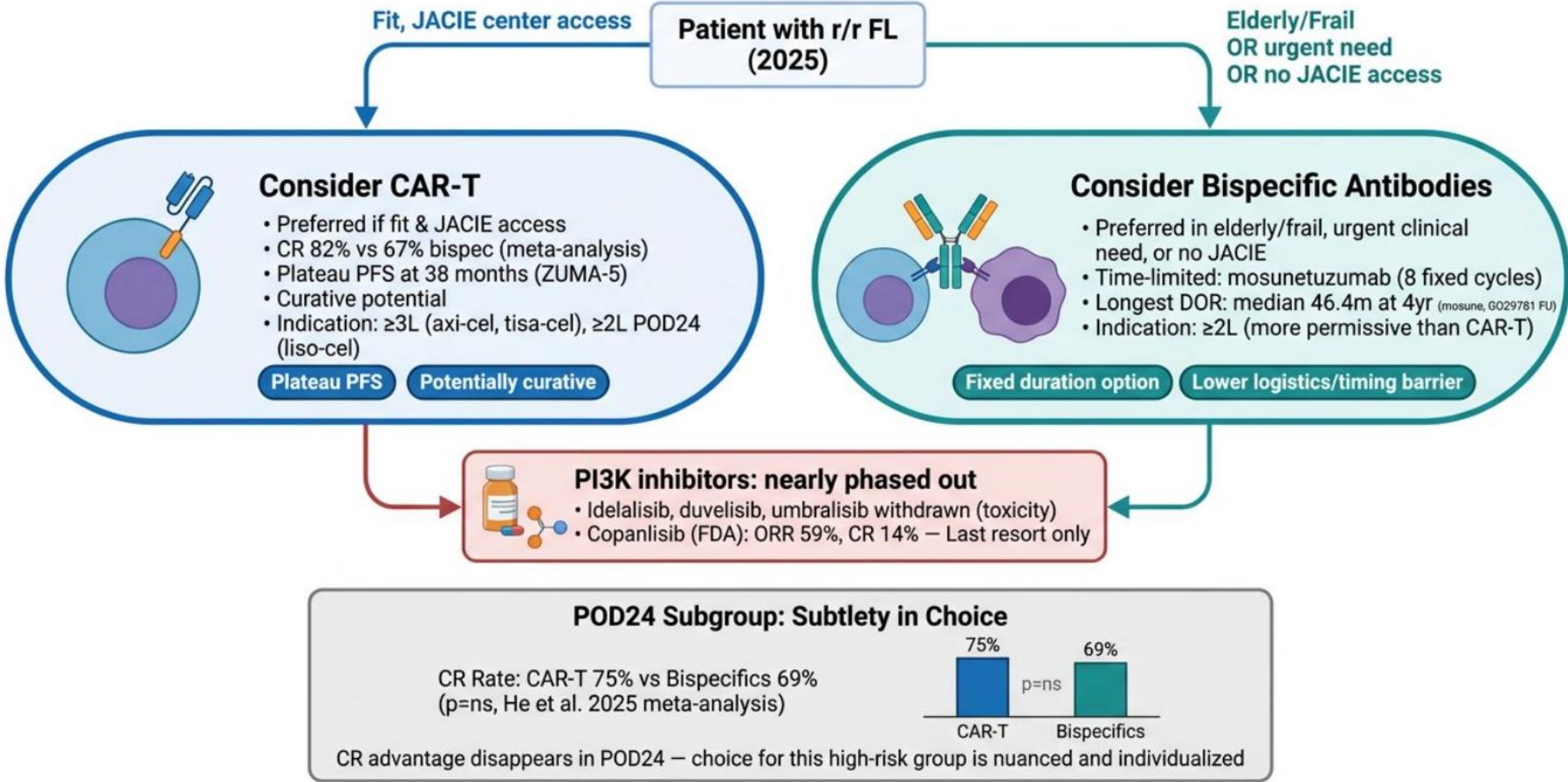
A trend toward higher 3-year overall survival (OS) was observed with CAR-T (80%) versus BsAbs (73%) ($p=0.48$)

CAR-T nel FL: il confronto indiretto

- 12 studi (7 CAR-T, 5 BsAb) in FL r/r, fornisce la migliore stima indiretta disponibile
- **ORR 93% e CRR 82% per CAR-T** vs **ORR 82% e CRR 67% per BsAb** ($p=0.0002$ e $p=0.005$)
- Nei pazienti con POD24, la **CRR era 75% per CAR-T** vs **69% per bispecifici** ($p=0.56$ — non *significativo*).
- La PFS a 6 mesi, 1 anno e 3 anni era rispettivamente **85%, 74%, 54% per CAR-T** vs **74%, 62%, 42% per bispecifici** ($p=0.006$).

Il dato **sul POD24 è cruciale**: la differenza di CR rate scompare, il che suggerisce che nei pazienti ad alto rischio la scelta tra le due strategie sia molto più sfumata di quanto appaia guardando solo le coorti generali.

2025 Therapeutic Hierarchy in Relapsed/Refractory Follicular Lymphoma



FL r/r — Quando CAR-T, Quando Bispecifici: Guida Clinica

Scenario / Paziente	→ CAR-T	→ Bispecifici	Nota
FL ≥3L, fit, JACIE disponibile	✓ PREFERITO axi-cel o tisa-cel	Alternativa se non eleggibile	CR 82% CAR-T vs 67% bispec. Plateau PFS a 38m.
FL ≥2L, POD24 ad alto rischio	✓ PREFERITO liso-cel (2L)	Equivalente in POD24 (CR 75% vs 69%, p=ns)	CR non differisce significativamente in POD24 (meta-analisi).
HT (trasformazione istologica) accertata o sospetta	✓ PRIMA SCELTA potenziale curativo	Solo se non eleggibile CAR-T	Curabilità nel DLBCL documentata. Dati bispec in HT assenti.
Anziano / comorbidità rischio ICANS elevato	ICANS 11-19% non accettabile	✓ PRIMA SCELTA ICAN <1%, ambulat.	Profilo tossicità nettamente favorevole. No caregiver 30gg.
Schema time-limited preferito dal paziente	Sì — singola infusione	✓ MOSUNE 8 cicli fissi IV	Mosune: unico bispecifico a schema fisso. DOR 46.4m a 4yr FU.
Malattia indolente stabile, nessuna urgenza	✓ PREFERITO efficacia superiore	Valida alternativa se no JACIE	Decisione condivisa paziente-clinico su logistica vs efficacia.
Refrattario a PI3Ki (idelalisib, copanlisib, etc.)	Attivo ma dati limitati	✓ PRIMA SCELTA ORR 88.9% post-PI3Ki	Epcò post-PI3Ki: sottopop. con risposta più elevata osservata.
Post-CAR-T failure	Già eseguito	✓ PRIMA SCELTA nessuna cross-resistenza	Mosune post-CAR-T: ORR 100%/CR 50% in piccola serie (n=4).
No accesso JACIE o area remota	Non disponibile praticamente	✓ UNICA OPZIONE	Bispec erogabili in spoke. Epcò SC: minima infrastruttura.