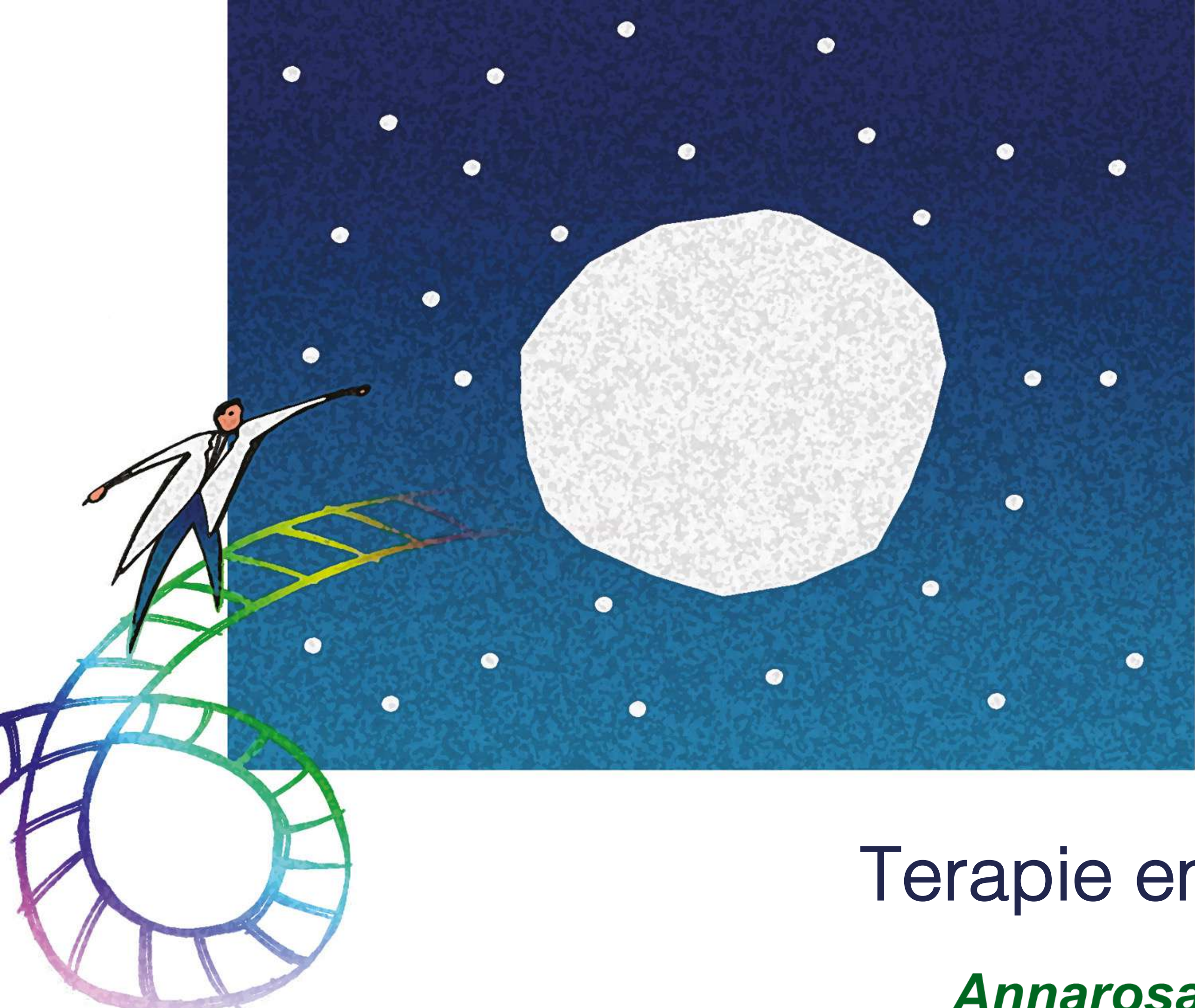




The young side of **LYMPHOMA**

gli under 40 a confronto

Verona, Centro Congressi Camera di Commercio
26-27 settembre 2025

Terapie emergenti nel HL

Annarosa Cuccaro

Istituto Nazionale Tumori, IRCCS Fondazione G. Pascale,
UOC Ematologia Oncologica, Napoli

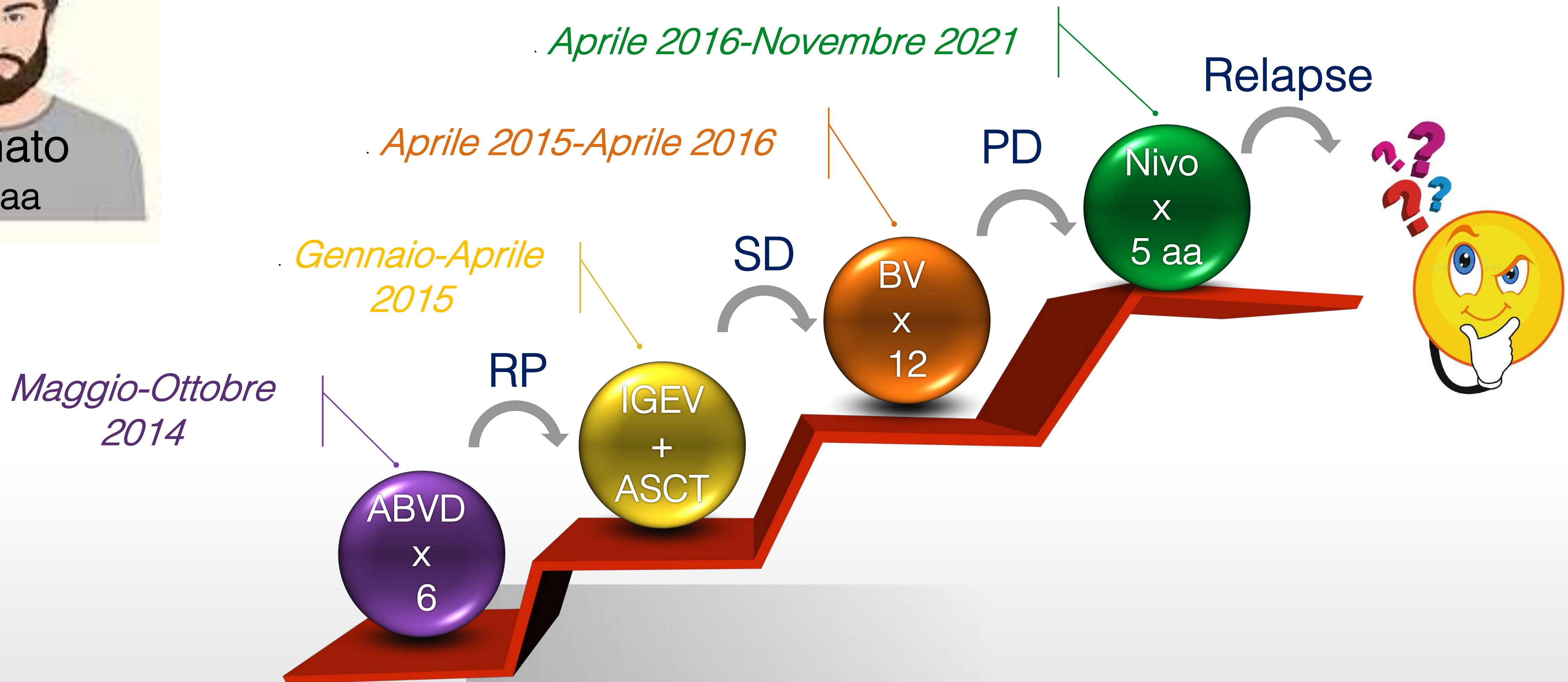


Disclosures of Name Surname

Company name	Research support	Employee	Consultant	Stockholder	Speakers bureau	Advisory board	Other
Takeda						x	



- LH SN II, Stadio IIB
Aprile 2014



Cosa fareste?

- a) Trapianto allogenico
- b) Trial Clinico
- c) Chemioterapia *platino-based*
- d) *Rechallenge* BV/CPI

ARTICLE

OPEN

Check for updates

Outcomes in patients with classic Hodgkin lymphoma refractory or intolerant to brentuximab vedotin and anti-PD-1 therapy: a real world analysis from 15 U.S. academic centers

Timothy J. Voorhees¹, Eric M. McLaughlin², Pallawi Torka³, Jorge Florindez⁴, Na Hyun Kim⁵, Tamara K. Moyo⁶, Heather Reves⁷, Nuttavut Sumransub⁸, Saarang Deshpande⁹, Ashley Rose¹⁰, Cassandra Duarte¹¹, Muhammad Salman Faisal¹², Showkat Hamid¹², Suki Subbiah¹³, Sabarish Ayyappan¹⁴, Lauren Shea¹⁵, Matt Cortese¹², Krish Patel¹⁶, Ajay Major¹¹, Hayder Saeed¹⁰, Jakub Svoboda⁹, Sanjal Desai⁸, Praveen Ramakrishnan Geethakumari⁷, Mehdi Hamadani⁵, Natalie Grover⁴ and Narendranath Epperla^{1,17}

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Table 3. Double Refractory Characteristics.	
	All patients n = 173
Age At DR/INT, (median, range)	40 (19–90)
DR/INT	
Double Refractory	127 (73.4)
Intolerant	46 (26.6)
Years From Diagnosis, (median, range)	3.4 (0.5–23.1)
Prior LOT (median, range)	5 (1–13)
Prior ASCT at DR/INT	
Yes	86 (49.7)
No	87 (50.3)
Treatment After DR/INT	
Yes	153 (88.4)
No	20 (11.6)
BV Therapy After DR/INT	
Yes	41 (23.7)
No	132 (76.3)
Anti-PD-1 Therapy After DR/INT	
Yes	63 (36.4)
No	110 (63.6)

Table 1. Patient Characteristics.

	All Patients n = 173	Refractory (DR) n = 127	Intolerant (INT) n = 46
Age at Diagnosis, median (range)	34 (16–89)	33 (16–89)	40 (18–87)
Sex, n (%)			
Male	105 (60.7)	76 (59.8)	29 (63.0)
Female	68 (39.3)	51 (40.2)	17 (37.0)
Race, n (%)			
Caucasian	136 (78.6)	100 (78.7)	36 (78.3)
African American	25 (14.5)	18 (14.2)	7 (15.2)
Hispanic	6 (3.5)	5 (3.9)	1 (2.2)
Other	6 (3.5)	5 (3.2)	2 (4.4)
cHL Subtype			
Nodular Sclerosing	118 (68.2)	86 (67.7)	32 (69.6)
Mixed Cellularity	18 (10.4)	10 (7.9)	8 (17.4)
Lymphocyte Rich	1 (0.6)	1 (0.8)	0 (0)
Lymphocyte Deplete	6 (3.5)	6 (4.7)	0 (0)
Unknown	30 (17.3)	24 (18.9)	6 (13.0)
Stage At Diagnosis			
Limited (I–II)	36 (20.8)	29 (22.8)	7 (15.2)
Advanced (III–IV)	132 (76.3)	97 (76.4)	35 (76.1)
Unknown	5 (2.9)	1 (0.8)	4 (8.7)
Front-line Therapy			
ABVD/AVD	134 (77.5)	96 (75.6)	38 (82.6)
BV-AVD	15 (8.7)	12 (9.5)	3 (6.5)
BV + Nivo	5 (2.9)	5 (3.9)	0 (0)
BV +/- Chemo	10 (5.8)	7 (5.5)	3 (6.5)
Other	9 (5.2)	7 (5.5)	2 (4.4)
Front-line CR			
Yes	63 (36.4)	44 (34.7)	19 (41.3)
No	105 (60.7)	81 (63.8)	24 (52.2)
Unknown	5 (2.9)	2 (1.6)	3 (6.5)
Front-line Refractory			
Yes	100 (57.8)	77 (60.6)	23 (50.0)
No	71 (41.0)	49 (38.6)	22 (47.8)
Unknown	2 (1.2)	1 (0.8)	1 (2.2)

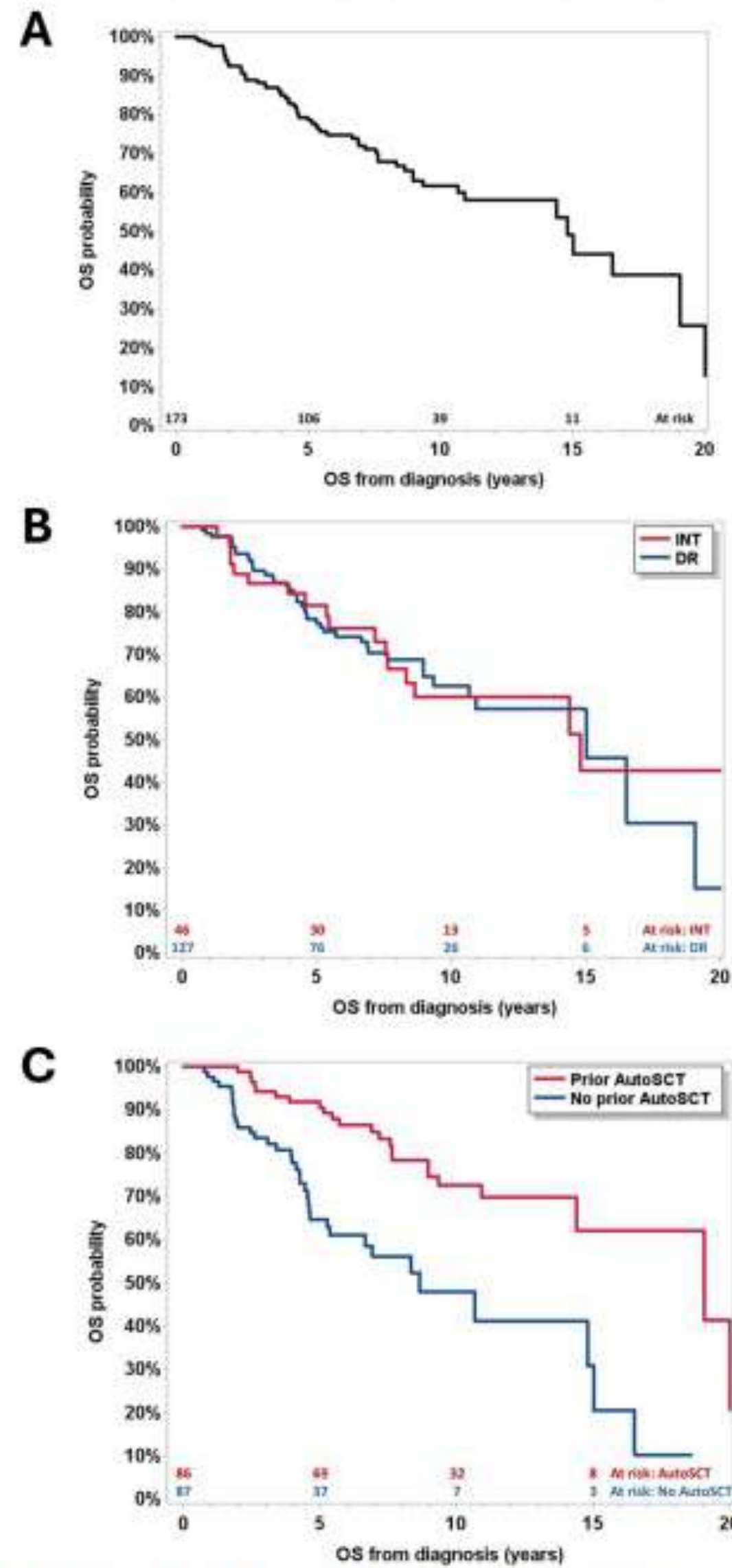


Fig. 1 Overall survival from diagnosis (OS-1). **A** the full cohort, **(B)** cohort stratified by INT (red) or DR (blue), **(C)** cohort stratified by prior ASCT (red) or no prior ASCT (blue) at the time of DR/INT.

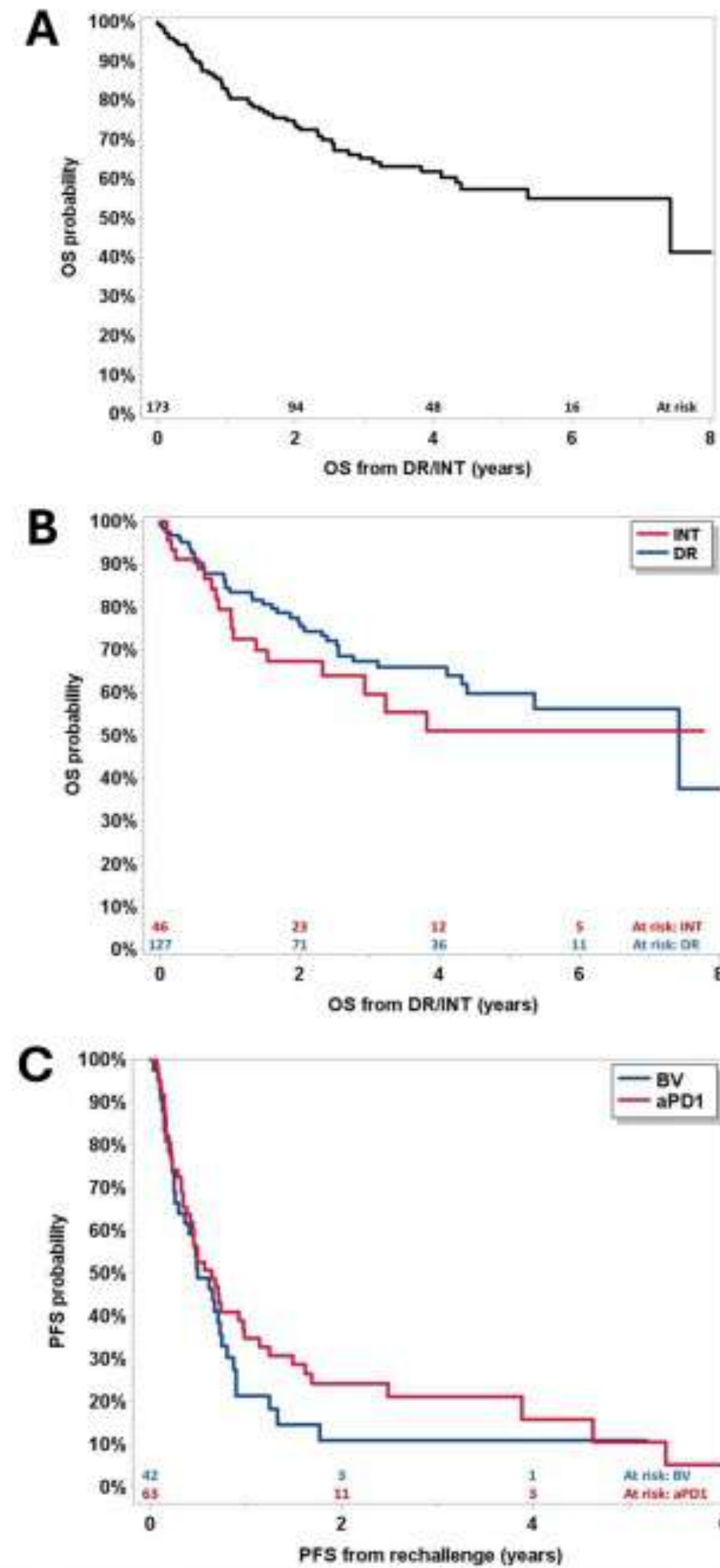


Fig. 2 Overall survival from the time of DR/INT (OS-2). **A** the full cohort, **(B)** cohort stratified by INT (red) or DR (blue). **C** Progression free survival (PFS) for patients rechallenged with anti-PD-1 based therapy (red) or BV based therapy (blue).

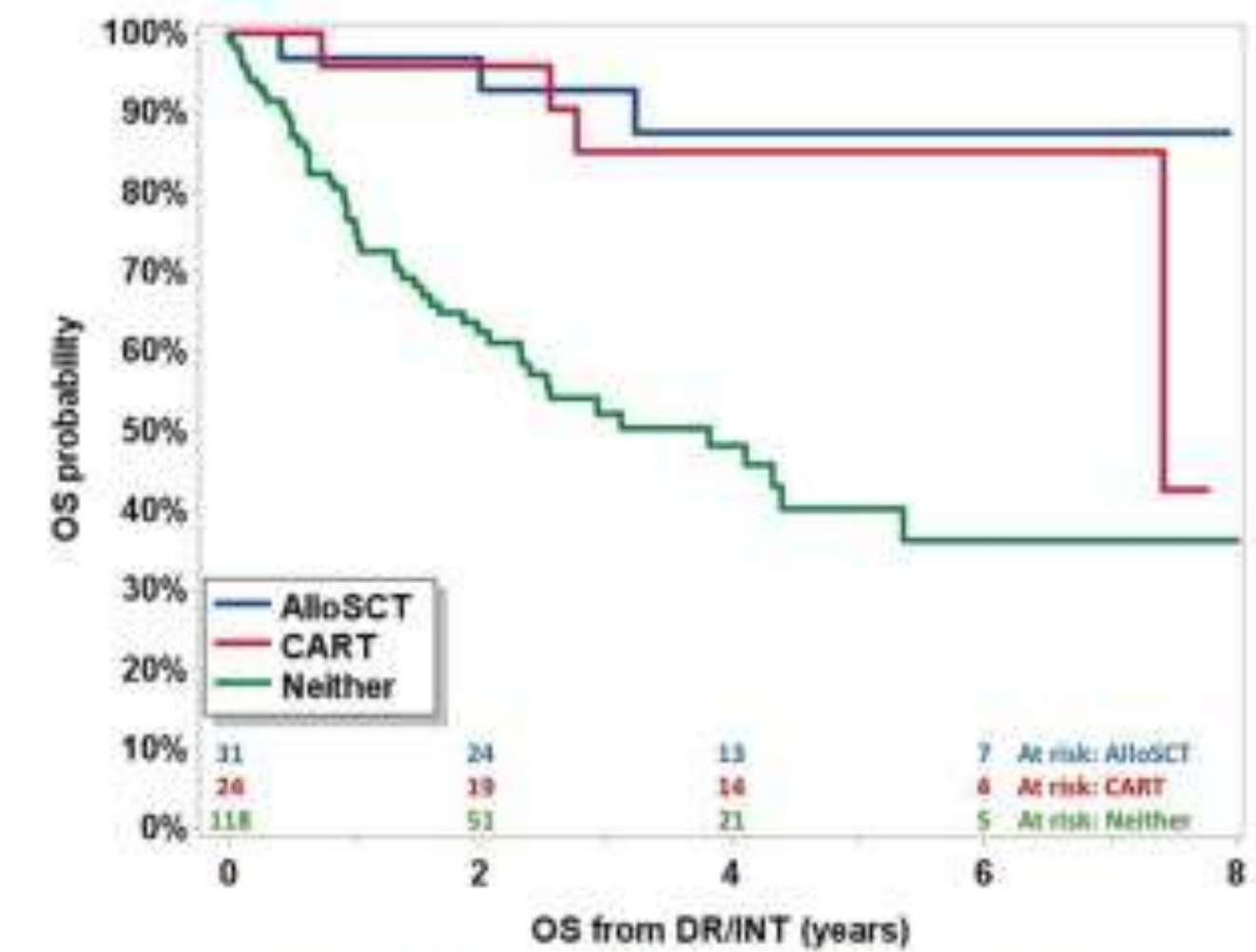
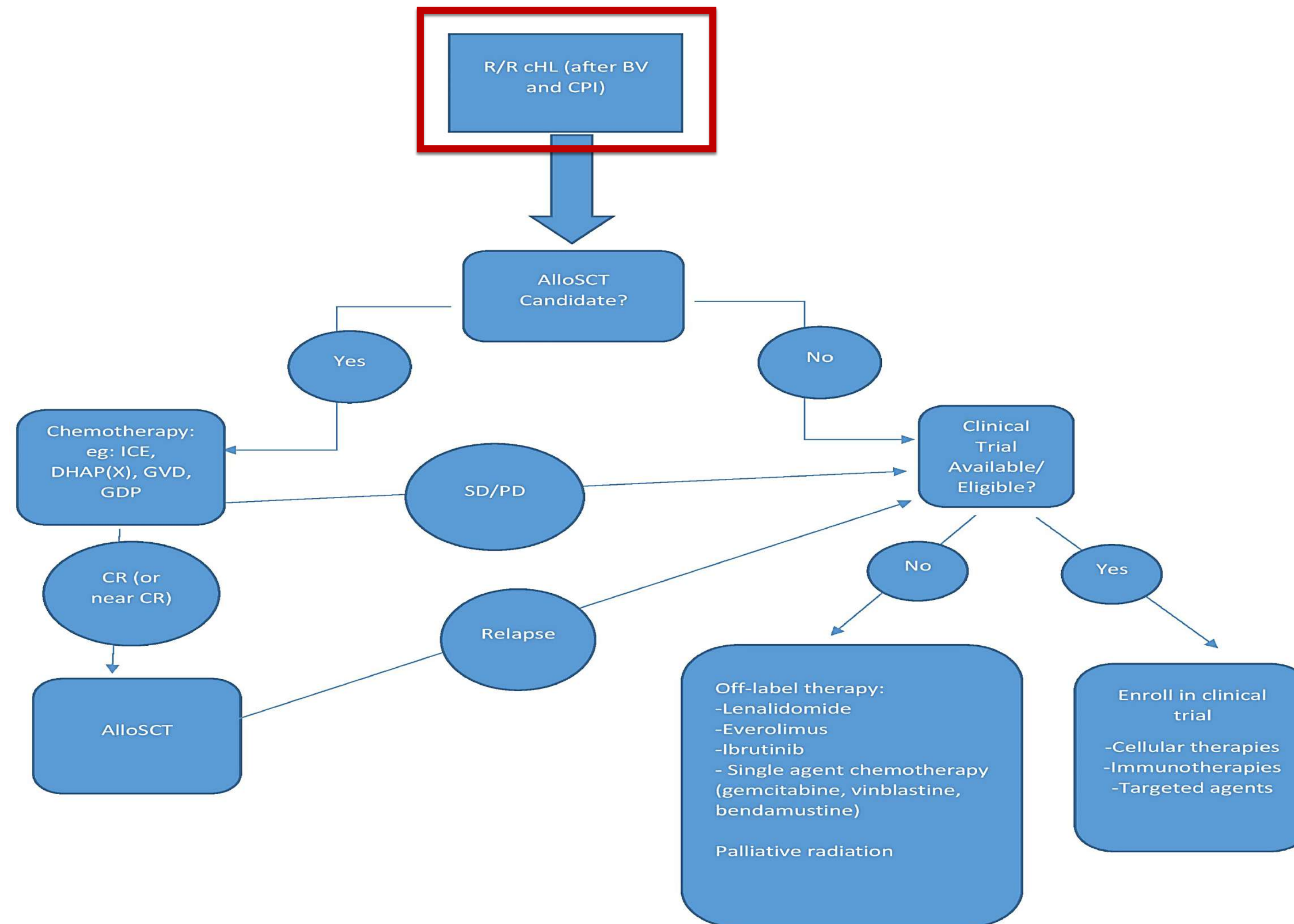
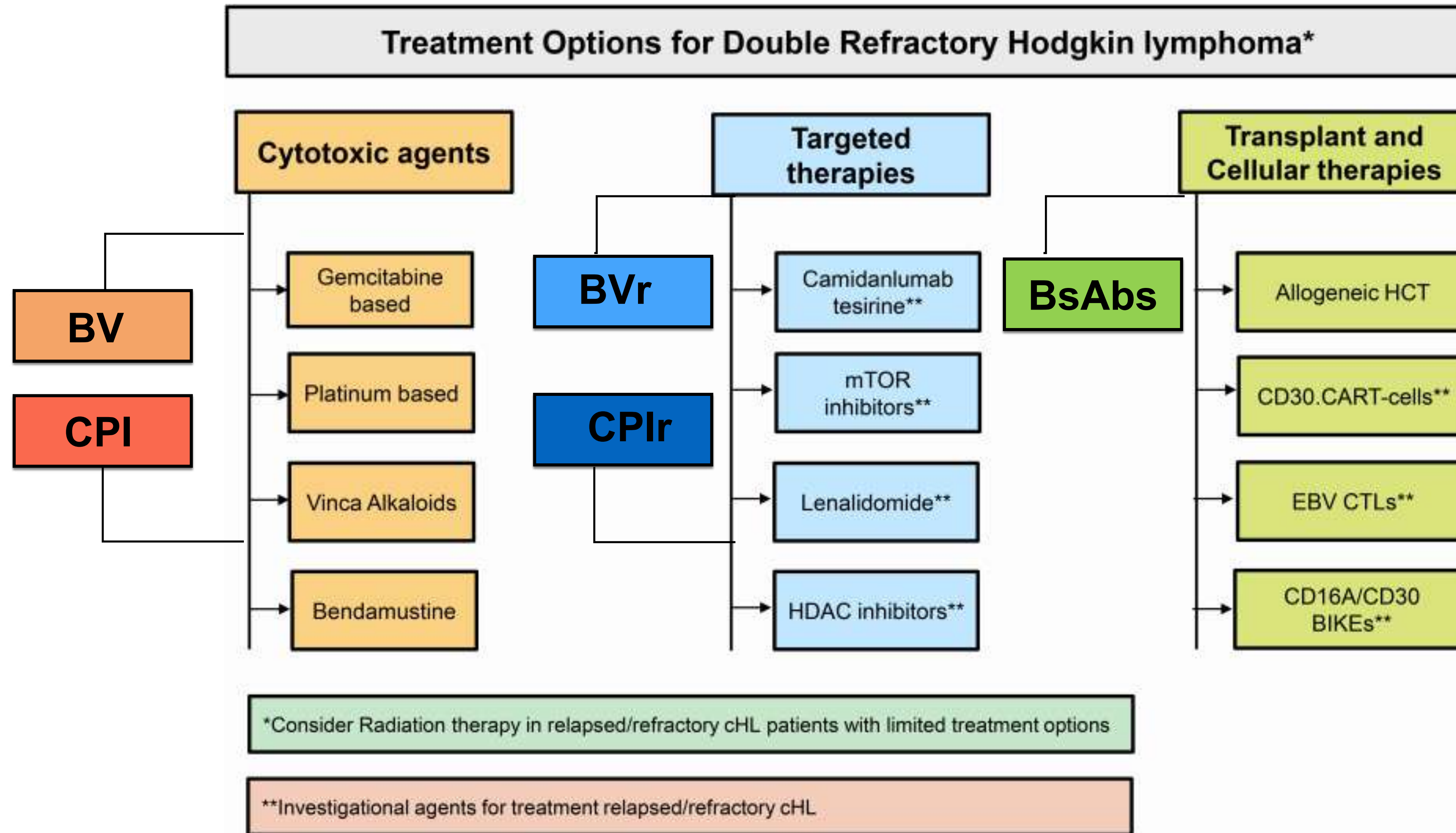


Fig. 3 Overall survival from the time of DR/INT (OS-2) stratified by subsequent AlloSCT (blue), CD30.CAR-T cell therapy (red), or neither therapy (green).

Management of relapsed and refractory HL post-BV & post-CPI





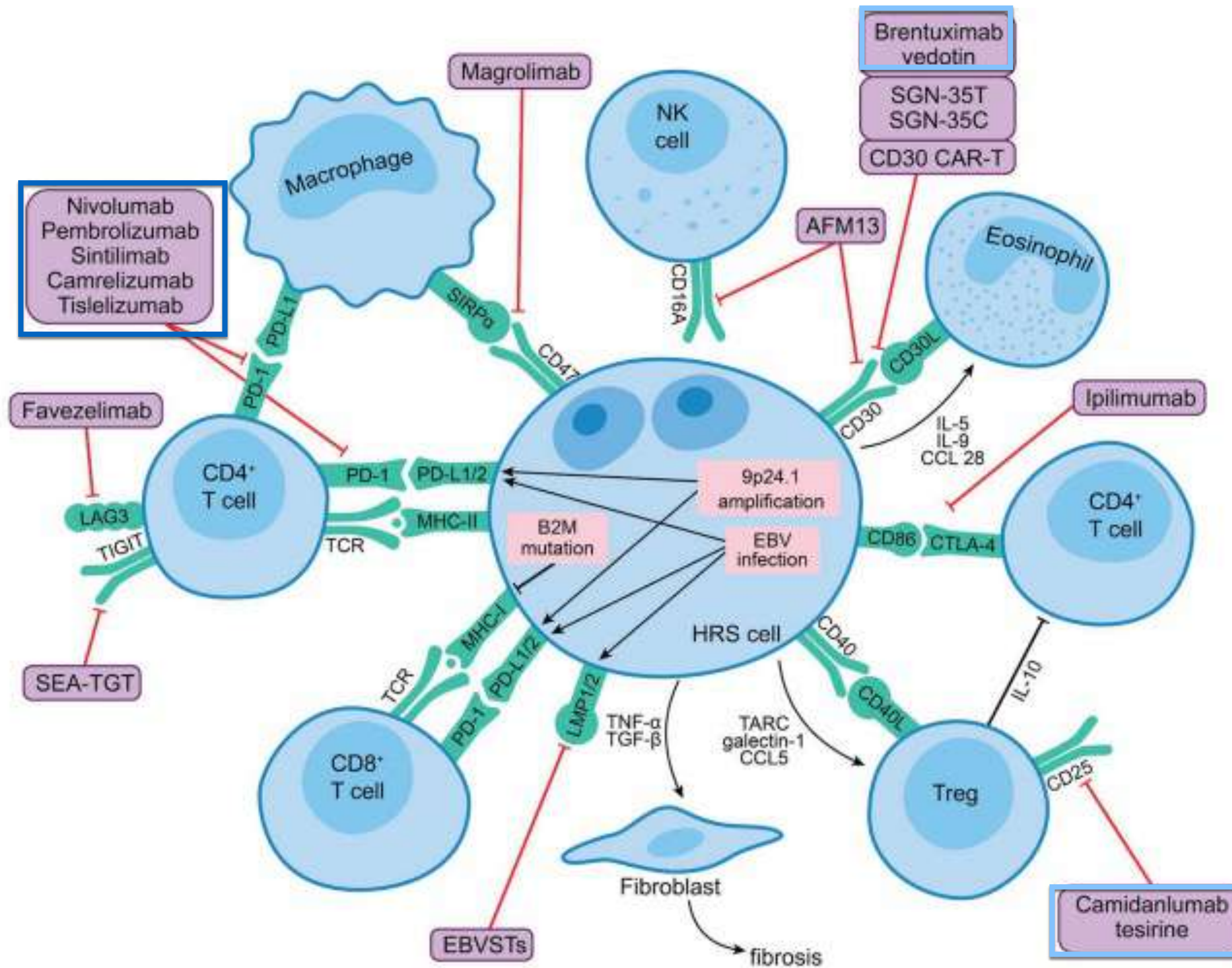
Cytotoxic agent HL

	N	ORR (%)	CR (%)	PFS	OS	Citation
GDP	23	69	17	NR	NR	Baetz et al. ¹¹
GVD*	41	62	20	4-y EFS: 52%	4-y OS: 70%	Bartlett et al. ¹²
ICE	65	88	26	58% at 43 mo	NR	Moskowitz et al. ¹³
DHAP	102	89	21	NR	NR	Josting et al. ¹⁴
Gemcitabine	23	39	9	6.7 mo	10.7 mo	Santoro et al. ¹⁹
Vinblastine	17	59	12	8.3 mo	38.8 mo	Little et al. ²⁰
Bendamustine	35	53	33	5.2 mo	NR	Moskowitz et al. ²¹

Cytotoxic agent HL + BV/CPI

Regimen	Phase	No.	Primary Refractory, No.	Relapsed, No.	CMR, %	PFS (all patients)	PFS (ASCT cohort)	Reference
BV-based salvage regimens								
BV→augmented ICE	II	45	25	20	76 ¹	82% at 3 years	82% at 3 years	Moskowitz et al ¹⁹
BV→salvage therapy	II	57	35	22	74 ²	71% at 2 years	71% at 2 years	Herrera et al ¹⁷
BV + ICE	II	45	29	16	74	80% at 2 years	Not reached	Lynch et al ⁴⁸
BV + ESHAP	I/II	66	40	26	70	71% at 30 months	Not reached	Garcia-Sanz et al ⁴⁹
BV + DHAP	II	61	23	38	79	76% at 2 years	Not reached	Hagenbeek et al ⁵⁰
BV + gemcitabine	I/II	45 ⁴	29	16	67	Not reached	Not reached	Cole et al ⁵¹
BV + bendamustine	I/II	55	28	27	74	62.6% at 2 years	70% at 2 years	LaCasce et al ⁵²
Anti-PD-1-based salvage regimens								
N ± ICE ⁵	II	39	18	21	91	72% at 2 years	94% at 2 years	Mei et al ¹⁸
Pem-ICE	II	42	16	26	86.5	87.2% at 2 years	Not reached	Bryan et al ²¹
Pem-GVD ⁷	II	39	16	23	95	100% at 13.5 months	100% at 13.5 months	Moskowitz et al ²⁰
BV + nivolumab	I/II	91	38	53	67	78% at 2 years	91% at 3 years	Herrera et al, Moskowitz et al ^{16,53}

TME & Immunotherapeutic targets in cHL



Michael A. Spinner & Ranjana H. Advani,
EXPERT OPINION ON EMERGING DRUGS, 2024

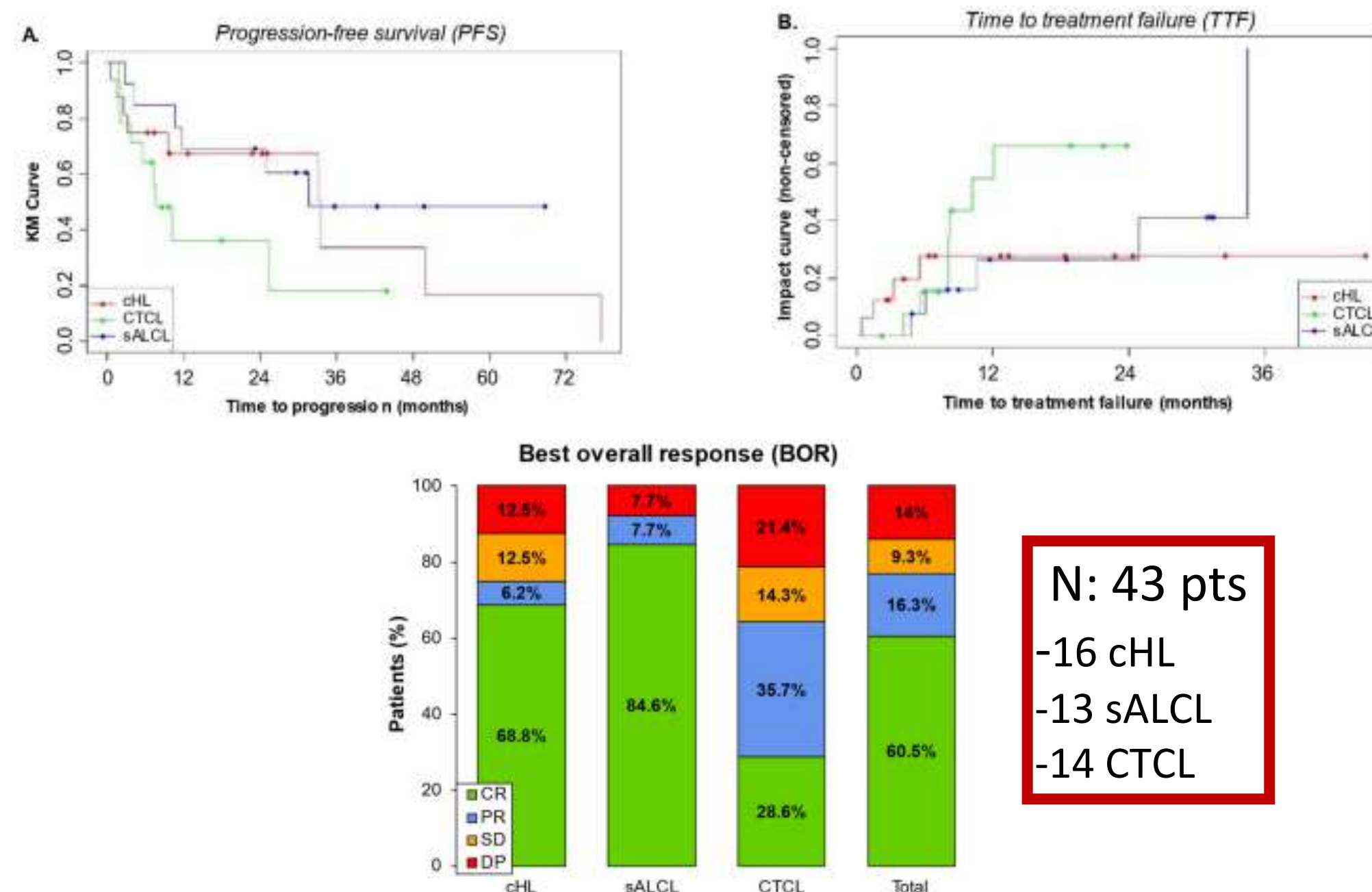
BV & CPI *rechallenge*



Article

Retreatment with Brentuximab Vedotin in Patients with Relapsed/Refractory CD30+ Malignancies: A Retrospective Medical Chart Review Study in Spain-The BELIEVE Study

Anna Sureda ¹, Ramón García-Sanz ^{2,*}, Eva Domingo-Domenech ¹, Francisco Javier Capote ³, Antonio Gutiérrez ⁴, Antonia Rodríguez ⁵, David Aguiar ⁶, Pilar Giraldo ⁷, María Stefanía Infante ⁸, Javier López-Jiménez ⁹, Carmen Martínez ¹⁰, Blanca Sánchez-González ¹¹, Pablo L. Ortiz-Romero ¹², Marta Grande ^{13,14} and Lourdes Baeza-Montañez ¹³



SYSTEMATIC REVIEW



Outcomes of immune checkpoint inhibitor rechallenge in relapsed/refractory Hodgkin lymphoma

Yoshito Nishimura, ^{1,*} Yiqun Han, ^{2,*} Nadia Toumeh, ³ Guneet Janda, ³ Yu Fujiwara, ⁴ Urshila Durani, ¹ Grzegorz S. Nowakowski, ¹ Jonas Paludo, ¹ Stephen M. Ansell, ¹ and Jithma P. Abeykoon ¹

Key Points

- ICI rechallenge in R/R classic HL can lead to high response rates comparable with uninterrupted ICI therapy.
- ICI rechallenge had acceptable safety profiles with grade 3 to 5 AEs occurring in 31%.

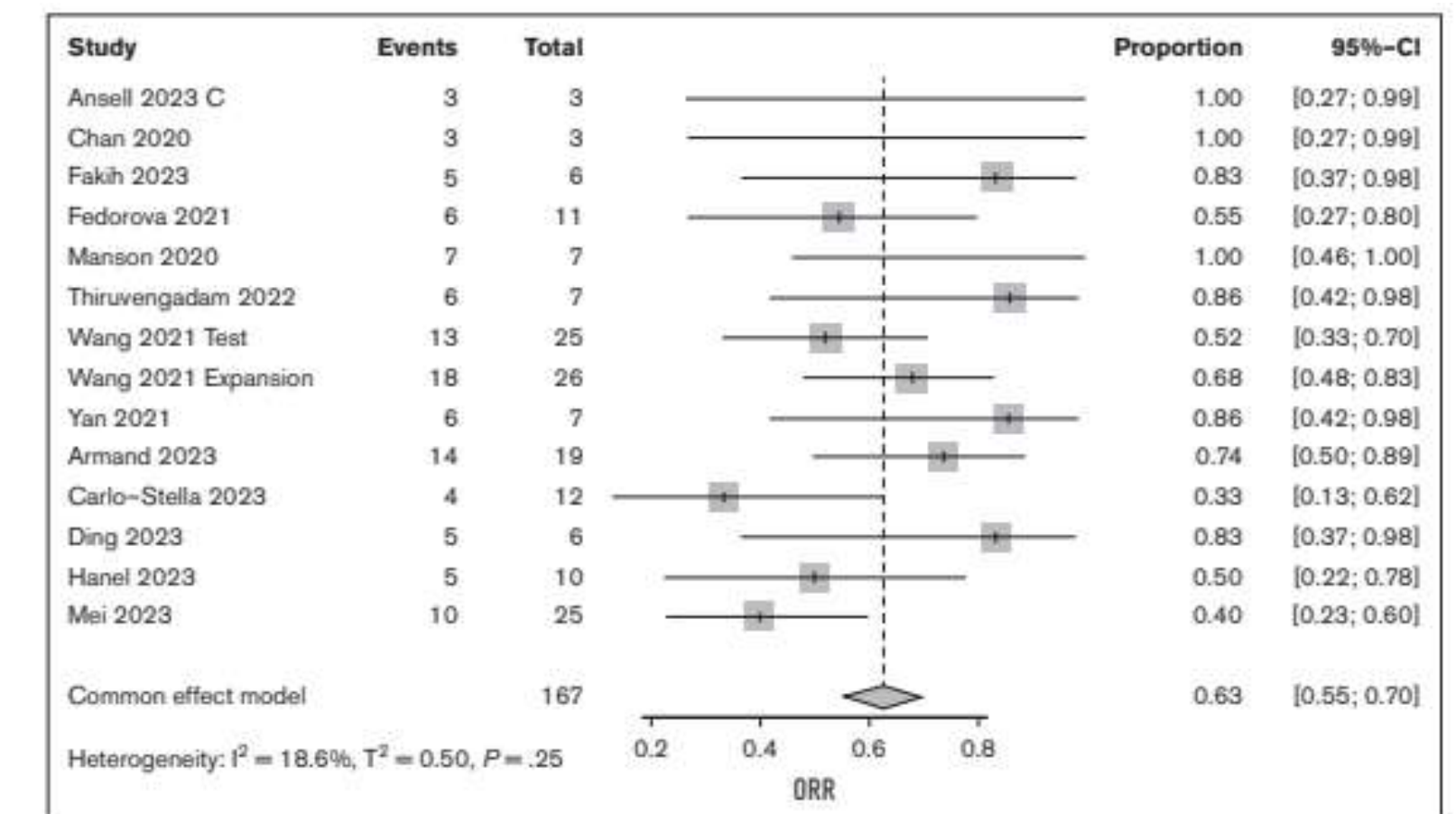


Figure 1. The pooled ORRs after rechallenge across all studies.

Immunotherapies and small molecules in development for cHL.1

Compound	Structure	Phase	Combinations	Mechanism of action
<i>Immune checkpoint inhibitors</i>				
Sintilimab	Anti-PD-1 mAb	<i>Phase 2</i>	ICE	✓ Enhance CD4+ Tcell response,
Camrelizumab	Anti-PD-1 mAb	<i>Phase 2</i>	Dacarbazine,AVD	withdrawal of prosurvival signals,
Tislelizumab	Anti-PD-1 mAb	<i>Phase 2</i>	Gem/Ox, AVD	possible NK
Avelumab	Anti PD-L1 mAb	<i>Phase 1b</i>	/	cell activation
Ipilimumab	Anti-CTLA-4 mAb	<i>Phase 2</i>	Nivolumab,BV	✓ Potentiare T-cell responses
Favezelimab	Anti-LAG 3 mAb	<i>Phase 2</i>	Pembrolizumab	✓ Overcome T-cell exhaustion
MK-4280°	Coformulated anti-PD-1+LAG3 mAb	<i>Phase 3</i>	/	✓ OvercomeT-cell exhaustion, Potentiare T-cell responses
Magrolimab	Anti-CD47 mAb	<i>Phase 2</i>	Pembrolizumab	✓ Enhance phagocytosis, increase antigen presentation
IMM01	SIRPα-fc fusion	<i>Phase 2</i>	Tislelizumab	✓ Enhance phagocytosis, increase antigen presentation
SEA-TST	Anti-TIGIT mAb	<i>Phase 1</i>	BV	✓ Enhance T & NK cell response
<i>Immunomodulatory agents & small molecules</i>				
Lenalidomide	CELMoD	<i>Phase 2</i>	Nivolumab,temserolimus	✓ Increase IL-2 production,enhance T & NK cell responses
Ruxolitinib	JAK1/2 inhibitor	<i>Phase 2</i>	Nivolumab	✓ Inhibit JAK/STAT signaling synergize with PD-1 inhibitors
Ibrutinib	BTK/ITK inhibitor	<i>Phase 2</i>	Nivolumab	✓ Enhance TH1 responses
<i>Epigenetic modifying therapies</i>				
Vorinostat	HDAC inhibitor	<i>Phase 1</i>	Pembrolizumab	✓ Enhance antigen presentation, t-cell recruitment & function
Entinostat	HDAC inhibitor	<i>Phase 2</i>	Pembrolizumab	
Decitabine	Hypomethylating agent	<i>Phase 2</i>	Camrelizumab	✓ Increase tumor immunogenicity, T cell infiltration &
Decitabine/cedazundine	Hypomethylating agent	<i>Phase 1</i>	Nivolumab	overcome resistance to
Azacitidine	Hypomethylating agent	<i>Phase 1</i>	Nivolumab	PD-1 inhibitors

Adapted by Michael A. Spinner & Ranjana H. Advani,
EXPERT OPINION ON EMERGING DRUGS, 2024

Immunotherapies and small molecules in development for cHL.2

Compound	Structure	Phase	Combinations	Mechanism of action
Antibody-drug conjugates (ADCs)				
Camidanlumab tesirine	Anti-CD25 ADC	<i>Phase 2</i>	/	✓ Deplete regulatory T-cells, target CD25+ HRS cells
SGN-35T	Anti-CD30 ADC	<i>Phase 1</i>	/	✓ Target CD30+ HRS cells with novel linker and MMRE
SGN-35C	Anti-CD30 ADC	<i>Phase 1</i>	/	(35T) or camptotethecin payload (35C)
Bispecific antibodies (BsAbs)				
AFM13	CD30/CD16A BsAb	<i>Phase 2</i>	Pembrolizumab, AB-101	✓ Recruit NK cells to target CD30+ HRS cells
GEN3017	CD30/CD3 BsAb	<i>Phase 1/2</i>	/	✓ Recruit T cells to target
AZD7789	PD-1/TIM-3 BsAb	<i>Phase 1/2</i>	/	✓ Overcome T-cell exhaustion, potentiate T.cell responses
IBI322	CD47/PD-L1 BsAb	<i>Phase 2</i>	/	✓ Enhance phagocytosis, increase antigen presentation, potentiate T-cell responses
Cellular therapies				
Autologous CD30/CAR-T	Anti-CD30 CAR-T	<i>Phase 2</i>	/	✓ Engineered autologous or allogenic T cells targeting CD30+ HRS-cells
Allogenic CD30 CAR. EBVSTs	Anti-CD30 CAR-T	<i>Phase 1</i>	/	
Allogenic UCB-derived NK cells	Cytokine-enhanced NK cells	<i>Phase 2</i>	AFM13	✓ Allogenic NK cell-mediated cytotoxicity enhanced ADCC

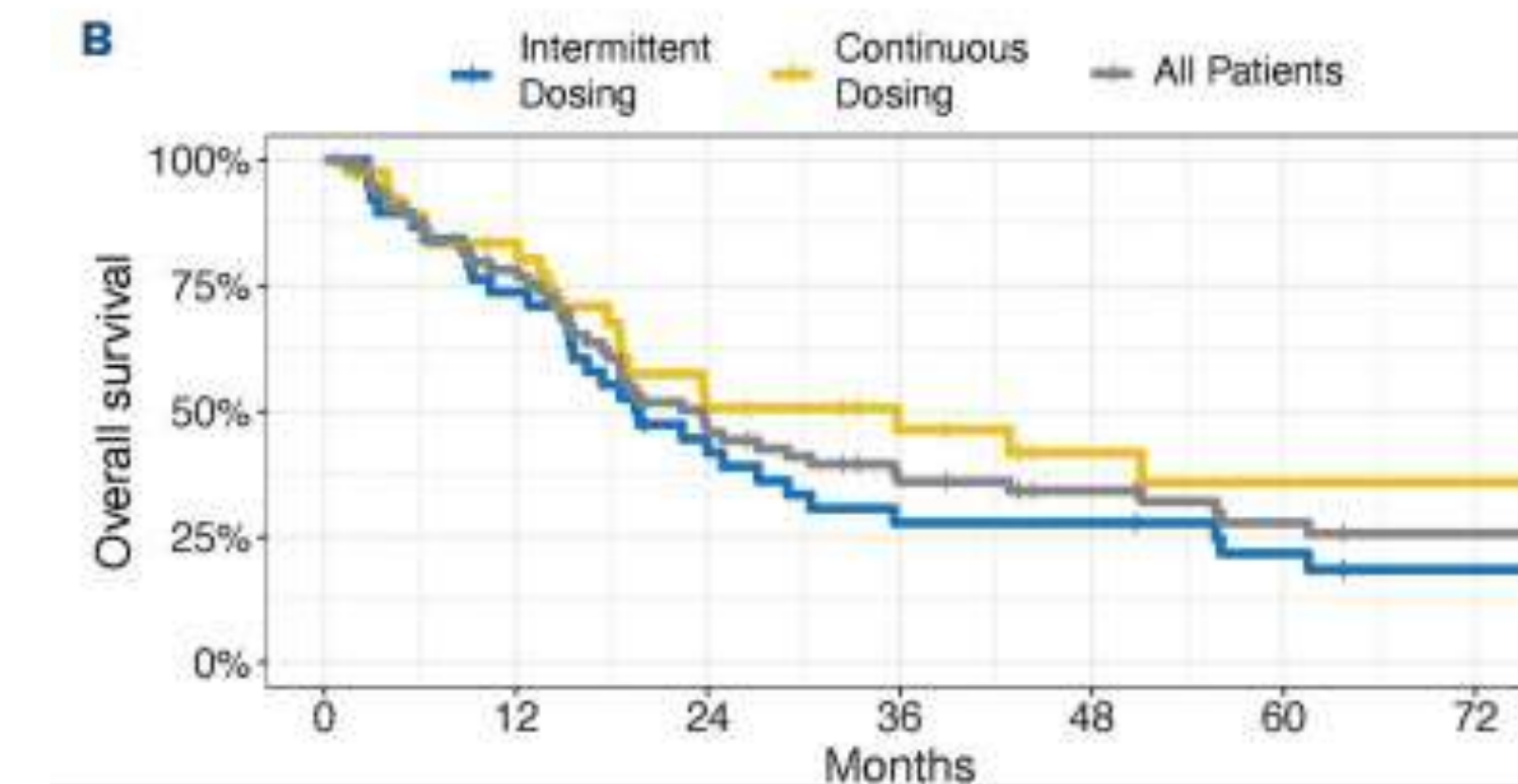
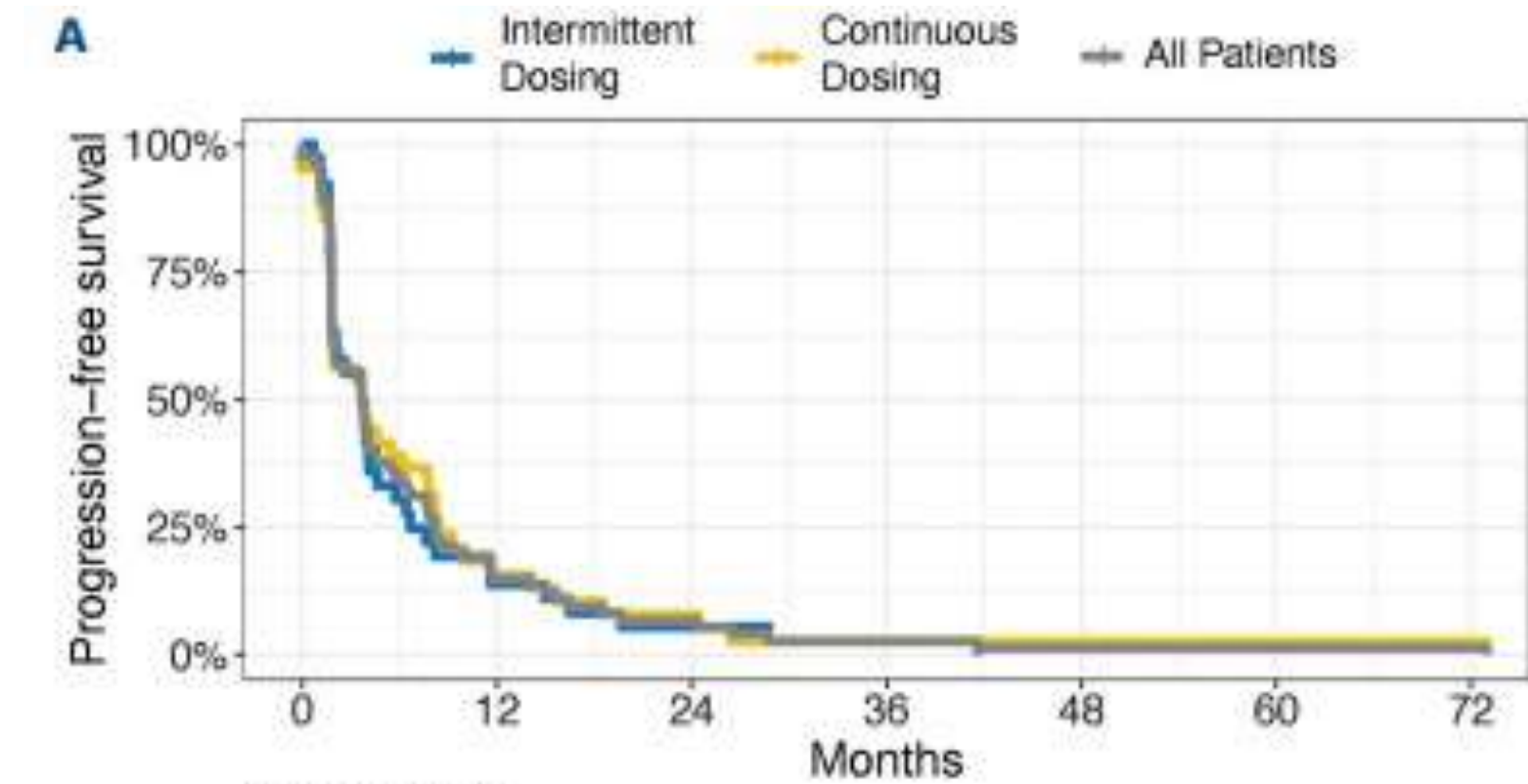
Immunomodulatory agents & small molecules.1

□ Lenalidomide

LETTER TO THE EDITOR

A phase II study of interrupted and continuous dose lenalidomide in relapsed/refractory Hodgkin lymphoma

Type of response	Entire cohort			Response-evaluable patients		
	Interrupted N=38	Continuous N=42	Combined N=80	Interrupted N=36	Continuous N=36	Combined N=72
CR*, N (%)	1 (2.6)	3 (7.2)	4 (5.0)	1 (2.8)	3 (8.3)	4 (5.5)
PR*, N (%)	6 (15.7)	9 (21.4)	15 (18.8)	6 (16.6)	9 (25.0)	15 (20.8)
SD ≥6 months*, N (%)	6 (13.2)	6 (14.3)	12 (15.0)	6 (16.6)	6 (16.7)	12 (16.7)
ORR (CR+PR)**, N (%)	7 (13.2)	12 (28.6)	19 (23.8)	7 (19.4)	12 (32.4)	19 (26.4)
Disease control rate** (CR+PR+SD ≥6 months), N (%)	13 (34.2)	18 (42.9)	31 (38.5)	13 (36.1)	18 (48.6)	31 (43.1)

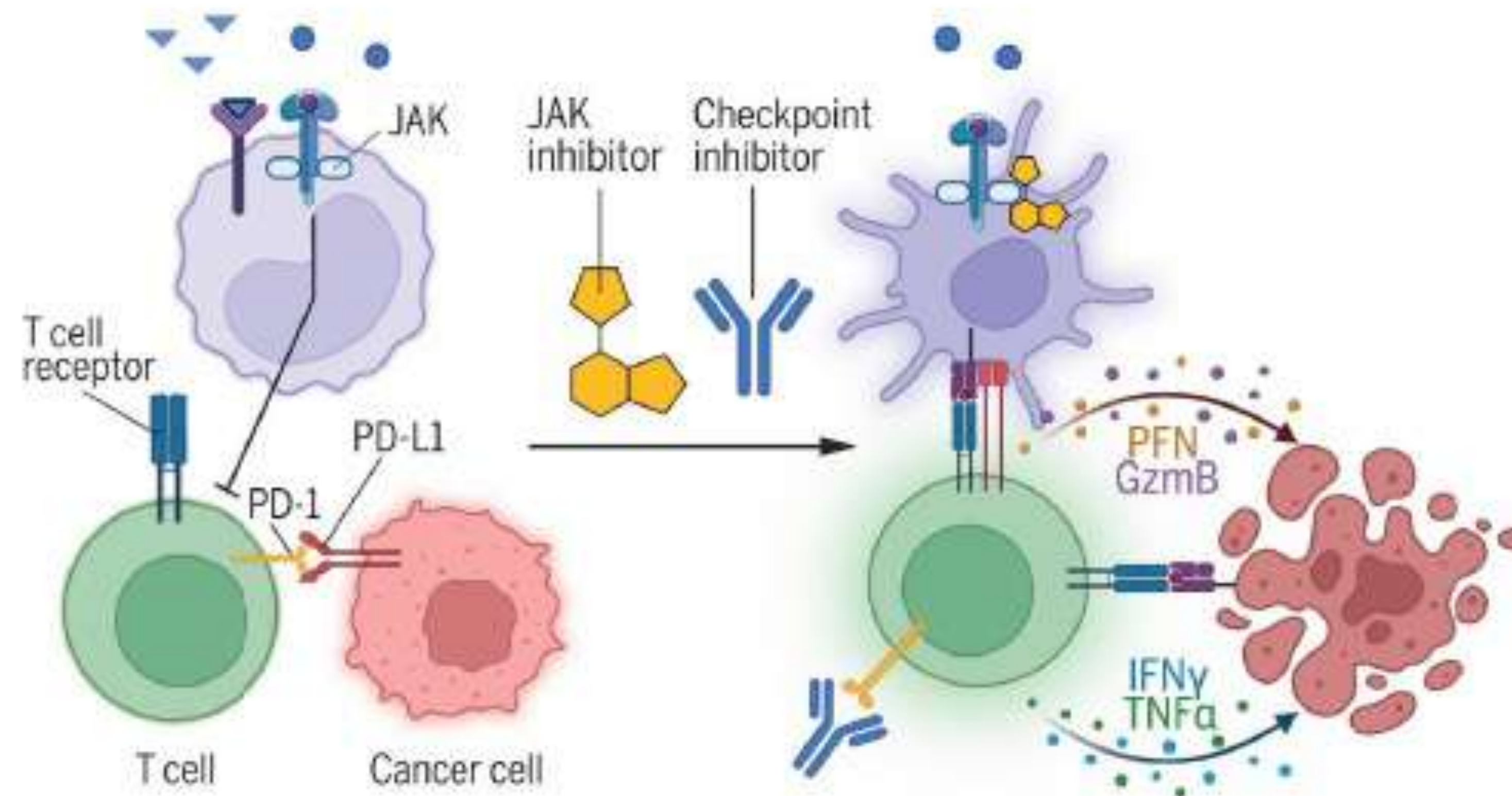


Immunomodulatory agents & small molecules.1

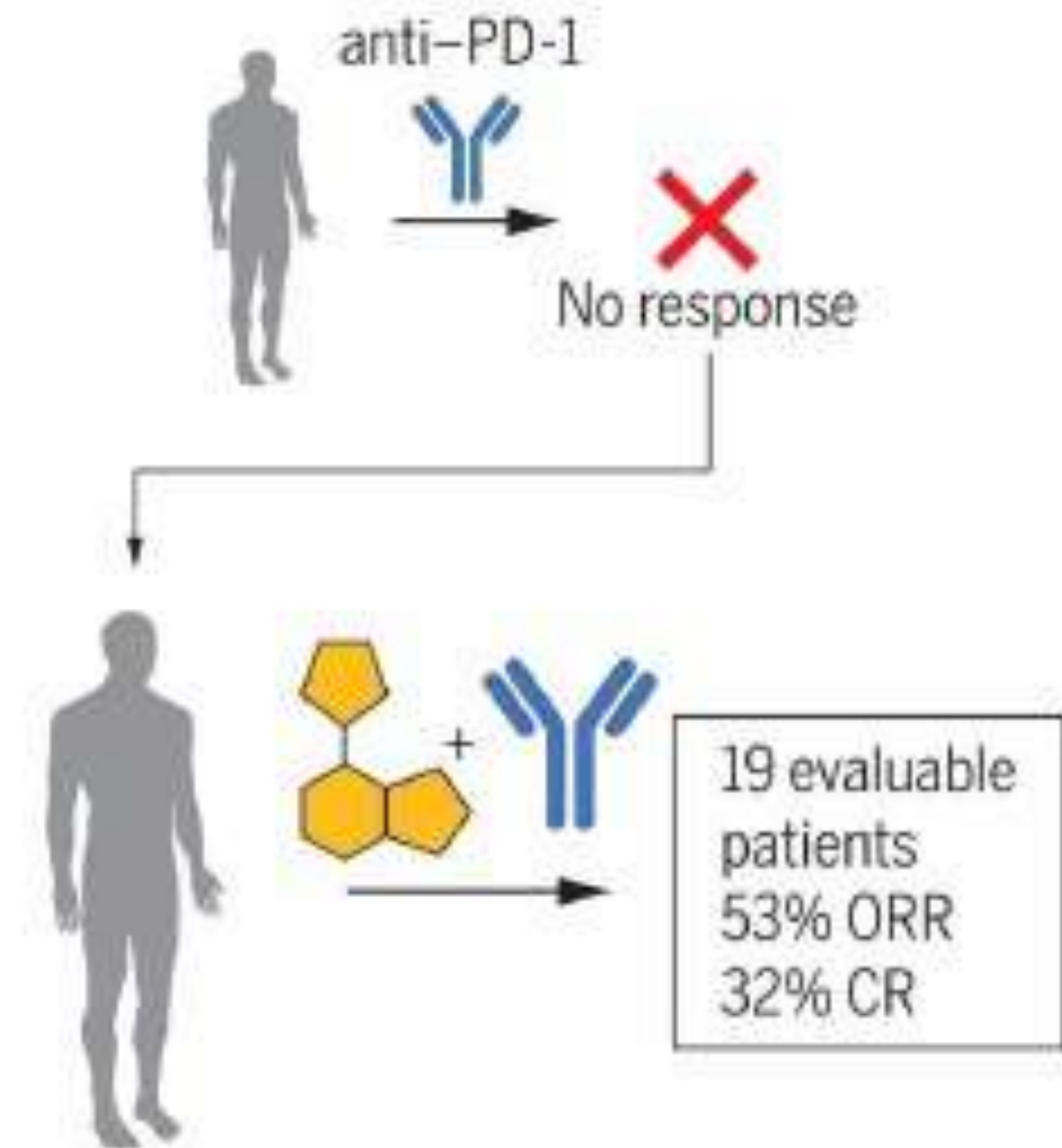


□ Ruxolitinib + anti-PD-1

JAK inhibition with checkpoint inhibitors reprograms myeloid cells from a suppressive to an immunostimulatory state



Ruxolitinib with nivolumab in anti-PD-1 relapsed or refractory Classical Hodgkin lymphoma

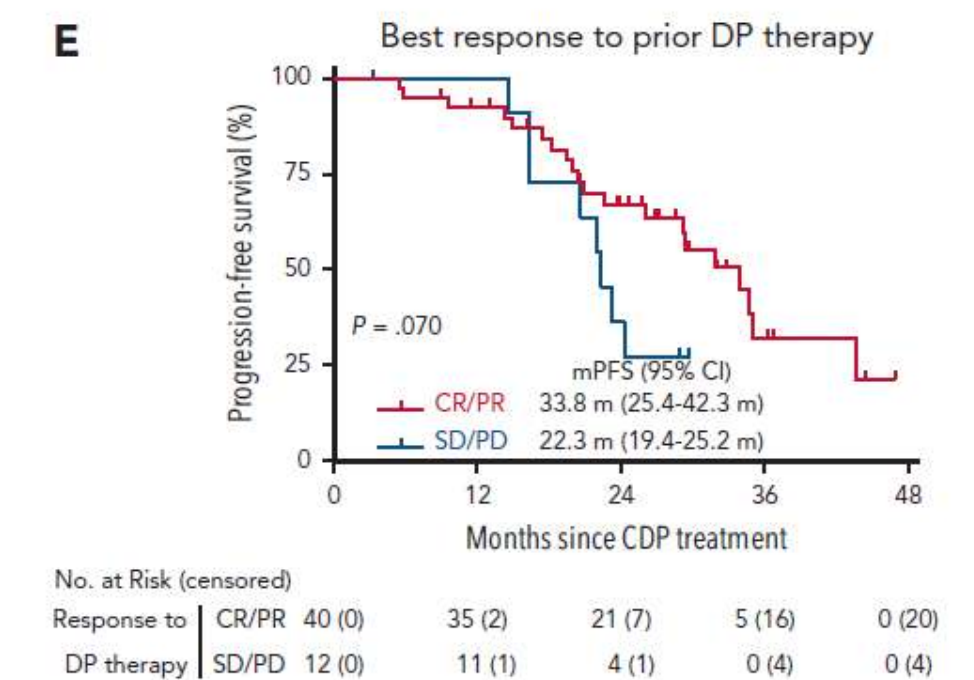
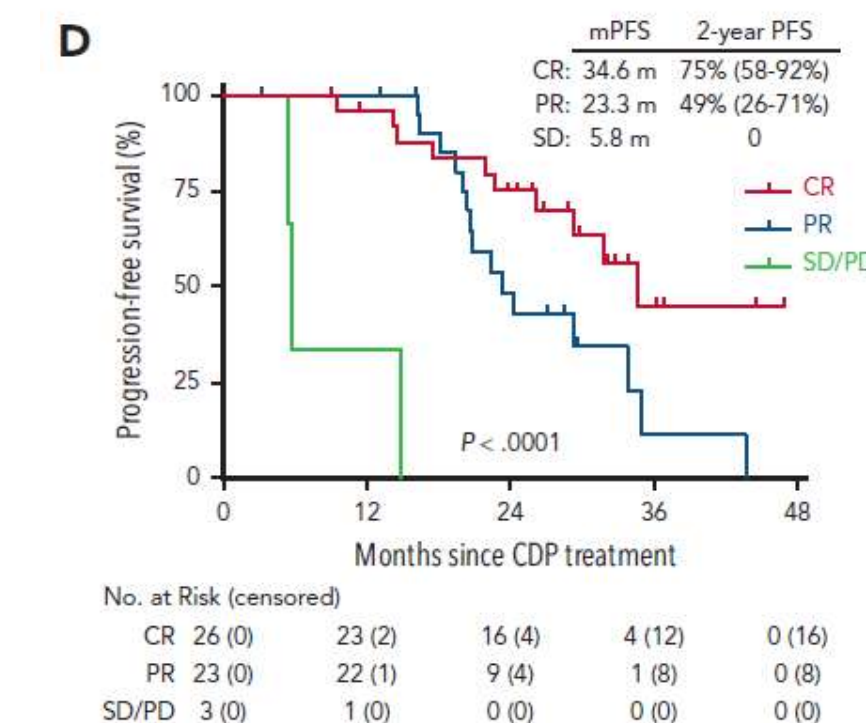
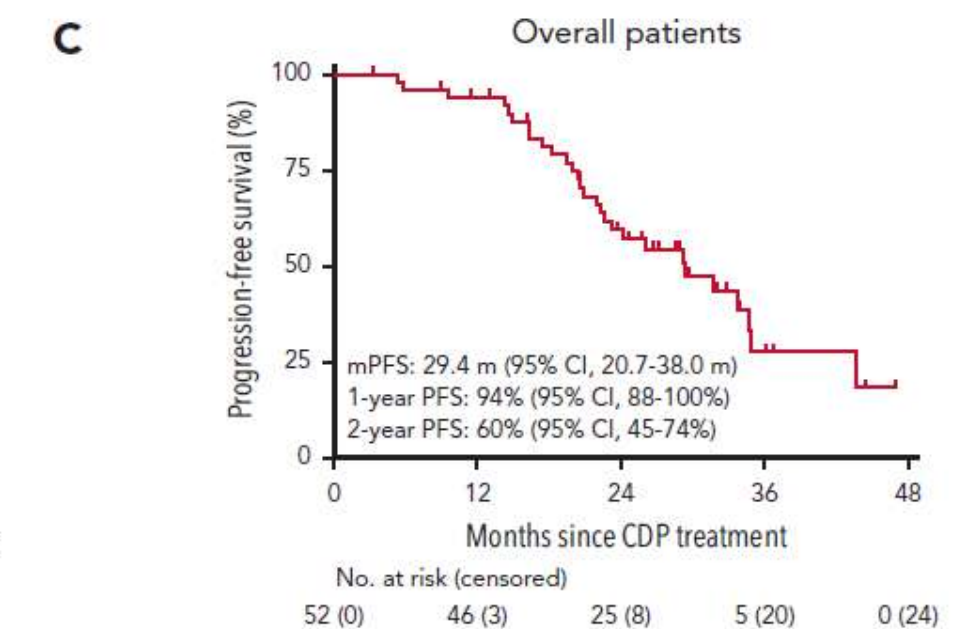
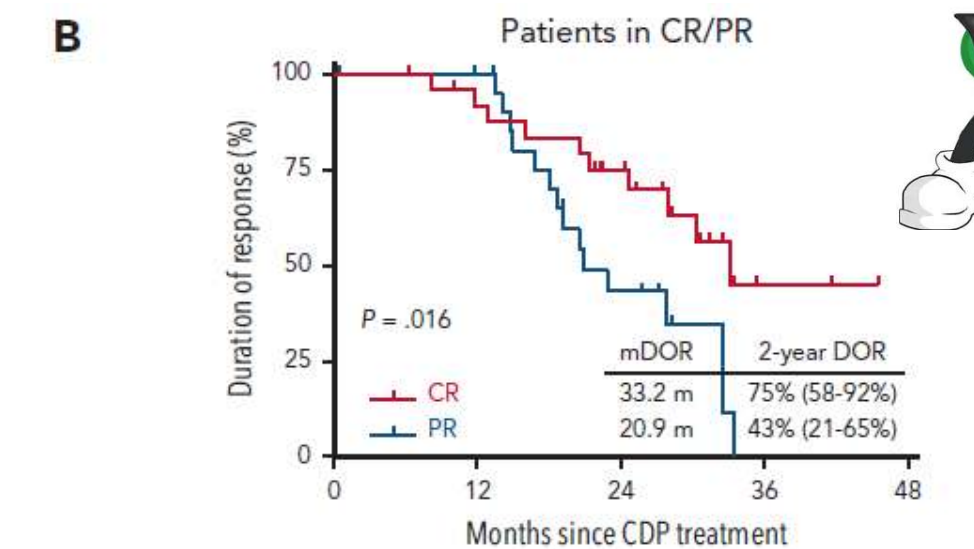
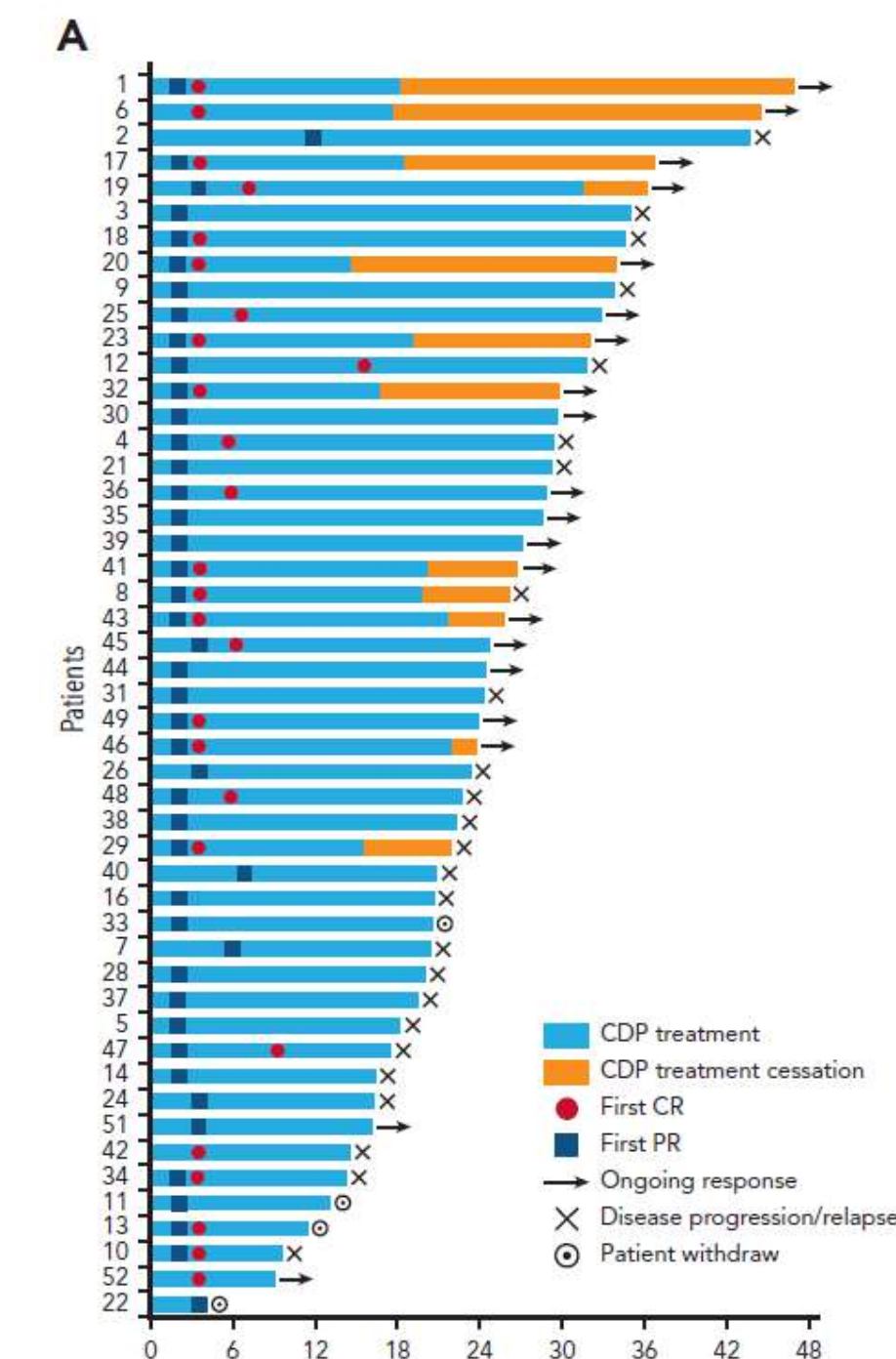
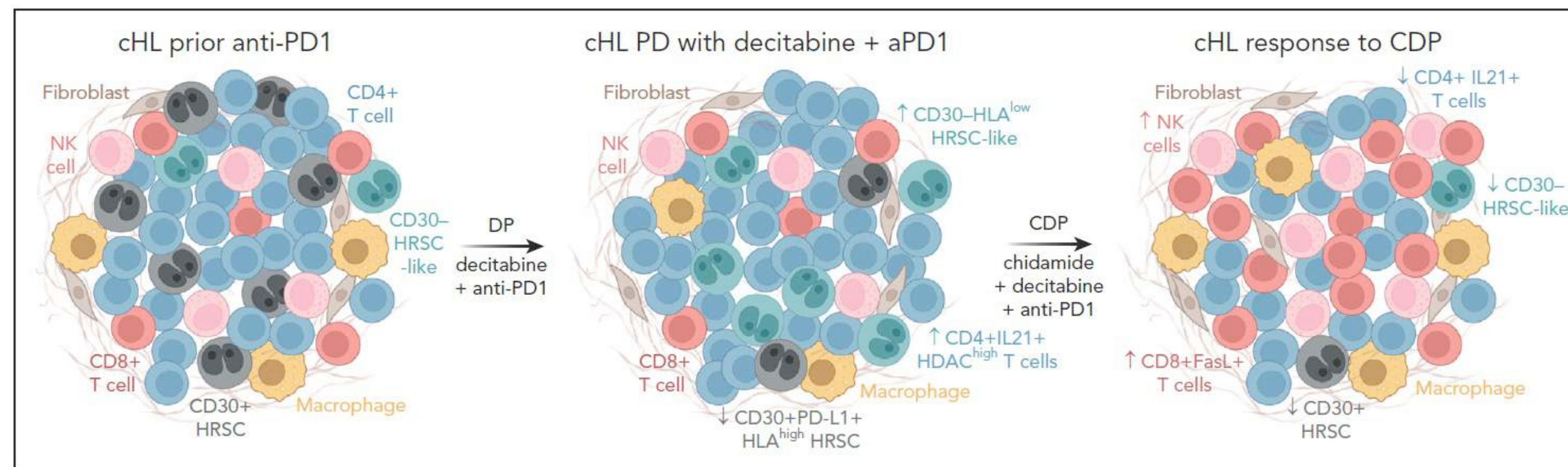


Epigenetic modifying therapies

□ HDACi+: chidamide+ decitabine+ anti-PD-1 camrelizumab

IMMUNOBIOLOGY AND IMMUNOTHERAPY

Epigenetic agents plus anti-PD-1 reprogram the tumor microenvironment and restore antitumor efficacy in Hodgkin lymphoma



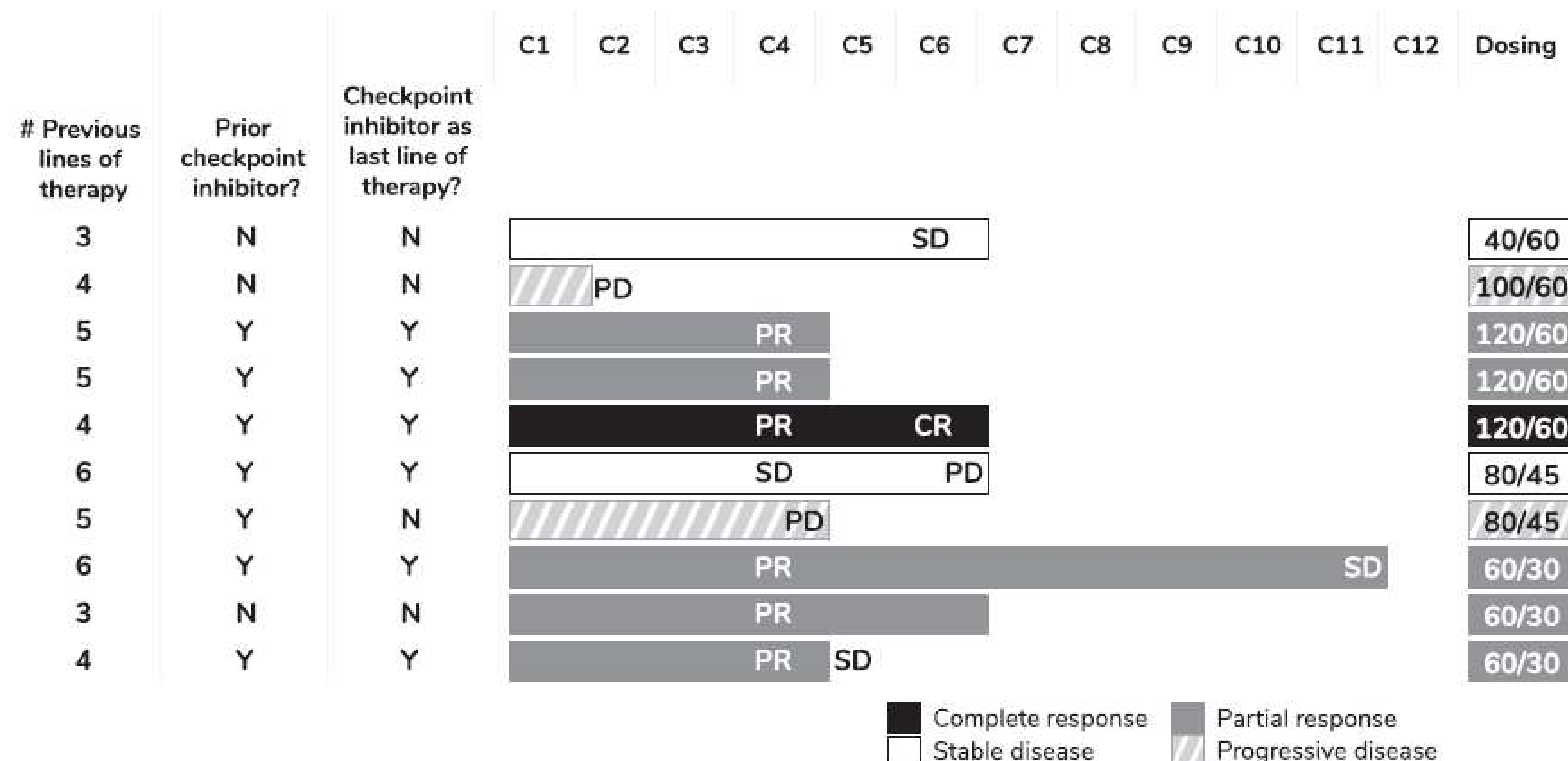
Epigenetic modifying therapies

□ HDACi+: Vorinostat+ Bendamustine (*fusion molecule*)

Safety and Efficacy of Tinostamustine in a Subpopulation of Patients With Relapsed/Refractory Hodgkin Lymphoma From a Phase I Trial

Anna Sureda¹ | Antonio Pinto²  | Hervé Ghesquières³  | Franck Morschhauser⁴ | Olivier Tournilhac⁵ | Pim Mutsaers⁶ | Josée M. Zijlstra⁷ | Rosaria De Filippi⁸ | Kasia Hilgier⁹ | Nick Manamley¹⁰ | Tomas Janik⁹ | Pier Luigi Zinzani^{11,12} 

First in class

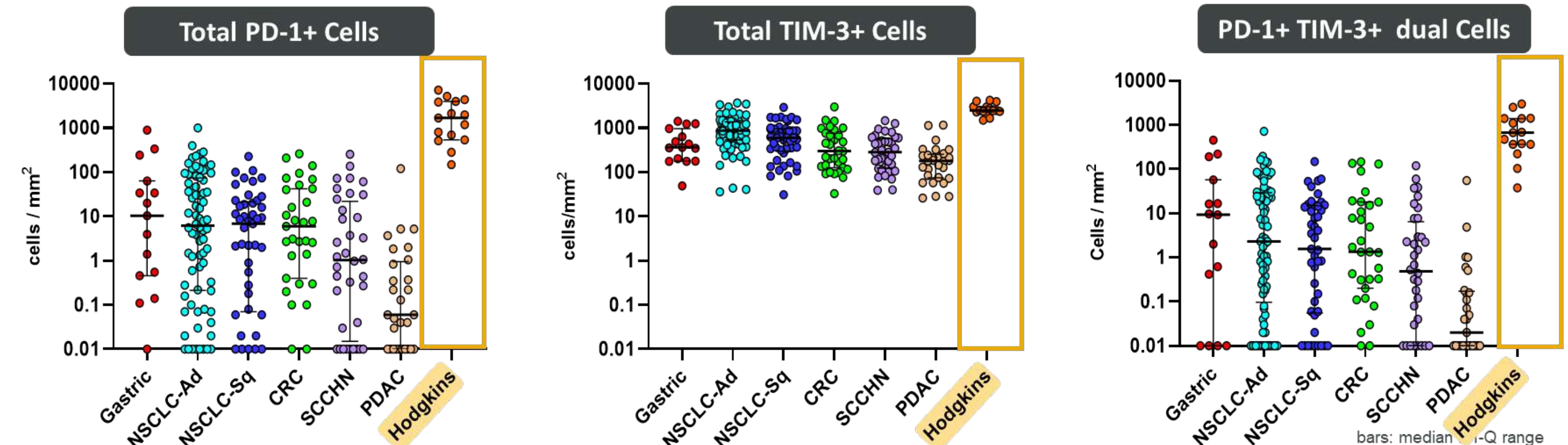
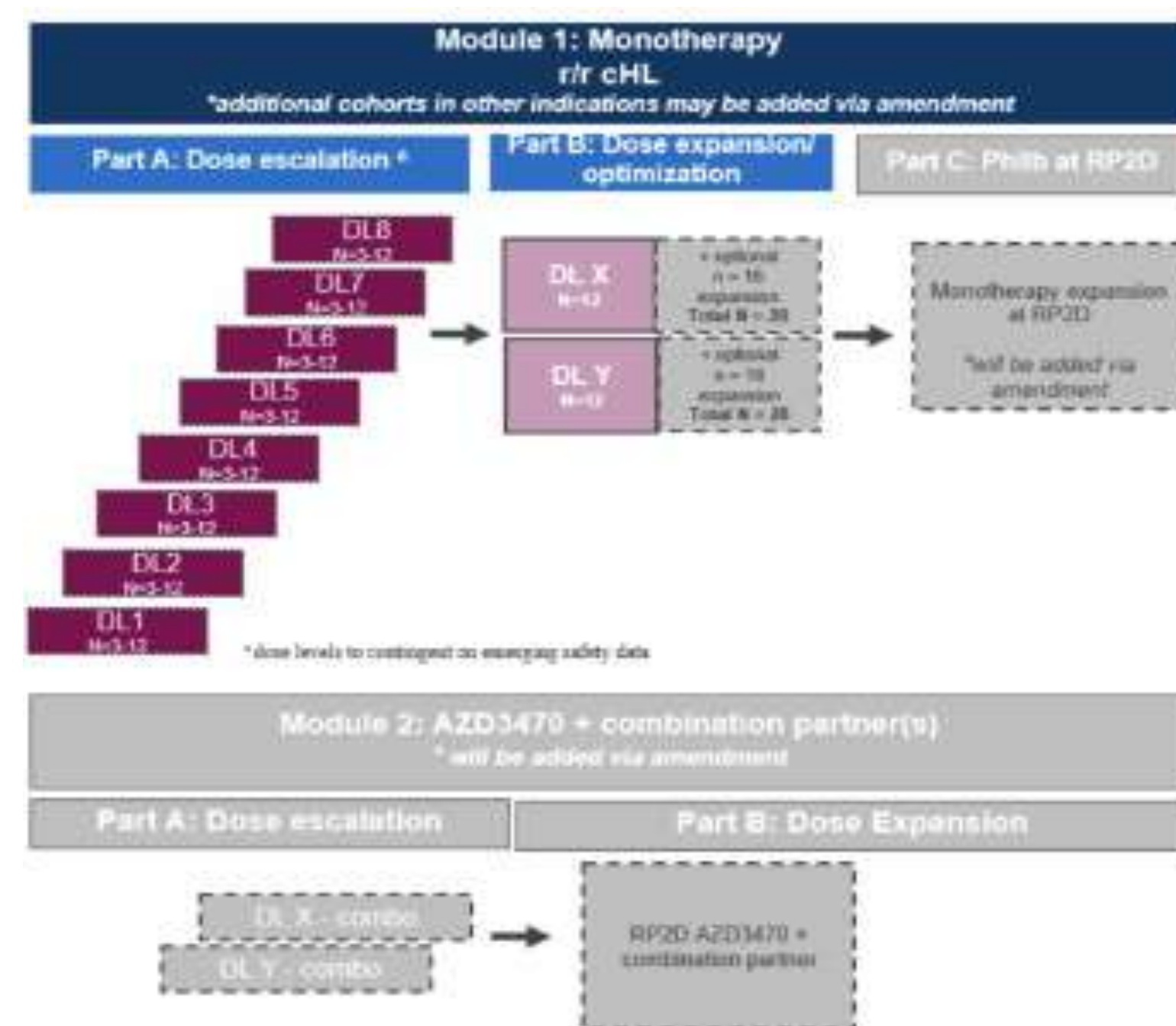


Bispecific antibodies

□ PD-1/TIM-3 BsAb

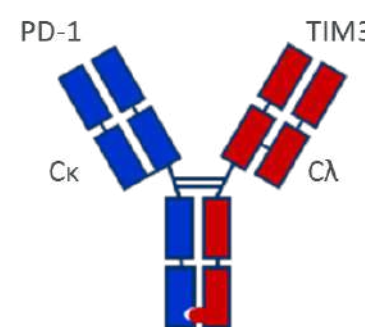
Fase I/II Trial of AZD7789 in R/R HL

PD-1 and TIM-3 proteins highly co-expressed in HL tumor microenvironment (ME)

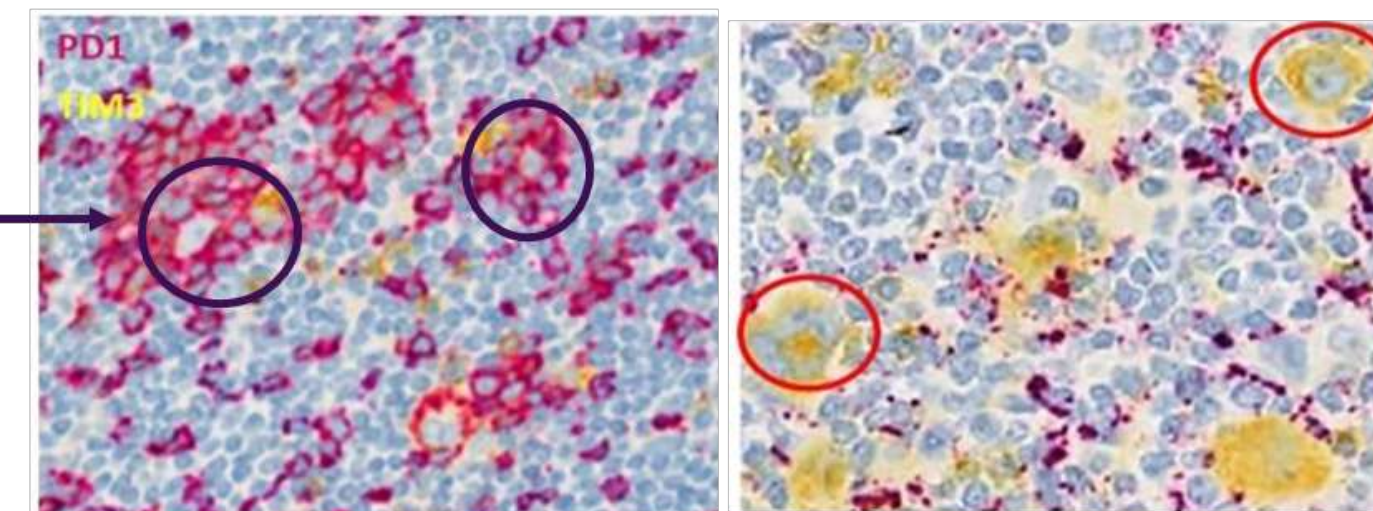


AZD7789 Structure

Drug design: DuetMab
TIM-3 arm: O13 V domains
PD-1 arm: LO115 V domains
Fc isotype: IgG1-TM



Rosette with HRS cell surrounded by PD-1+/TIM-3+ immune cells

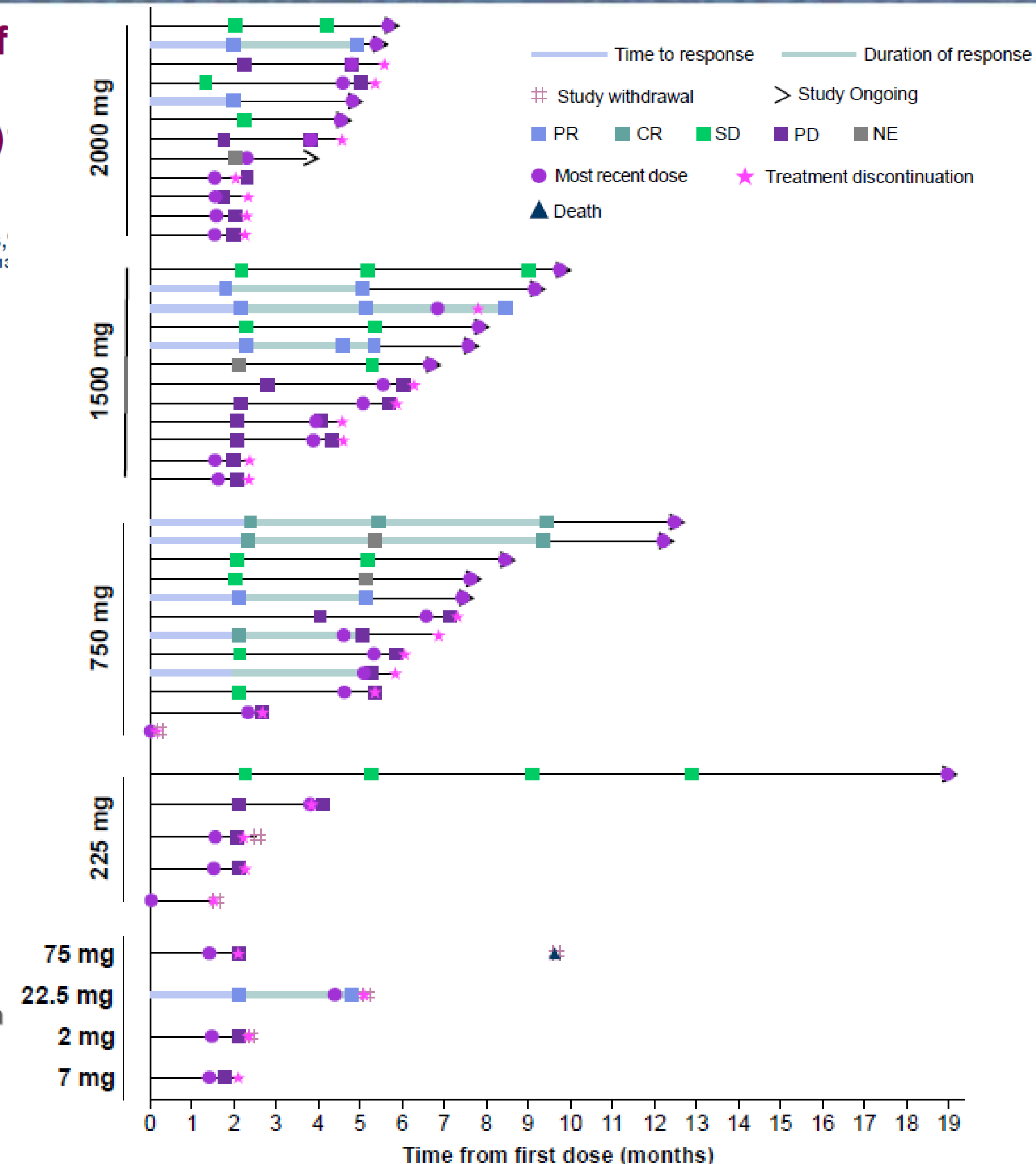
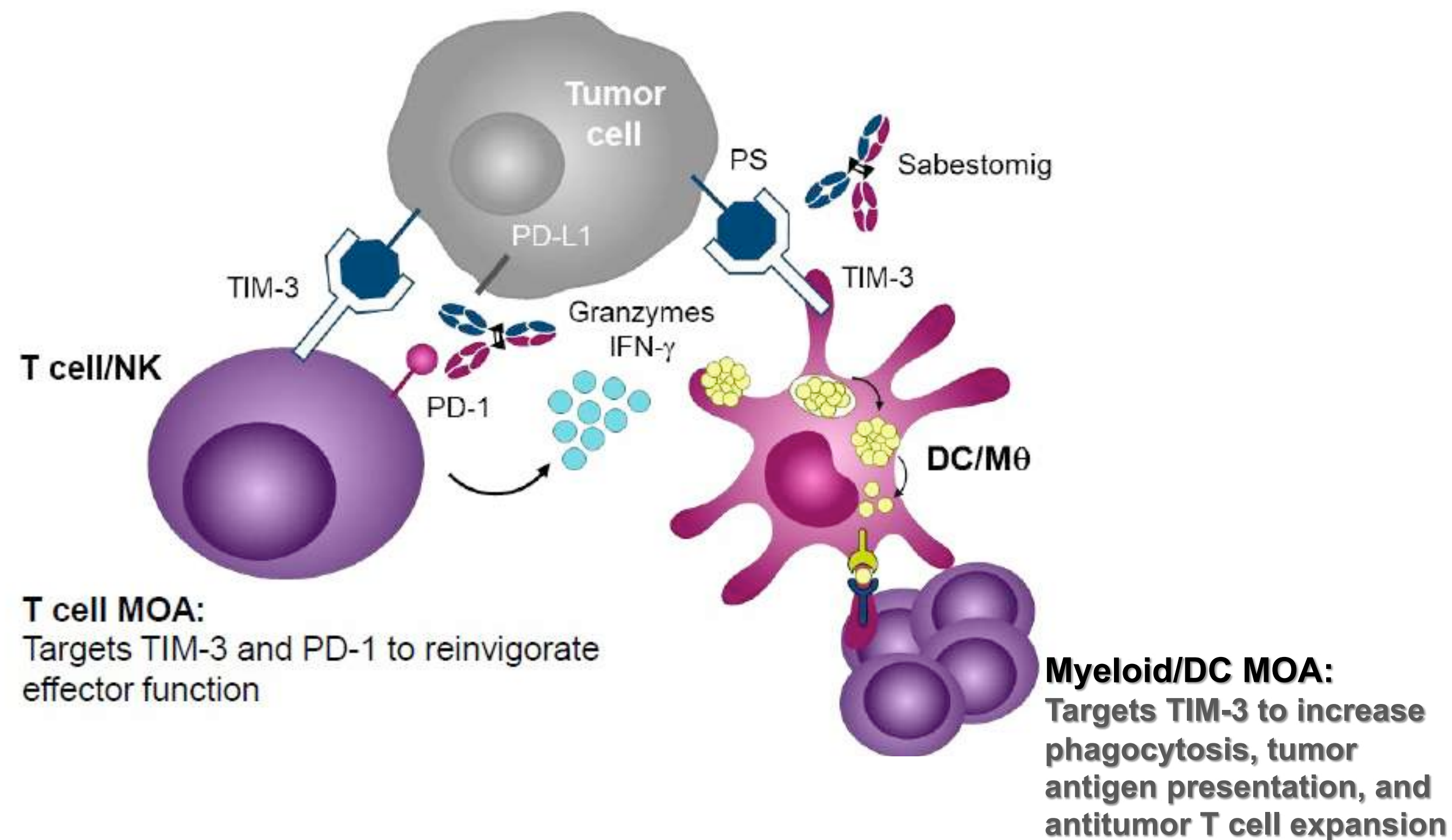


TIM-3+ HRS cells

Urošević J et al, ASH 2023
Corrazzelli G., EHA, 2024

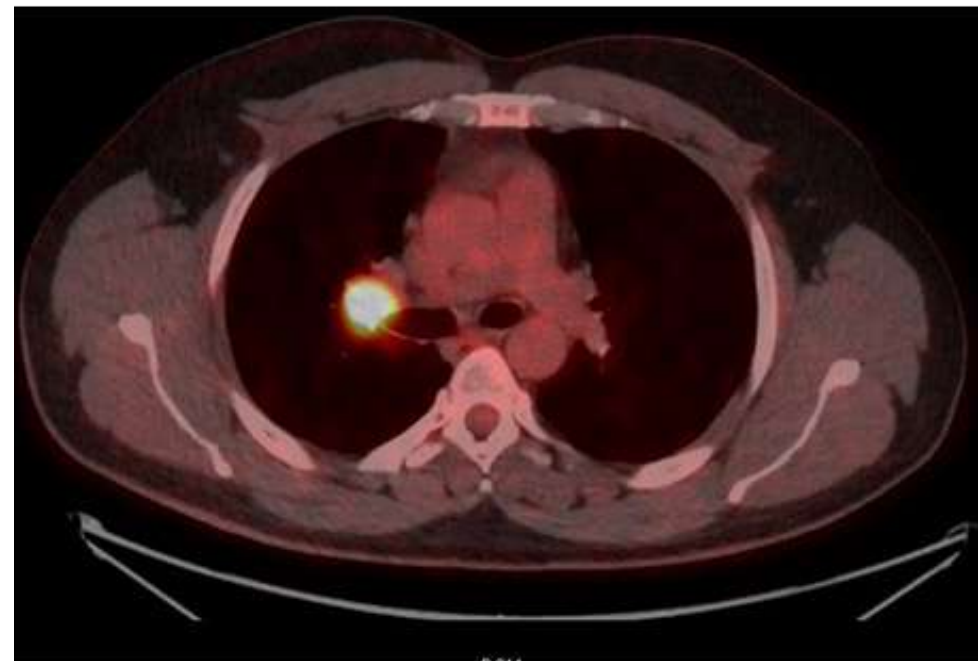
Safety and efficacy results from an open-label, Phase 1/2 trial of sabestomig (AZD7789) in patients with relapsed/refractory classical Hodgkin lymphoma previously treated with anti-PD-(L) therapies

Gaetano Corazzelli,¹ Franck Morschhauser,² Matthew Genyeh Mei,³ Nathalie A. Johnson,⁴ Craig H. Moskowitz,⁵ Graham P. Collins,¹ Stephen M. Ansell,⁷ Elizabeth Phillips,⁸ Martin Hutchings,⁹ John Kuruvilla,¹⁰ Hun Ju Lee,¹¹ Alison J. Moskowitz,¹² Teresa Collins,¹³ Robin Lesley,¹⁴ George Hawkins,¹³ Kaitlyn Beyfuss,¹⁵ Richard F. Olsson,¹⁶ Connor Hall,¹⁷ Emma Dean,¹³ Pier Luigi Zinzani¹⁸

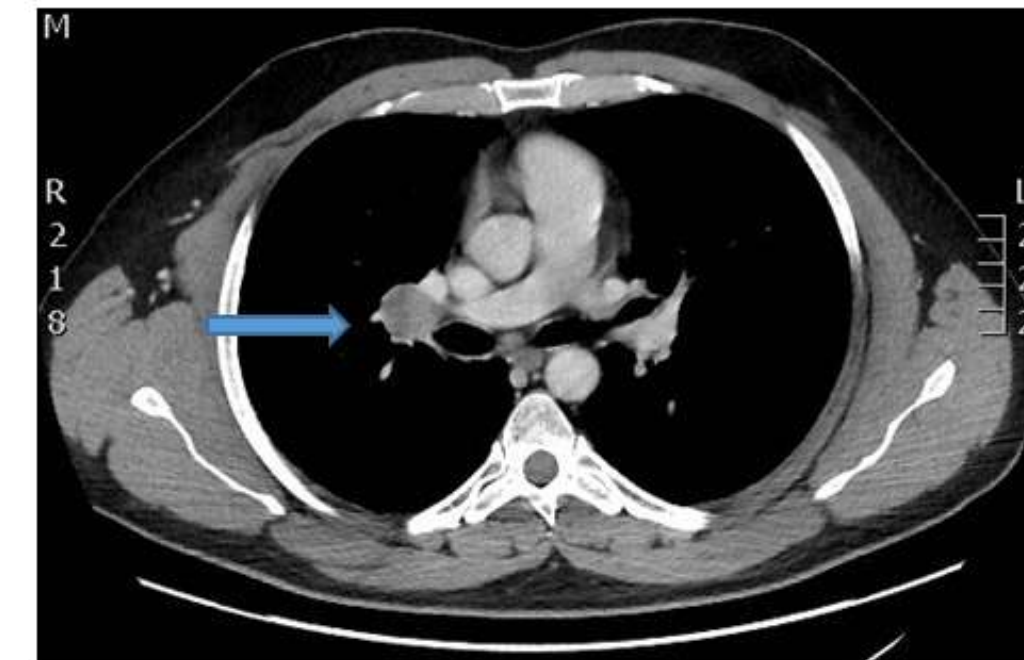
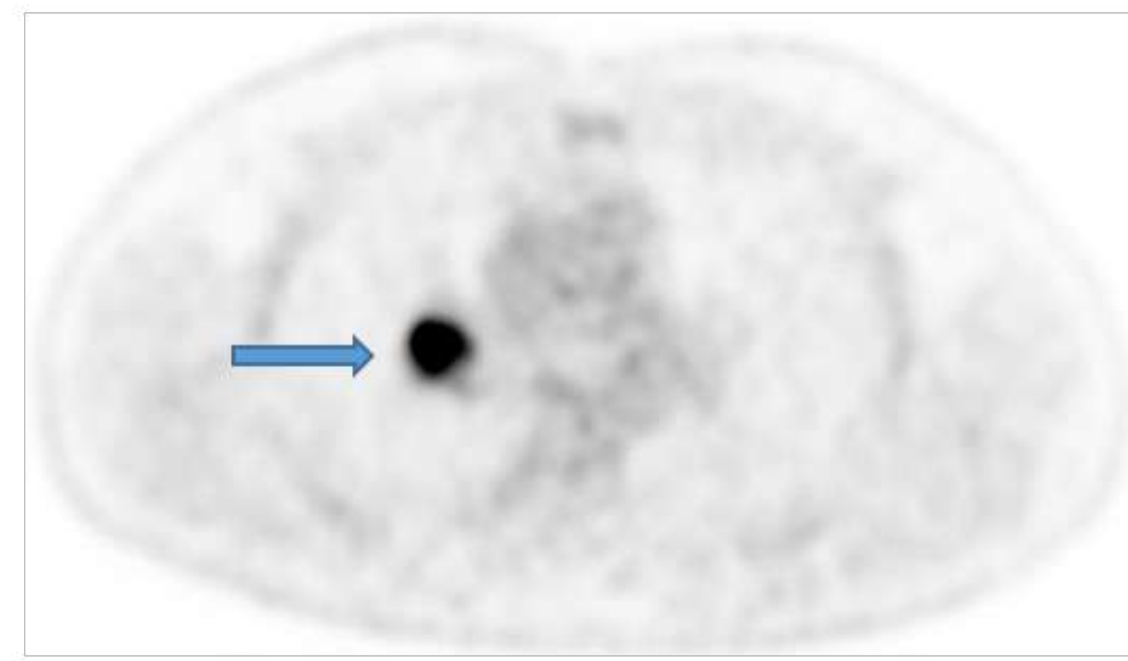


.... Be continued

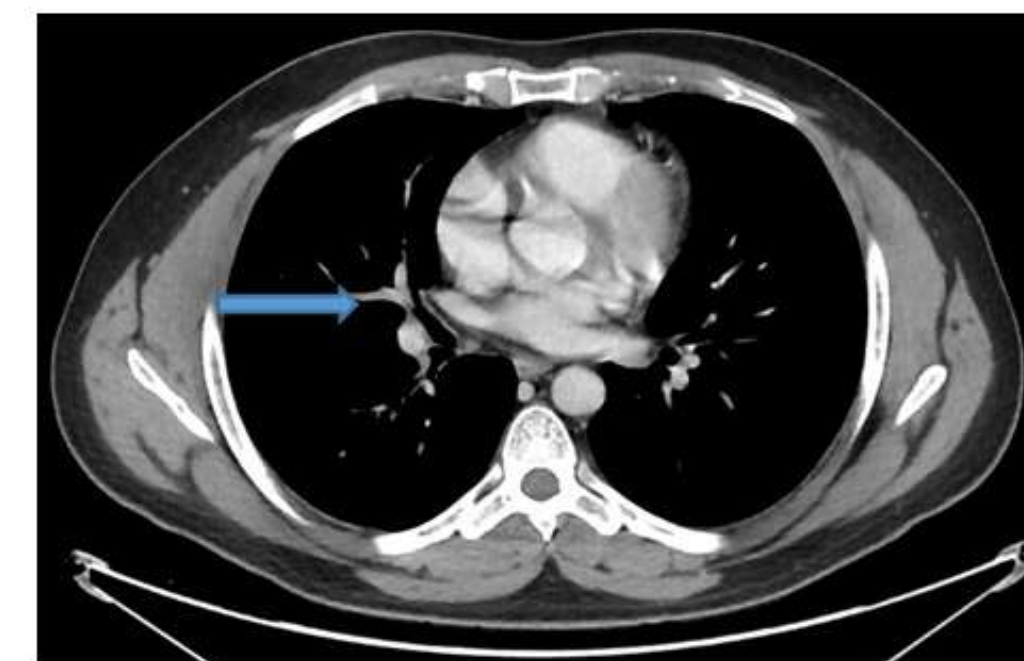
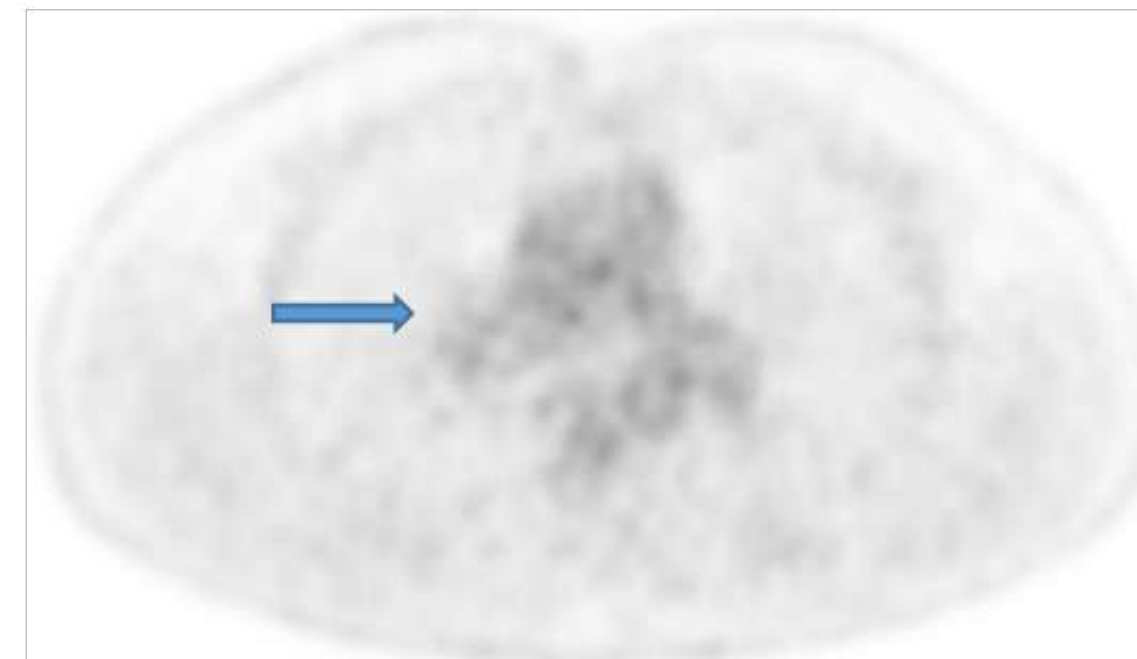
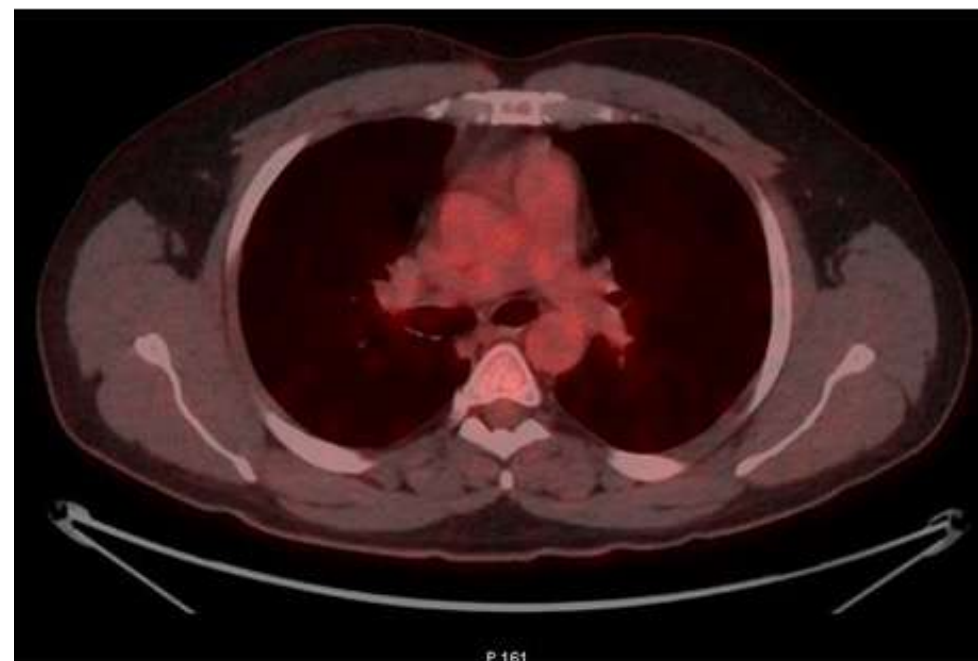
Donato
39 aa



Baseline



After 3 courses of AZD7789



CR 35 cycles tot
27 Sep 2025: 6 mo FU

Cosa fareste?

- a) Riproporre Tipizzazione HLA
- b) Riproporre Trapianto allogenico
- c) Avviare a Follow-up
- d) Radioterapia

Antibody-drug conjugates

Ab anti CD25: Camidanlumab tesirine

Camidanlumab tesirine: updated efficacy and safety in an open-label, multicenter, phase 2 study of patients with relapsed or refractory classical Hodgkin lymphoma (R/R cHL)

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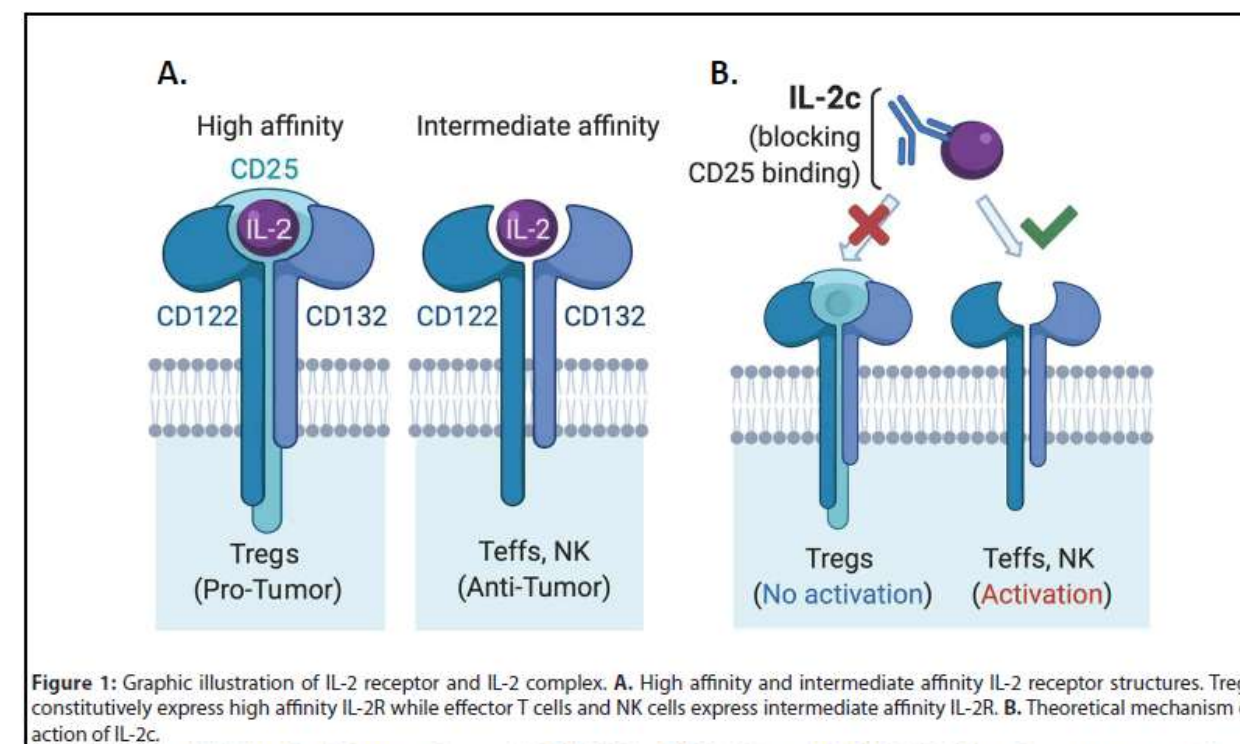
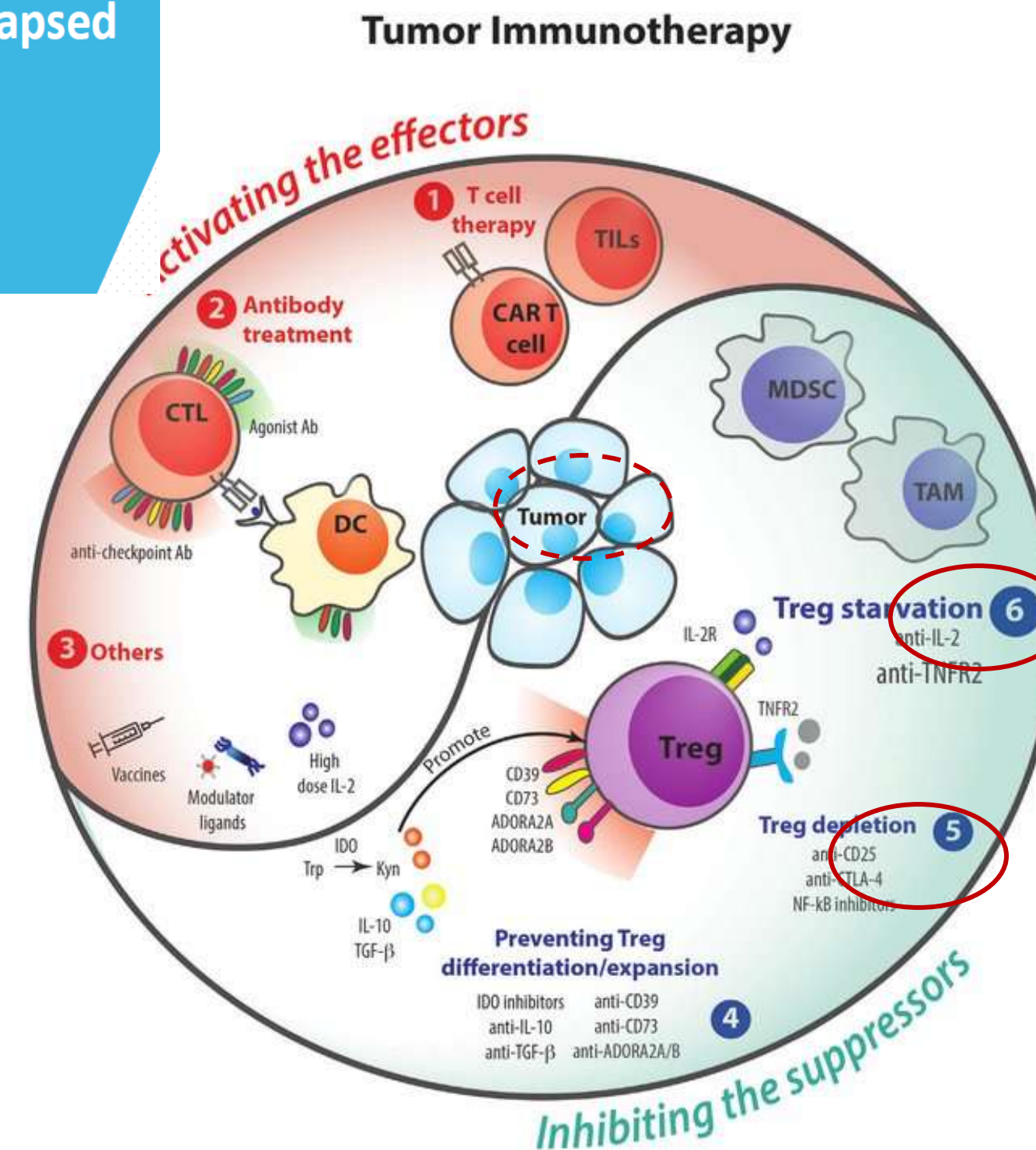
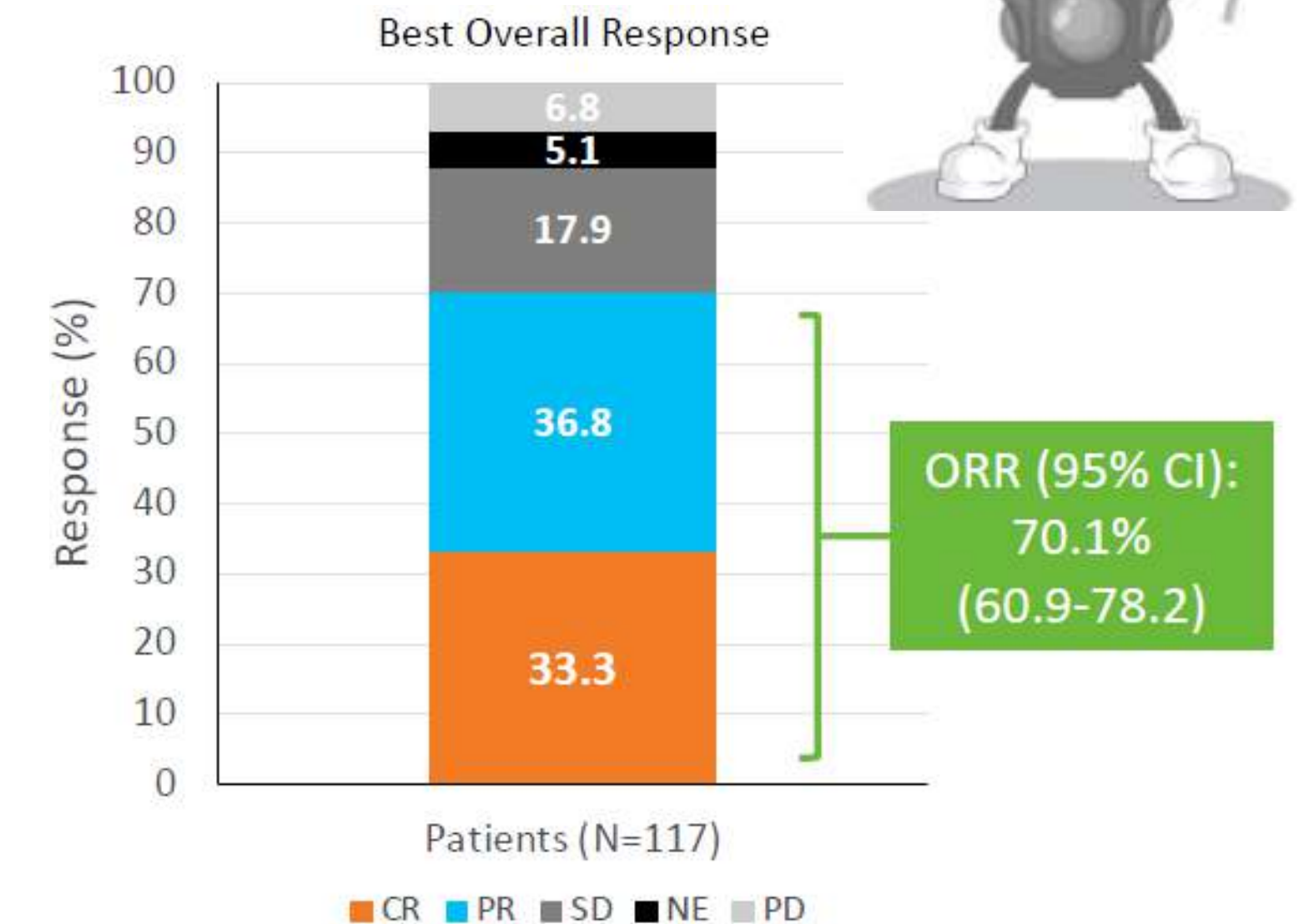


Table I. Expression of CD25, CD122 and CD132 in immune and non-immune cells.

Cell type	CD25	CD122	CD132
Thymocyte	-/+	-/+	+
Naïve T cell	-	-/+	+
Effector T cell	+++	++	+
Memory T cell	-	+/++	+
Treg	+++	+	+
Immature B cell	+	-	+
Mature B cell	-	-	+
NK cell	-	++	+
NK T cell	-/+	-/+	+
Langerhans cell	+	?	+
Endothelial cell	+	+	+



- Primary endpoint: ORR (per 2014 Lugano classification) assessed by central review
- Secondary endpoints: DoR, PFS, safety (frequency and severity of adverse events)
- As of November 1, 2021, enrollment was complete (N=117)



Best Overall Response in Patients with or without prior SCT

Best Overall response, n (%) ^b	BV and CHPi With Prior SCT (n=73), n (%)	BV and CHPi Without Prior SCT (n=43), n (%)
CR	30 (41.1)	8 (18.6)
PR	24 (32.9)	19 (44.2)
SD	13 (17.8)	8 (18.6)
NE ^c	3 (4.1)	3 (7.0)
PD	3 (4.1)	5 (11.6)
ORR	54 (74.0)	27 (62.8)
95% CI for ORR	62.4-83.5	46.7-77.0

1. Sasidharan NV, et al. *Immunol Cell Biol*. 2018;96:21-33. 2. Arce Vargas F, et al. *Immunity*. 2017;46:577-86. 3. Hartley JA. *Expert Opin Investig Drugs*. 2011;20:733-44. 4. Flynn MJ, et al. *Mol Cancer Ther*. 2016;15:2709-21. ADC, antibody drug conjugate; CD25, cluster of differentiation 25; PBD, pyrrolobenzodiazepine; Teff, effector T cell; Treg, regulatory T cell; Val-Ala, valine-alanine.

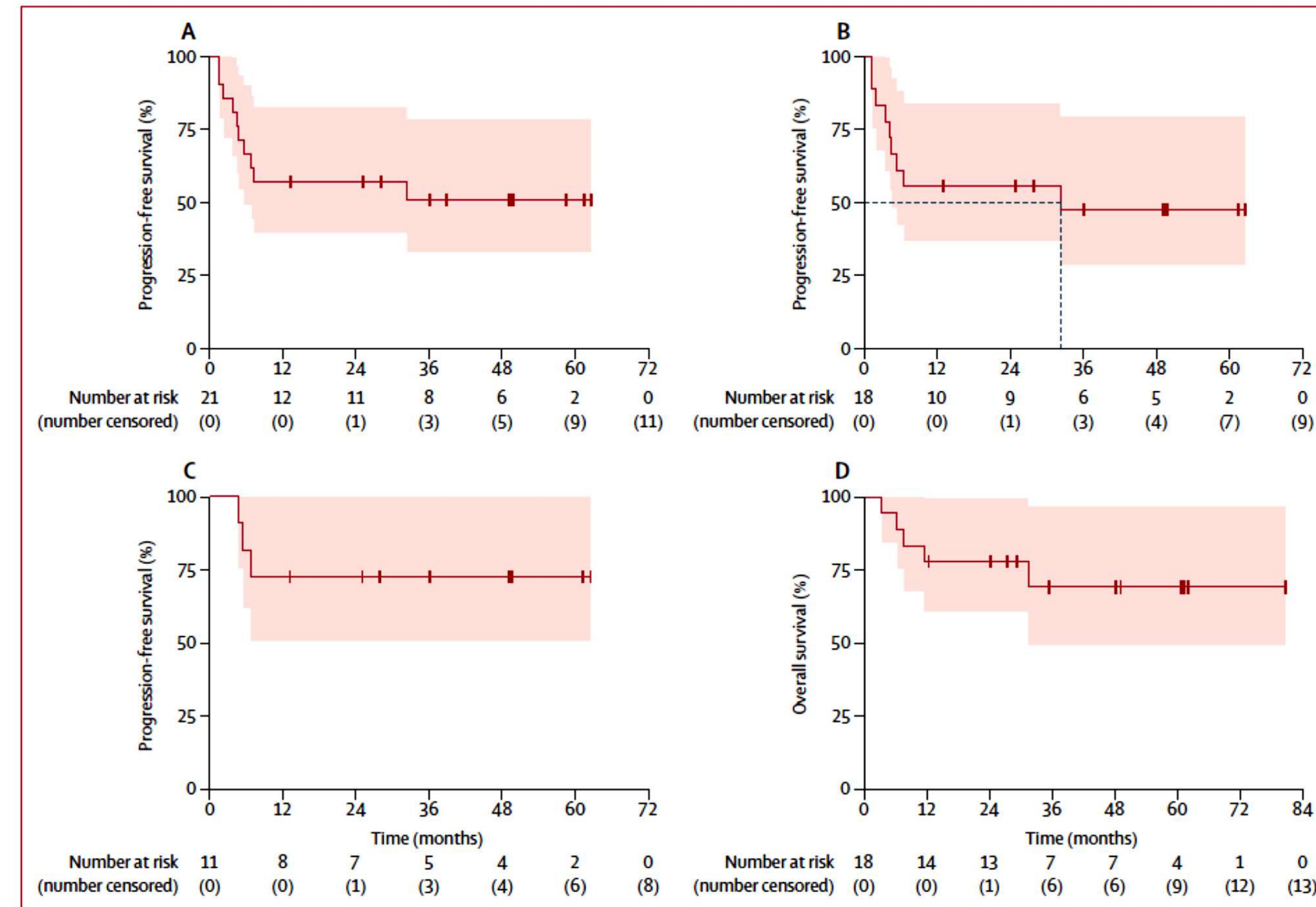
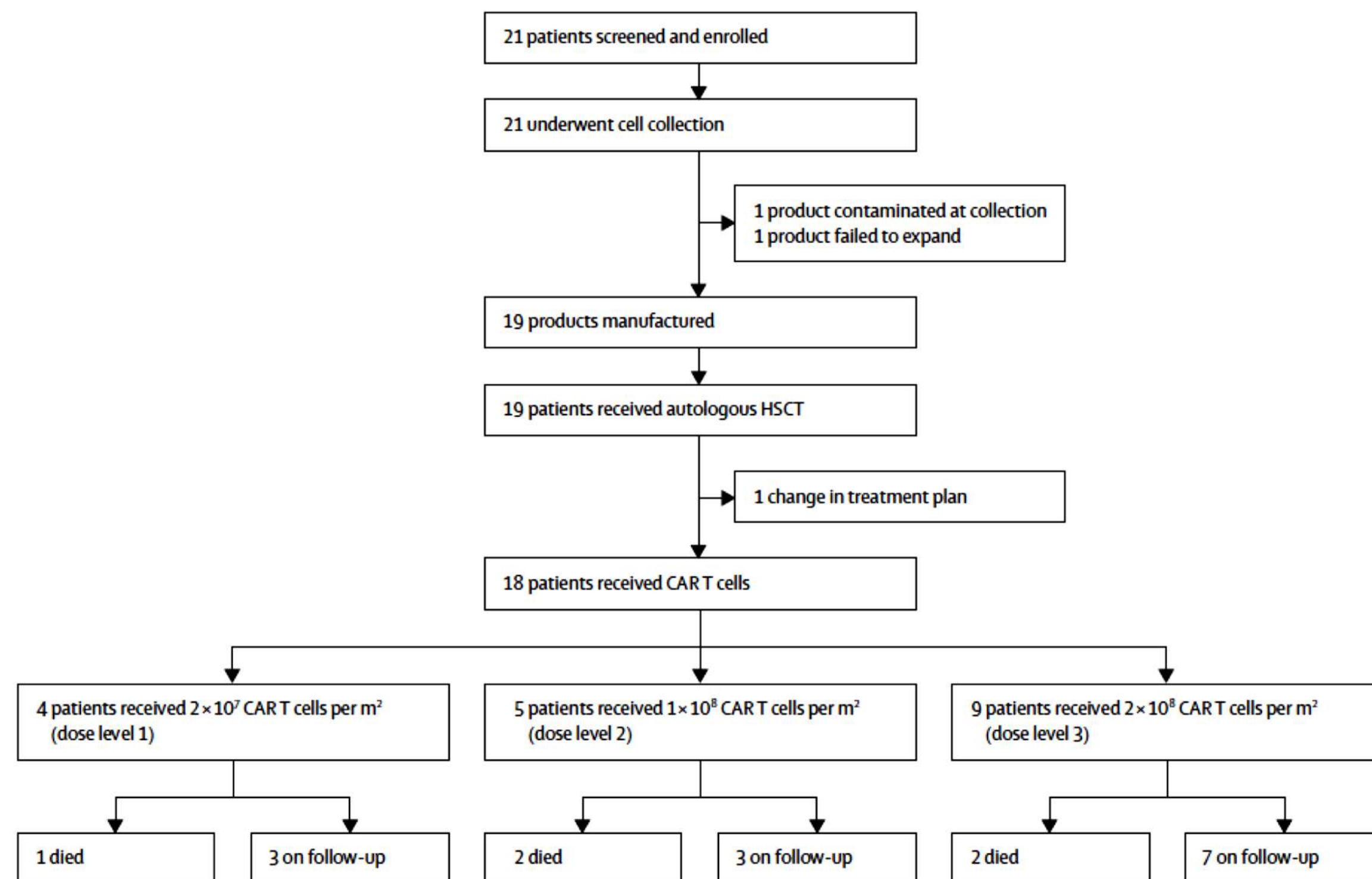
Cellular Therapy.1

□ CAR-T anti CD30+



Anti-CD30 CAR T cells as consolidation after autologous haematopoietic stem-cell transplantation in patients with high-risk CD30⁺ lymphoma: a phase 1 study

Natalie S Grover, George Hucks, Marcie L Riches, Anastasia Ivanova, Dominic T Moore, Thomas C Shea, Mary Beth Seegars, Paul M Armistead, Kimberly A Kasow, Anne W Beaven, Christopher Dittus, James M Coghill, Katarzyna J Jamieson, Benjamin G Vincent, William A Wood, Catherine Cheng, Julia Kaitlin Morrison, John West, Tammy Cavallo, Gianpietro Dotti, Jonathan S Serody, Barbara Savoldo

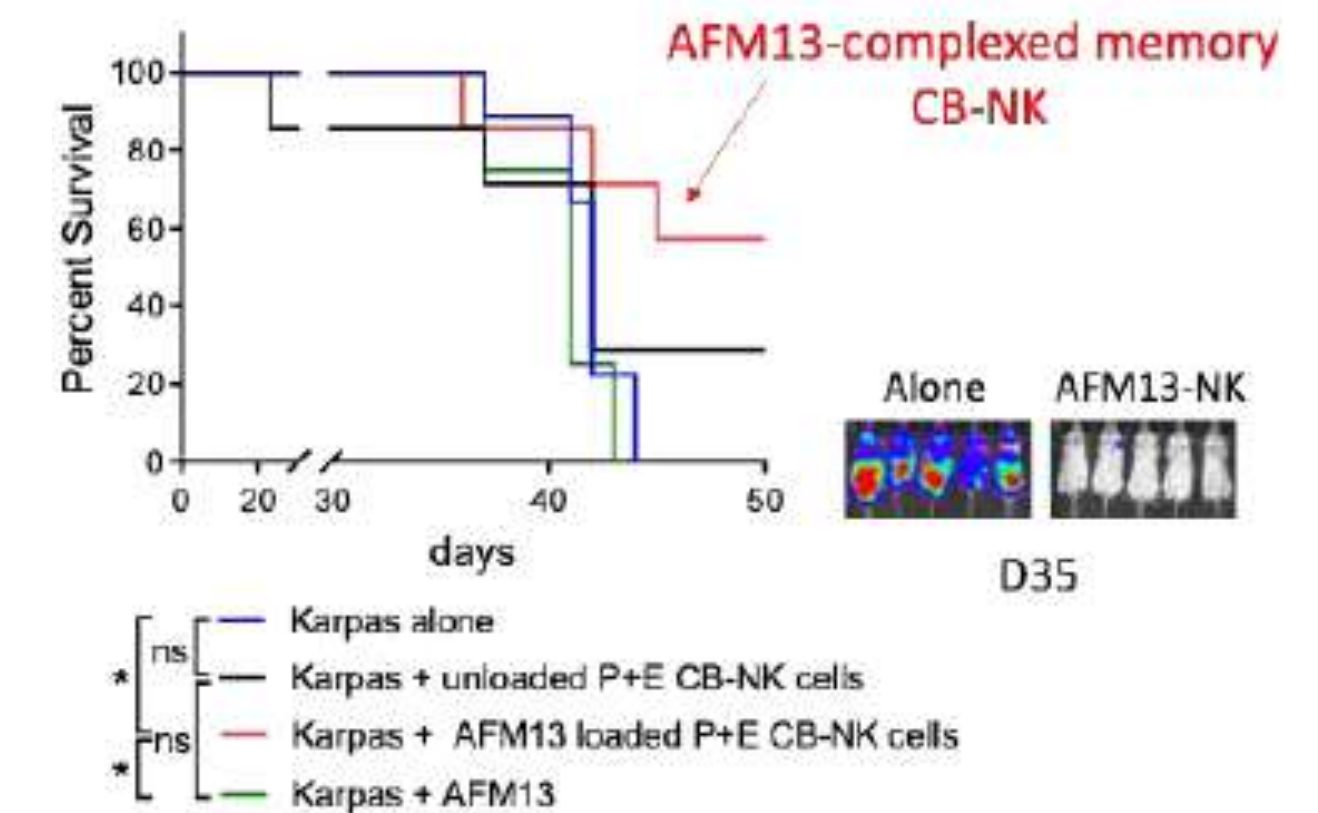
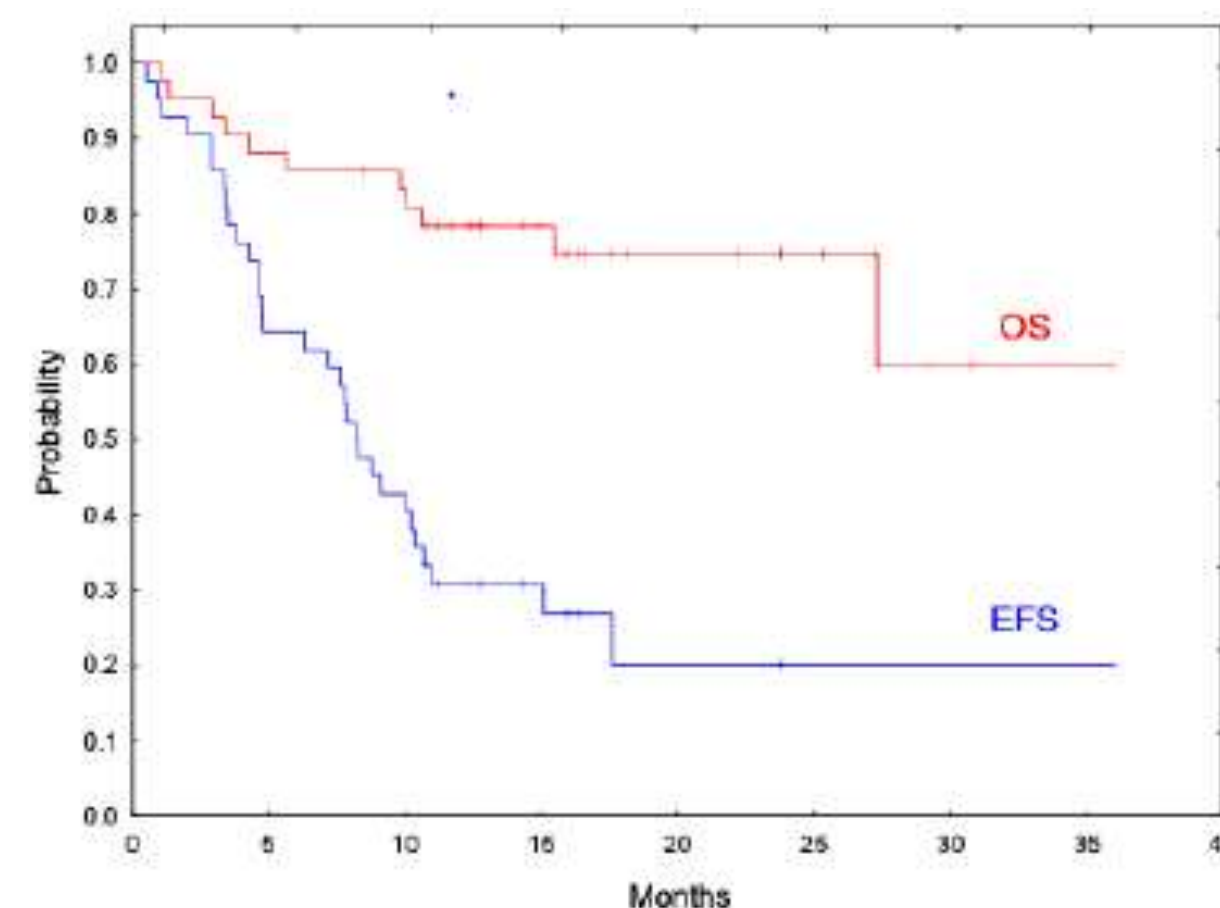
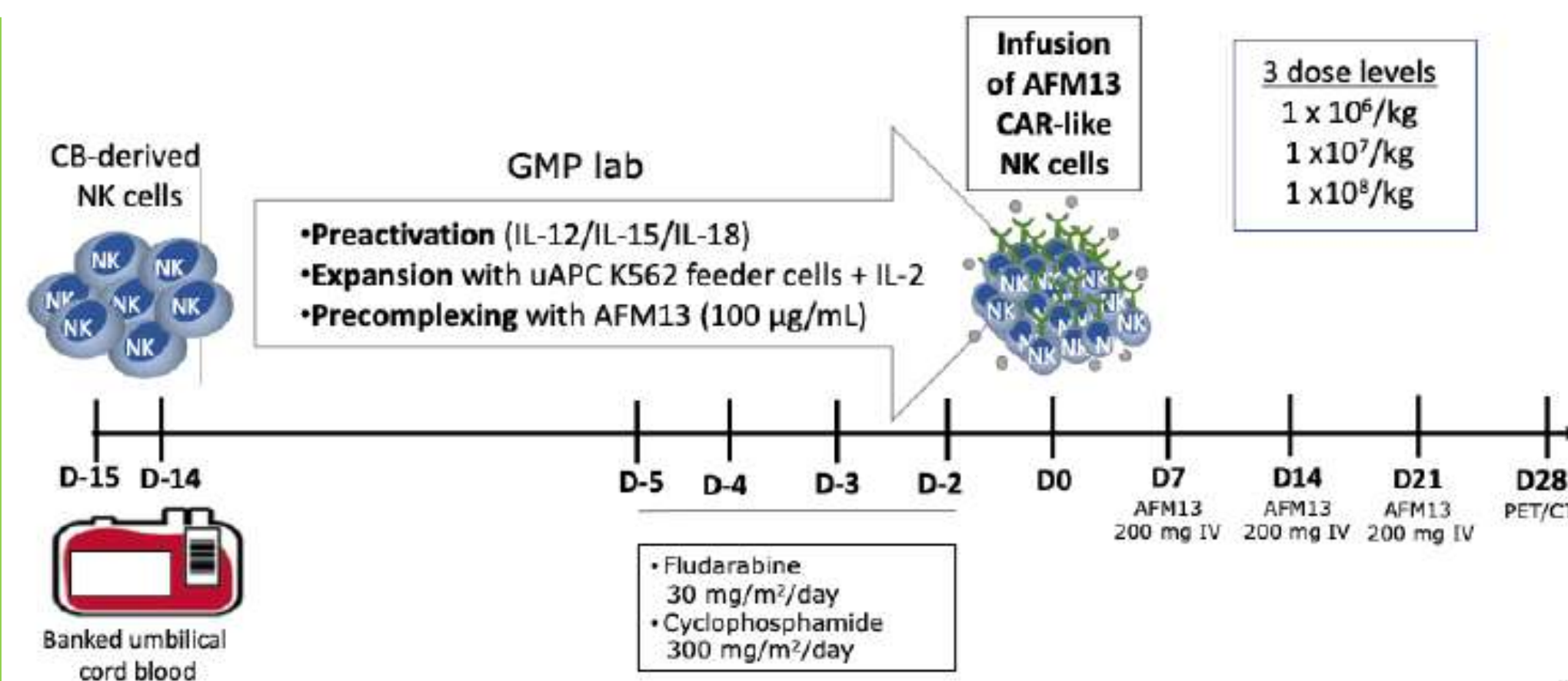
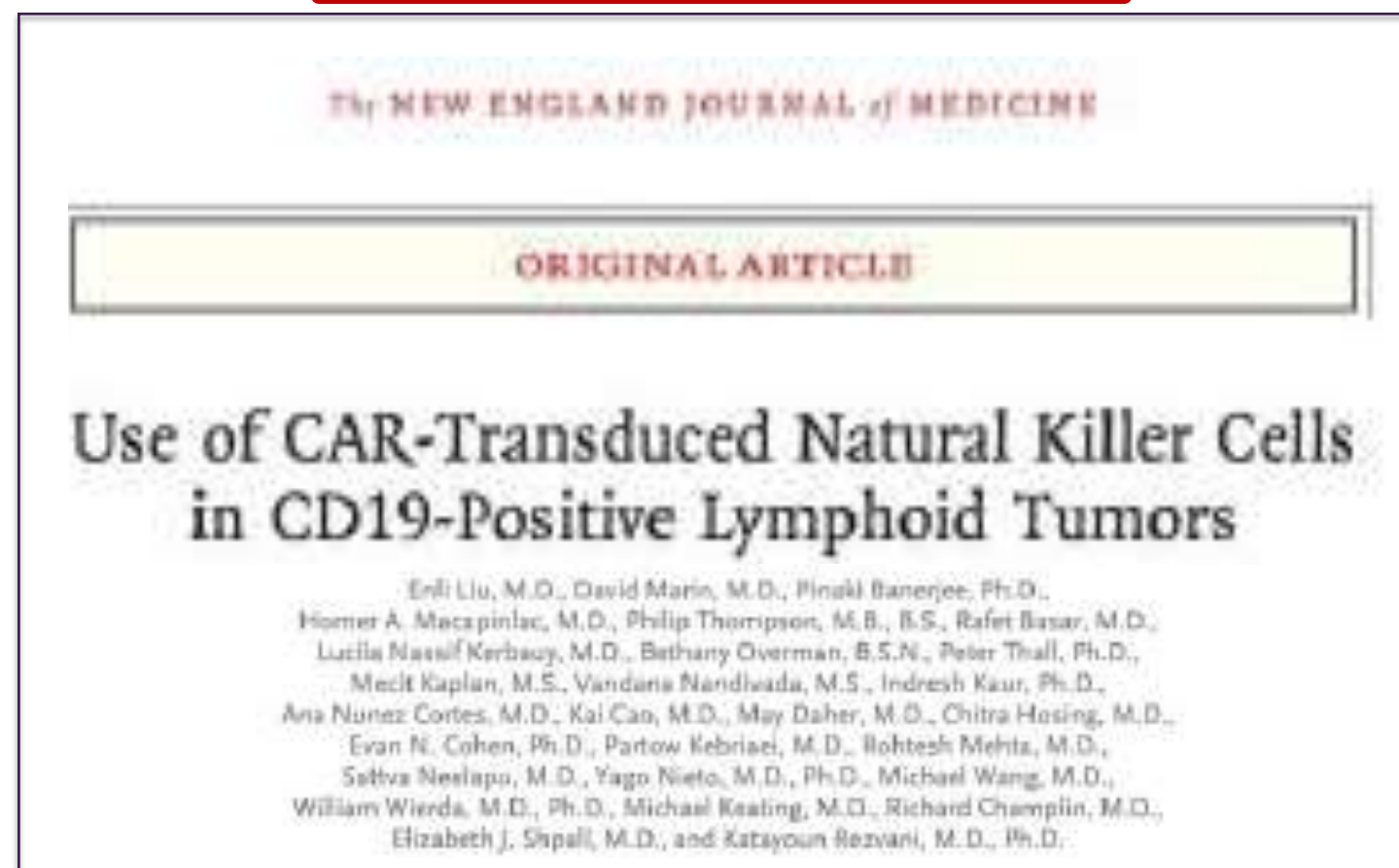


Lancet Haematology, 2024

Cellular Therapy.2

AFM13-complexed CB-Derived NK cells for R/R CD30+Lymphoma NCT04074746

First In-human



	Patients treated at RP2D			
	Overall (N=36)		Hodgkin (N=32)	
	2 cycles (N=13)	4 cycles (N=23)	2 cycles (N=12)	4 cycles (N=20)
Median EFS	8 months	10 months	8 months	10 months
At 6 months	62%	70%	67%	68%
At 12 months	31%	29%	33%	27%
Median OS	NR	NR	NR	NR
At 6 months	85%	87%	92%	85%
At 12 months	85%	85%	92%	82%

Kerbaux et al, Clin Cancer Res 2021

Conclusions

- ❑ Plethora of emerging immunotherapies in R/R cHL that are poised to further improve outcomes for patients, including those who progress after BV and CPI
- ❑ While many of these therapies have demonstrated encouraging activity, rational combinations are needed to improve the durability of responses
- ❑ Advances in our understanding of cHL biology, may enable more biologically-tailored treatment approaches in the future

Grazie per l'attenzione!!!!!!!!!!!!!!