HIGHLIGHTS IN EMATOLOGIA

TREVISO
7-8 NOVEMBRE 2025

IL RUOLO DEL TRAPIANTO ALLOGENICO NEL LINFOMA DI HODGKIN

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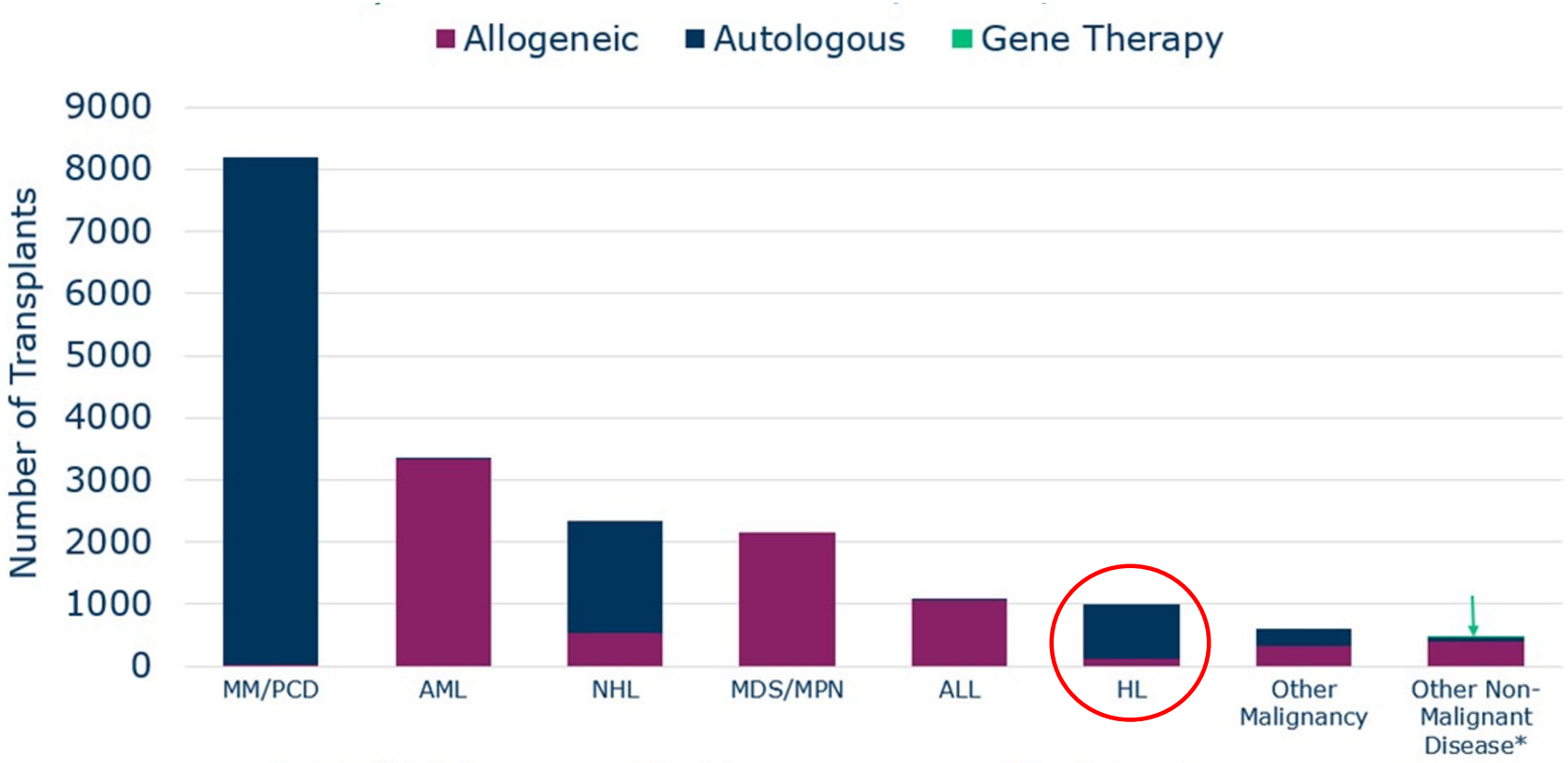
Disclosures of Name Surname

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

Introduction

- ➔ Classic Hodgkin Lymphoma has a bimodal age distribution
- ➔ Prognosis of R/R cHL after failure of Auto-HCT is poor (median OS 2 years)
- ➔ Effective therapies in R/R cHL include brentuximab vedotin and the checkpoint inhibitors (nivolumab and pembrolizumab)
- ➔ Patients responding to checkpoint inhibitors after Auto-HSCT often undergo to Allo-HSCT with a significant improvement in survival outcomes
- ➔ Prior Allo-HSCT checkpoint inhibitors may exacerbate post-transplant complications (GVHD and TRM)

Number of HCTs by Indications in 2023



*Includes 22 limited gene therapy events

Abbreviations:
ALL, acute lymphoblastic leukemia;
AML, acute myeloid leukemia;
CLL, chronic lymphocytic leukemia;
HL, Hodgkin lymphoma;
MDS, myelodysplastic syndromes;
MM, multiple myeloma;
MPN, myeloproliferative neoplasms;
NHL, non-Hodgkin lymphoma;
PCD, plasma cell disorders.

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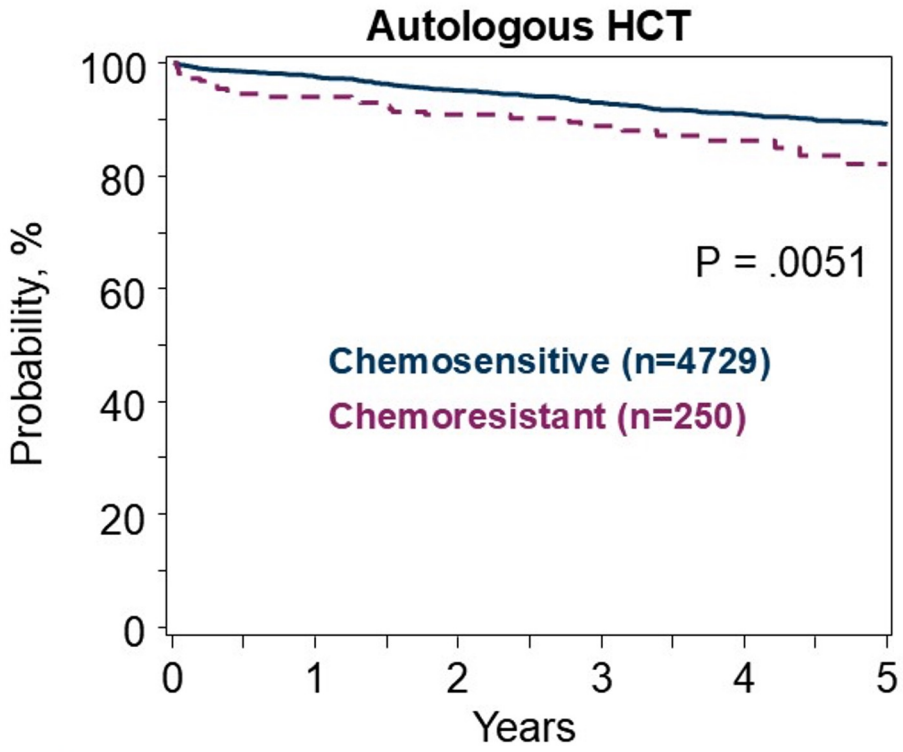
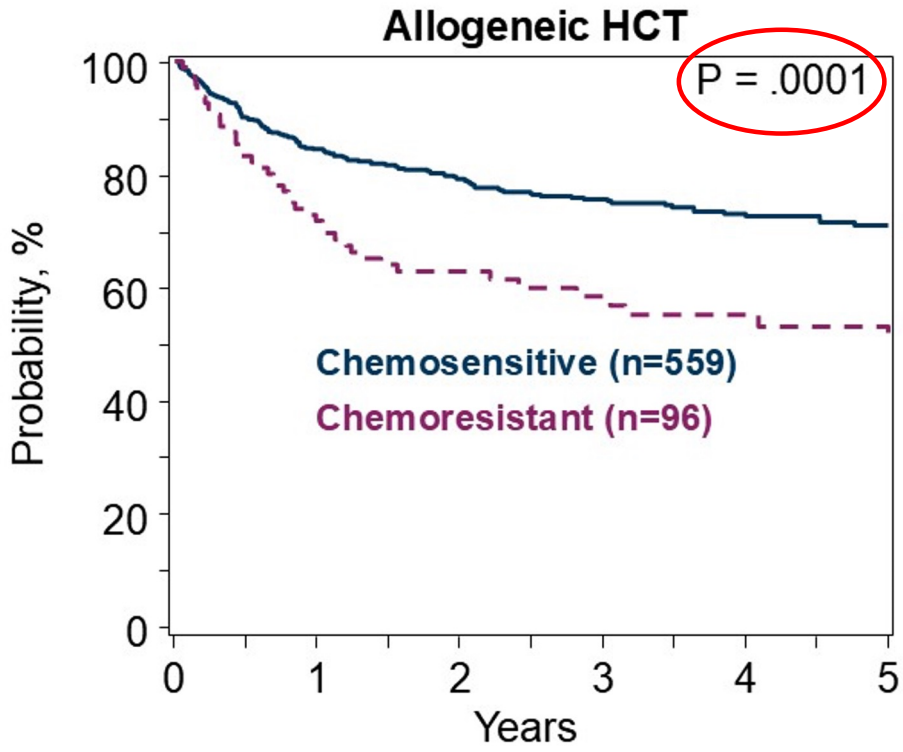
Survival after Autologous or Allogeneic HCTs for Hodgkin Lymphoma

2017-2022





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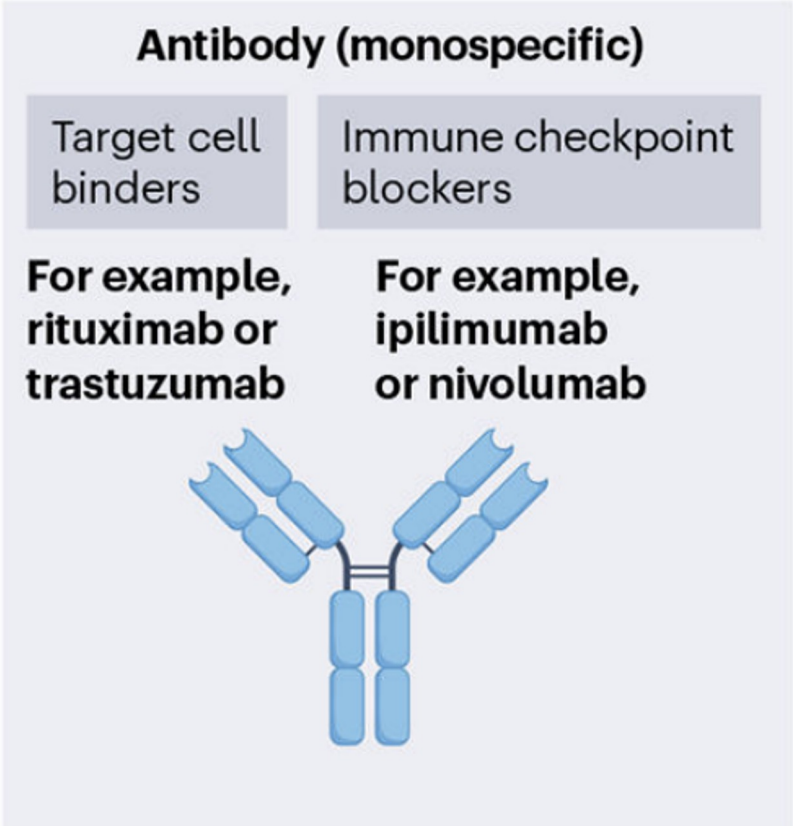
VOLUME 36 · NUMBER 14 · MAY 10, 2018

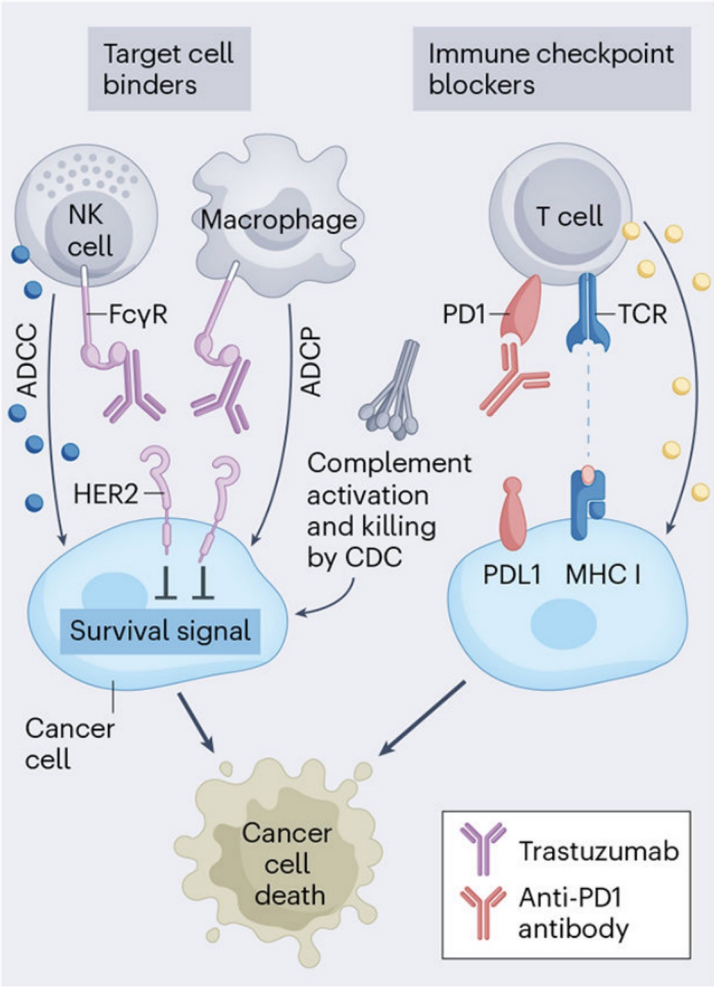
JOURNAL OF CLINICAL ONCOLOGY ORIGINAL REPORT

Nivolumab for Relapsed/Refractory Classic Hodgkin Lymphoma After Failure of Autologous Hematopoietic Cell Transplantation: Extended Follow-Up of the Multicohort Single-Arm Phase II CheckMate 205 Trial

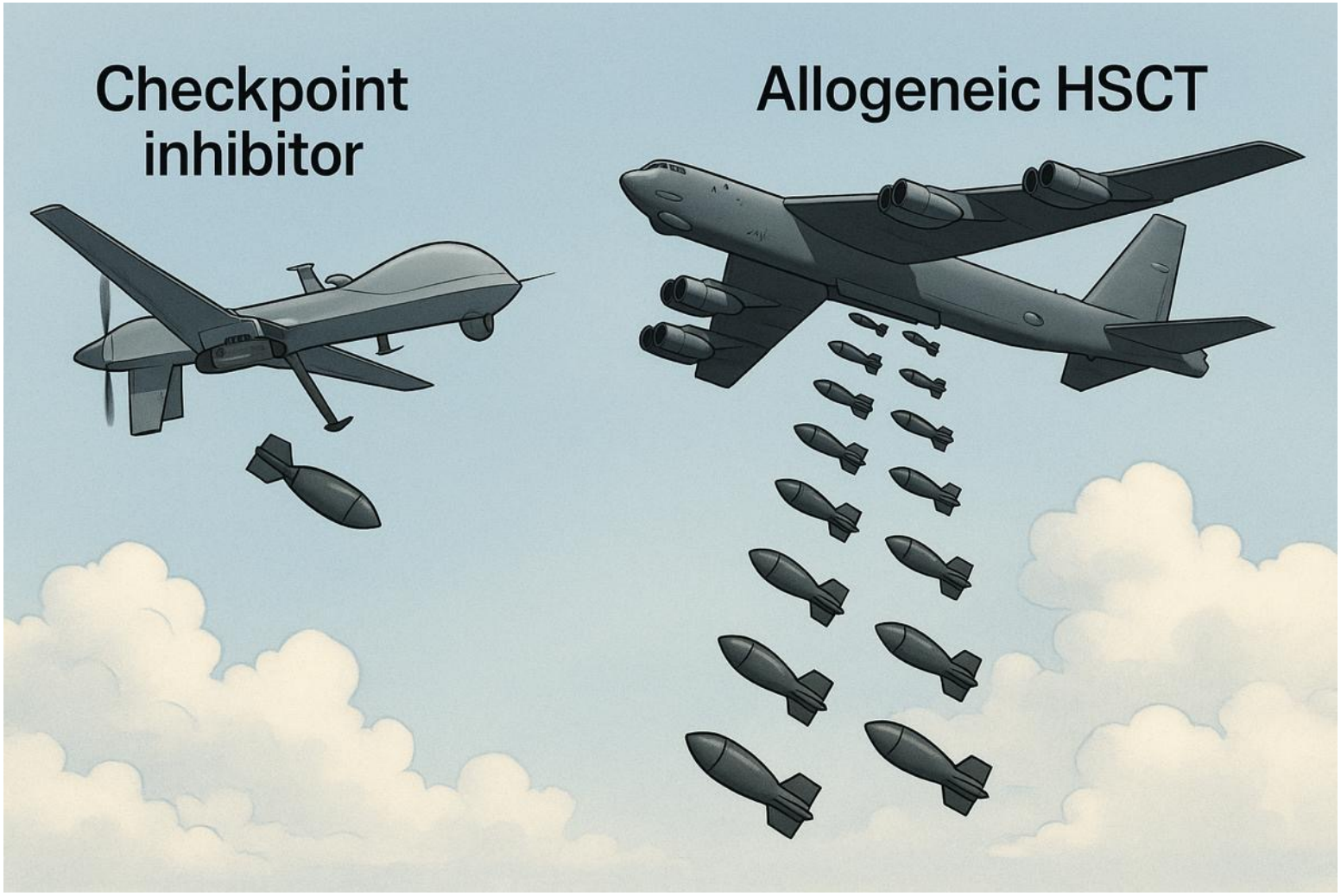
Philippe Armand, Andreas Engert, Anas Younes, Michelle Fanale, Armando Santoro, Pier Luigi Zinzani, John M. Timmerman, Graham P. Collins, Radhakrishnan Ramchandren, Jonathon B. Cohen, Jan Paul De Boer, John Kuruvilla, Kerry J. Savage, Marek Trneny, Margaret A. Shipp, Kazunobu Kato, Anne Sumbul, Benedetto Farsaci, and Stephen M. Ansell

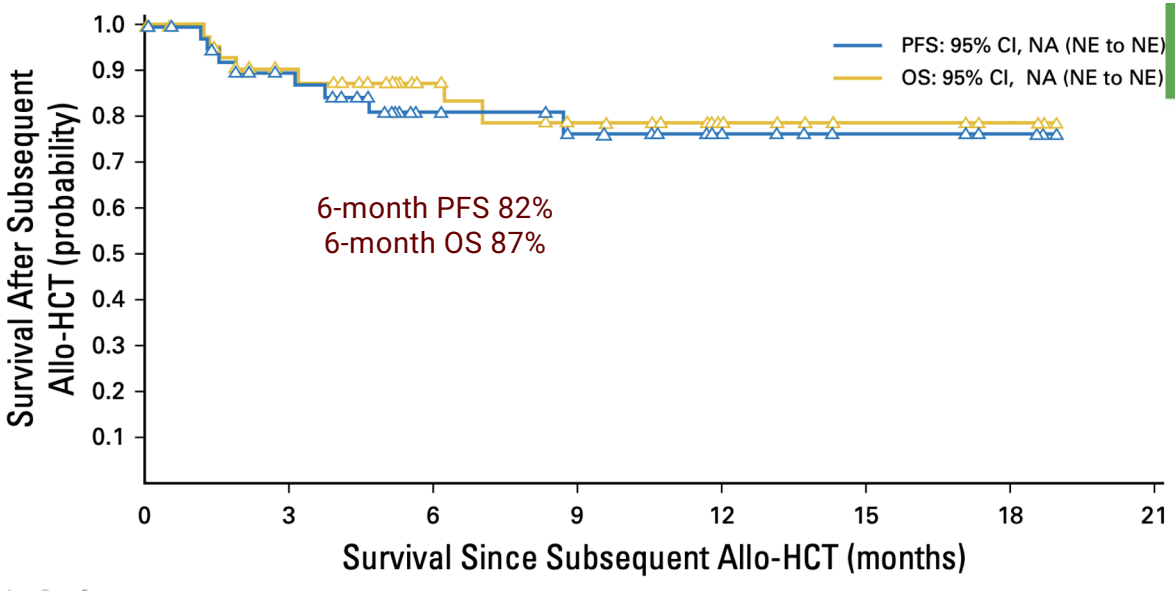
Mechanism of Action of Monospecific Antibodies

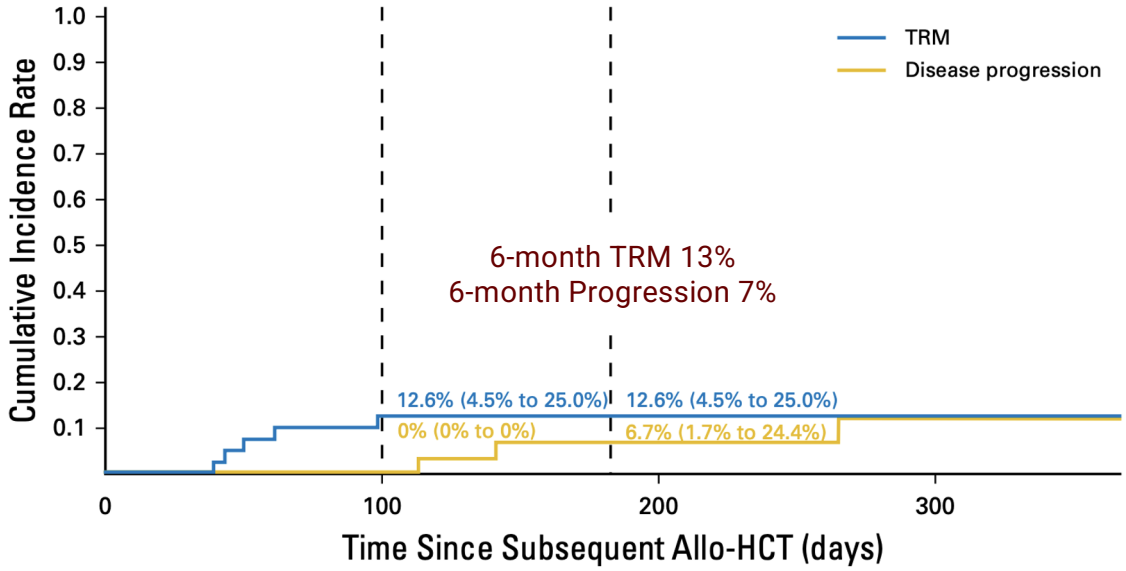




Paul s et al. Nat Rev Cancer. 2024 June ; 24(6): 399–426


Checkpoint inhibitor
Allogeneic HSCT





Nivolumab 3 mg/kg i.v. every 2 weeks

- 44/243 patients proceeded to allo-HCT after a median of 13 nivolumab doses
- Median time from last dose to allo-HCT was 49 days
- 77% of patients received nonmyeloablative conditioning
- 21/44 patients experienced aGVHD (10/44 severe aGVHD)
- Not significant relationship between time from last dose of nivolumab to allo-HCT and TRM or G3 to G4 aGVHD was identify (considered the estimated nivolumab concentration at transplant)

Armand P et al. J Clin Oncol. 2018 Mar 27;36(14):1428–1439

REGULAR ARTICLE

blood advances

Improved overall survival with checkpoint inhibition and allogeneic transplantation in relapsed Hodgkin lymphoma

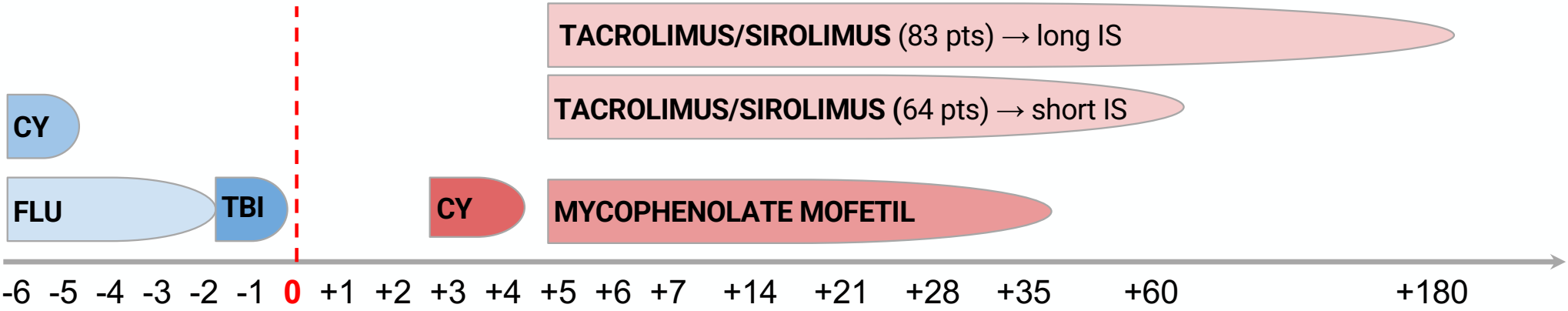
Nadeem Tabbara,[1,*] Marianna Zahurak,[1,*] Cole H. Sterling,[1] Iris Margalit Trutzer,[1] Jaroslaw Jedrych,[2] Lode J. Swinnen,[1] Ephraim J. Fuchs,[1] Javier Bolaños-Meade,[1] Nina Wagner-Johnston,[1] Richard J. Jones,[1] Richard F. Ambinder,[1] Ravi Varadhan,[1] and Suman Paul[1]

[1]Department of Oncology, Sidney Kimmel Comprehensive Cancer Center and [2]Department of Dermatology, Johns Hopkins University, Baltimore, MD

11 MARCH 2025 - VOLUME 9, NUMBER 5

Study Design

- One-hundred forty-seven patients transplanted between 2004 and 2023
- Rescue before Allo-HSCT was immune checkpoint inhibitors or chemotherapy
- Allo-HSCT was preferred for patients with:
- **primary refractory disease**
- **first remission lasting <12 months**
- **failure of prior ASCT**



Luznik L, et al. Biol Blood Marrow Transplant. 2008;14(6):641-650
Paul S, et al. Biol Blood Marrow Transplant. 2020;26(3):502-508.
Sterling CH, et al. Transplant Cell Ther. 2023;29(4):267.e1-267.e5.
Webster JA, et al. Transplant Cell Ther. 2023;29(3):182.e1-182.e8
DeZern AE, et al. Biol Blood Marrow Transplant. 2020;26(11):2075-2081
Tabarra N et al. Blood Adv. 2025; 11;9(5):1202-1209

Patient and Transplant Characteristics

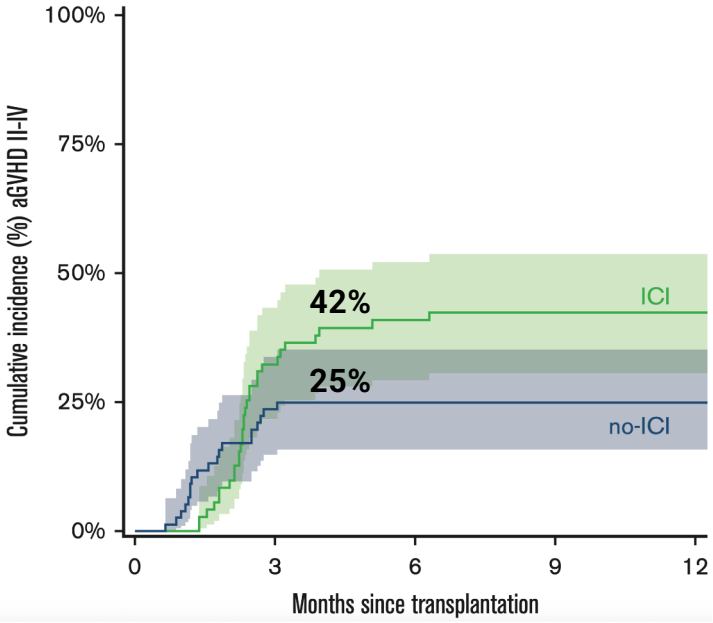
	ICIs	No ICIs	*p value*
Patients, n (%)	71 (48.3)	76 (51.7)	-
Median age at alloHSCT, y	32	36	.2
Median prior treatments	3	3	.4
ICI as the last therapy (%)	47 (66.2)	N/A	-
MT from ICI to alloHSCT, d	61 (43-165)	N/A	-
Prior ASCT (%)	12 (17)	27 (35)	
Pre-alloHSCT status, n (%) - CR - PR - SD	 32 (45%) 37 (52%) 2 (3%)	 41 (54%) 22 (29%) 13 (17%)	**.02**

	ICIs	No ICIs	*p value*
Donor type, n (%) - HLA Haploidentical - HLA Matched - HLA Mismatched	 48 (68) 7 (10) 16 (22)	 70 (92) 2 (3) 4 (5)	**< .001**
Allograft source, n (%) - Bone Marrow - Peripheral Blood - Cord Blood	 53 (75) 17 (24) 1 (1)	 69 (91) 6 (8) 1 (1)	**.03**
Chimerism at day +60 (%) ≥95% donor - Full donor (<5% pt) - Mixed (5%-94% pt) - Graft failure (<5% donor)	 43 (60.5) 16 (22.5) 12 (16.9)	 64 (84.2) 8 (10.5) 4 (5.3)	**.005**

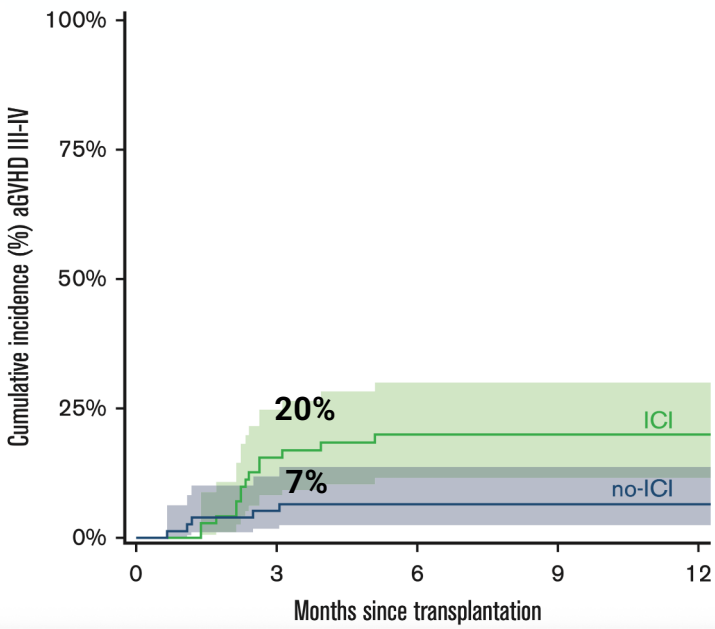
Tabarra N et al. Blood Adv. 2025; 11;9(5):1202-1209

Acute GVHD in Checkpoint Inhibitor *versus* no-Checkpoint Inhibitor

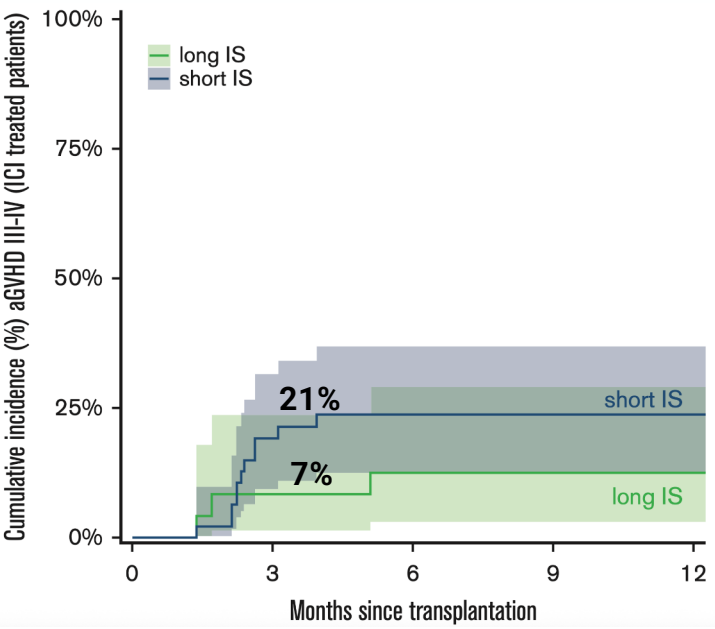
Incidence aGVHD II°-IV°



Incidence aGVHD III°-IV°



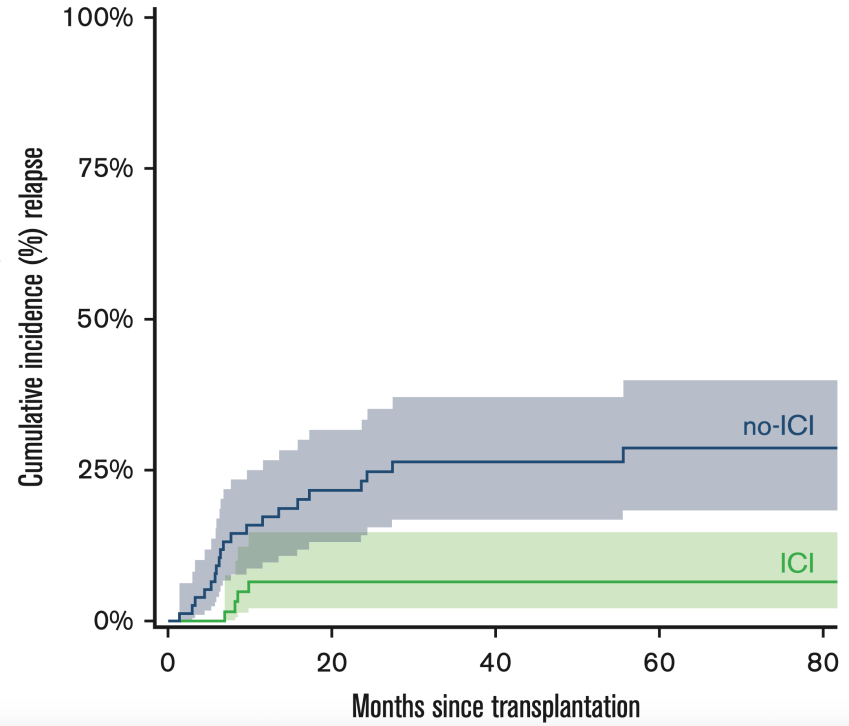
aGVHD III°-IV° stratified by short vs long IS



Tabarra N et al. Blood Adv. 2025; 11;9(5):1202-1209

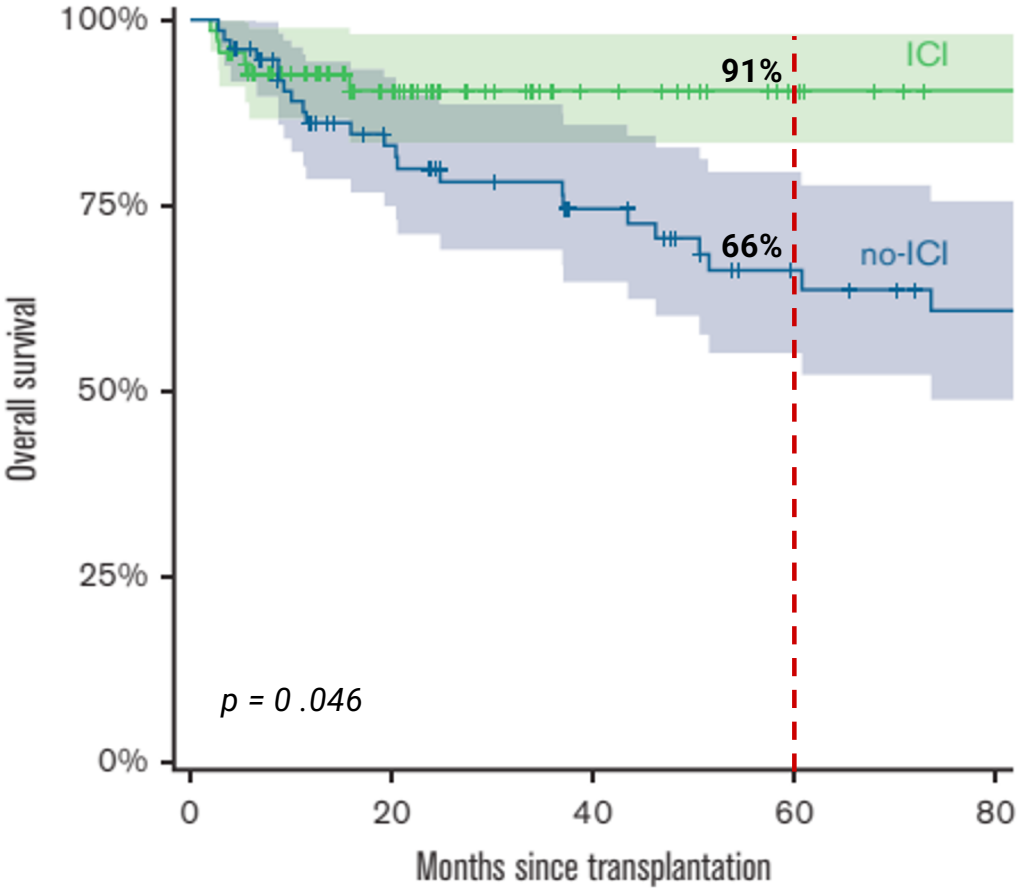
Outcome in Checkpoint Inhibitor versus no-Checkpoint Inhibitor

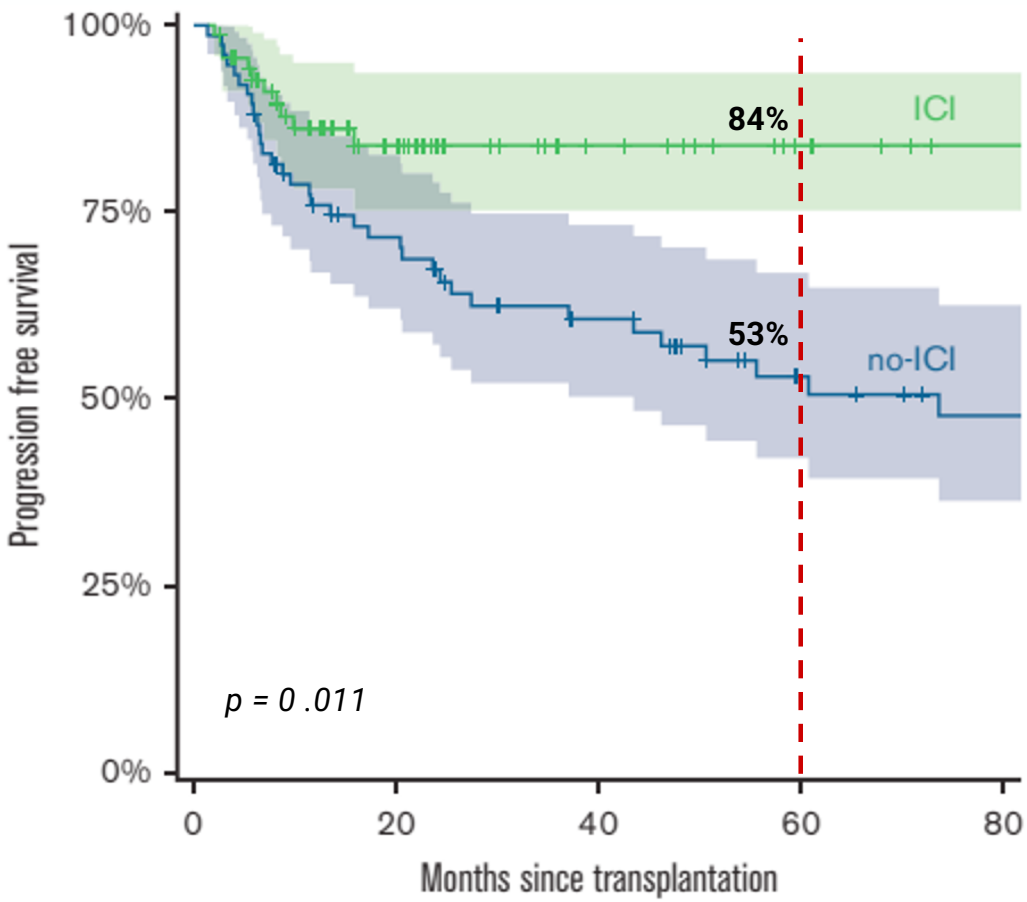
	ICIs	No ICIs	*p value*
3-year Relapse %	**7**	**26**	***.01***
5-year NRM %	9	17	*.65*
5-year PFS %	**84**	**53**	***.011***
5-year OS %	**91**	**66**	***.046***



Tabarra N et al. Blood Adv. 2025; 11;9(5):1202-1209

Survival in Checkpoint Inhibitor *versus* no-Checkpoint Inhibitor





Tabarra N et al. Blood Adv. 2025; 11;9(5):1202-1209

TRANSPLANTATION

CME Article

Outcomes of allogeneic HCT in Hodgkin lymphoma in the era of checkpoint inhibitors: a joint CIBMTR and EBMT analysis

Miguel-Angel Perales,[1,2] Farrukh T. Awan,[3] Ariane Boumendil,[4] Jinalben Patel,[5] Luca Castagna,[6] Emanuele Angelucci,[7] Herve Finel,[4] Alexander Kulagin,[8] Bertram Glass,[9] Paolo Corradini,[10] Alex F. Herrera,[11] Didier Blaise,[12] Mohamed A. Kharfan-Dabaja,[13] Khalid Halahleh,[14] Sairah Ahmed,[15] Carmen Martínez,[16] Sebastian Giebel,[17] Silvia Montoto,[18] Richard J. Jones,[19] Nausheen Ahmed,[20] Ryan C. Lynch,[21] Marcos J. De Lima,[22] Mazyar Shadman,[21] Craig S. Sauter,[23] Kwang W. Ahn,[5,24] Mehdi Hamadani,[5,25] Ali Bazarbachi,[26] and Anna Sureda[27]

Patient and Transplant Characteristics

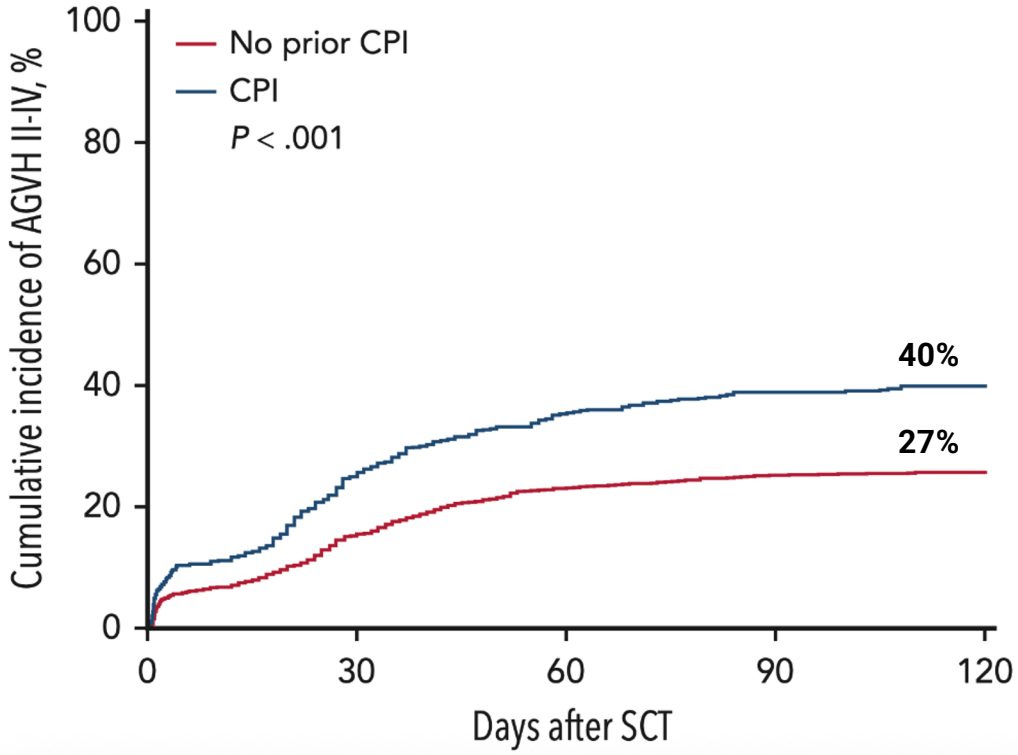
2186 adults transplanted between 2008 and 2023

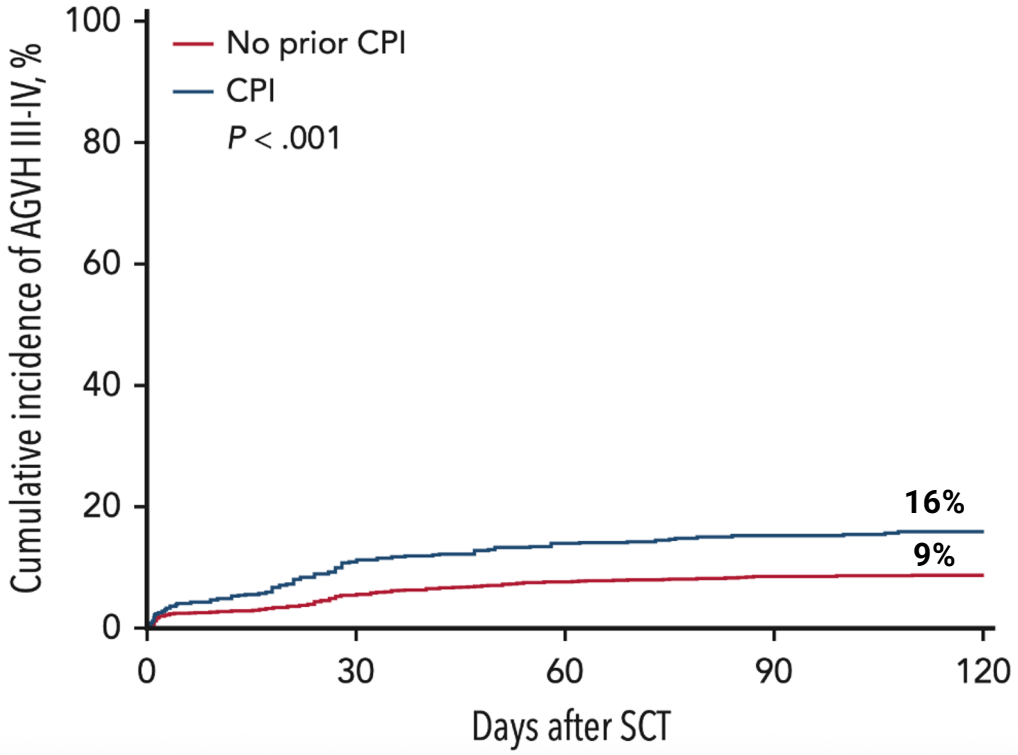
	CPIs	No CPIs	*p value*
Patients, n (%)	600 (27)	1586 (73)	-
Median age at alloHSCT, y	31.7	32.4	.66
MT from last ICI, m	10.1 (0.7-217)	N/A	-
Prior ASCT (%)	226 (37.7)	408 (25.8)	**< .0001**
Pre-alloHSCT status, n (%)			**.003**
- CR	307 (51.2%)	767 (48.4%)	
- PR	187 (31.2%)	22 (29%)	
- Refractory	90 (15%)	418 (26.4%)	

	CPIs	No CPIs	*p value*
Donor type, n (%)			**< .0001**
- Haploidentical	281 (46.8)	522 (32.9)	
- Sibling	159 (26.5)	571 (36)	
- MUD	160 (26.7)	493 (31.1)	
Conditioning, n (%)			.30
- MA	105 (17.5)	308 (19.4)	
- NMA, RIC	495 (82.5)	1278 (80.6)	
GVHD prophylaxis (%)			**< .0001**
- CNI + MMF	119 (19.8)	409 (25.8)	
- CNI + MTX	146 (24.3)	622 (39.2)	
- Post-Cy	335 (55.8)	555 (35)	
- ATG	132 (28.6)	324 (24.5)	
Median FU (months)	17	39	**< .0001**

Perales MA et al. Blood. 2025; 146;8:1011-1029

Incidence of Acute GVHD

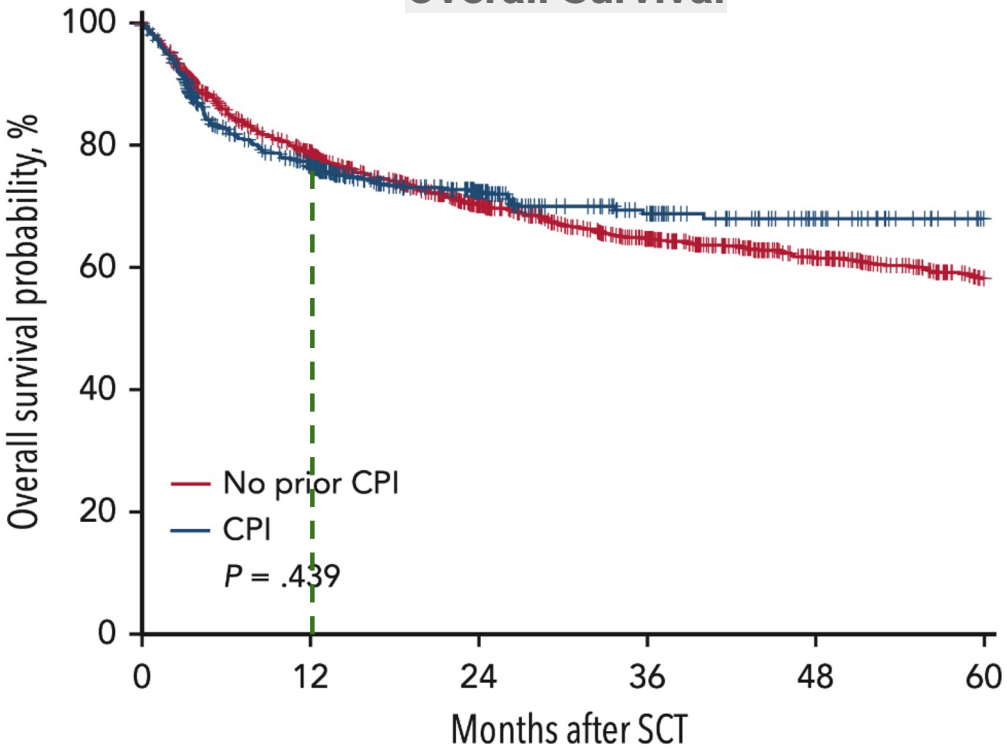




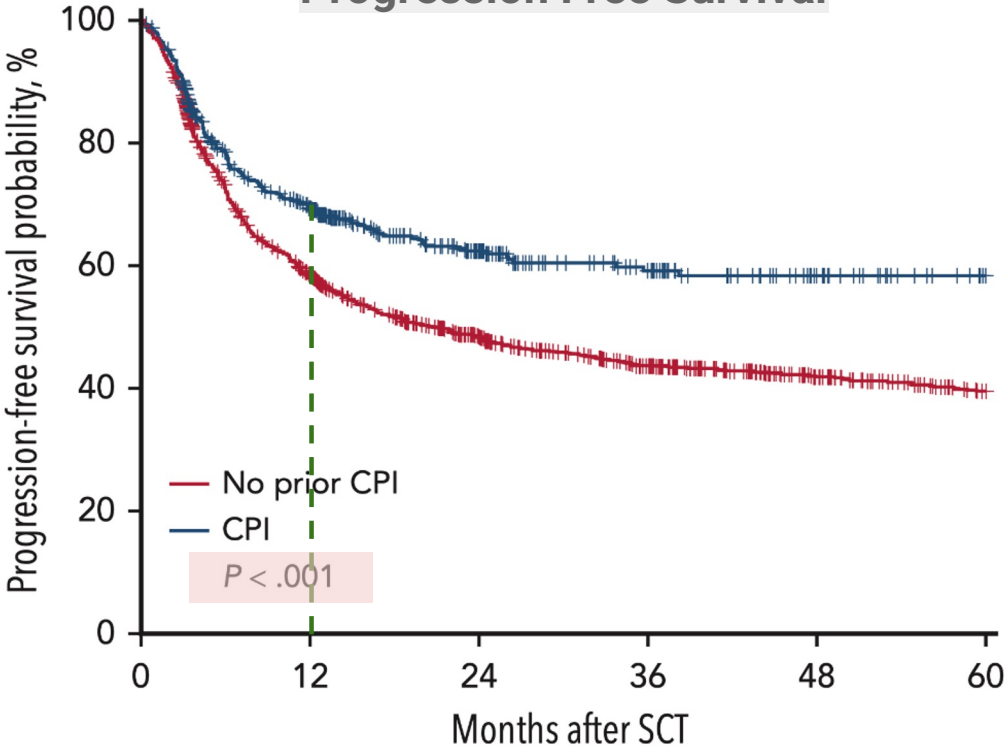
Perales MA et al. Blood. 2025; 146;8:1011-1029

Outcome after Allo-HSCT

Overall Survival



Progression Free Survival



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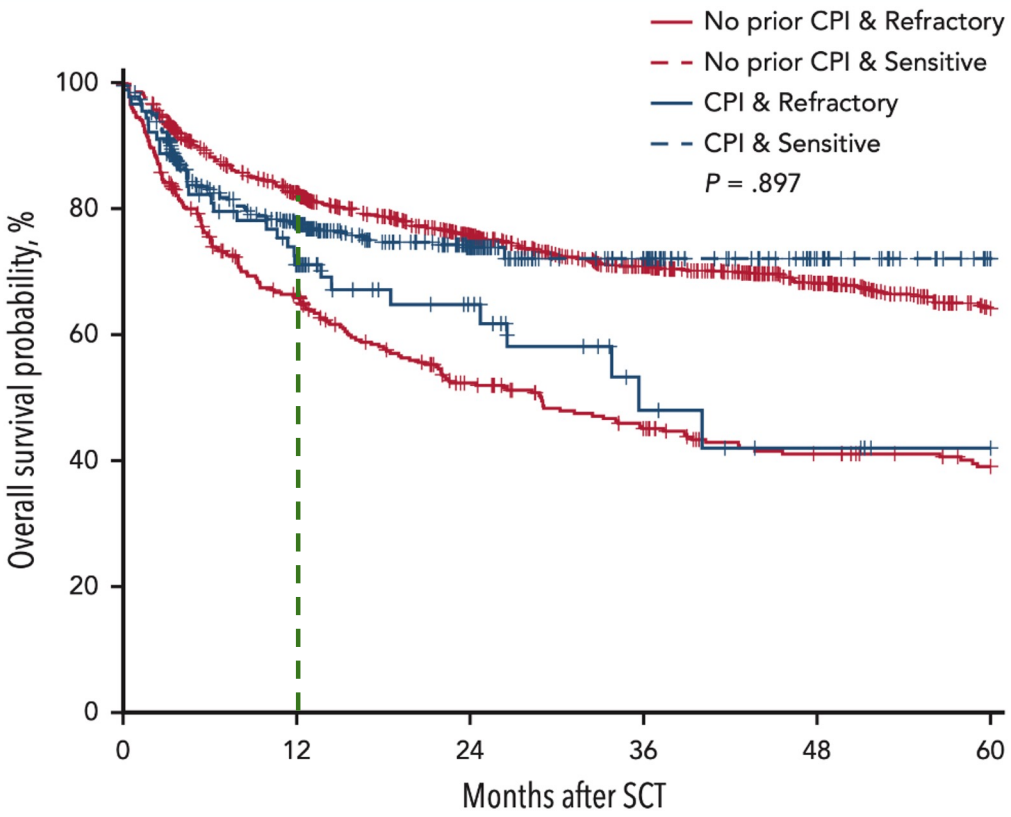
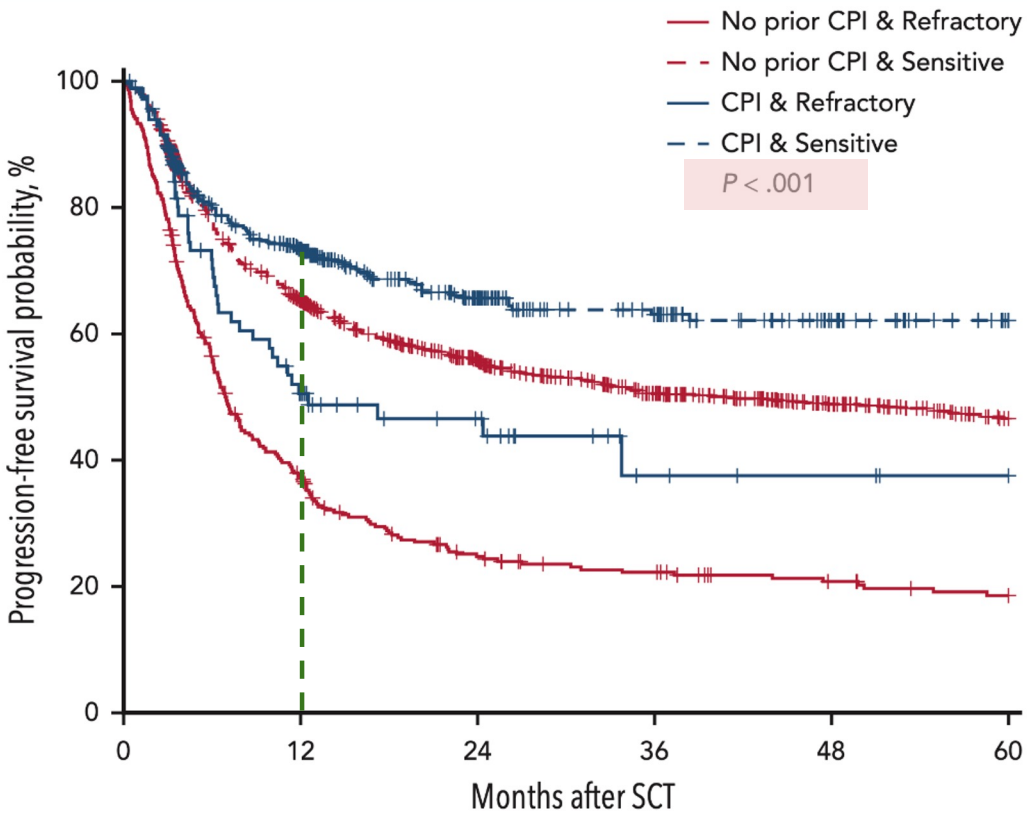
Survival after AlloHSCT based on pre-AlloHSCT treatment sensitivity

Overall Survival



Progression Free Survival



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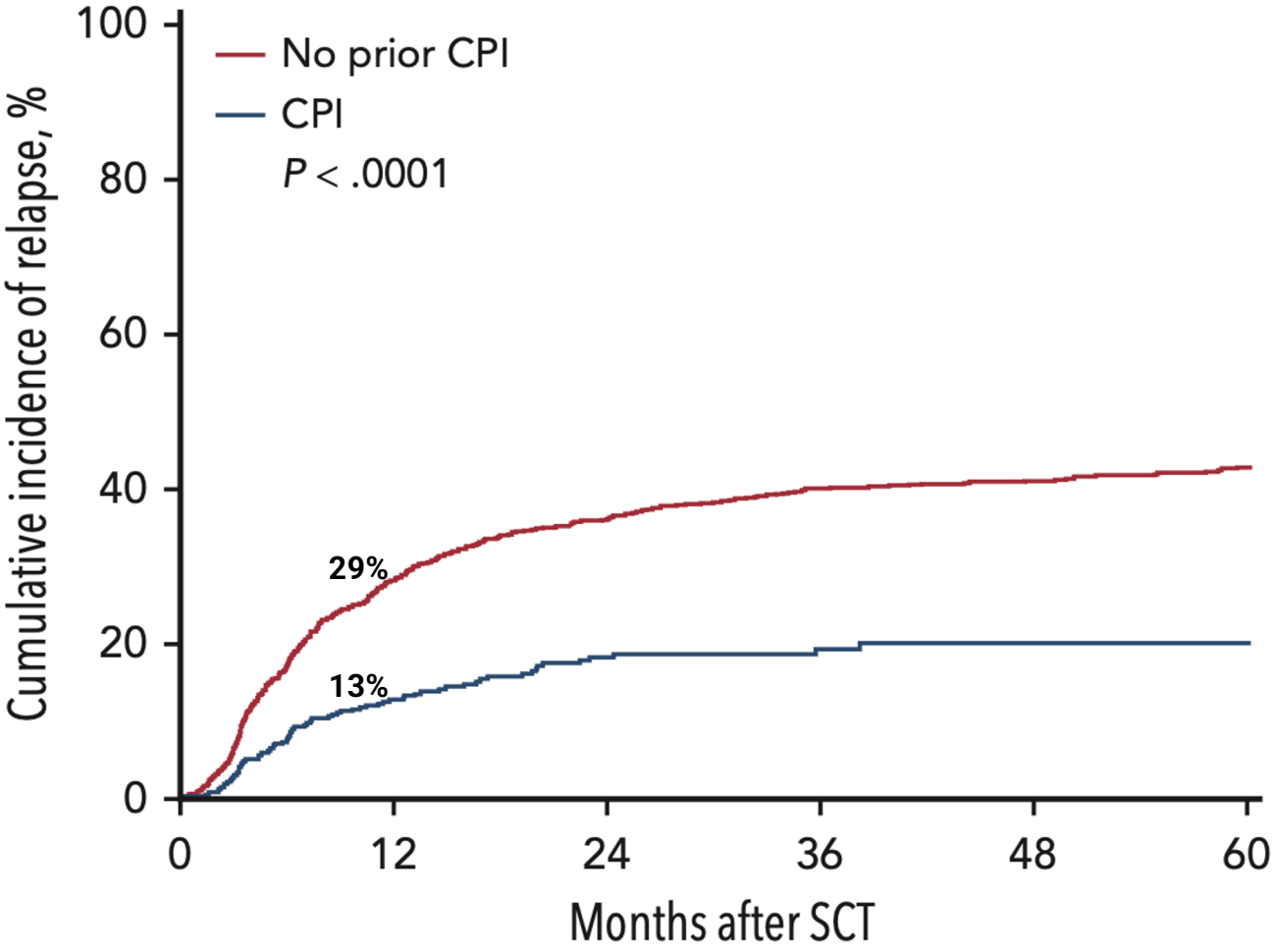
Mortality



	No CPIs	CPIs
Primary disease	33.3%	9.8%
Infections	16.8%	13.3%
Toxicity	16.4%	28.0%
GVHD	9.1%	13.3%

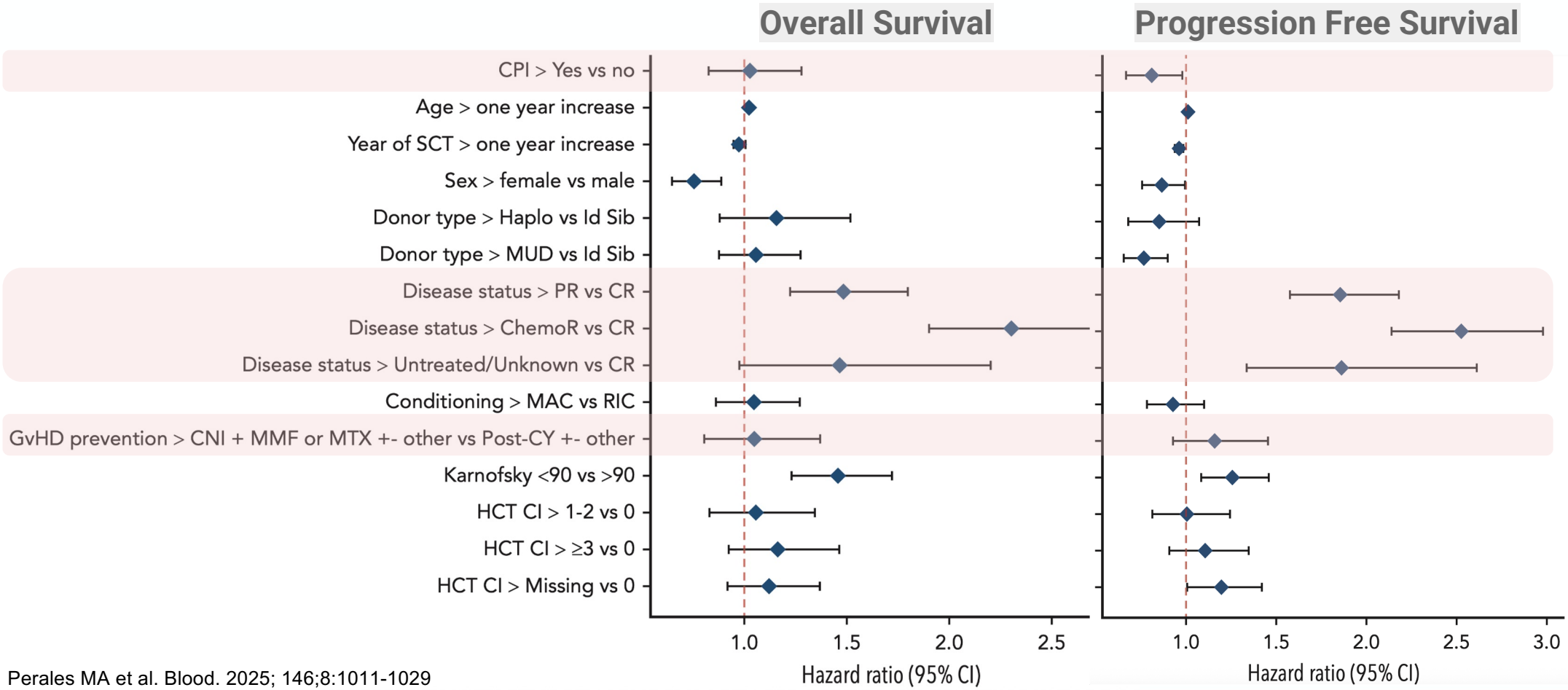
Perales MA et al. Blood. 2025; 146;8:1011-1029

Impact of Checkpoint Inhibitors on Outcomes

Variables	OS		PFS		Relapse		NRM	
	HR	*P value*	HR	*P value*	HR	*P value*	HR	*P value*
CPIs vs. no-CPIs	1.03	*.81*	0.81	***.03***	0.58	***<.0001***	1.18	*.25*
Age (1 year increase)	1.02	***<.0001***	1.01	***<.0001***	1	*.64*	1.02	***<.0001***
Disease Status (ref. CR) - PR - Refractory	 1.48 2.3	 ***<.0001*** ***<.0001***	 1.85 2.52	 ***<.0001*** ***<.0001***	 2.49 3.22	 ***<.0001*** ***<.0001***	 1.09 1.7	 *.53* ***.0001***
CPIs / PTCY No CPIs and PTCY CPIs but no PTCY CPIs and PTCY	 1.07 1.07 1.05	 *.51* *.64* *.75*	 0.86 0.86 0.67	 *.08* *.23* ***.002***	 0.81 0.63 0.46	 ***.04*** ***.009*** ***<.0001***	 1 1.33 1.05	 *.98* *.13* *.80*

Perales MA et al. Blood. 2025; 146;8:1011-1029

Outcome Prediction



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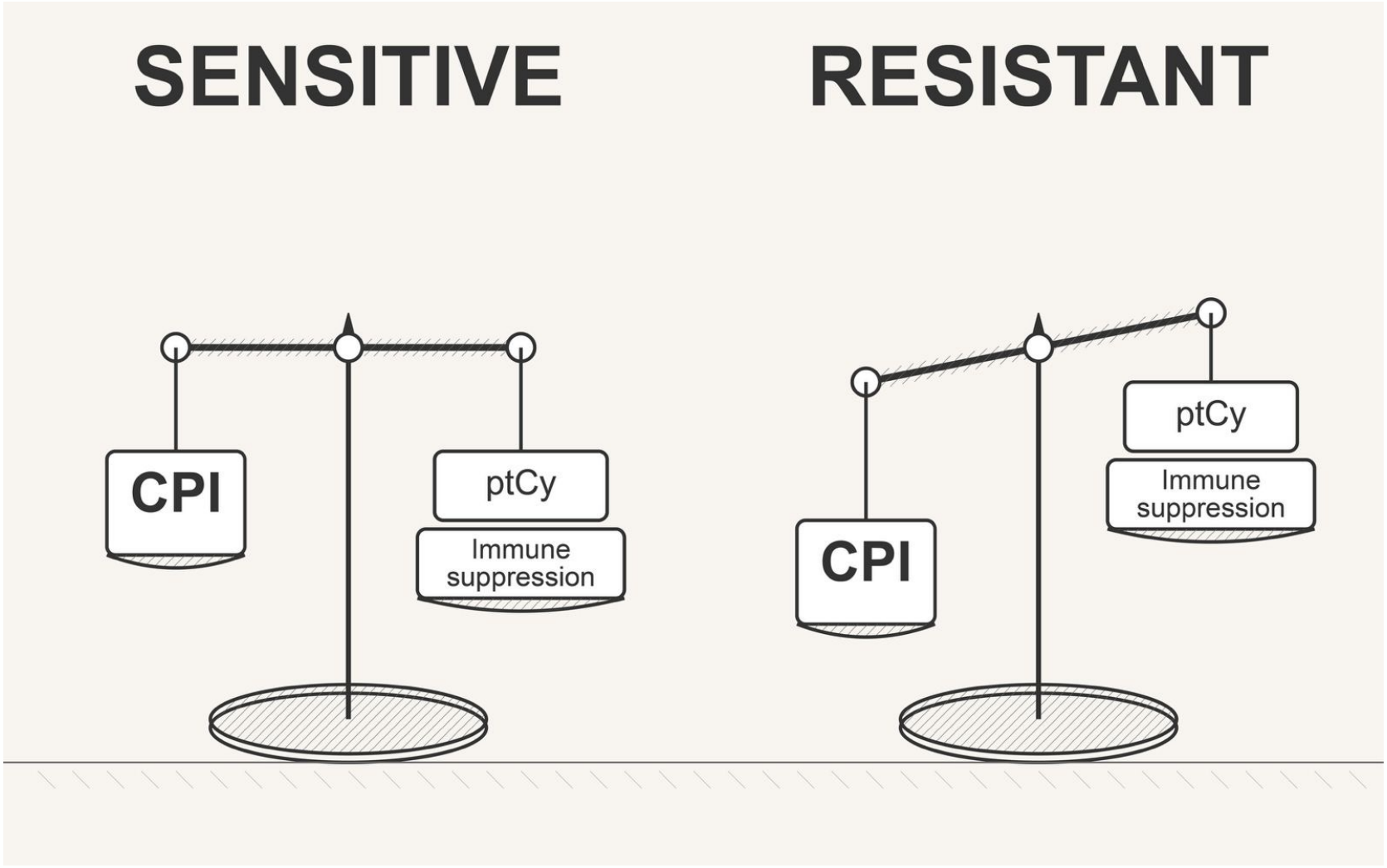
SENSITIVE
RESISTANT
CPI
ptCy
Immune suppression
CPI
ptCy
Immune suppression

Take Home Message

- In R/R cHL the Allo-HSCT is recomended if:
  - Primary refractory disease
  - Short first CR
  - Auto-HSCT failure
- PTCy decreases GVHD also in pre-transplant CPIs setting
- It is better prolong the IS to decrease the risk of severe aGVHD after CPIs
- CPIs before Allo-HSCT in R/R cHL:
  - Improve OS and PFS when compared with chemotherapy
  - Increase the risk of aGVHD (can be decreased by increasing IS or PTCY?)
  - Reduce the risk of relapse even in refractory disease

Acknowledgments

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NUTRIZIONIST

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