

How to overcome the barrier of age and comorbidity in Allo-HSCT for hematological cancers



Pr Raynier Devillier, MD, PhD
March 29th 2023



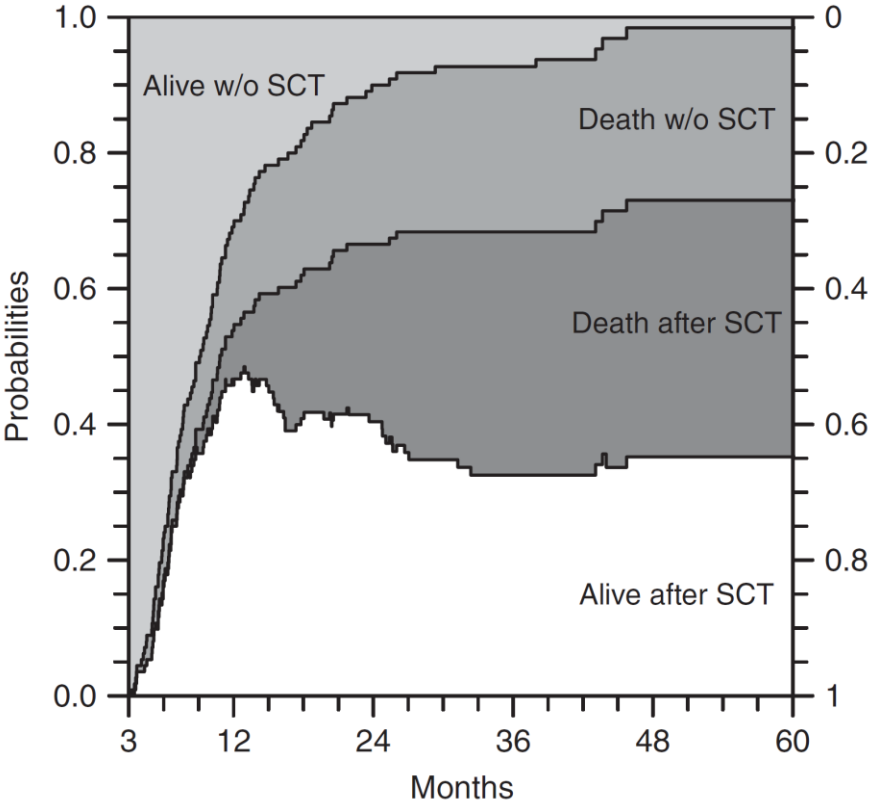
Disclosure

Jazz Pharma, Medac, Incyte, Sanofi, Astellas, MSD

Allo-HSCT improves outcome of older patients with AML or MDS

Prospective analysis of 172 patients

- Age 60 years (50-70)
- Int-2 or High risk IPSS
- No contraindication for Allo-HSCT

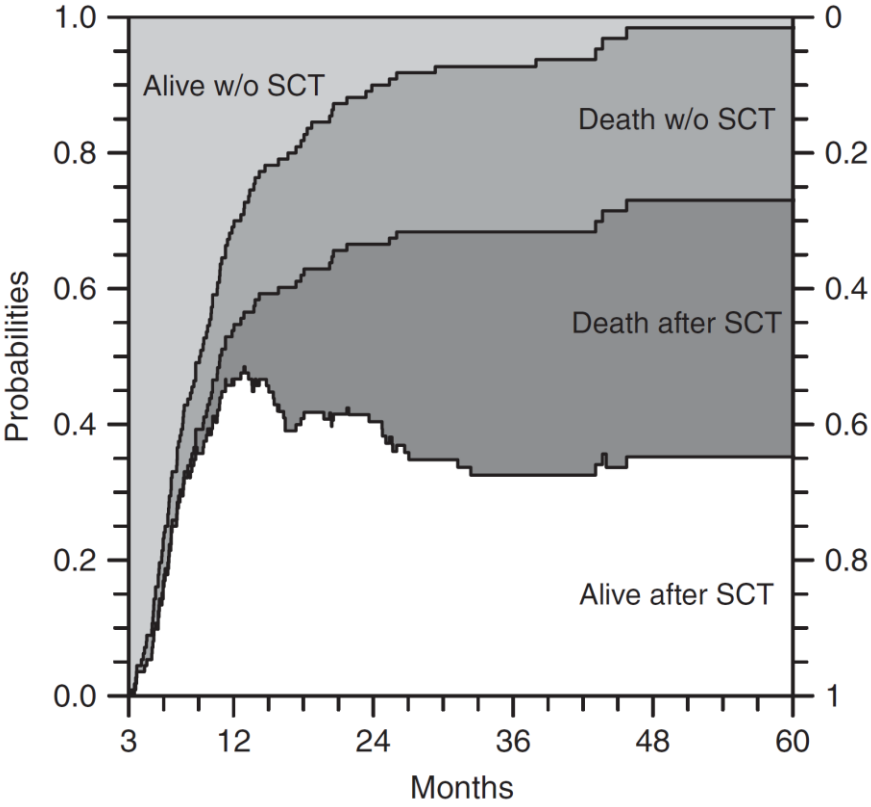


Robin Leuk 2015

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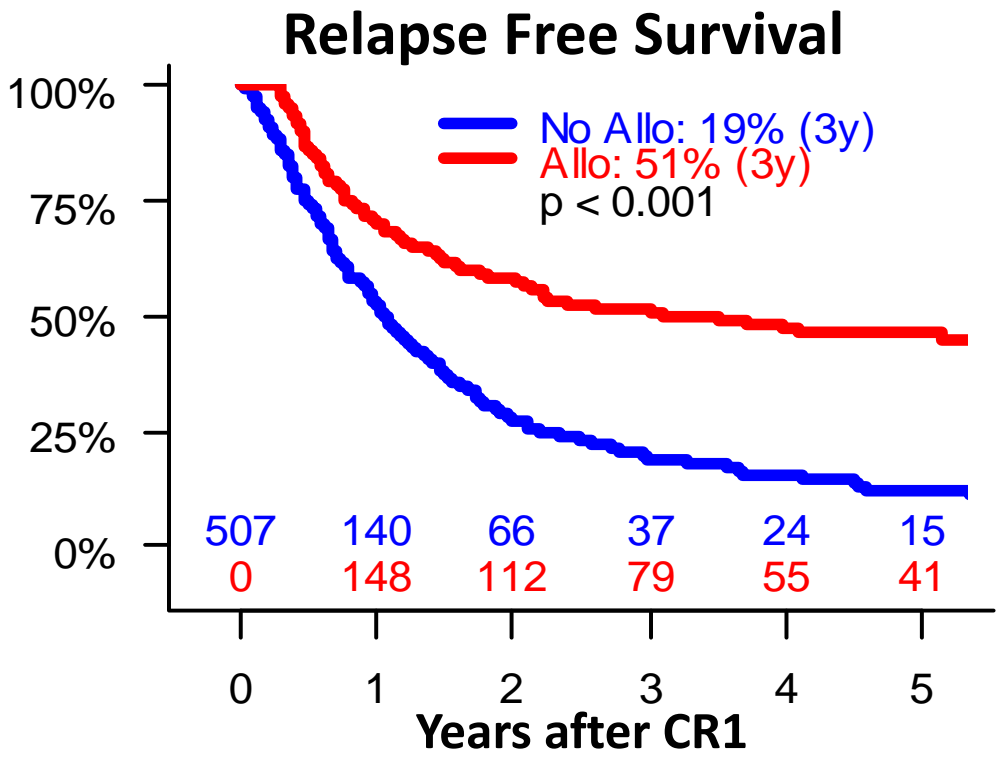
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Real Life Study of 507 patients

- Age: 60-70 y
- AML in CR1
- ELN int or unfav
- Intensive chemo

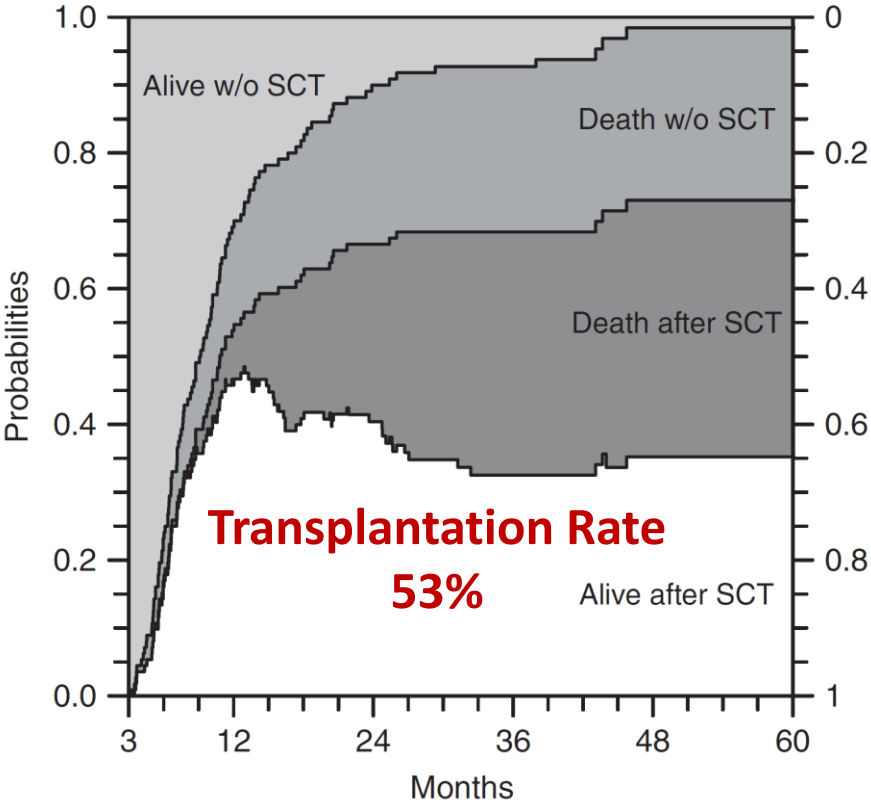


Devillier Blood Advances 2021

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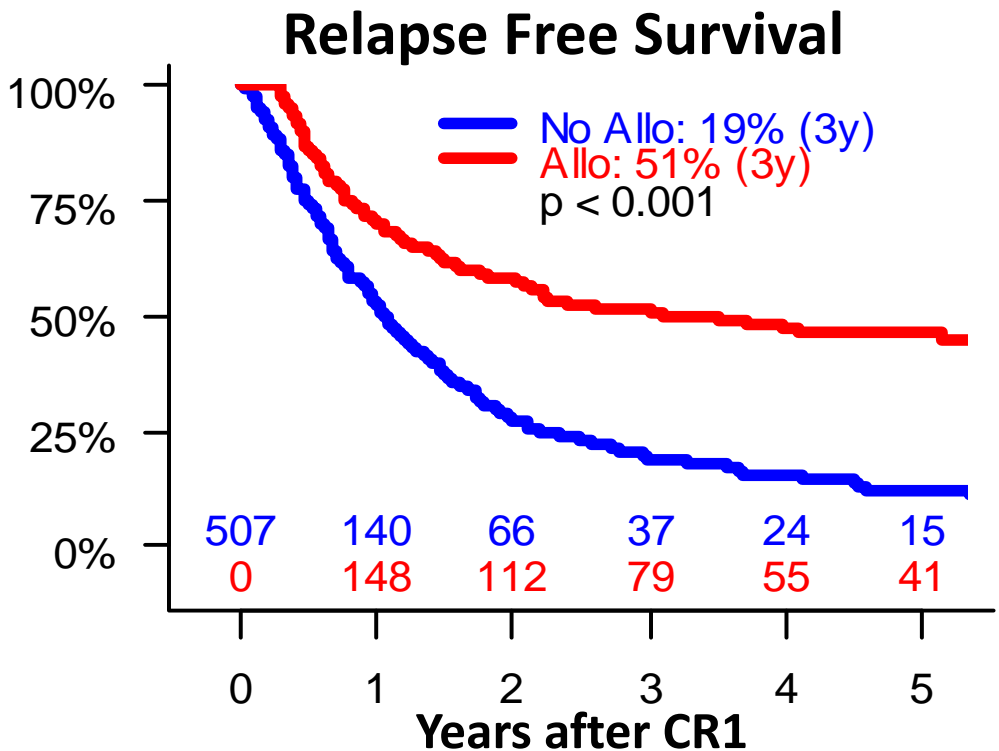
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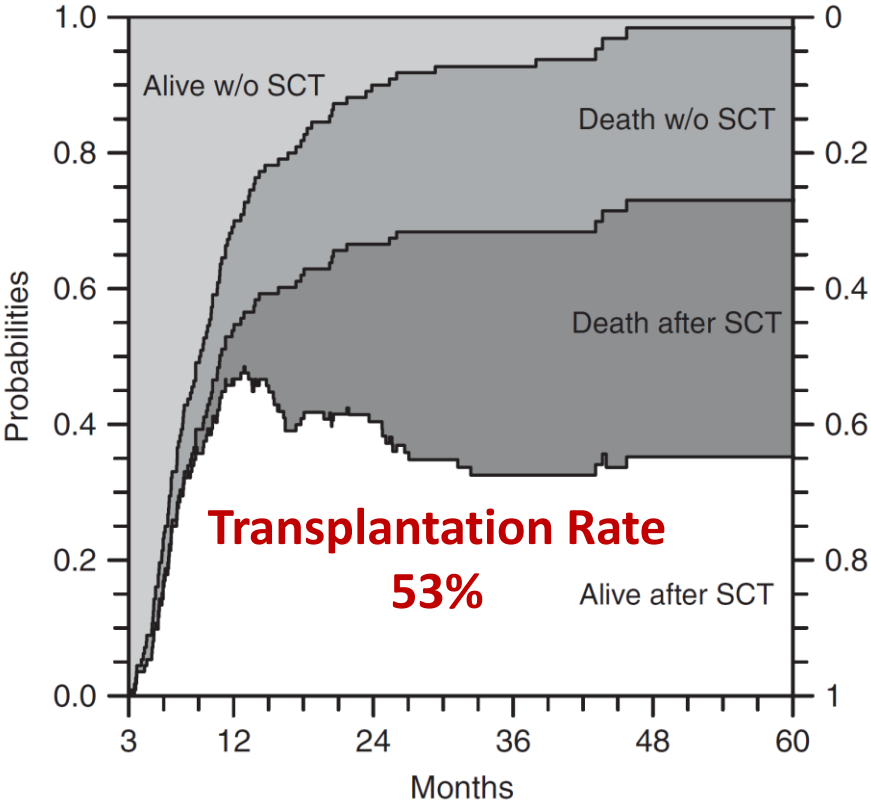


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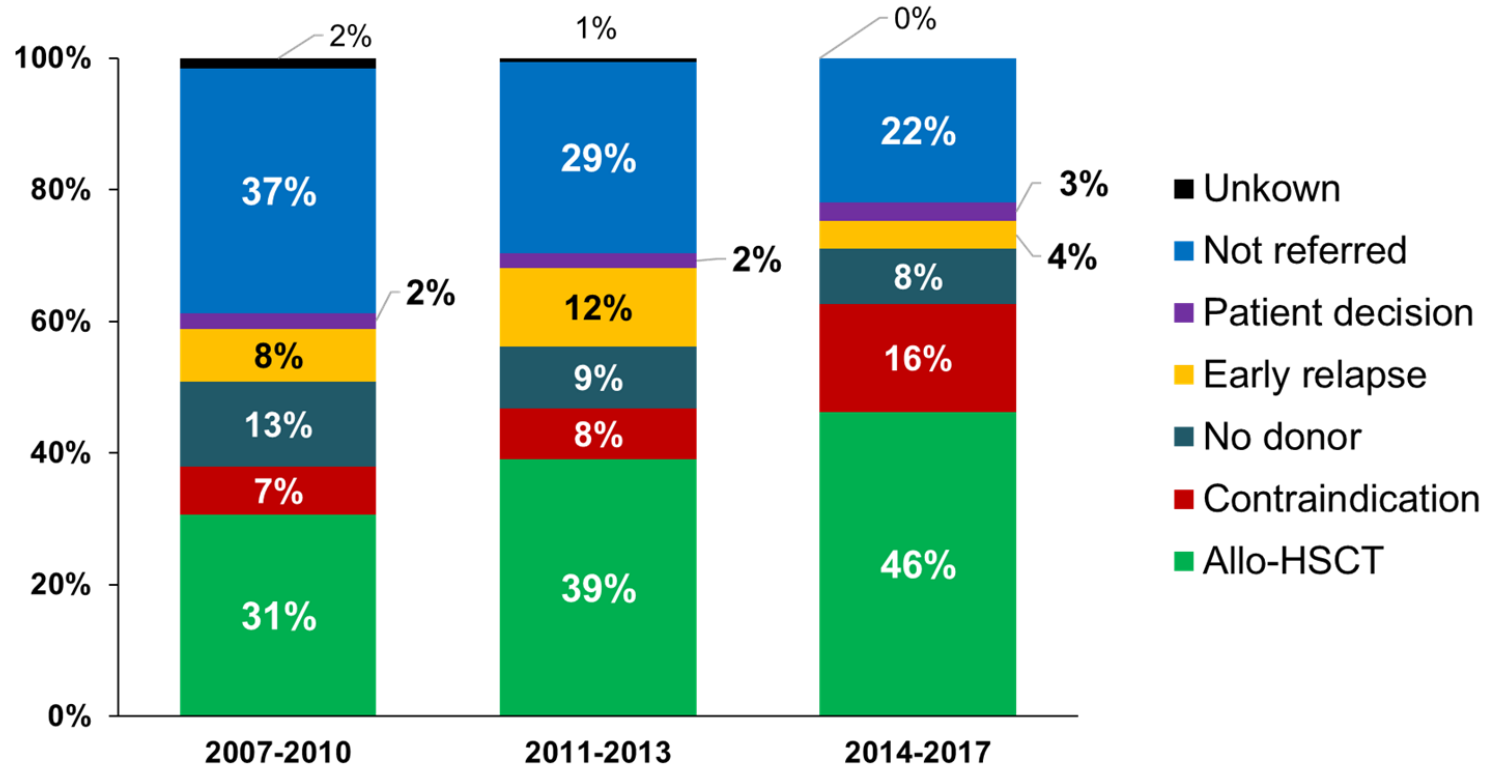
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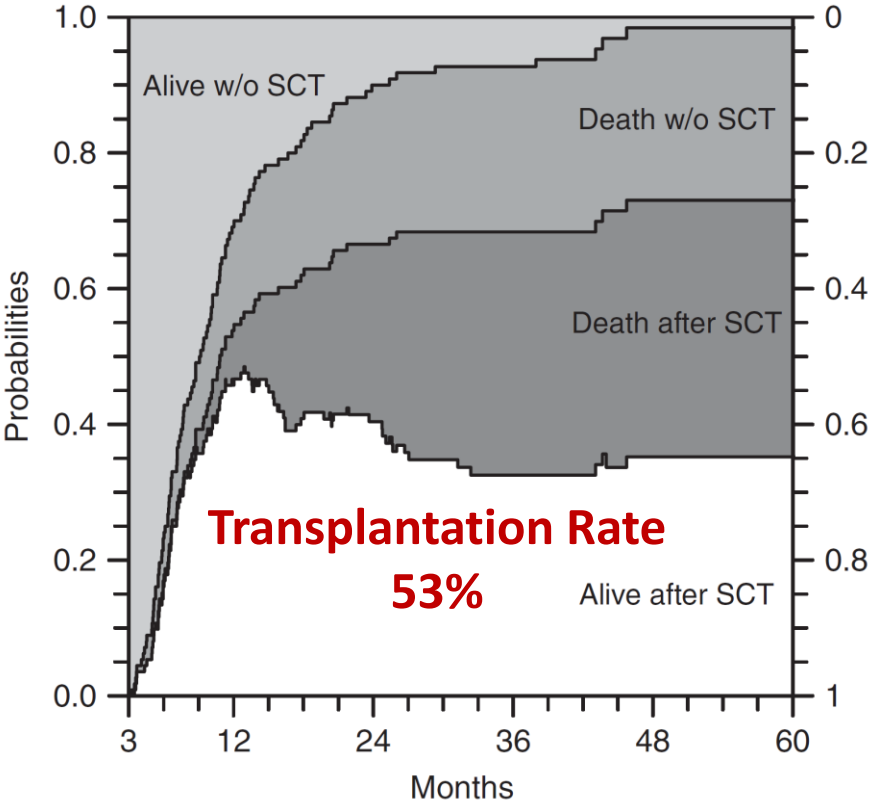


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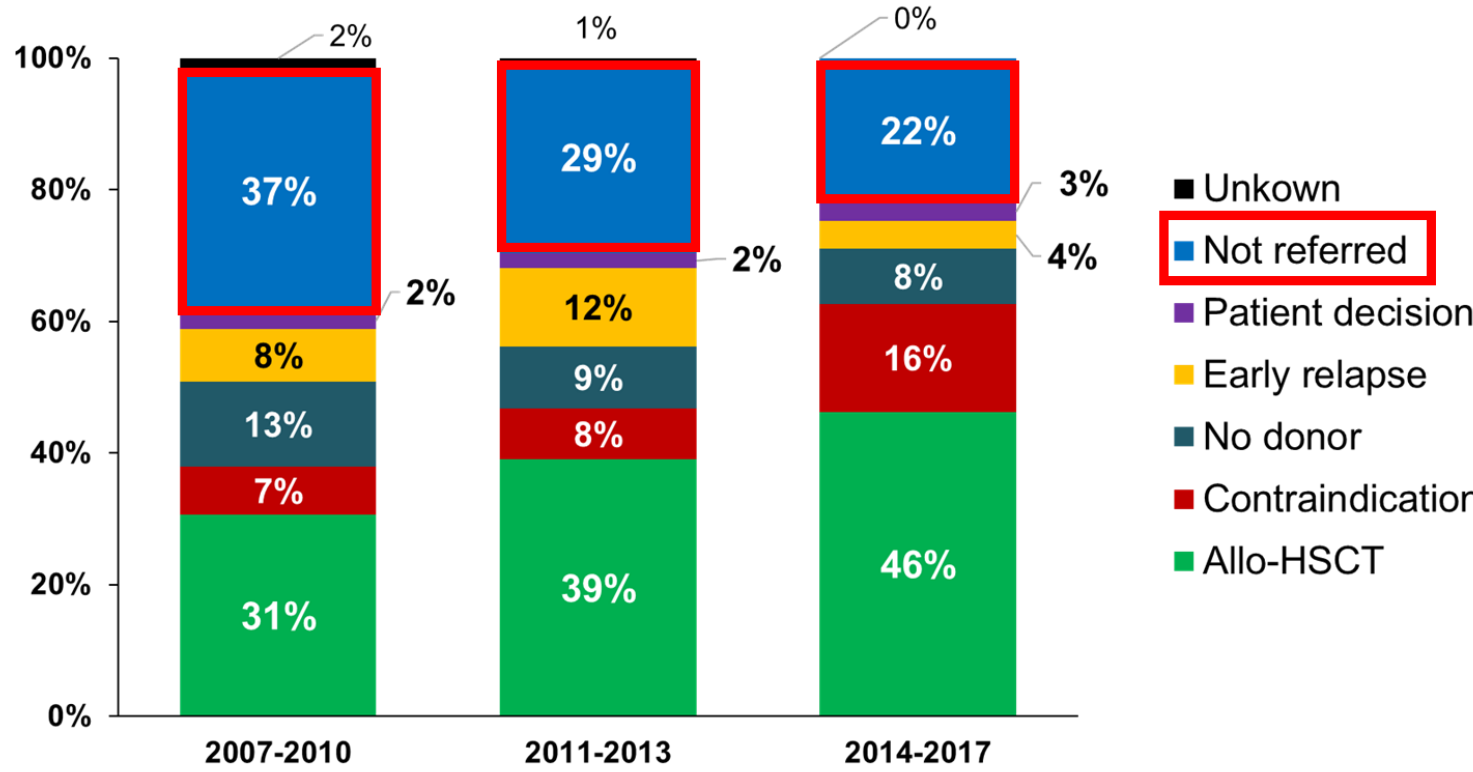
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Barriers to Allo-HSCT (adults, USA)

Levels	Barriers/Factors Associated with Either Referral for or Receipt of HCT	Total No. of Studies	No. of Studies Indicating the Barrier Was Present*
Patient	Age [10,12,18,20-25,27,28,30,31,35,38-40]	17	16
	Gender/sex [10,12,21-28,30,31,36,38-40 35]	17	7
	Race [10,12,19-31,34,35,38-40]	20	16
	Insurance status and coverage [10-12,18,23,24,27,30-33,38-40]	14	12
	Comorbidity or medically unstable/ineligible (total number of or specific comorbidity, e.g., diabetes) [10,12,20,23,24,27,30,31, 37-39]	11	10
	Patient preference [11,18,20,24,30,37]	6	6
	Socioeconomic status (education, income, employment) [10,12,18,23-25,27,29]	8	7
	Donor/human leukocyte antigen-subtype availability [†] [11,18-20,30,31]	6	5
	Performance status [18,20,23,24,30]	5	3
	Social support [29-31,33]	4	3
	Psychiatric disability [†] [30,31]	2	2
	Substance use disorder [20,31]	2	2

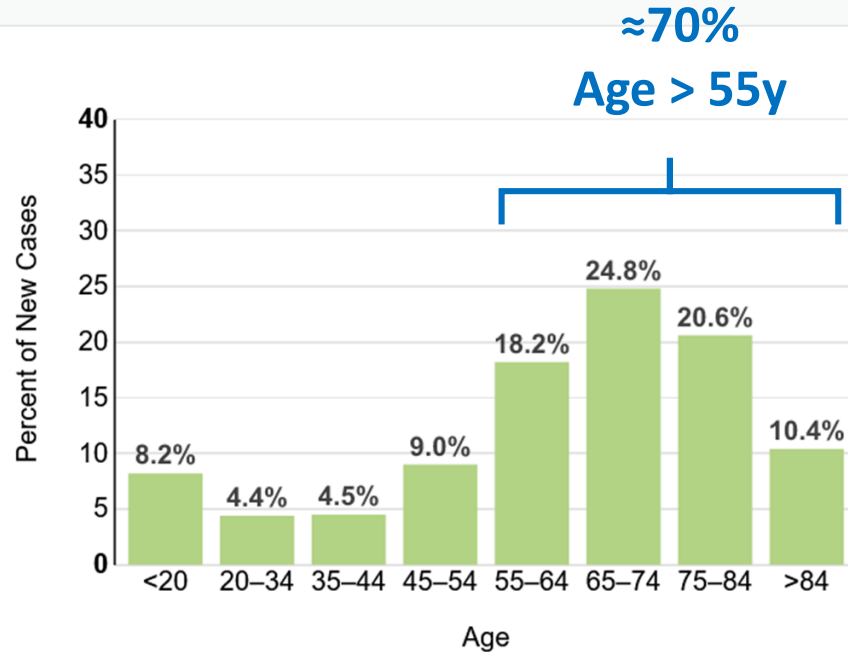
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- High risk disease
- Comorbidities and frailty
- Physician preference

Barriers to Allo-HSCT (adults, USA)

Percent of New Cases by Age Group: Leukemia



<https://seer.cancer.gov/statfacts/html/leuks.html>

Levels	Barriers/Factors Associated with HCT	Number of Patients	Number of Transplants
Patient	Age [10,12,18,20-24,26,27,29]		
	Gender/sex [10,12,20,24,26,27,29]		
	Race [10,12,19-31,33]		
	Insurance status and payer [10,12,18,20,24,26,27,29]		
	Comorbidity or medication-specific comorbidity [10,12,18,20,24,26,27,29,37-39]		
	Patient preference [10,12,18,20,24,26,27,29]		
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Median Age At Diagnosis

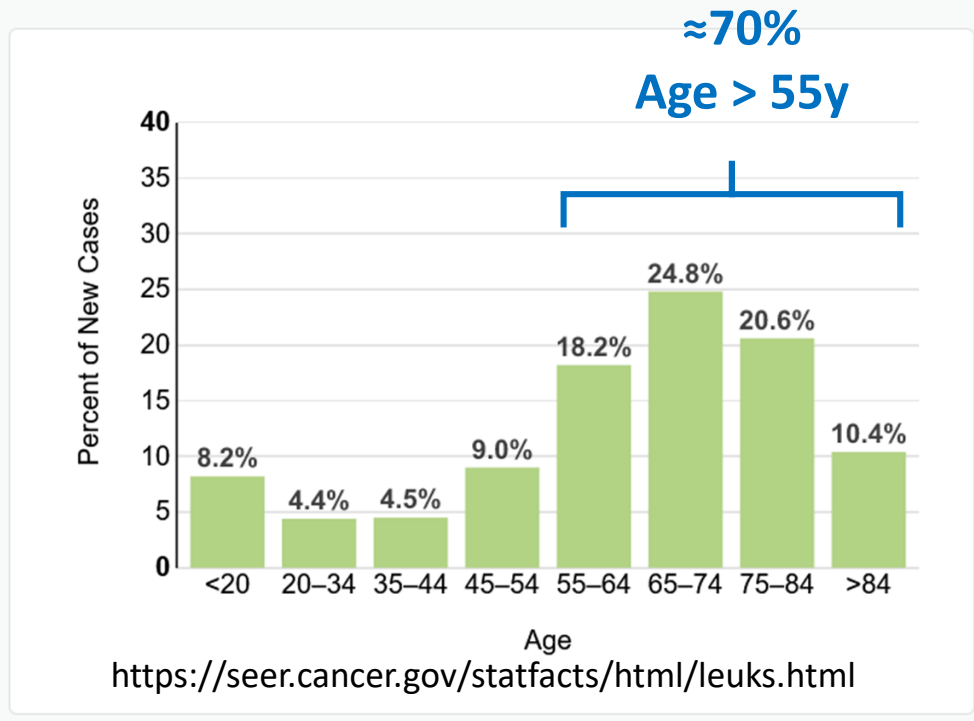
67

- Physician preference

Barriers to Allo-HSCT (adults, USA)

Levels	Barriers/Factors Associated with HSCT
Patient	Age [10,12,18,20-24,25-34,35-44,45-54,55-64,65-74,75-84,>84]
	Gender/sex [10,12,18,20-24,25-34,35-44,45-54,55-64,65-74,75-84,>84]
	Race [10,12,19-31,32-44,45-54,55-64,65-74,75-84,>84]
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Percent of New Cases by Age Group: Leukemia



Median Age At Diagnosis

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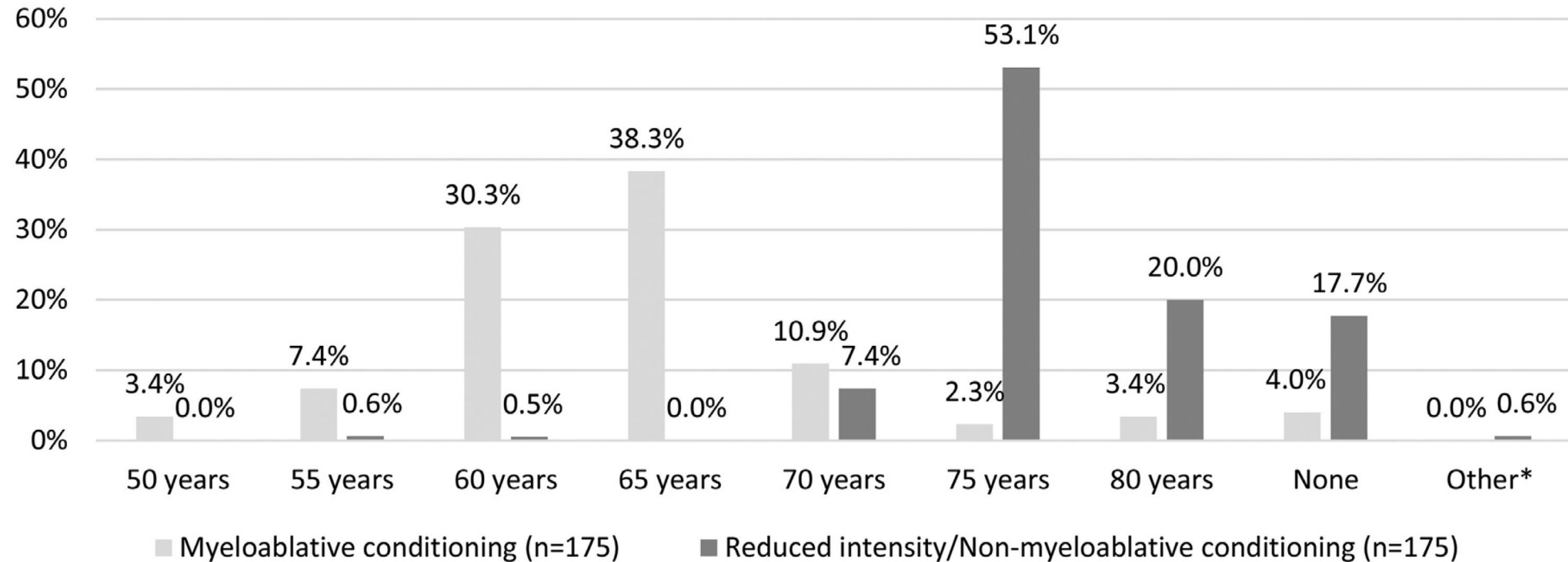
- Physician preference

Allogeneic bone marrow transplantation for acute leukemia in patients over the age of 40 years

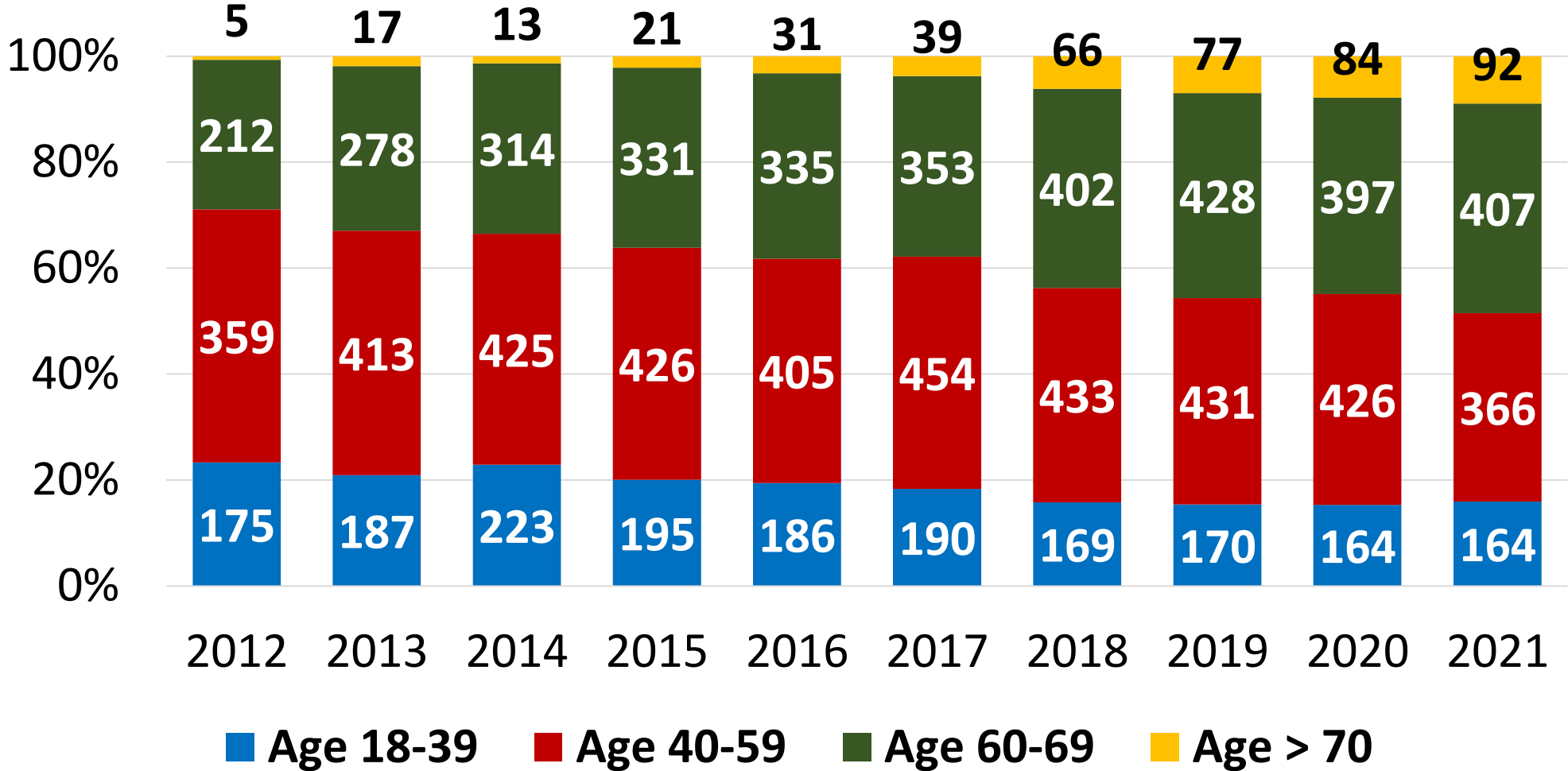
J-Y Cahn¹, M Labopin², A Schattenberg³, J Reiffers⁴, R Willemze⁵, R Zittoun⁶, A Bacigalupo⁷, G Prentice⁸, E Gluckman⁹, P Herve¹⁰, A Gratwohl¹¹ and N-C Gorin¹² on behalf of the Acute Leukemia Working Party of the European Group for Bone Marrow Transplantation (EBMT)

Barriers to Allo-HSCT : Physician perspective

Upper Age Limit: The Physician Point of View

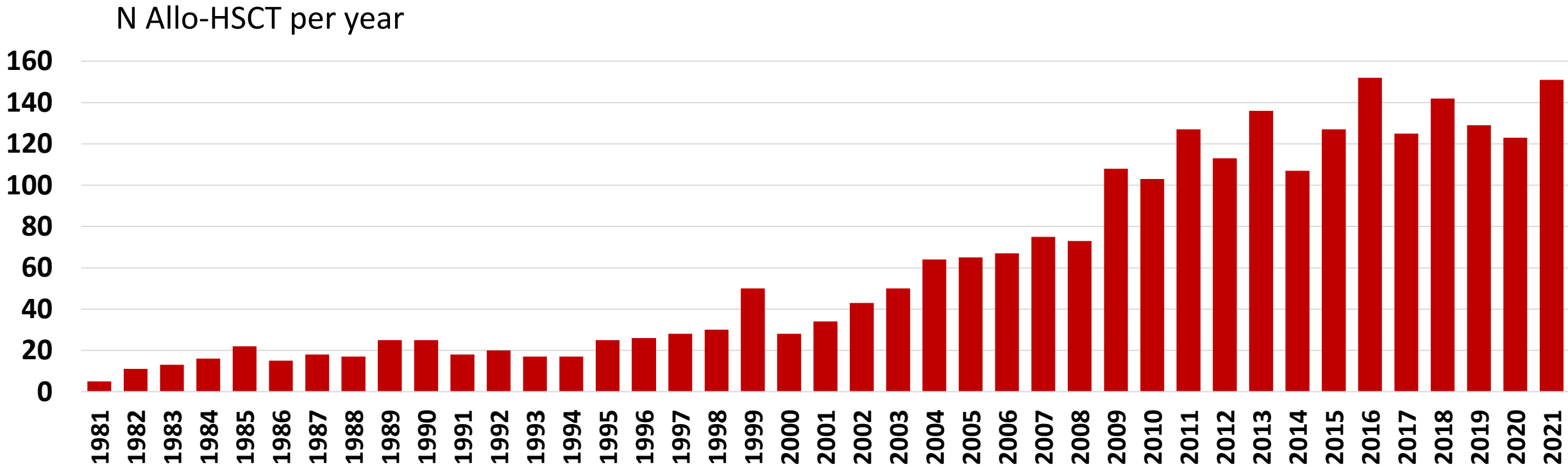


Allo-HSCT for AML and MDS in France

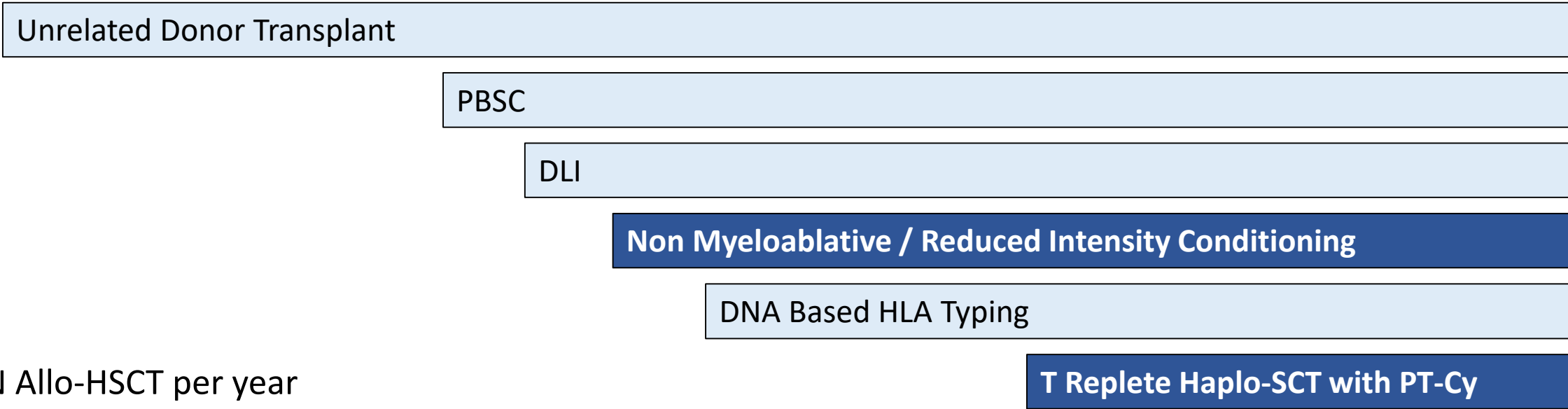


Confidential data from SFGM-TC

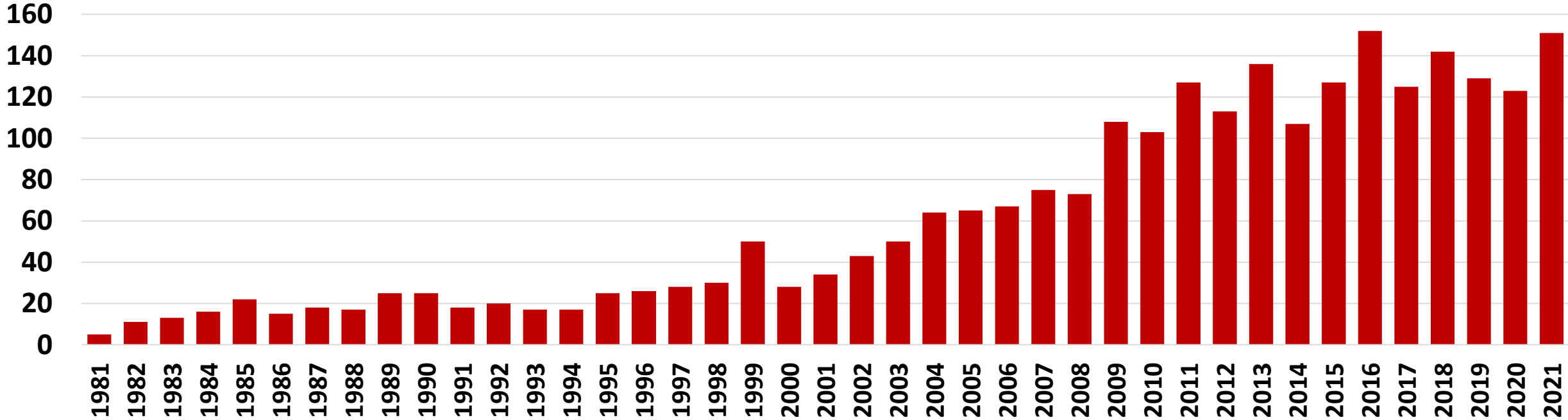
Transplantation program at Paoli Calmettes Institute



Transplantation program at Paoli Calmettes Institute

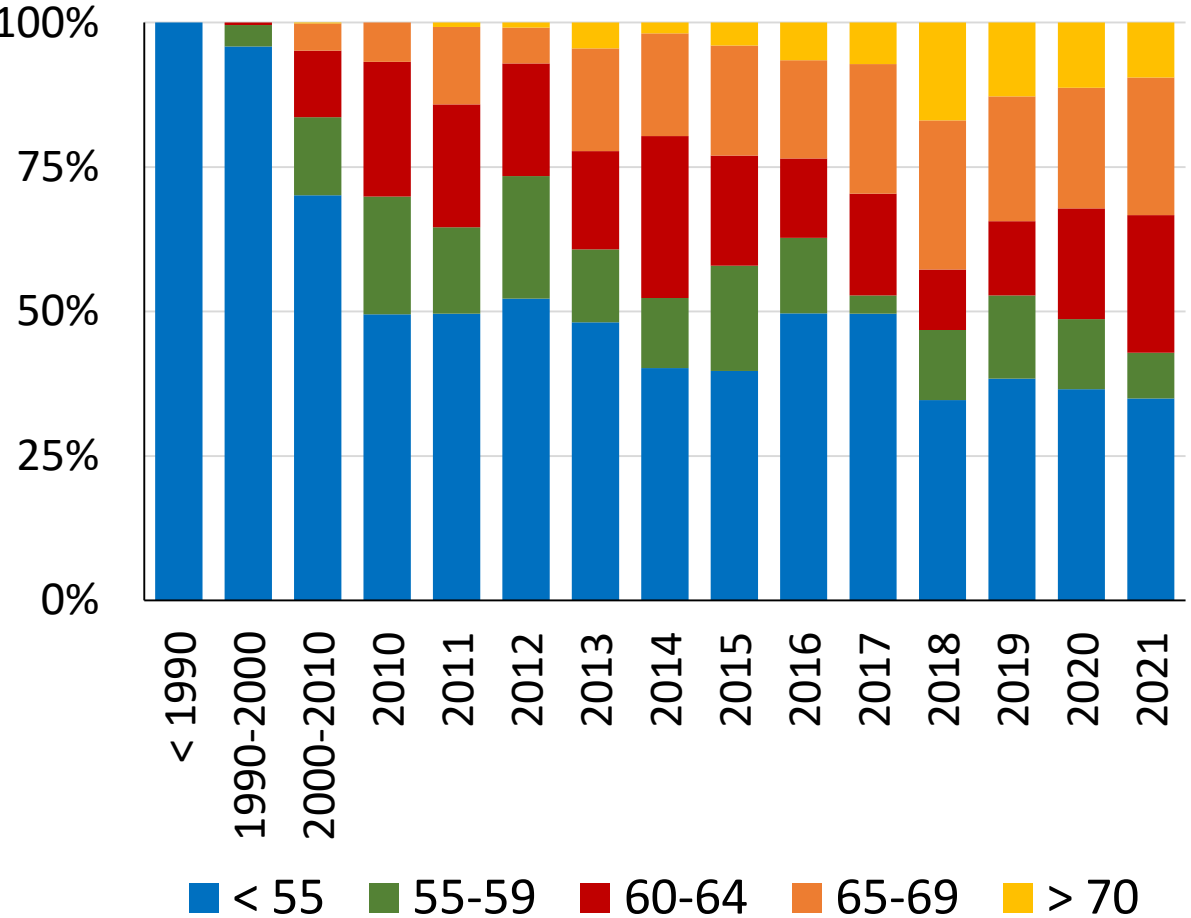


N Allo-HSCT per year



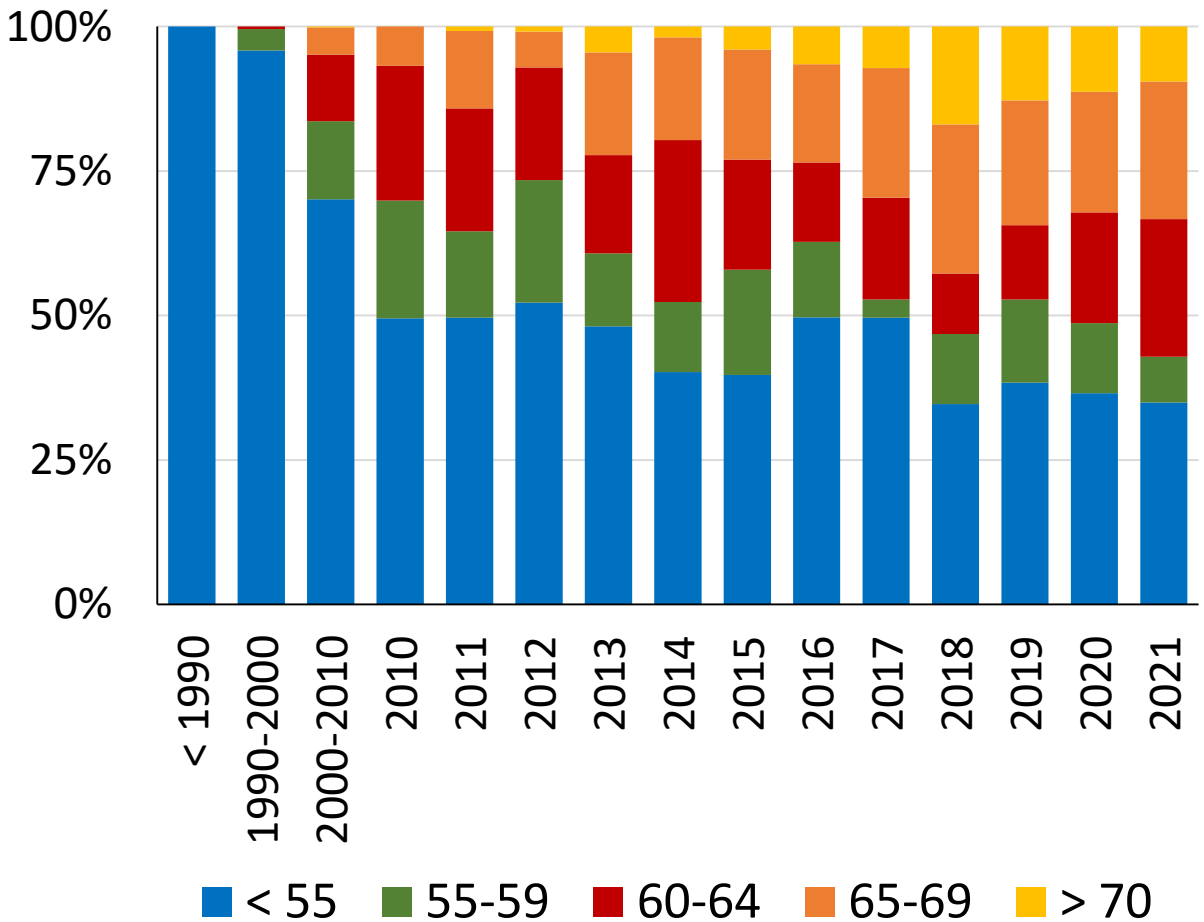
Transplantation program at Paoli Calmettes Institute

Age group frequencies

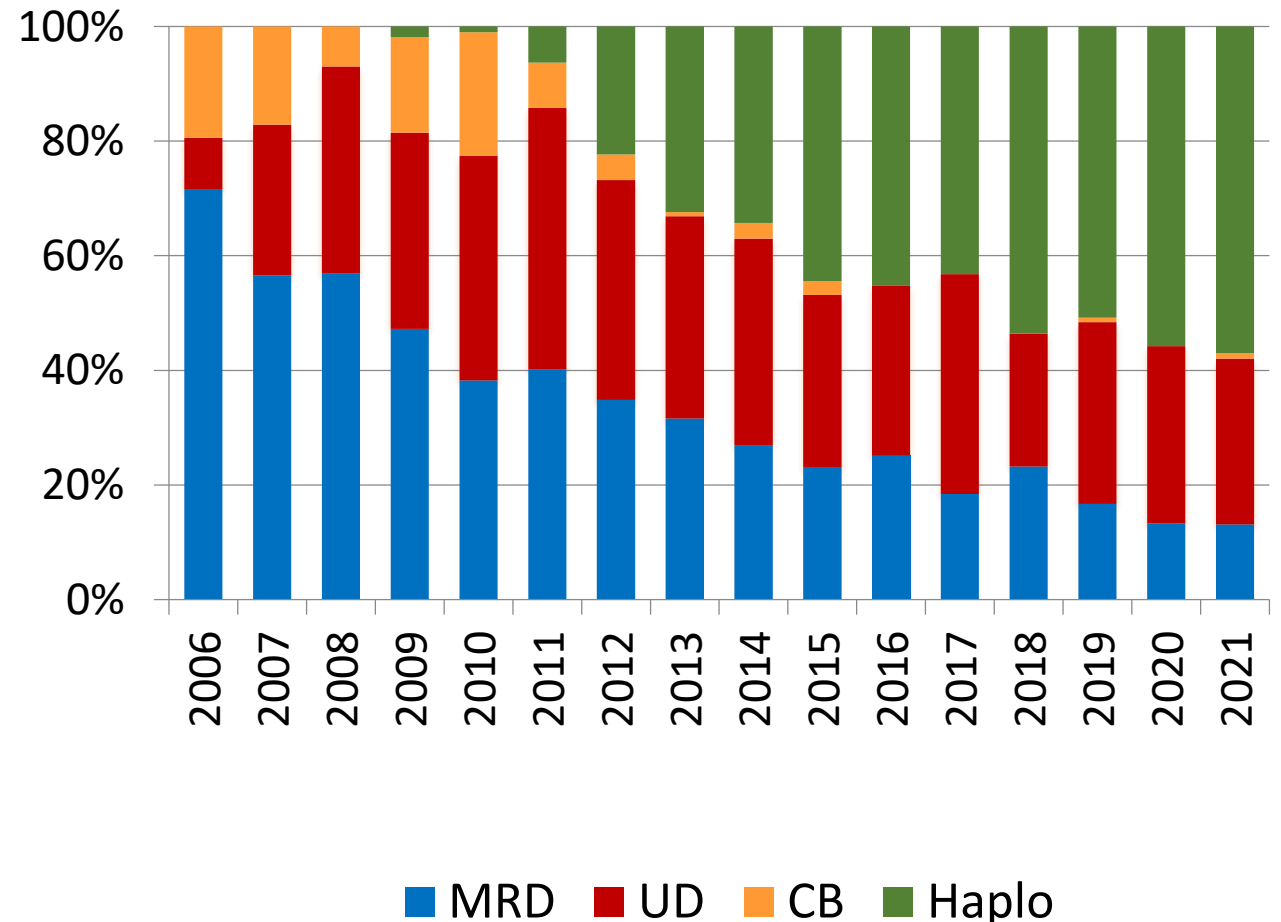


Transplantation program at Paoli Calmettes Institute

Age group frequencies



Donor group frequencies



Haplo-SCT with PT-Cy in older patients

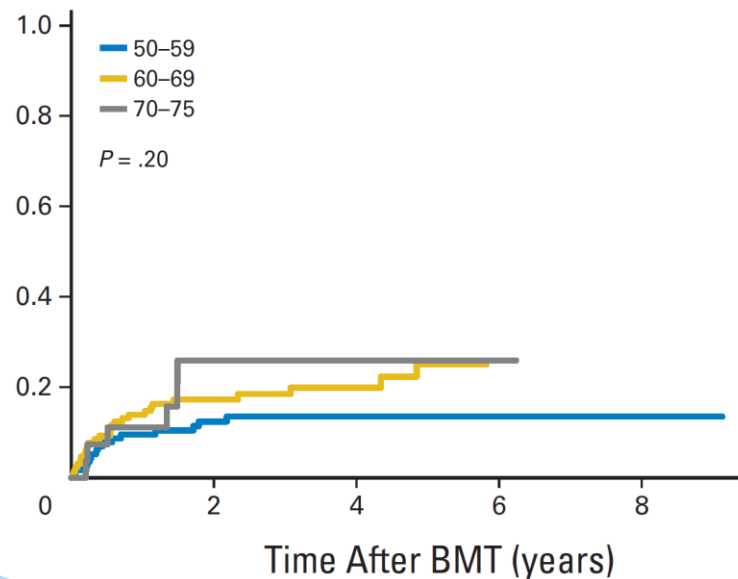
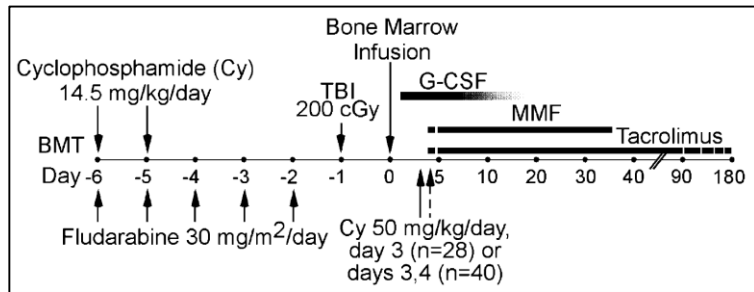
¹Kasamon JCO 2015

²Robin Blood Adv 2021

³Deville EBMT 2022

Baltimore¹

- NMAC CyFluTBI2
- Age > 50y
- Bone marrow



Haplo-SCT with PT-Cy in older patients

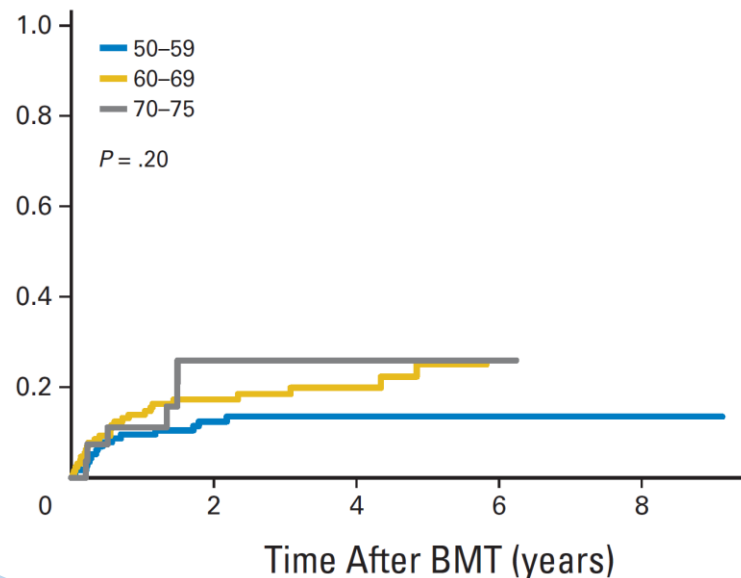
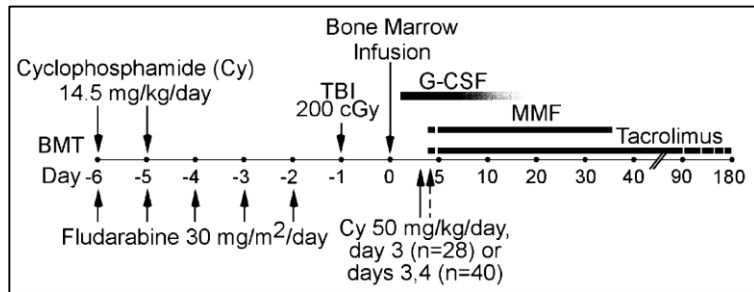
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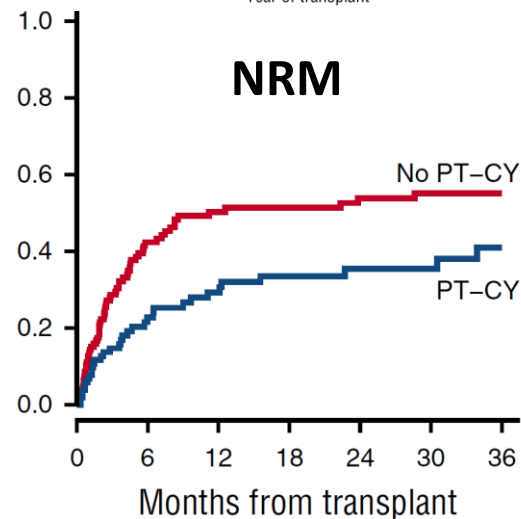
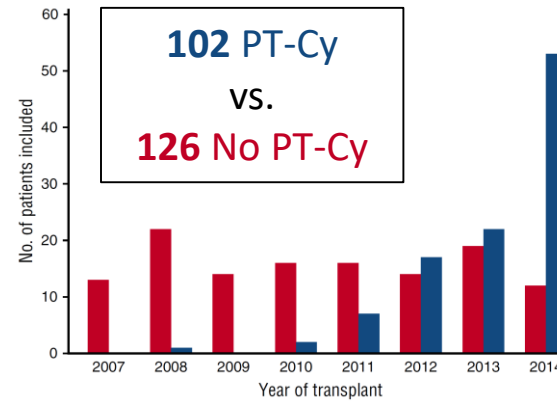
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CMWP²

- N = 228 (2007-14)
- Age 56 y (46-64)
- MDS



Haplo-SCT with PT-Cy in older patients

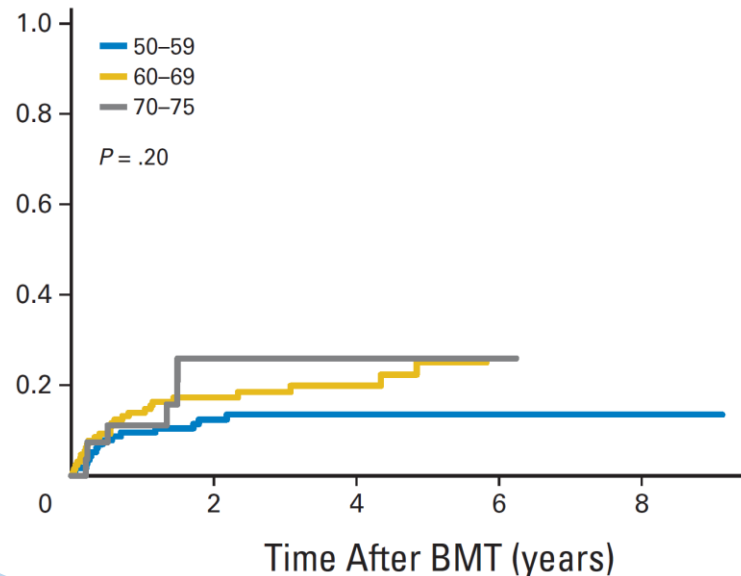
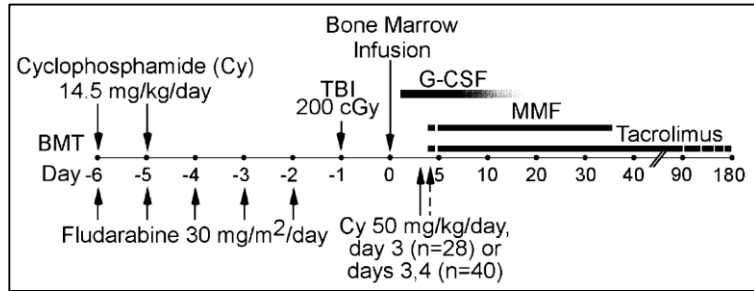
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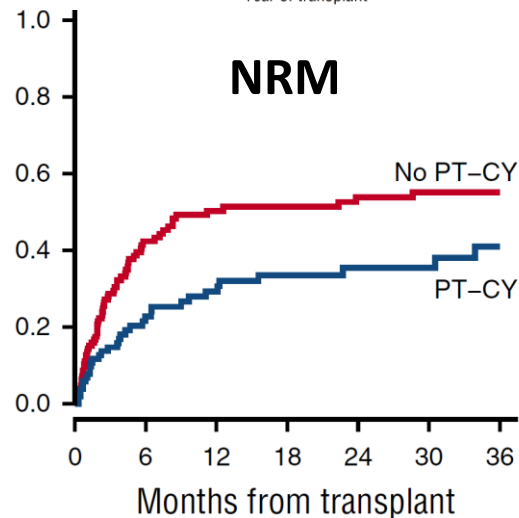
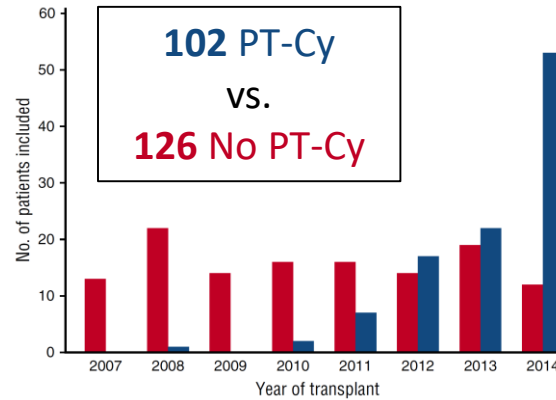
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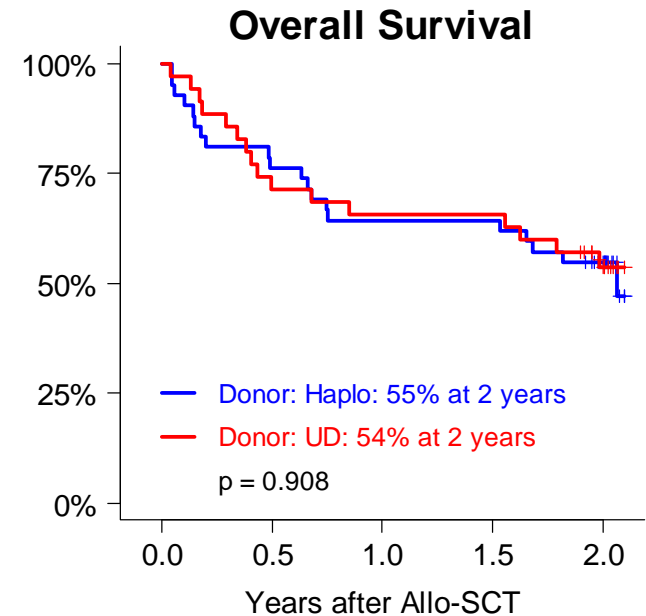
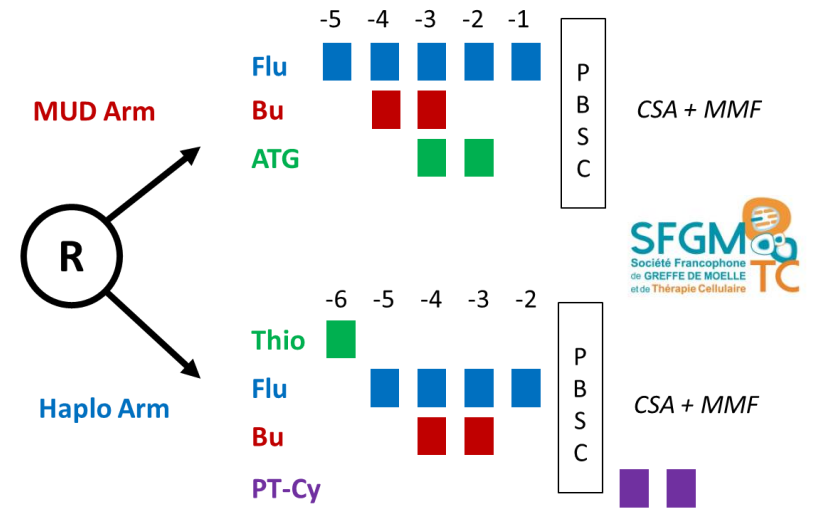


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HAPLOMUD-ELDERLY³

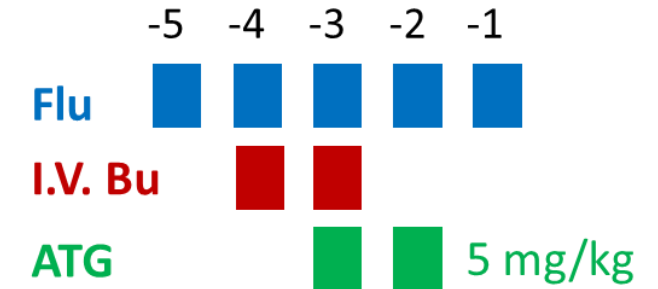


Low non-relapse mortality and long-term preserved quality of life in older patients undergoing matched related donor allogeneic stem cell transplantation: a prospective multicenter phase II trial

Didier Blaise,^{1,2,3} Raynier Devillier,^{1,2,3} Anne-Gaëlle Lecoroller-Sorriano,⁴ Jean-Marie Boher,⁵ Agnès Boyer-Chammard,⁵ Reza Tabrizi,⁶ Patrice Chevallier,⁷ Nathalie Fegueux,⁸ Anne Sirvent,⁸ Mauricette Michallet,⁹ Jacques-Olivier Bay,¹⁰ Sabine Fürst,¹ Jean El-Cheikh,¹ Laure Vincent,⁸ Thierry Guillaume,⁷ Caroline Regny,¹¹ Noël Milpied,⁶ Luca Castagna,¹ and Mohamad Mohty^{7,12,13}

Selection criteria

- ✓ Age > 55 years
- ✓ Hematological disease
- ✓ Matched sibling donor
- ✓ PBSC



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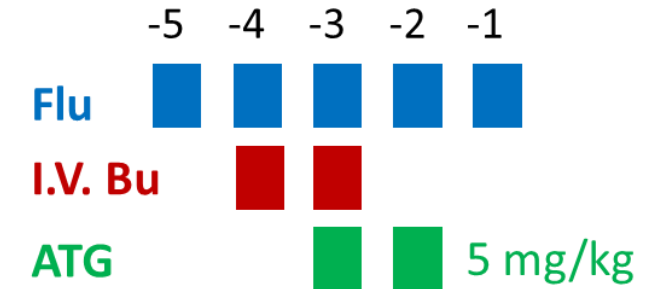
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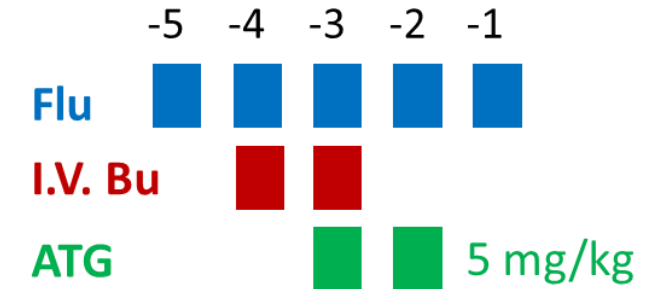
Grade III-IV aGVHD: **3%**

NRM at day +100: **1%**



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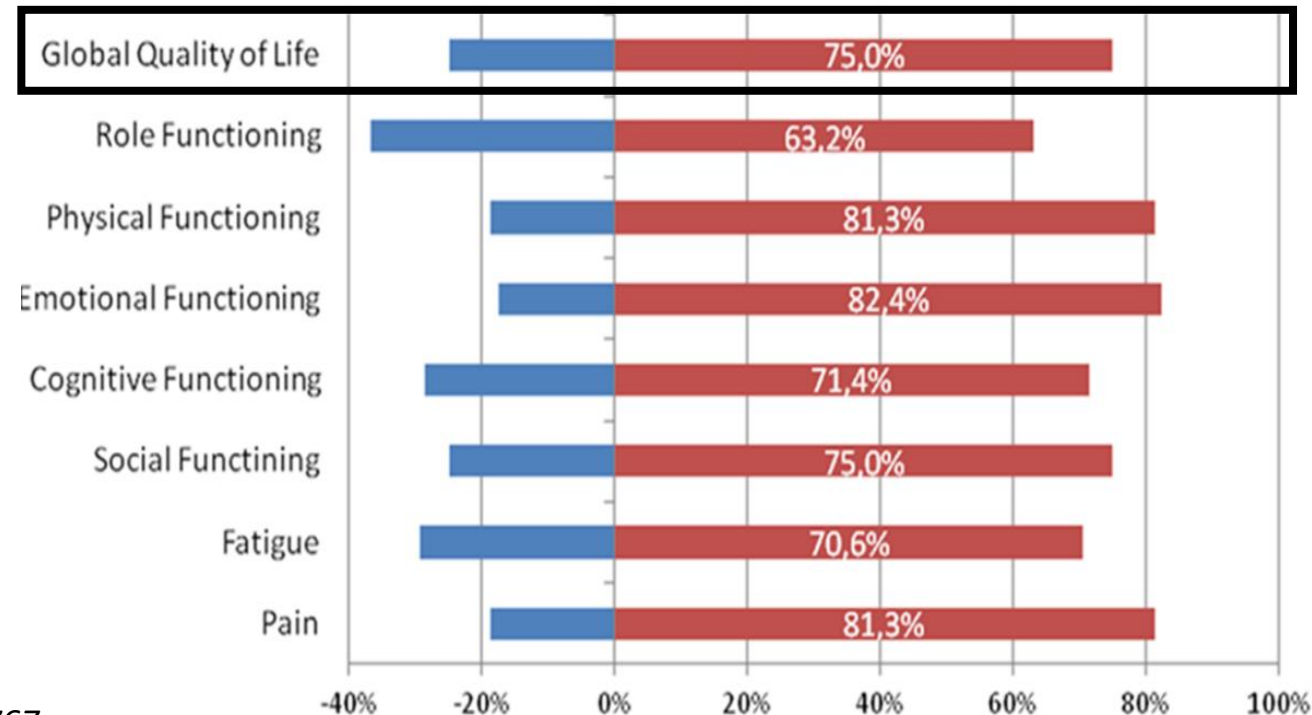


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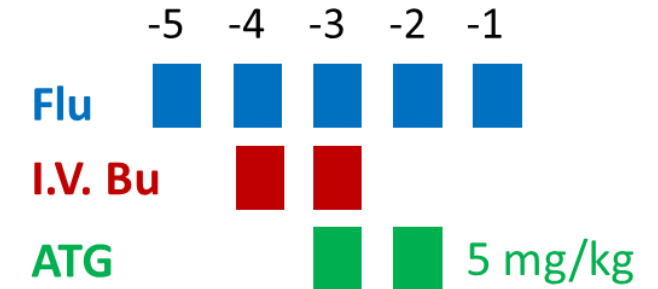
Impaired compared to before Allo-HSCT

Equal or better than before Allo-HSCT



Low non-relapse mortality and long-term preserved quality of life in older patients undergoing matched related donor allogeneic stem cell transplantation: a prospective multicenter phase II trial

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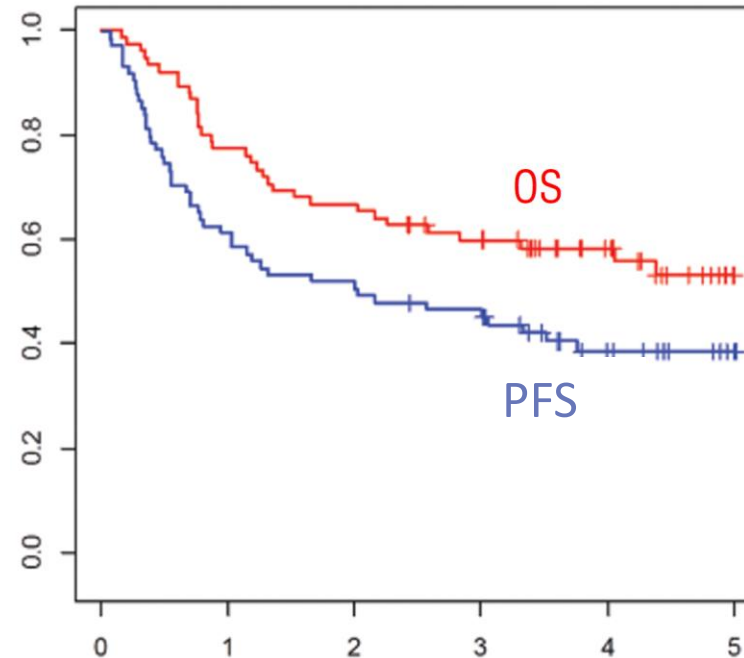


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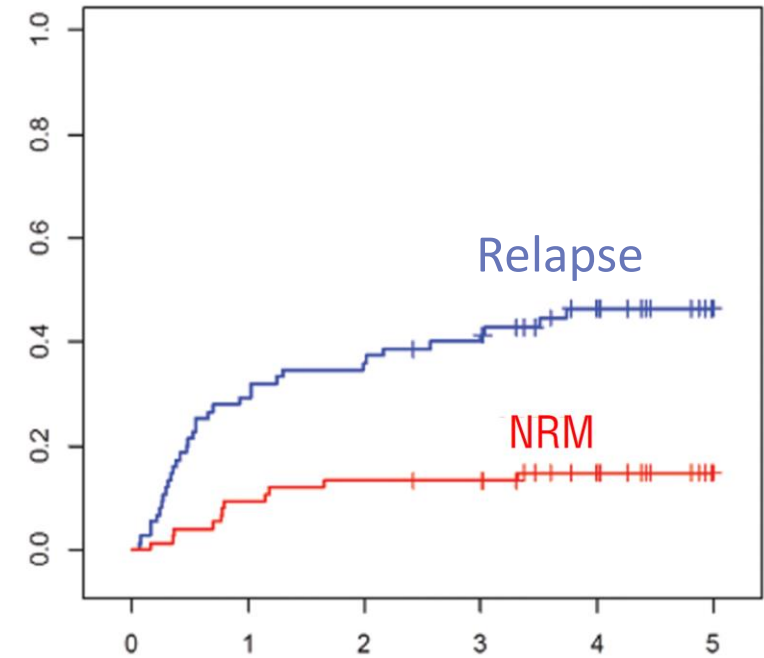
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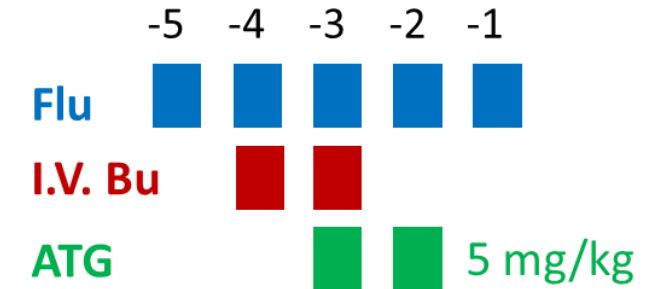
Years after Allo-HSCT



Years after Allo-HSCT

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Causes of death

Non-relapse-related deaths

- Infection and chronic GVHD
- Infection and acute GVHD
- Infection without GVHD
- Secondary cancer
- Cerebral hemorrhage
- Acute coronary syndrome
- Liver Cirrhosis

Relapse-related deaths

N

11 (33%)

3 (9%)

1 (3%)

2 (6%)

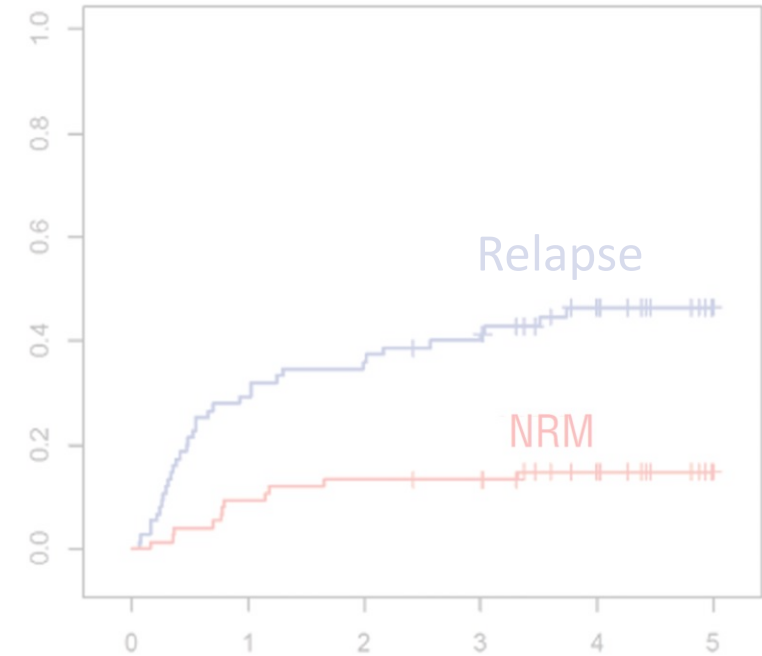
2 (6%)

1 (3%)

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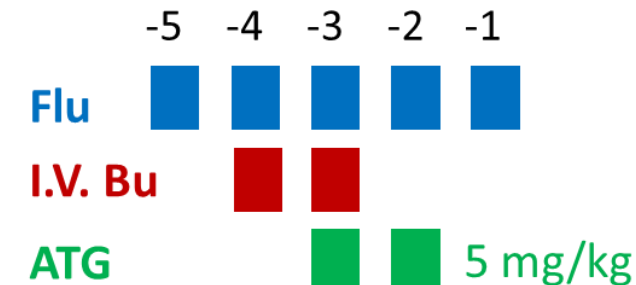
1 (3%)

22 (67%)



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Causes of death	N
Non-relapse-related deaths	11 (33%)
Infection and chronic GVHD	3 (9%)
Infection and acute GVHD	1 (3%)
Infection without GVHD	2 (6%)
Secondary cancer	2 (6%)
Cerebral hemorrhage	1 (3%)
Acute coronary syndrome	1 (3%)
Liver Cirrhosis	1 (3%)
Relapse-related deaths	22 (67%)

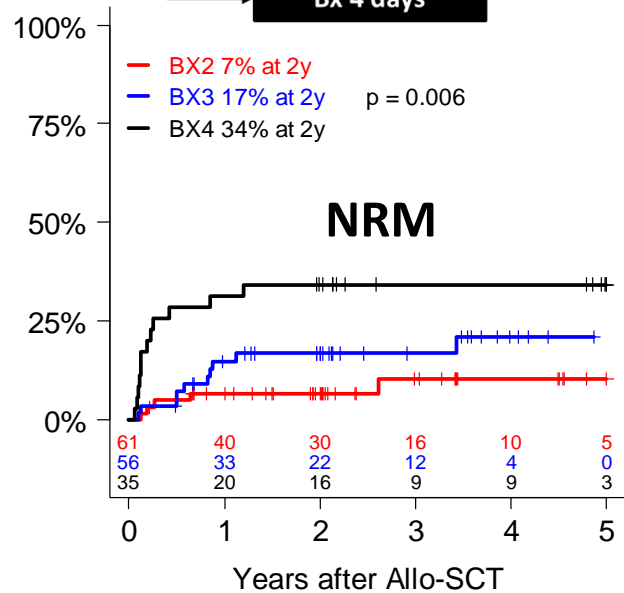
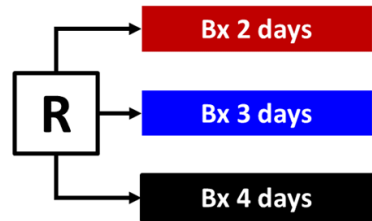


Cause	No. (%)
Relapse	53 (74.6)
aGVHD related	3 (4.2)
cGVHD related	6 (8.5)
PTLD	2 (2.8)
Sepsis	1 (1.4)
Secondary graft failure	1 (1.4)
Rectal cancer	1 (1.4)
Pneumonia	1 (1.4)
Pneumonitis	1 (1.4)
HHV-6 encephalitis	1 (1.4)
Sudden death	1 (1.4)

Role of conditioning intensity in older patients

AAA trial

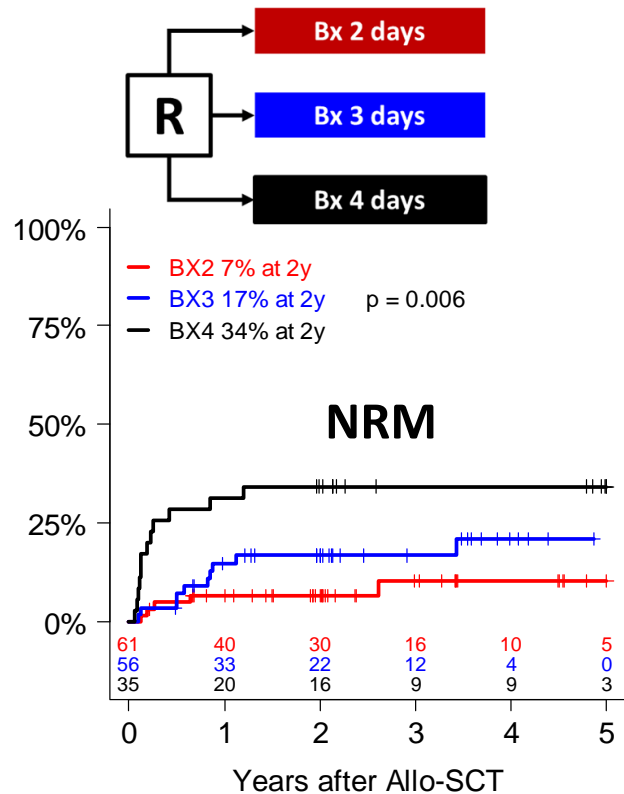
- Age 50 – 65 years
- HCT-CI ≥ 3
- CR AML and MDS
- MSD or UD



Role of conditioning intensity in older patients

AAA trial

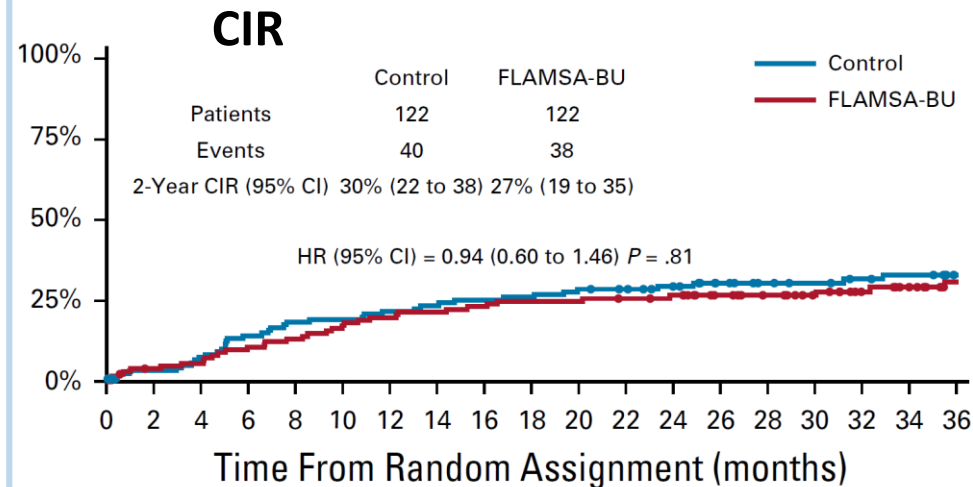
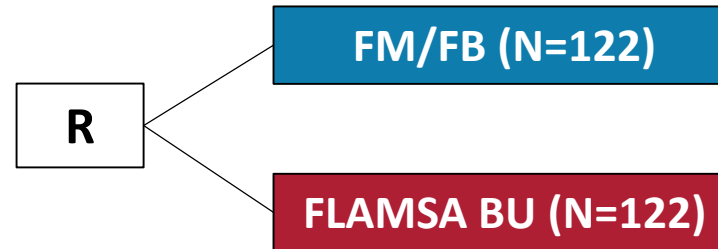
- Age 50 – 65 years
- HCT-CI ≥ 3
- CR AML and MDS
- MSD or UD



Devillier ASH 2022

FIGARO trial

- Age 59 years (22-75)
- AML and MDS
- MSD or UD

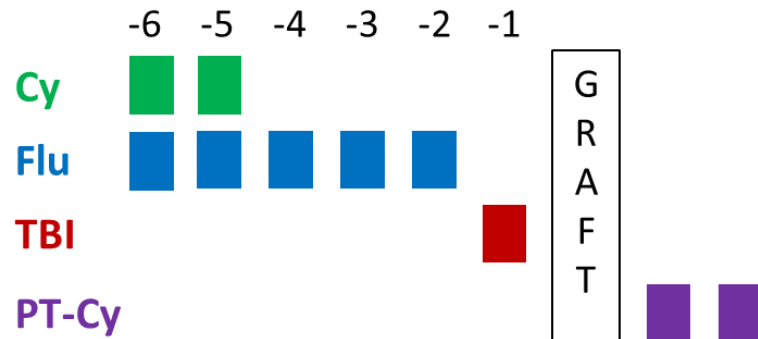


Craddock JCO 2021

NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

N = 51

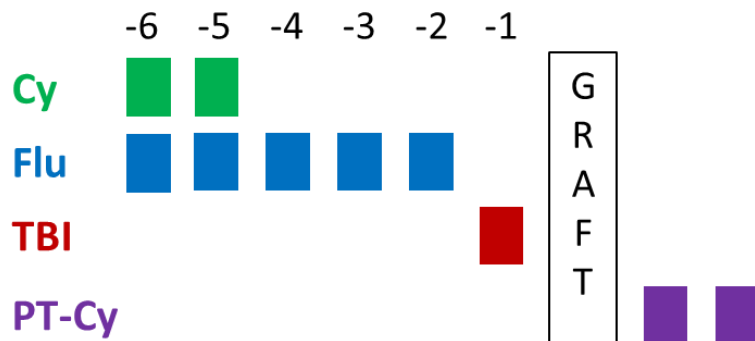
- Age \geq 70
- AML or MDS
- Haplo-SCT
- PBSC
- NMAC regimen
- Intent to treat prophylactic DLI



NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

N = 51

- Age \geq 70
- AML or MDS
- Haplo-SCT
- PBSC
- NMAC regimen
- Intent to treat prophylactic DLI



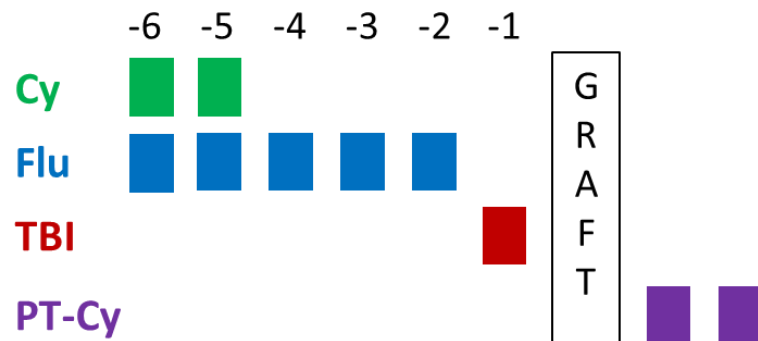
All patients (N=51)		N	%
Median Age, years [range]		72	[70-77]
AML	CR1	20	39%
	CR2	7	14%
	active disease	1	2%
MDS	CR	12	24%
	active disease	11	22%
DRI	Low	0	0%
	Intermediate	39	76%
	High or Very High	12	24%
HCT-CI	< 3	26	51%
	\geq 3	25	49%
Median Follow up, months [95%CI]		43	[34-49]

NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

N = 51

- Age \geq 70
- AML or MDS
- Haplo-SCT
- PBSC
- NMAC regimen
- Intent to treat prophylactic DLI

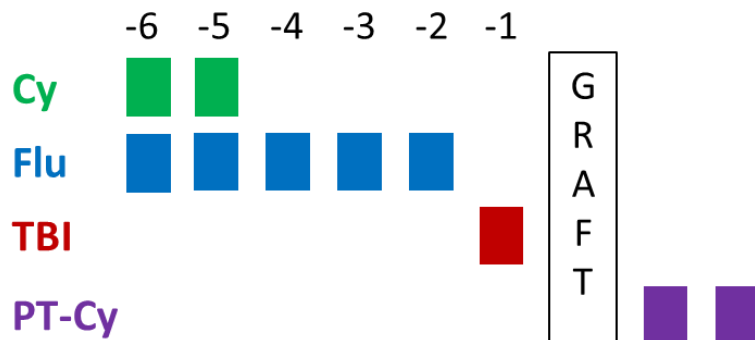
No early death
Day+100 NRM = 0%



NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

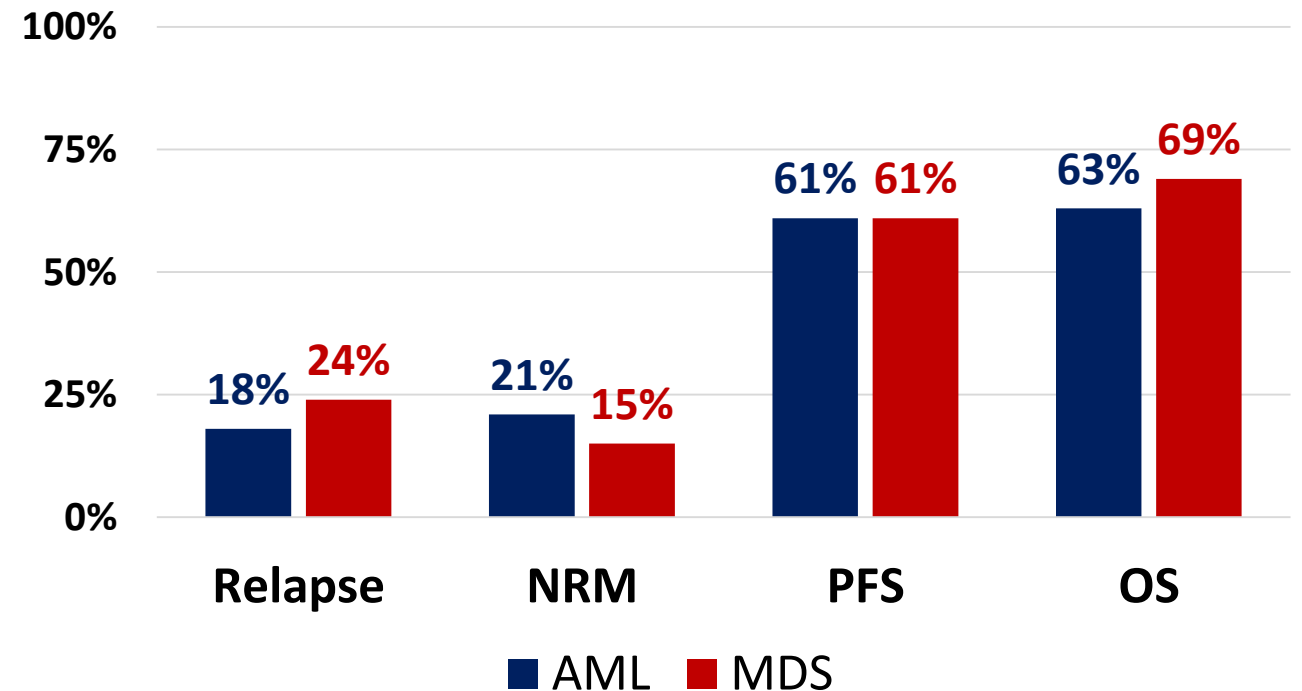
N = 51

- Age \geq 70
- AML or MDS
- Haplo-SCT
- PBSC
- NMAC regimen
- Intent to treat prophylactic DLI



No early death
Day+100 NRM = 0%

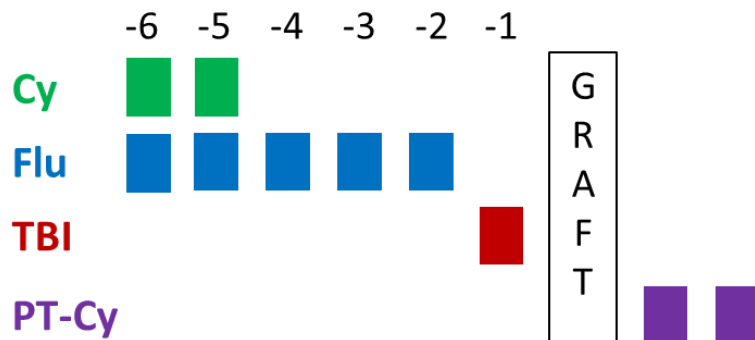
Outcome at 3 years after Haplo-SCT



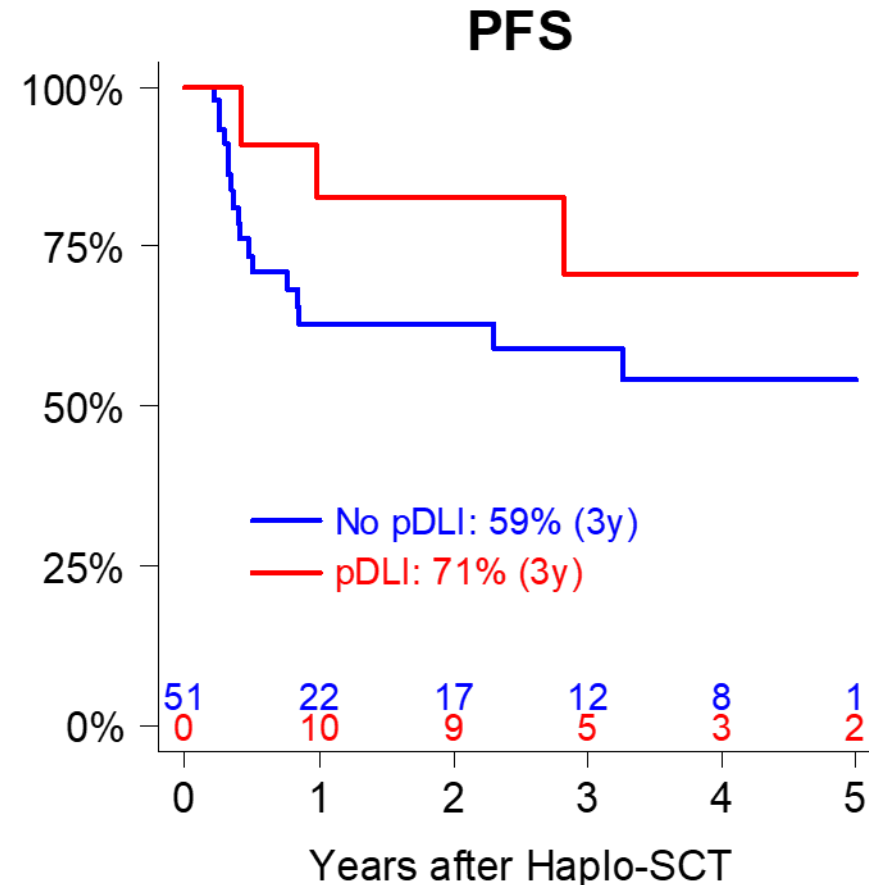
NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

N = 51

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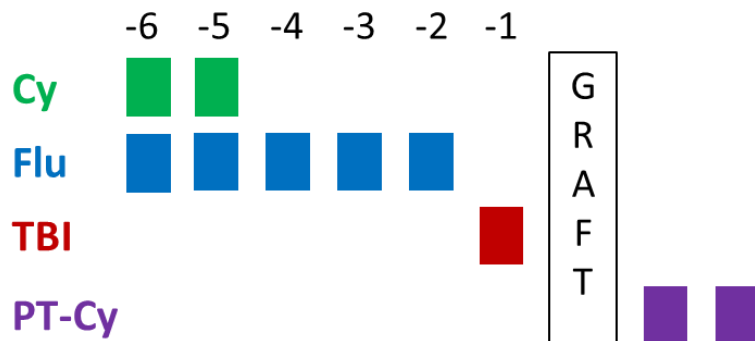
**No early death
Day+100 NRM = 0%**



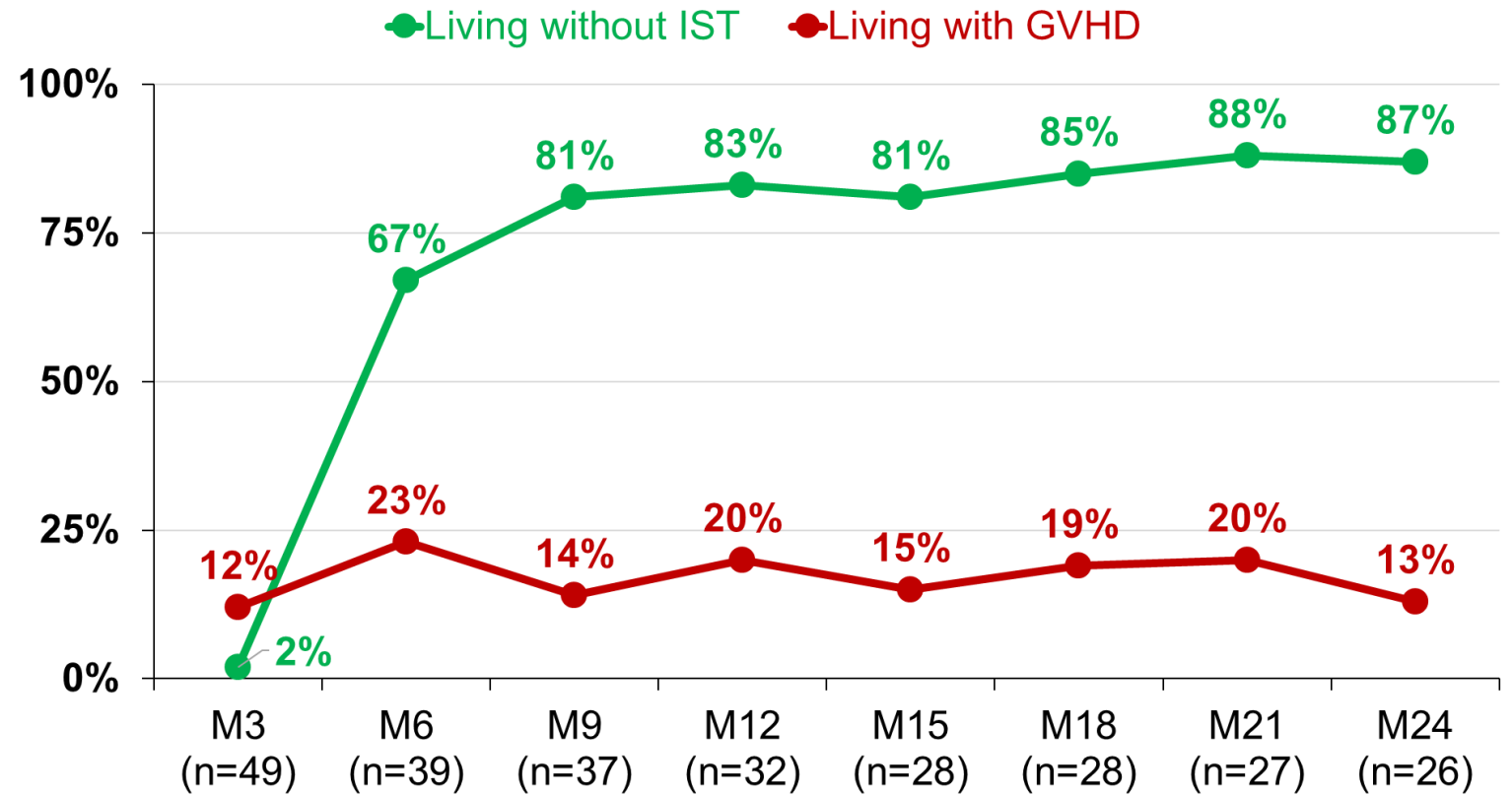
NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

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**No early death
Day+100 NRM = 0%**

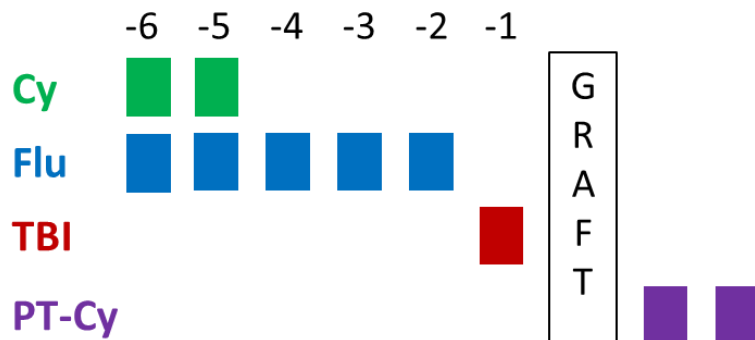


Prevalences are calculated on disease free patients

NMAC Haplo-SCT with PT-Cy : Age \geq 70 years

N = 51

- Age \geq 70
- AML or MDS
- Haplo-SCT
- PBSC
- NMAC regimen
- Intent to treat prophylactic DLI



Causes of death (N=18)

Relapse	9	50%
GVHD	3	17%
Encephalopathy	2	11%
Hemolytic anemia	1	6%
Tuberculosis	1	6%
Septic shock	1	6%
Secondary cancer	1	6%

Only 12 patients (24%) received pDLI

Allo-HSCT for older patients: issues, tools and perspectives

Suboptimal pre Allo-HSCT treatments

**Relapse
Death**

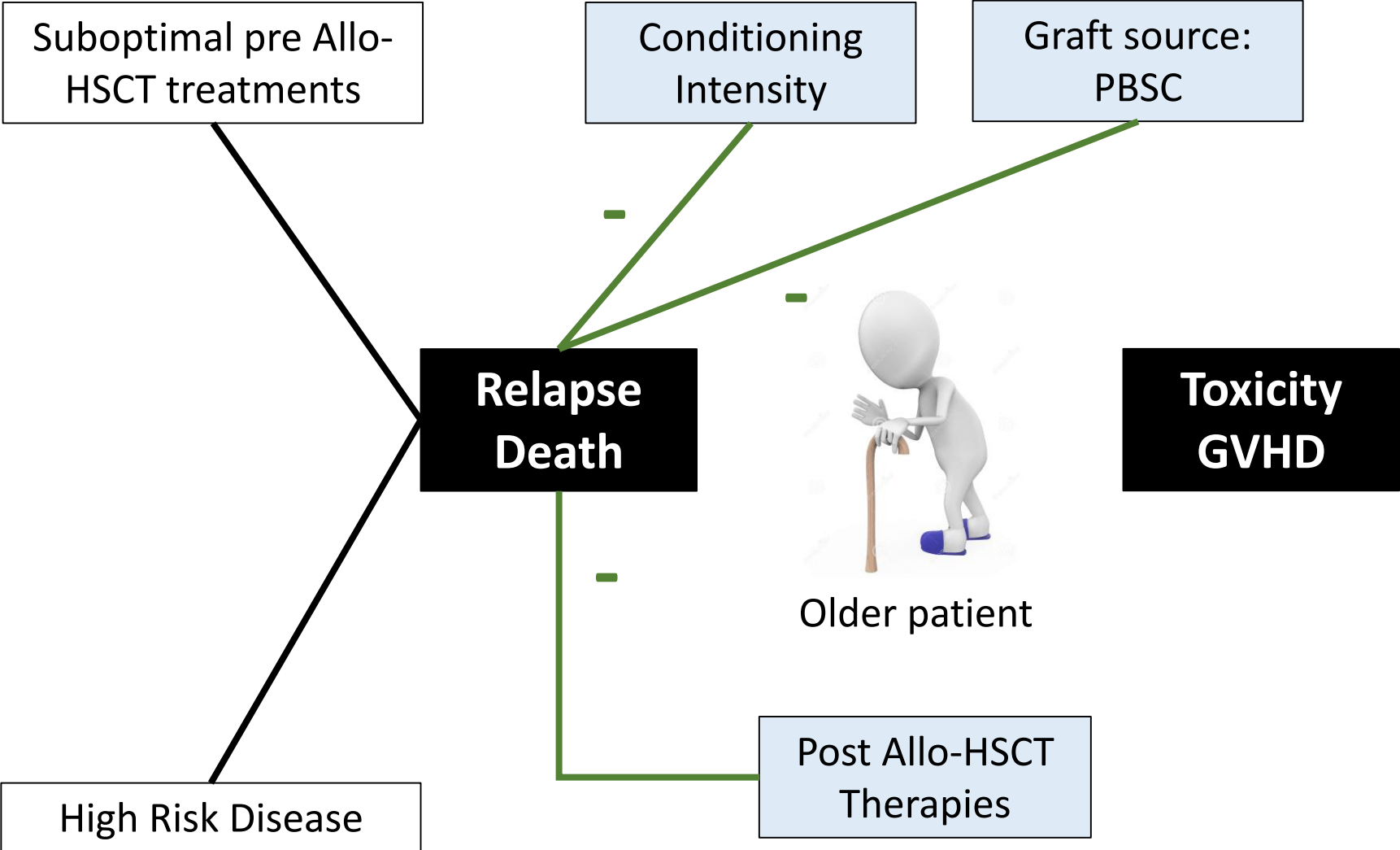
High Risk Disease



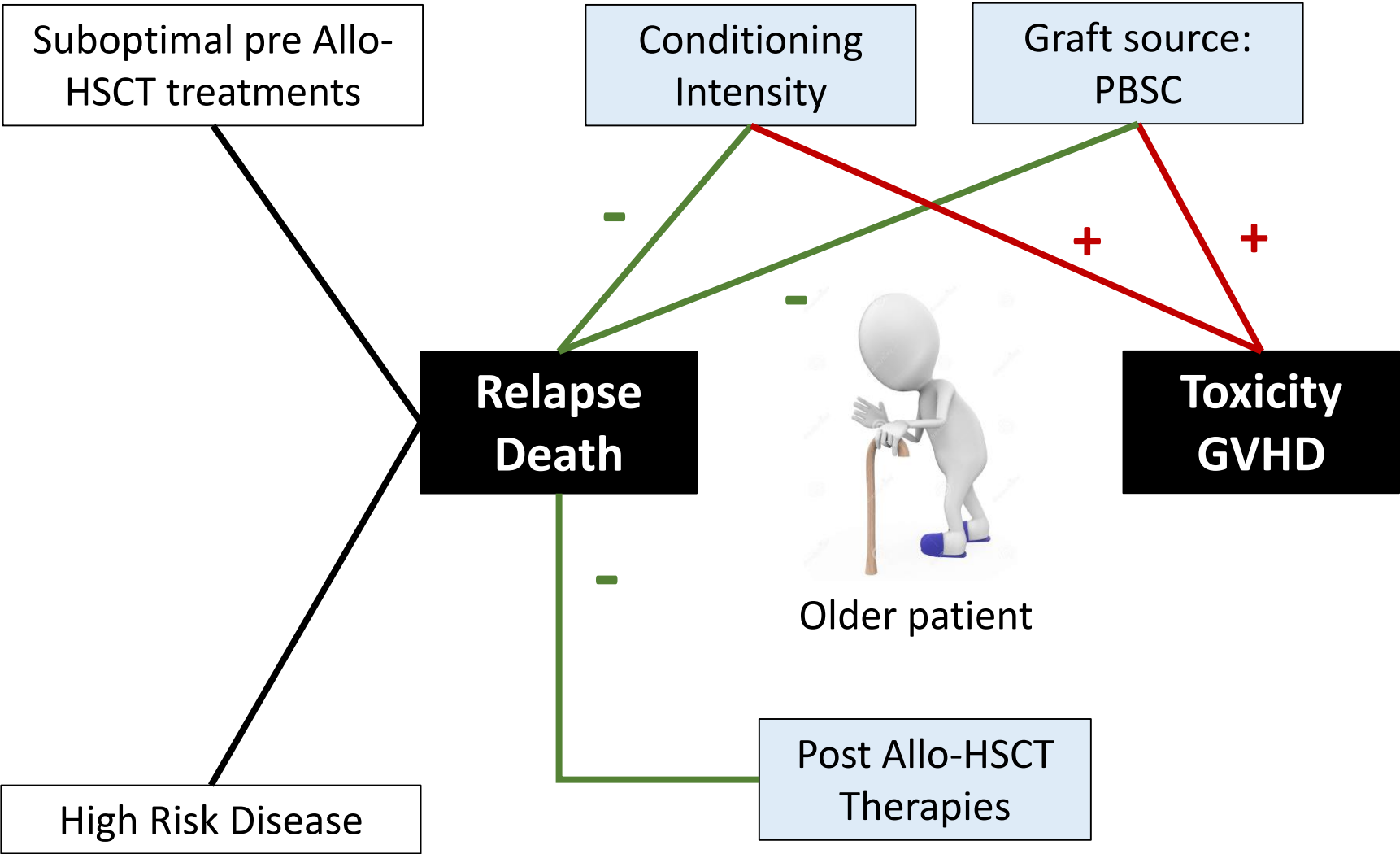
Older patient

**Toxicity
GVHD**

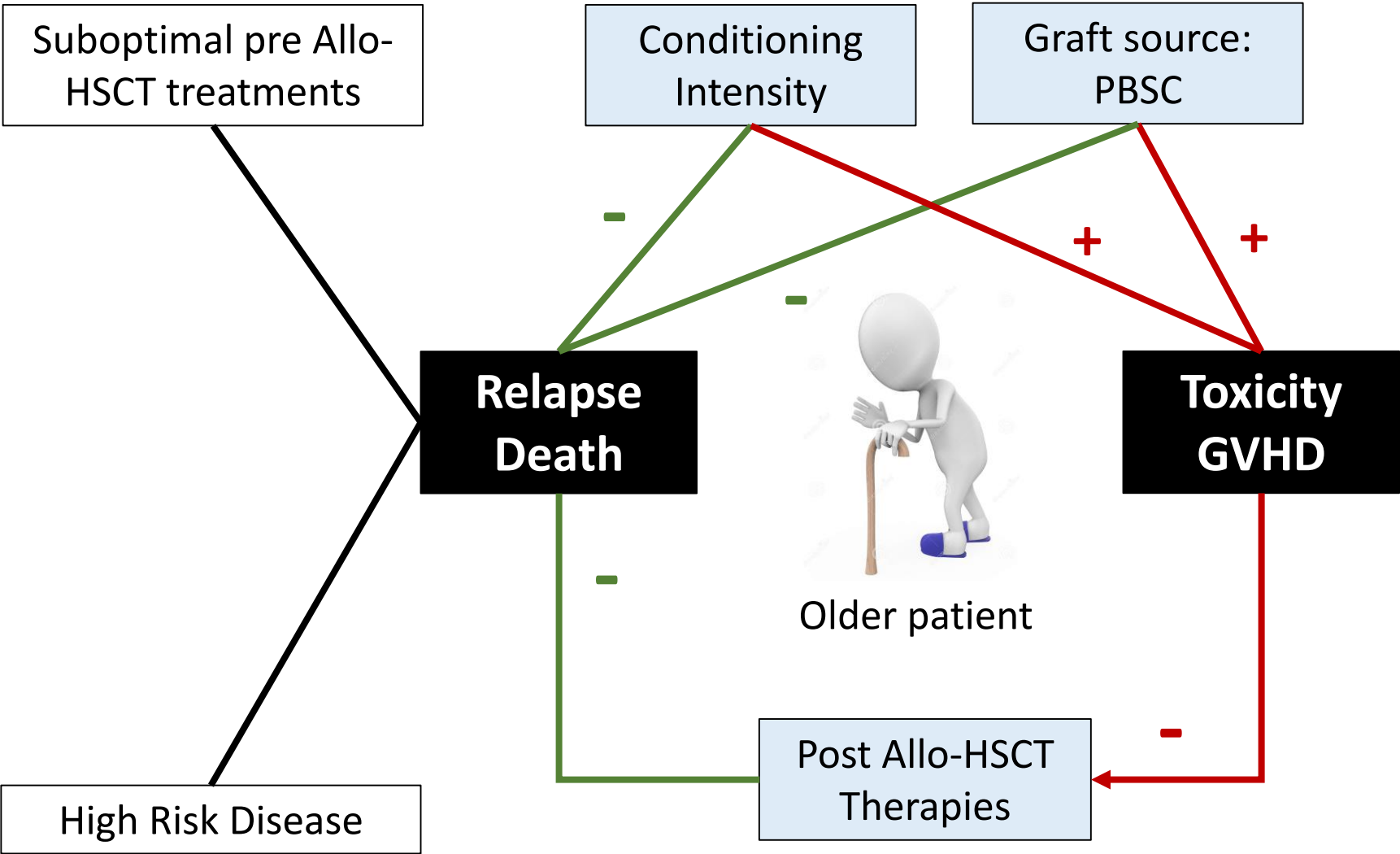
Allo-HSCT for older patients: issues, tools and perspectives



Allo-HSCT for older patients: issues, tools and perspectives



Allo-HSCT for older patients: issues, tools and perspectives



Optimization of Conditioning Regimen

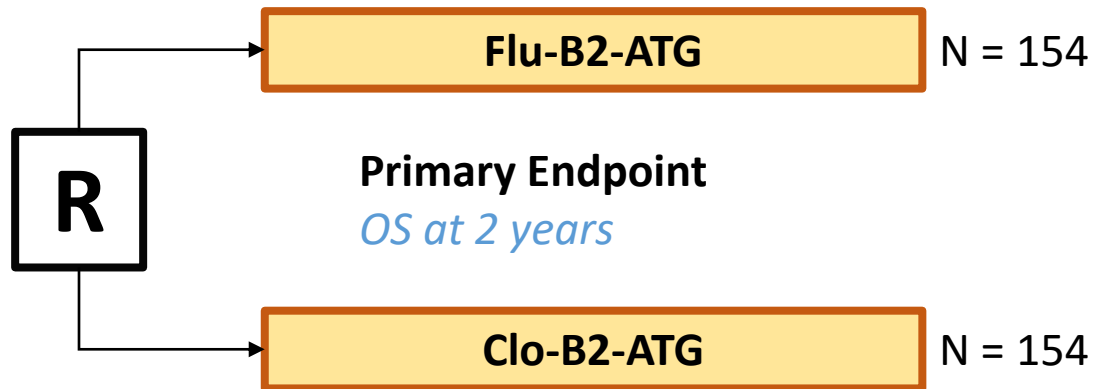
Clofarabine

FLUCLORIC phase III trial

- Age > 18 y
- AML in CR
- RIC
- MSD or MUD



PHRC-K 2022



Optimization of Conditioning Regimen

Clofarabine

FLUCLORIC phase III trial

- Age > 18 y
- AML in CR
- RIC
- MSD or MUD

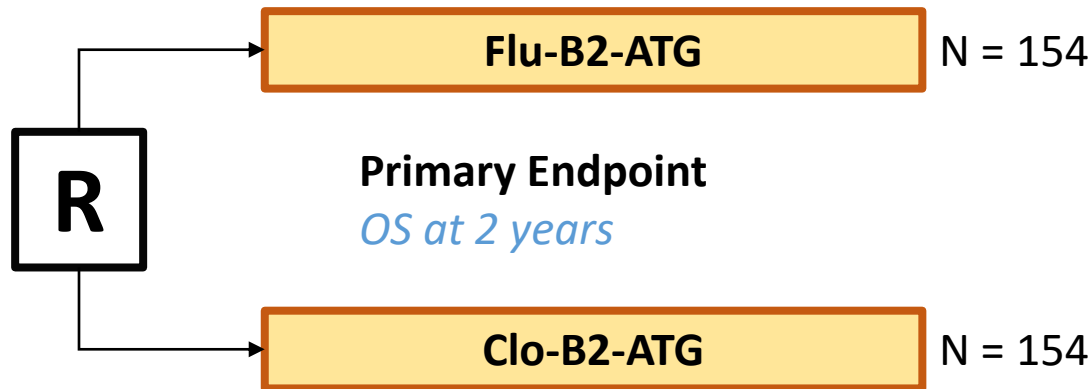


PHRC-K 2022

Treosulfan

FT-RIC-HAPLO phase II trial

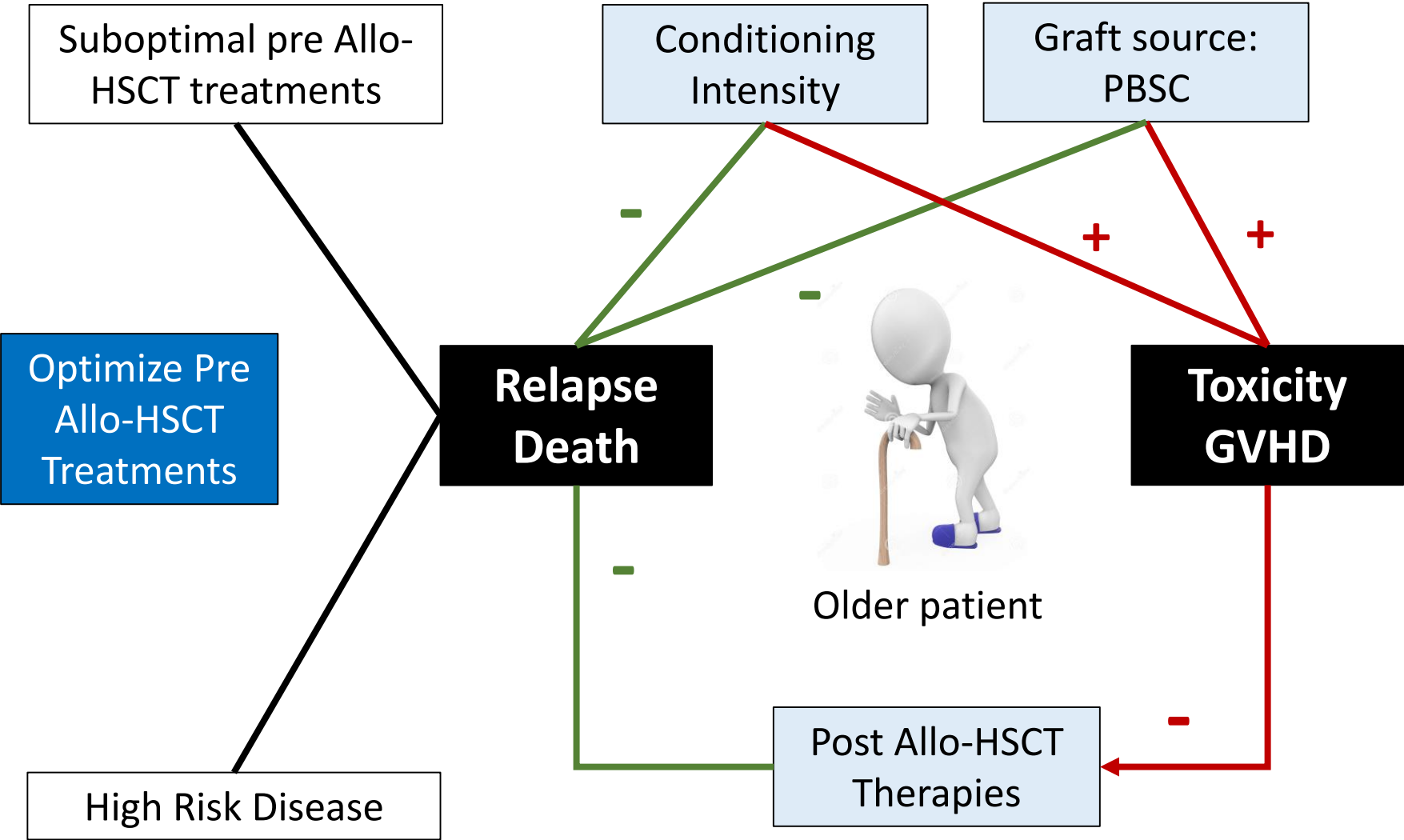
- AML in CR < 5% (ELN 2022)
- Age **60-75**
- Age < 60 with HCT-CI ≥ 3
- Haplo-SCT with PT-Cy
- PBSC



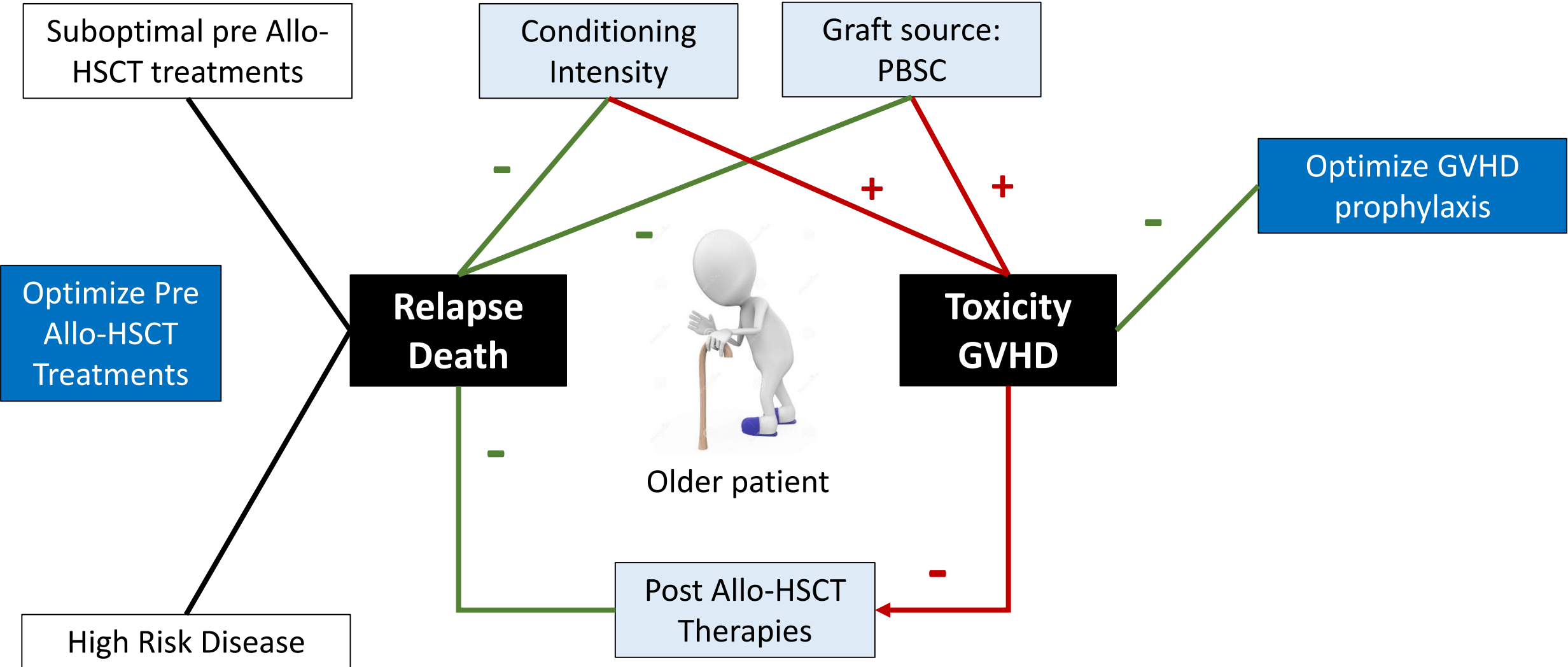
	-6	-5	-4	-3	-2
Fludarabine (mg/m²)	30	30	30	30	30
Treosulfan (g/m²)			10	10	10

N = 77

Allo-HSCT for older patients: issues, tools and perspectives



Allo-HSCT for older patients: issues, tools and perspectives



Optimization of GVHD Prophylaxis

ATG / HLA id



- AML CR1
- Age: 50–70 years
- HLA 10/10 MUD
- FT-RIC



ATG- Thymoglobulin
5 mg/kg total dose
(D-3,D-2)
N=158

ATLG- Grafalon
30 mg/kg total dose
(D-3,D-2,D-1)
N=157

Primary Endpoint

Day 100 incidence of grade II-IV acute GVHD



Optimization of GVHD Prophylaxis



ATG / HLA id

- AML CR1
- Age: 50–70 years
- HLA 10/10 MUD
- FT-RIC



ATG- Thymoglobulin
5 mg/kg total dose
(D-3,D-2)
N=158

ATLG- Grafalon
30 mg/kg total dose
(D-3,D-2,D-1)
N=157

Primary Endpoint

Day 100 incidence of grade II-IV acute GVHD

PT-Cy / Haplo



PT-Cy 35 mg/kg/d d+3/+4

N = 72

Primary Endpoint
GRFES at 2 years

PT-Cy 50 mg/kg/d d+3/+4

N = 72

- Hematological cancer
- Adult patient
- Haplo-SCT with PT-Cy

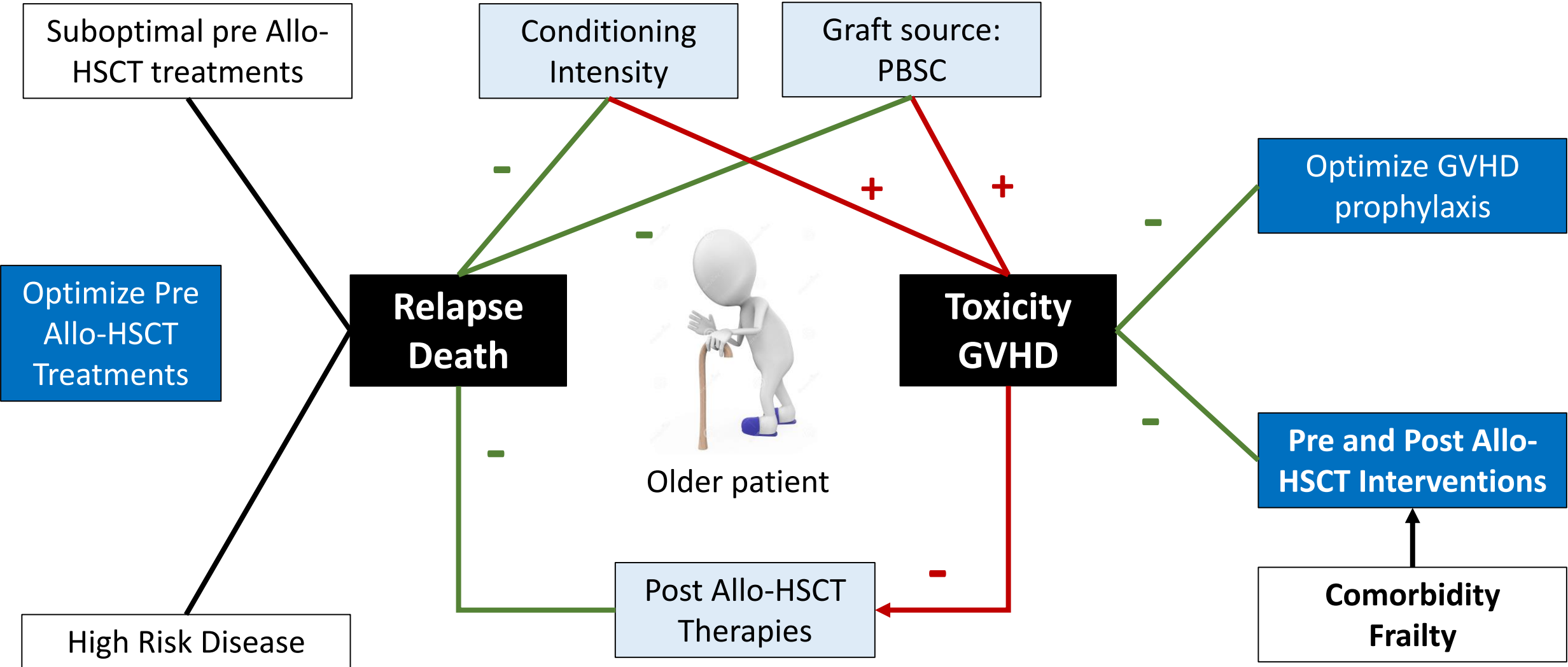


Rubio, SFGMTC

Dulery, SFGMTC



Allo-HSCT for older patients: issues, tools and perspectives



The Issue of Predictive Scores in Older Patients

Poor Predictive Value of Conventional Scores in Older Patients



Single center experience

	<i>TRM</i>		<i>OS</i>	
	<i>HR (CI)</i>	<i>P-value</i>	<i>HR (CI)</i>	<i>P-value</i>
<i>HCT-CI score</i>				
0-2	1	0.98	1	0.2
≥3	0.98 (0.37-2.58)	—	0.6 (0.2-1.5)	—
<i>Karnofsky</i>				
> 80%	1	0.55	1	0.6
≤80%	0.74	—	0.8	—
<i>PAM score</i>				
≤16	1	0.08	1	0.2
17-23	0.69 (0.13-3.72)	—	0.9 (0.2-4)	—
24-30	0.2 (0.02-2.43)	—	0.4 (0.1-3.1)	—
≥31	4.2 (0.72-24.35)	—	4 (0.3-45.3)	—
<i>EBMT score</i>				
2-3	1	0.14	1	0.5
4-5	0.44 (0.14-1.32)	—	0.8 (0.3-1.8)	—

The Issue of Predictive Scores in Older Patients

Poor Predictive Value of Conventional Scores in Older Patients



Single center experience

	TRM		OS	
	HR (CI)	P-value	HR (CI)	P-value
<i>HCT-CI score</i>				
0-2	1	0.98	1	0.2
≥3	0.98 (0.37-2.58)	—	0.6 (0.2-1.5)	—
<i>Karnofsky</i>				
> 80%	1	0.55	1	0.6
≤ 80%	0.74	—	0.8	—
<i>PAM score</i>				
≤ 16	1	0.08	1	0.2
17-23	0.69 (0.13-3.72)	—	0.9 (0.2-4)	—
24-30	0.2 (0.02-2.43)	—	0.4 (0.1-3.1)	—
≥ 31	4.2 (0.72-24.35)	—	4 (0.3-45.3)	—
<i>EBMT score</i>				
2-3	1	0.14	1	0.5
4-5	0.44 (0.14-1.32)	—	0.8 (0.3-1.8)	—

Castagna BMT 2011

Phase II prospective trial



	N	NRM	P
<i>Age</i>			
< 60 years	33	12%	0.650
≥ 60 years	42	17%	
<i>Karnofsky index</i>			
90-100	48	7%	0.020
≤ 80	19	26%	
<i>HCT-CI¹⁵</i>			
0-2	26	20%	0.514
≥ 3	47	13%	

Blaise Haem 2015

The Issue of Predictive Scores in Older Patients

Poor Predictive Value of Conventional Scores in Older Patients

Haploidentical transplantation using posttransplant cyclophosphamide as GVHD prophylaxis in patients over age 70



JOHNS HOPKINS UNIVERSITY

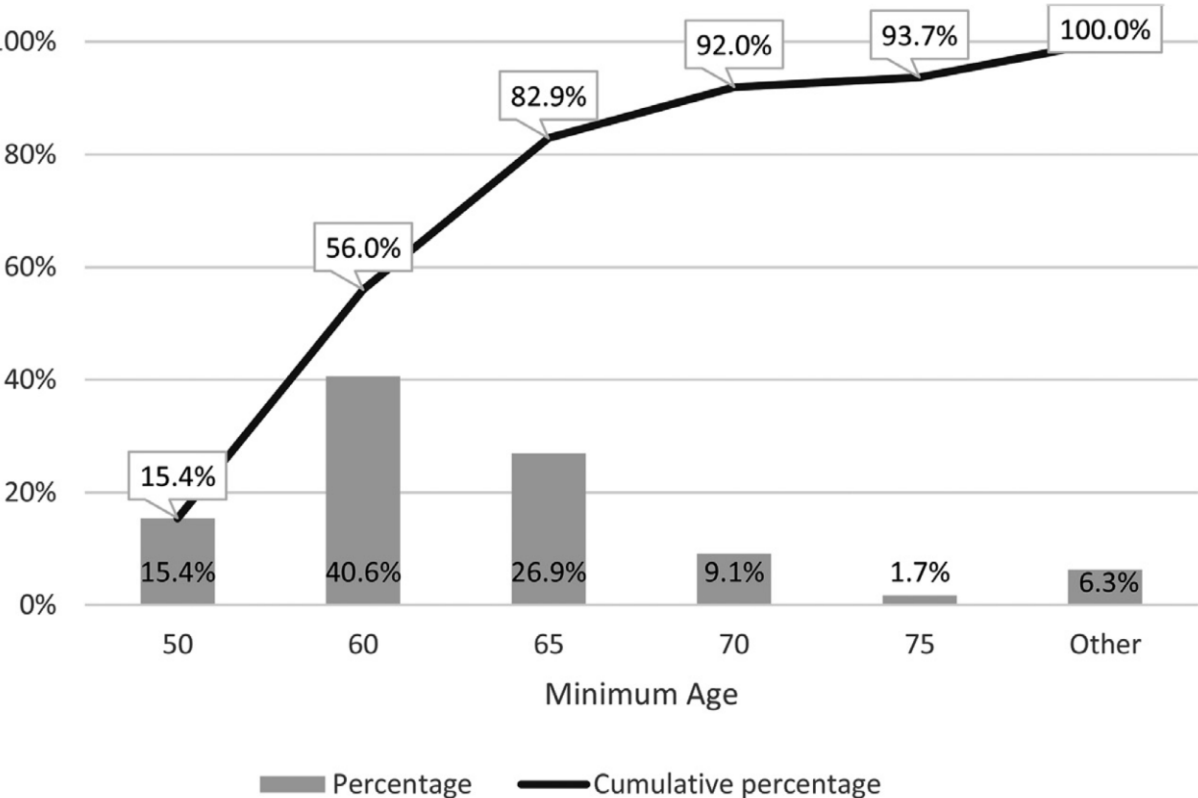
	HR (CI)	P	NRM		
			SDHR (95% CI)	P	
Univariate					
Patient age (per 1 y)		.09	1.17 (0.98-1.31)		33 (12%)
DRI					42 (17%)
Low		.27	0.35 (0.05-2.28)		48 (7%) 19 (26%)
Intermediate			1		
High/very high		.20	0.27 (0.04-2.04)		
HCT-CI score					26 (20%)
0 (low)			1		47 (13%)
1-2 (intermediate)		.38	0.66 (0.26-1.66)		
≥3 (high)		.58	0.76 (0.29-1.99)		

Castagna BM

Imus Blood Adv 2019

The need of standardized evaluation tools : Geriatric assessment ?

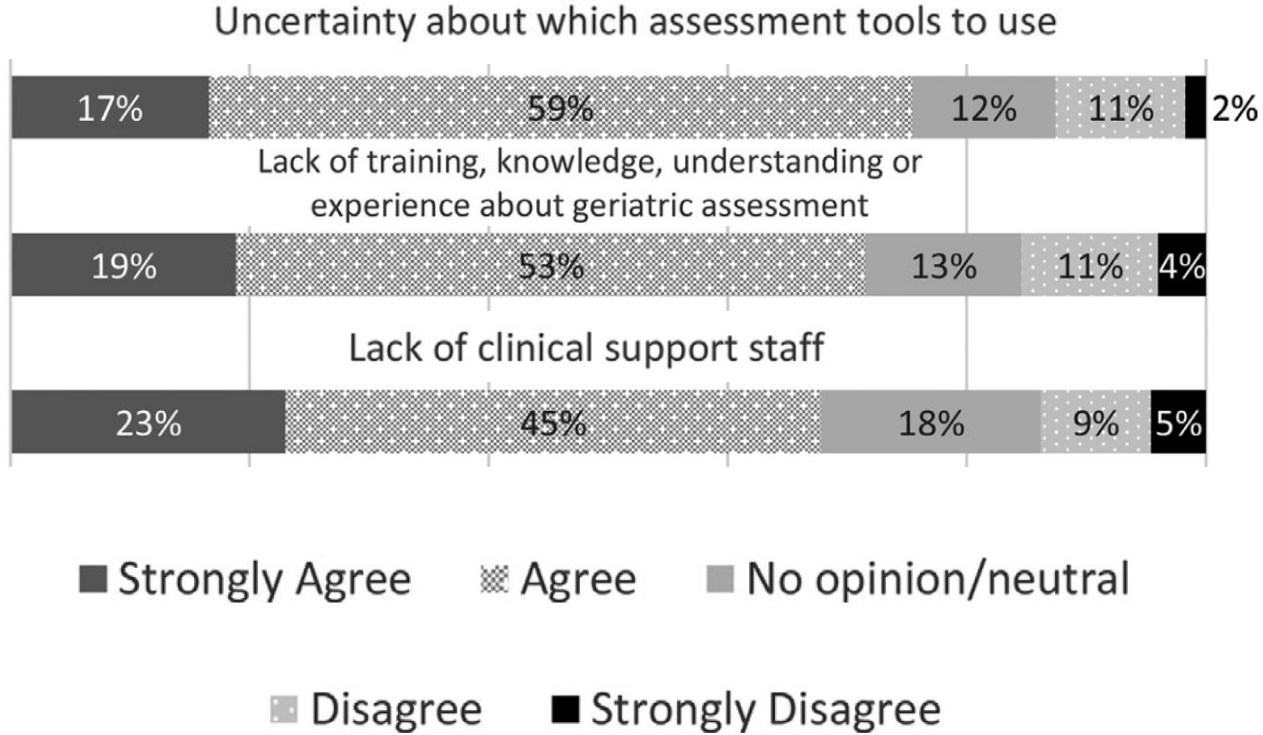
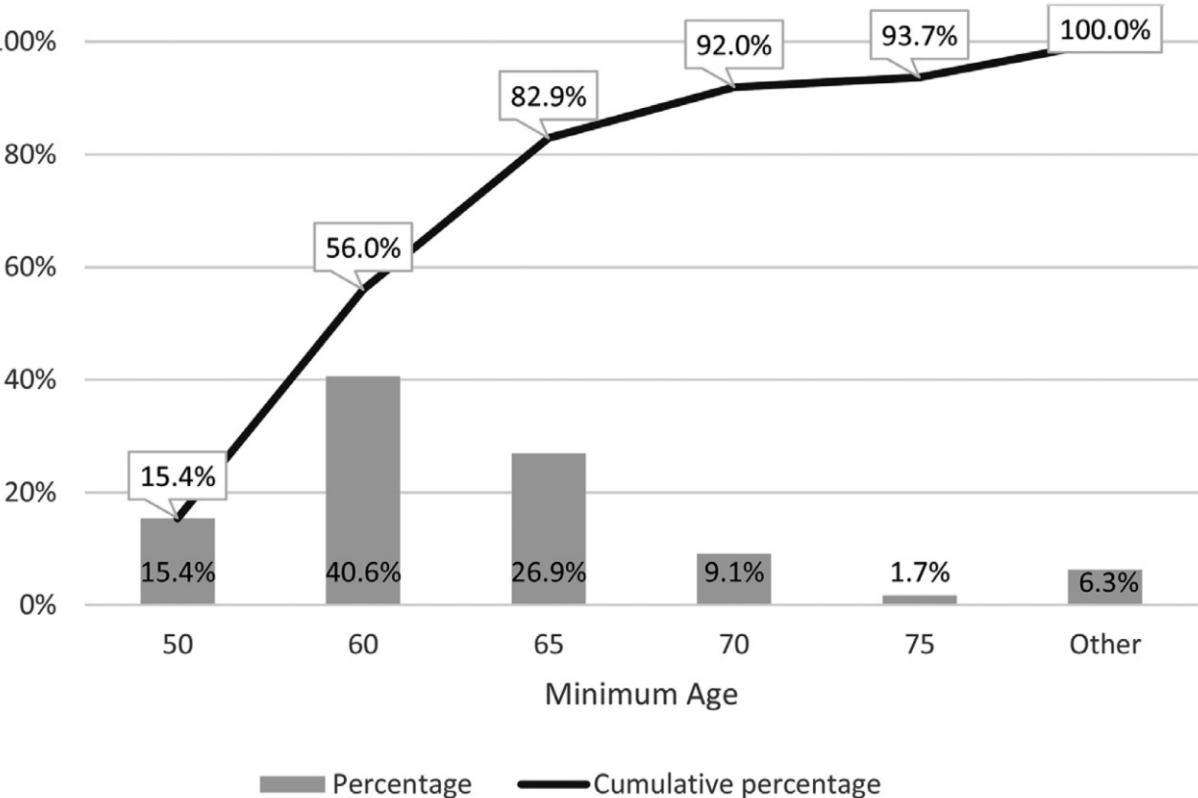
Need of standardized toolkit to evaluate Allo-HSCT candidacy



The need of standardized evaluation tools : Geriatric assessment ?

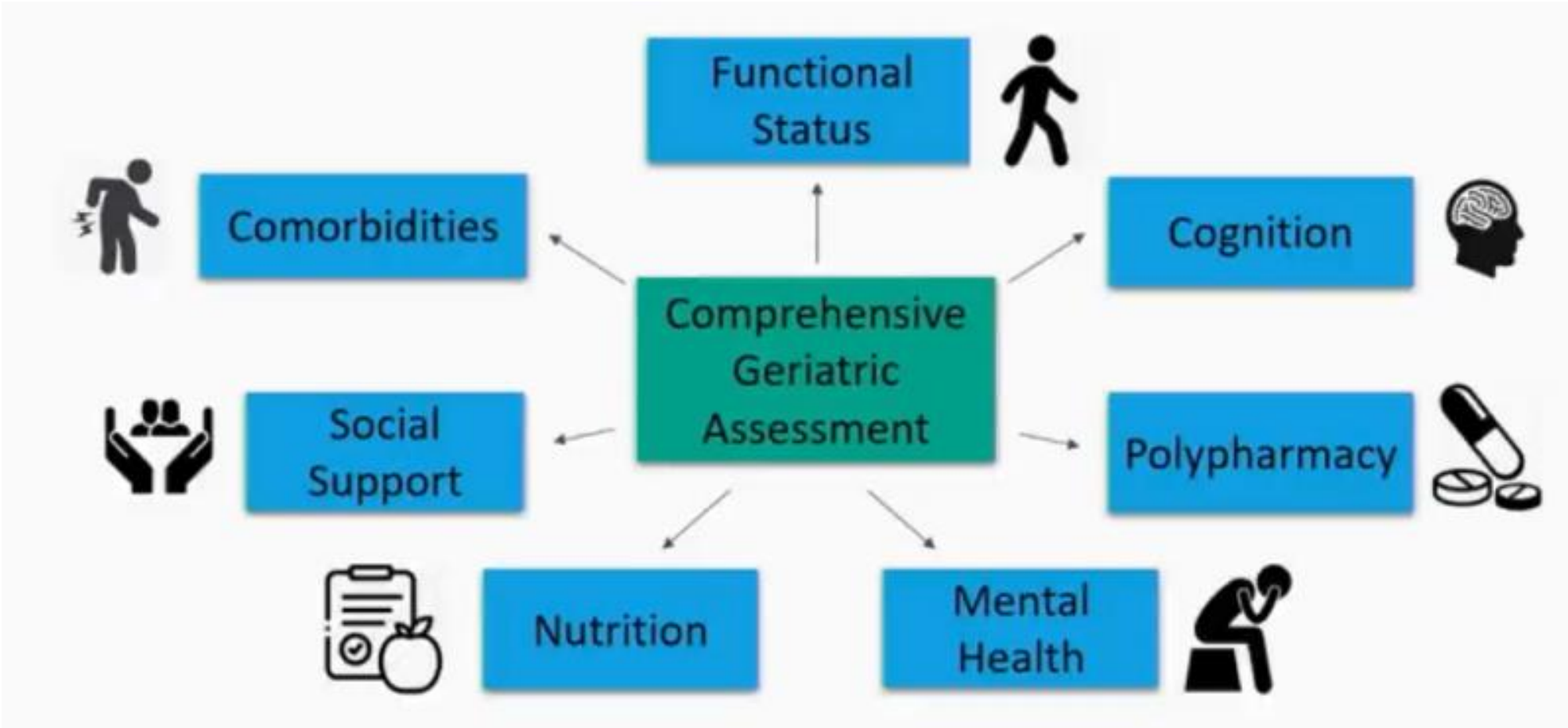
Need of standardized toolkit to evaluate Allo-HSCT candidacy

Barriers to Geriatric Assessment in patients older than 60 years



Geriatric Assessment (GA)

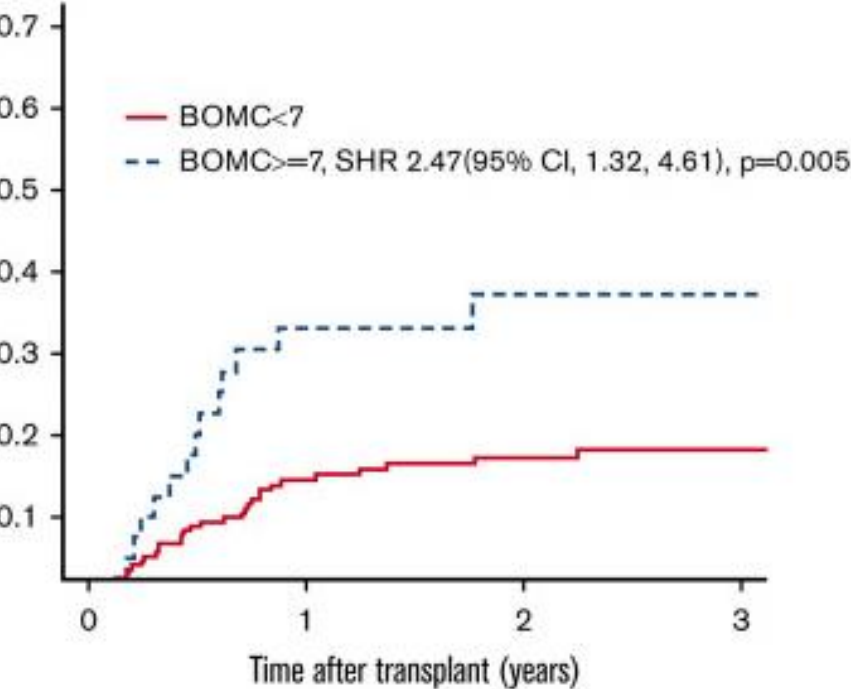
Domains of Geriatric Assessment



Geriatric Assessment (GA) : Prediction

Prediction of NRM according to GA metrics

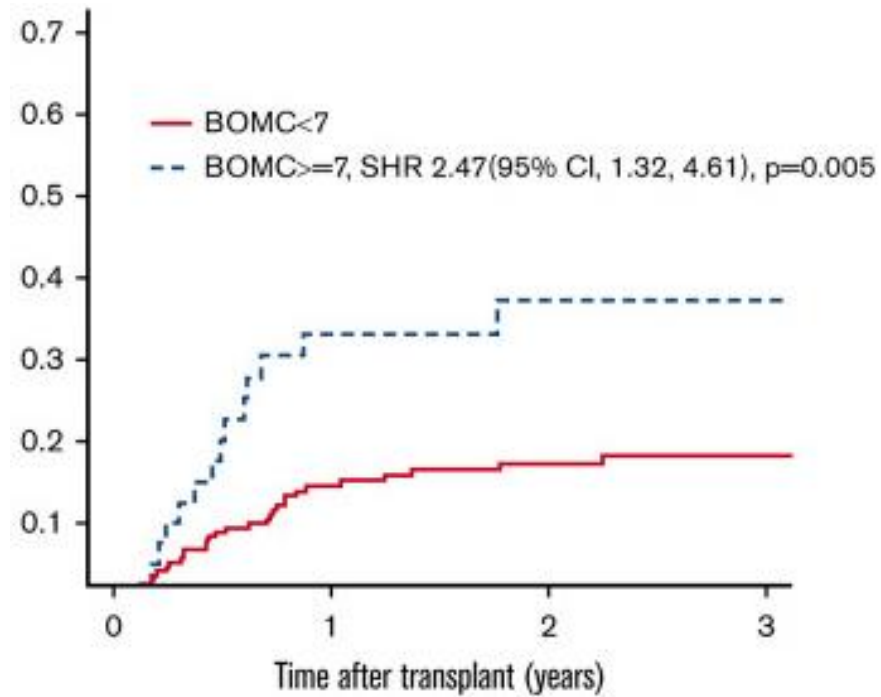
Cognition



Geriatric Assessment (GA) : Prediction

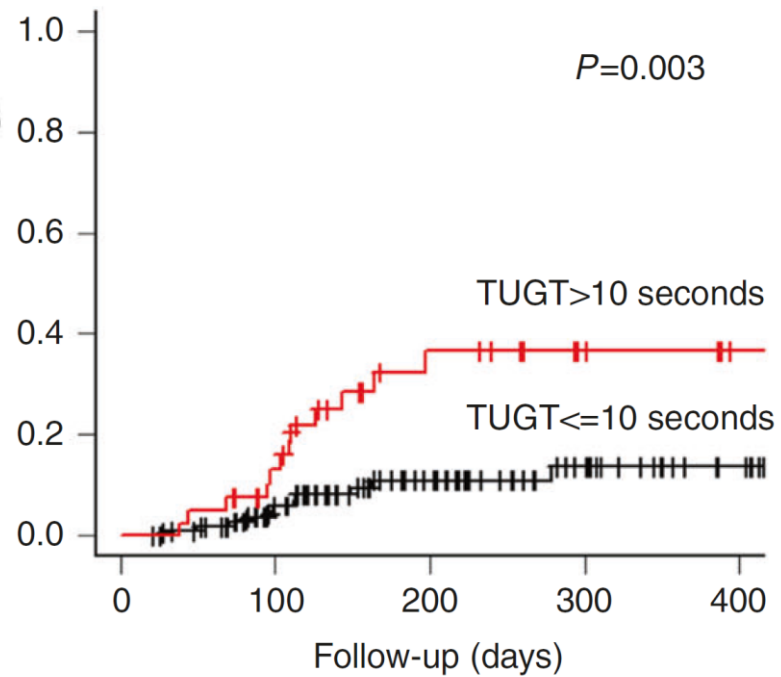
Prediction of NRM according to GA metrics

Cognition



Olin Blood Adv 2020

Physical function

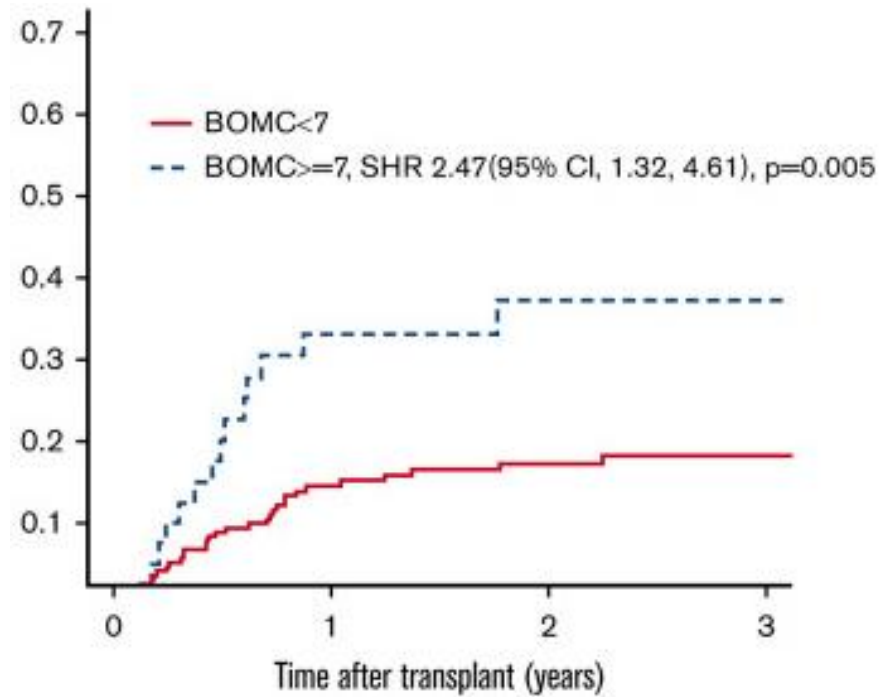


Salas BMT 2021

Geriatric Assessment (GA) : Prediction

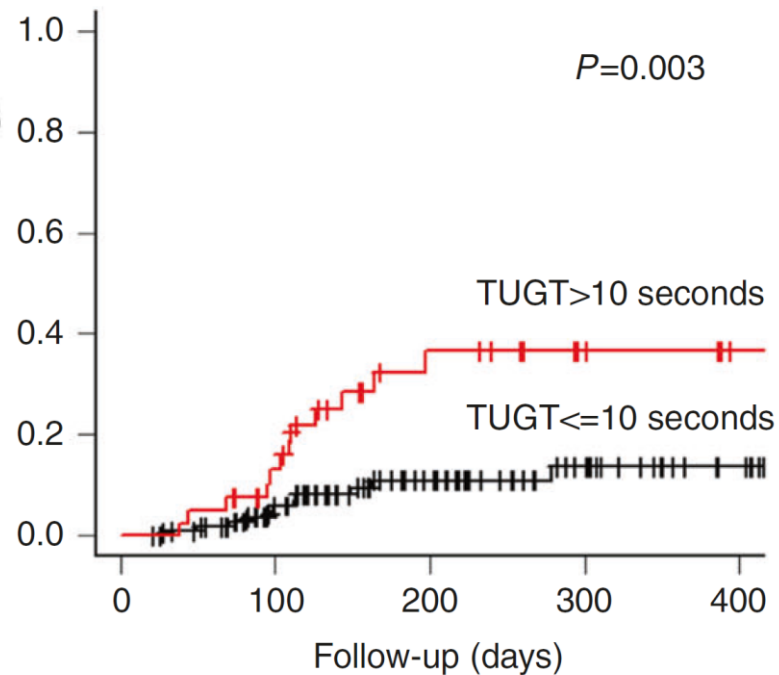
Prediction of NRM according to GA metrics

Cognition



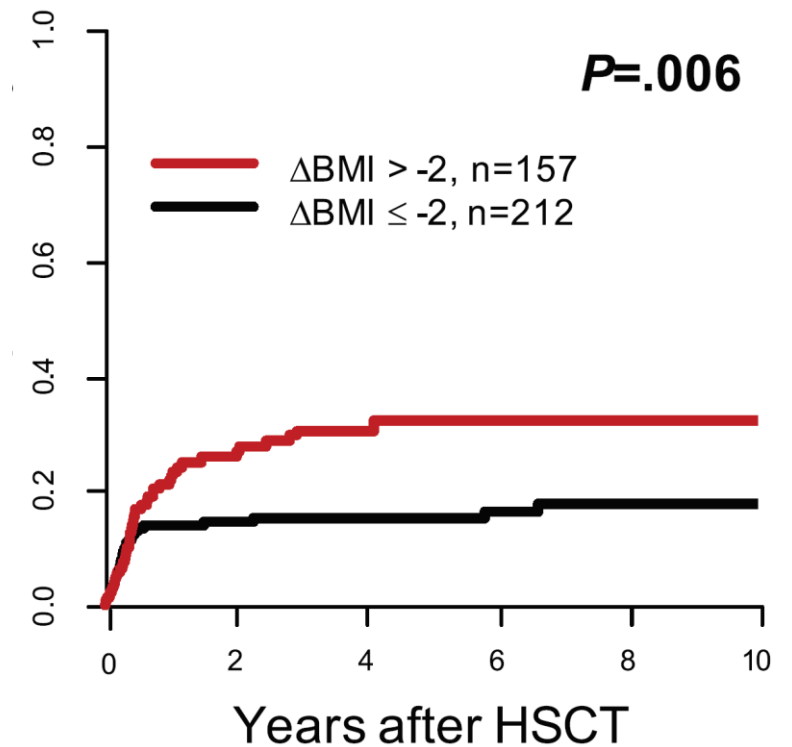
Olin Blood Adv 2020

Physical function



Salas BMT 2021

Nutrition

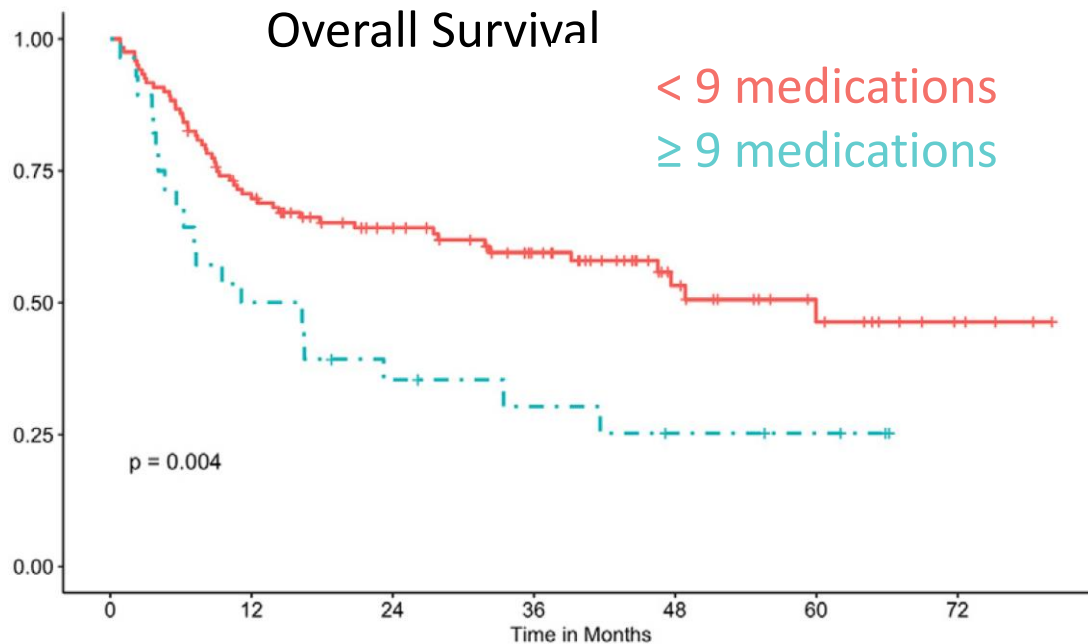


Brauer Hemasph 2021

Geriatric Assessment (GA) : Prediction

Impact of Polypharmacy Prior to Allogeneic Hematopoietic Stem Cell Transplantation in Older Adults

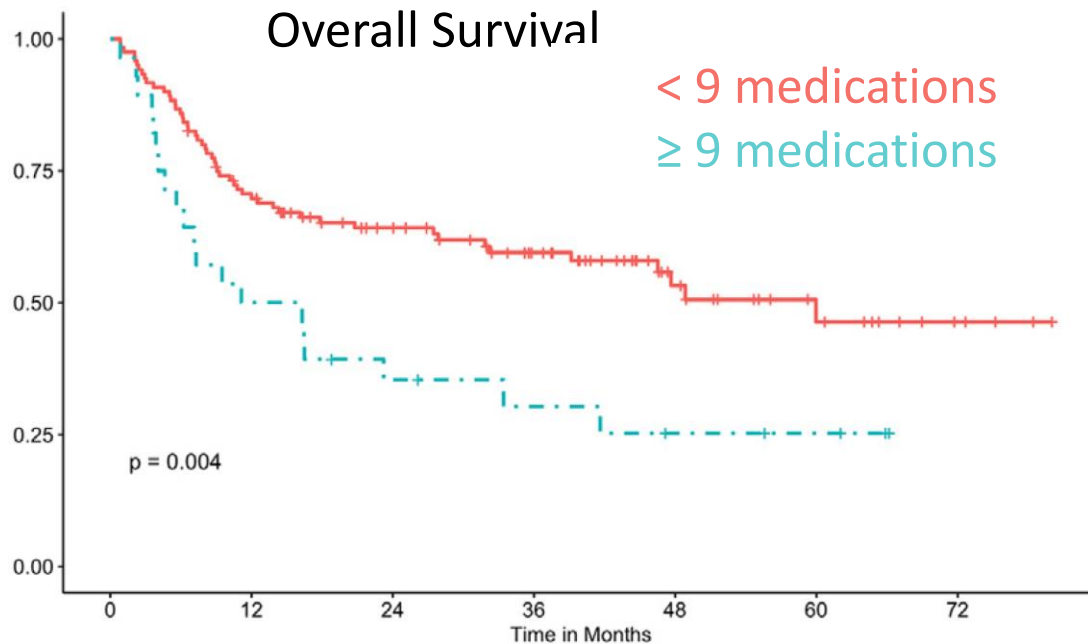
Matthew Sugidono¹, Mimi Lo², Rebecca Young², Kimberly Rosario³, Yoonie Jung³,
Chiung-Yu Huang⁴, Ying Sheng⁴, Li-Wen Huang^{5,6}, Rebecca L. Olin^{6,7,*}



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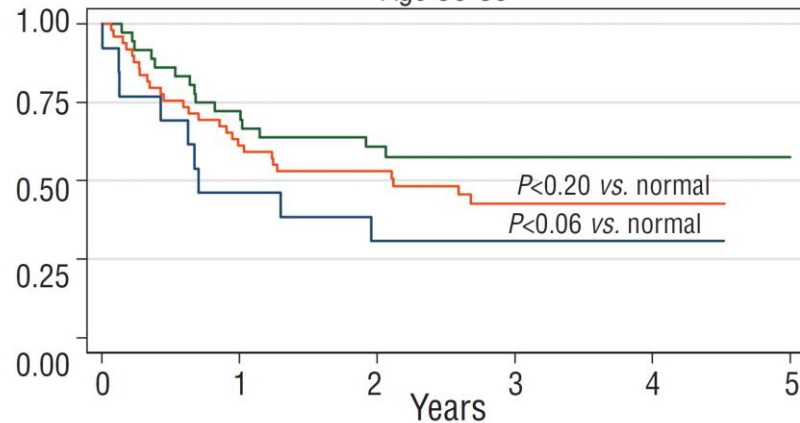


Medication Variables	Adjusted Analysis	
	Effect Size (95% CI)	<i>p</i>
Number of all medications	HR, 1.07 (1.01–1.12)	0.02
Number of scheduled medications	HR, 1.08 (1.00–1.15)	0.04
Nine or more scheduled medications	HR, 1.92 (1.11–3.32)	0.02
Number of PIMs	HR, 1.24 (1.00–1.54)	0.05
Number of DDIs	HR, 1.05 (0.99–1.12)	0.12
Number of DDIs (major)	HR, 1.07 (0.92–1.23)	0.38

Geriatric assessment to predict survival in older allogeneic hematopoietic cell transplantation recipients

Lori S. Muffly,¹ Masha Kocherginsky,² Wendy Stock,¹ Quynh Chu,¹ Michael R. Bishop,¹ Lucy A. Godley,¹ Justin Kline,¹ Hongtao Liu,¹ Olatoyosi M. Odenike,¹ Richard A. Larson,¹ Koen van Besien,³ and Andrew S. Artz¹

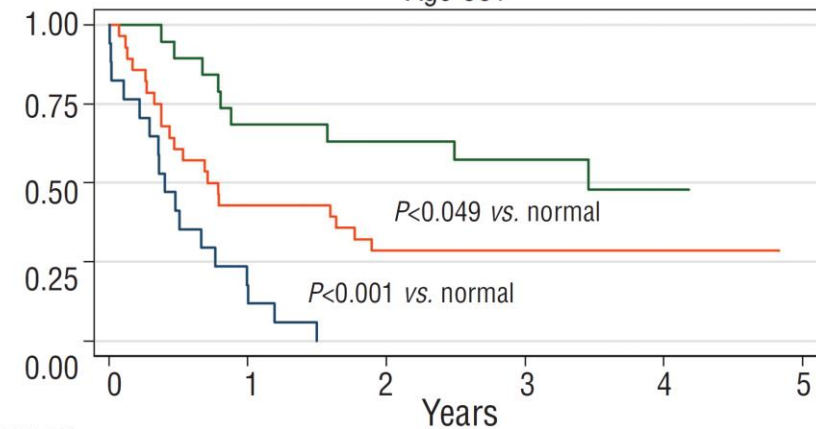
Kaplan-Meier overall survival estimates
Age 50-59



IADL and HCTCI	0	1	2	3	4	5
Both Normal	36	26	18	15	11	6
One Abnormal	49	30	22	12	9	8
Both Abnormal	13	6	4	4	2	1

— both normal — one abnormal — both abnormal

Kaplan-Meier overall survival estimates
Age 60+



IADL and HCTCI	0	1	2	3	4	5
Both Normal	19	13	11	7	5	4
One Abnormal	28	12	8	7	5	1
Both Abnormal	17	3	0	0	0	0

— both normal — one abnormal — both abnormal

Geriatric Assessment (GA) combined with HCT-CI

Stem Cell Transplantation

ARTICLES

Geriatric assessment to predict survival in older allogeneic hematopoietic cell transplantation recipients



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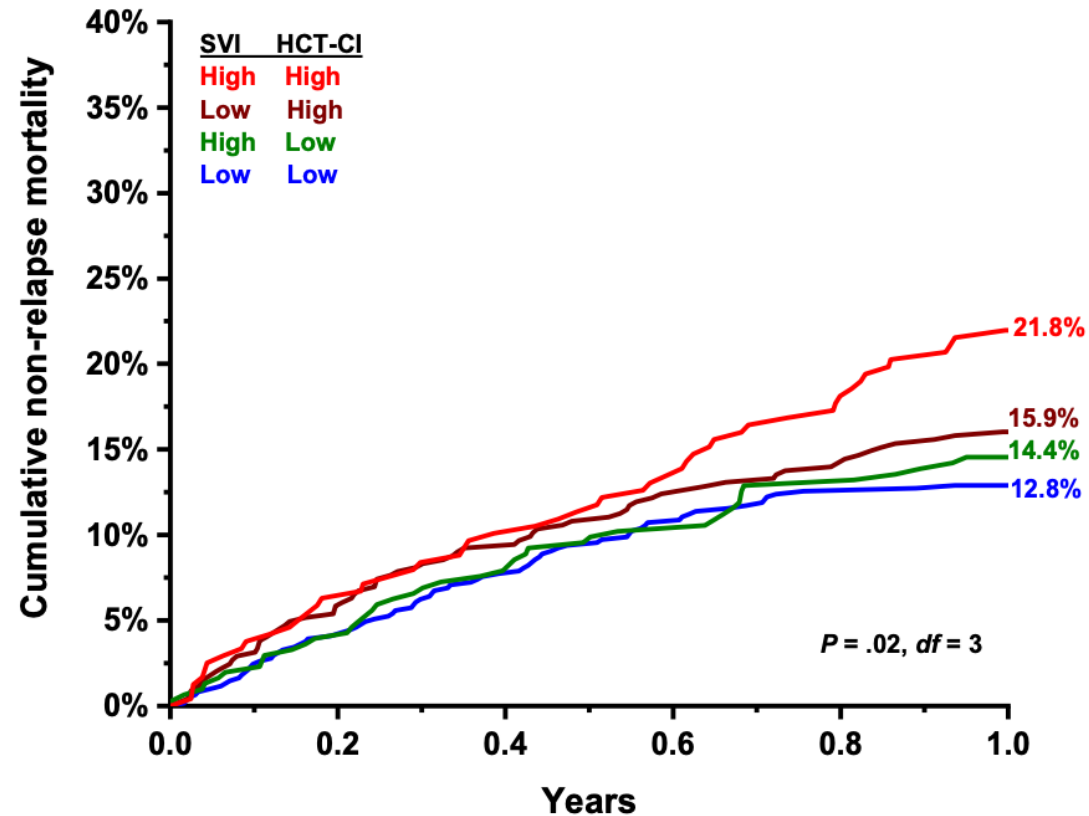
Variable	Total population			50-59 years			60-73 years		
	HR	95% CI	P	HR	95% CI	P	HR	95% CI	P
Main model variables									
Age >60	1.83	1.26-2.65	0.001	–	–	–	–	–	–
HCT-CI ≥3	1.56	1.07-2.28	0.02	1.50	0.88-2.53	0.13	1.72	0.99-2.98	0.05
Active disease at HCT	1.31	0.90-1.90	0.16	1.54	0.92-2.58	0.10	1.27	0.71-2.27	0.42
Myeloablative regimen	1.54	1.02-2.31	0.04	2.14	1.24-3.69	0.01	1.07	0.54-2.10	0.85
GA variables									
IADL impairment	2.38	1.59-3.56	<0.001	1.86	1.07-3.24	0.03	3.25	1.75-6.05	<0.001
Slow walk speed	1.80	1.14-2.83	0.01	1.16	0.60-2.28	0.66	3.27	1.68-6.39	0.001
Reduced mental health	1.67	1.13-2.48	0.01	1.55	0.92-2.62	0.10	1.87	1.01-3.49	0.04
Low albumin	1.52	0.94-2.46	0.09	1.23	0.57-2.63	0.60	2.62	1.26-5.47	0.01
High CRP	2.51	1.54-4.09	<0.001	1.89	0.94-3.79	0.07	3.13	1.52-6.46	0.002

Geriatric Assessment (GA) combined with HCT-CI



Social Vulnerability and Risk of Nonrelapse Mortality After Allogeneic Hematopoietic Cell Transplantation

Rusha Bhandari, MD, MS,¹ Jennifer Berano Teh, MD,^{2,4} Tianhui He, MS,² Ryotaro Nakamura, MD,³
Andrew S. Artz, MD, MS ,³ Marta M. Jankowska, PhD,² Stephen J. Forman, MD,³ F. Lennie Wong, PhD,²
Saro H. Armenian, DO, MPH ^{2,*}

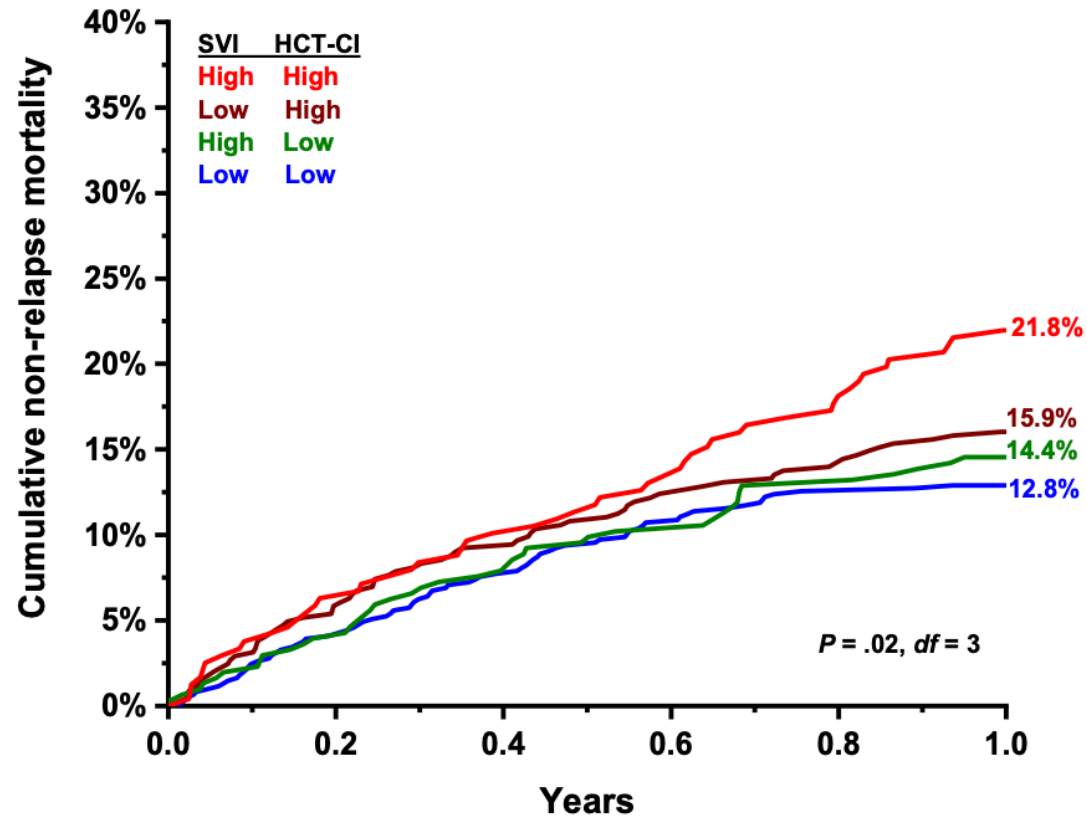


Geriatric Assessment (GA) combined with HCT-CI



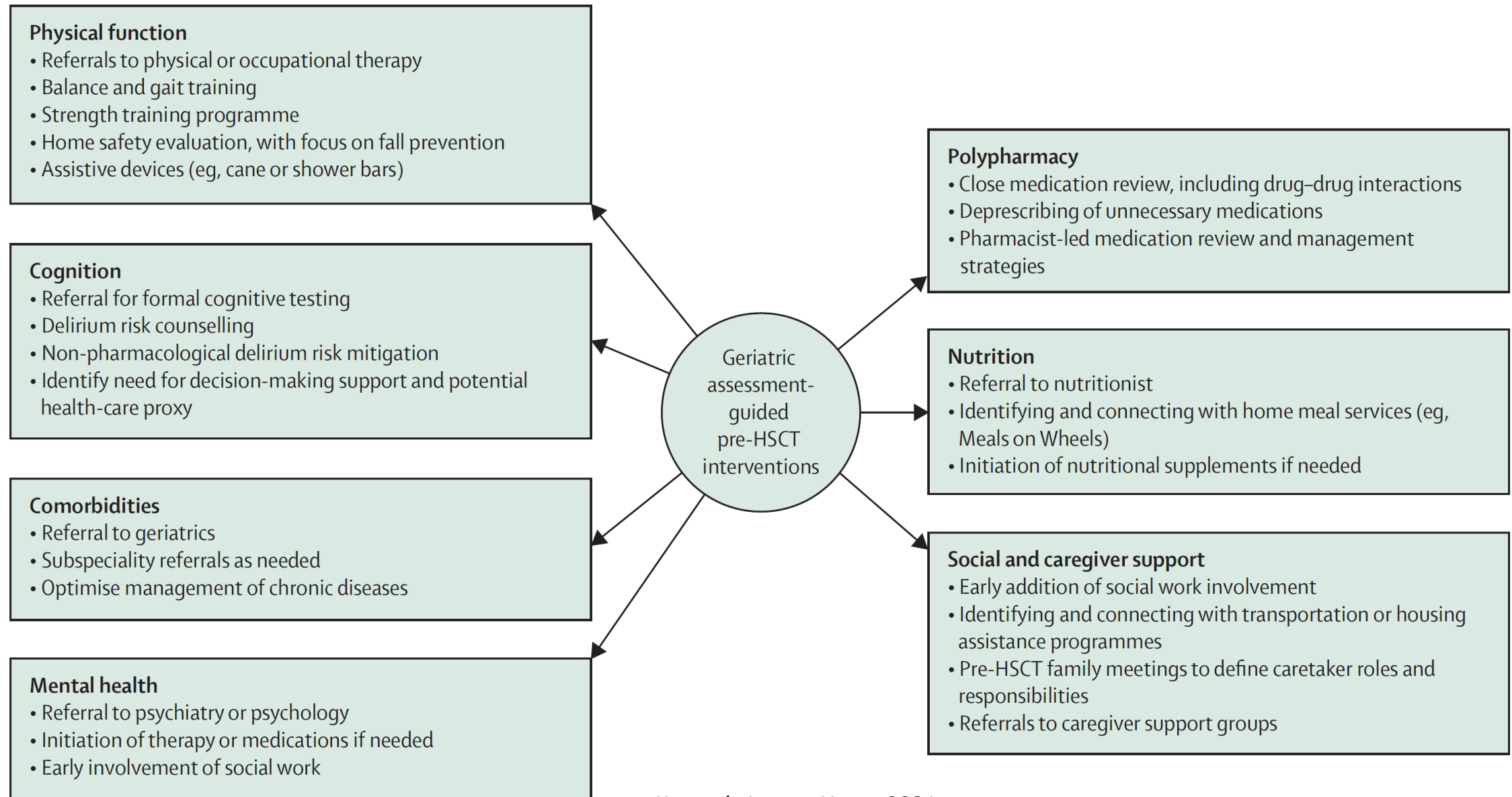
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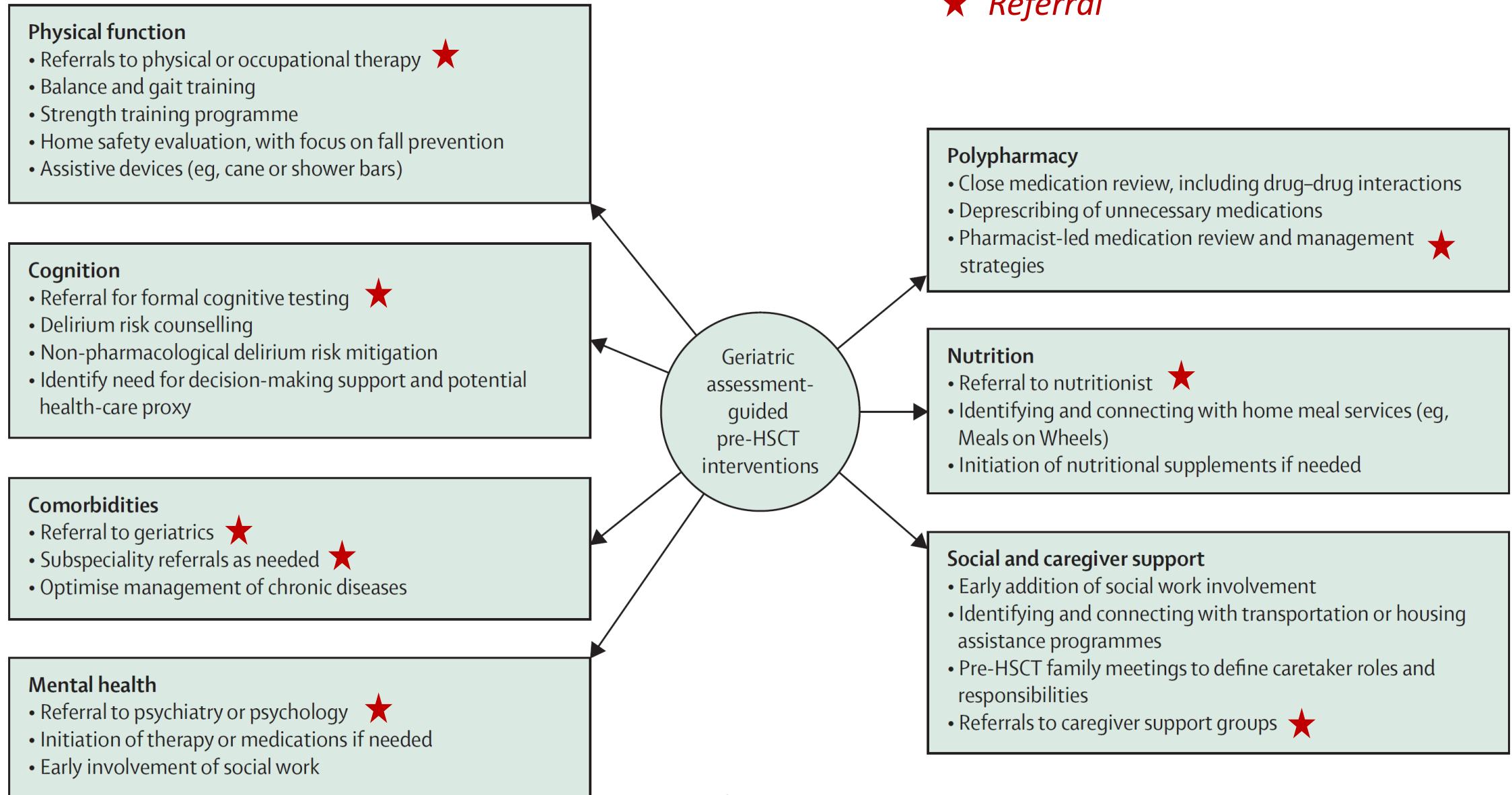
Covariable	sHR (95% CI)	P
Age at HCT	1.02 (1.01 to 1.02)	<.001
Relapse risk		
Low	1.00 (Referent)	— ^d
High	1.50 (1.17 to 1.92)	.002
Performance status	0.97 (0.96 to 0.99)	<.001
HCT-CI score	1.09 (1.03 to 1.15)	.006
HLA match		
Matched	1.00 (Referent)	— ^d
Haploidentical	1.92 (1.38 to 2.67)	<.001
Mismatched	1.48 (1.06 to 2.07)	.02
SVI overall (highest tertile) ^{b,c}	1.36 (1.04 to 1.78)	.02
SVI socioeconomic status (highest tertile) ^{b,c}	1.39 (1.06 to 1.81)	.02
SVI household composition and disability (highest tertile) ^{b,c}	1.31 (1.01 to 1.69)	.04
SVI minority status and language (highest tertile) ^{b,c}	1.33 (1.02 to 1.75)	.04
SVI housing and transportation (highest tertile) ^{b,c}	1.26 (0.97 to 1.63)	.09

Geriatric Assessment guided pre-HSCT interventions



Geriatric Assessment guided pre-HSCT interventions

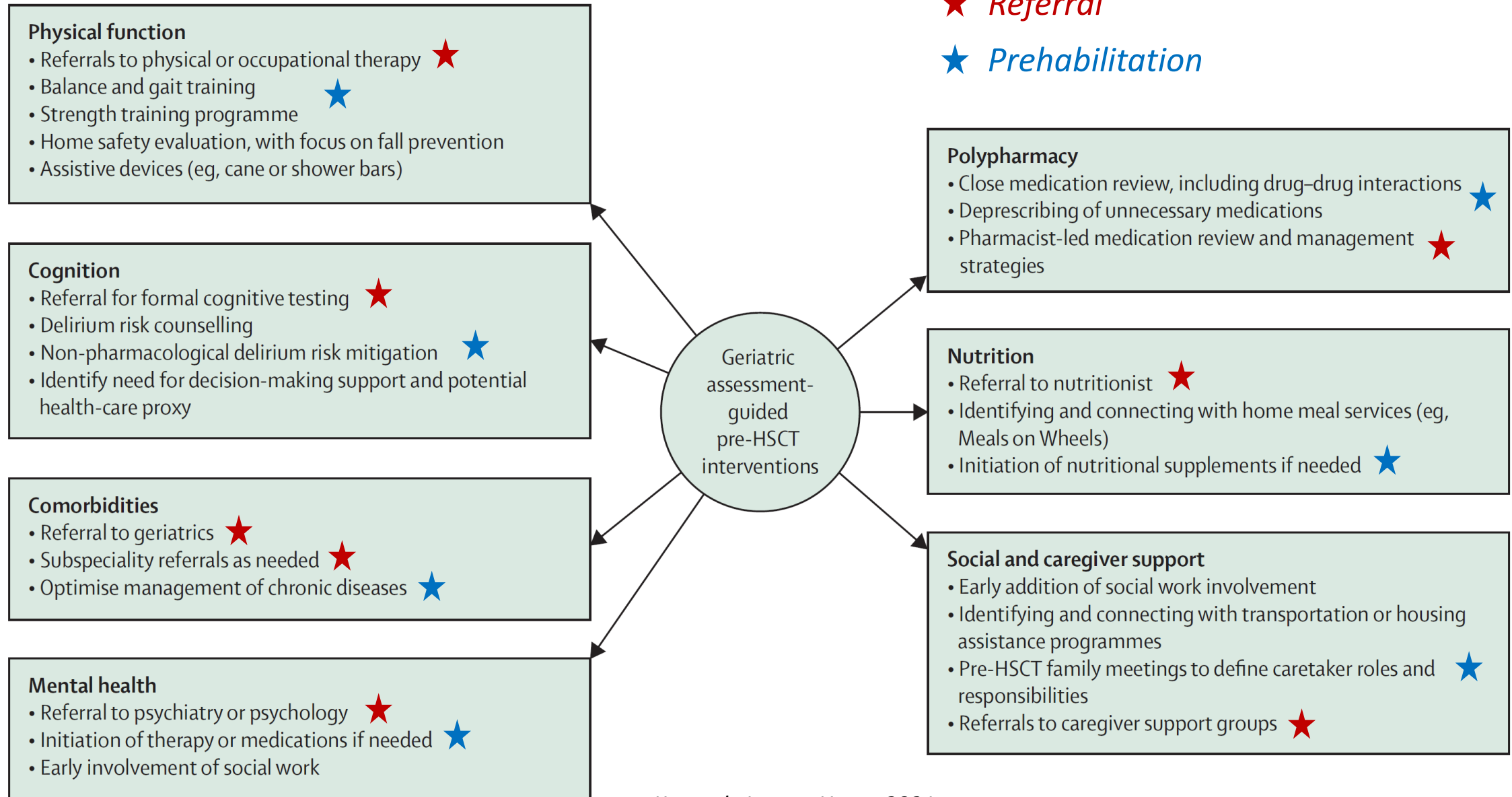
★ *Referral*



Geriatric Assessment guided pre-HSCT interventions

★ *Referral*

★ *Prehabilitation*



Geriatric Assessment guided pre-HSCT interventions

Enhanced Recovery Stem-Cell Transplantation: Multidisciplinary Efforts to Improve Outcomes in Older Adults Undergoing Hematopoietic Stem-Cell Transplant

JCO® Oncology Practice

MDAnderson
~~Cancer~~ Center

An Ngo-Huang, DO¹; Rachel Ombres, MD²; Rima M. Saliba, PhD³; Nicholas Szewczyk, APN-C³; LaToya Adekoya, MOT⁴; Tacara N. Soones, MD²; Jill Ferguson, PharmD⁵; Rhodora C. Fontillas, DPT⁴; Alison M. Gulbis, PharmD⁵; Chitra Hosing, MD³; Partow Kebriaei, MD³; Richard Lindsay, PA-C³; David C. Marin, MD³; Rohtesh S. Mehta, MD³; Amin M. Alousi, MD³; Samer Srour, MD³; Betul Oran, MD³; Amanda L. Olson, MD³; Muzaffar H. Qazilbash, MD³; Zandra Rivera, APN-BC³; Richard E. Champlin, MD³; Elizabeth J. Shpall, MD³; and Uday R. Popat, MD³

Prehabilitation

PM&R / PT / OT

Medical oversight of prehabilitation needs
Manage mobility concerns/barriers
Optimize physical function, cognition, routines, sleep, and fatigue

Geriatric assessment

Geriatrician

Identify and manage geriatric syndromes and comorbidities
Advance care planning

Nutritional optimization

Clinical dietitian

Diagnose, risk-stratify and manage malnutrition
Maintain adequate nutrition

Pharmacological management

Clinical pharmacist

Polypharmacy review
Optimize meds and fluids

Nursing support

Inpatient nursing team

Delirium screen
Fall risk
Functional screening
Encourage ambulation

Geriatric Assessment guided pre-HSCT interventions

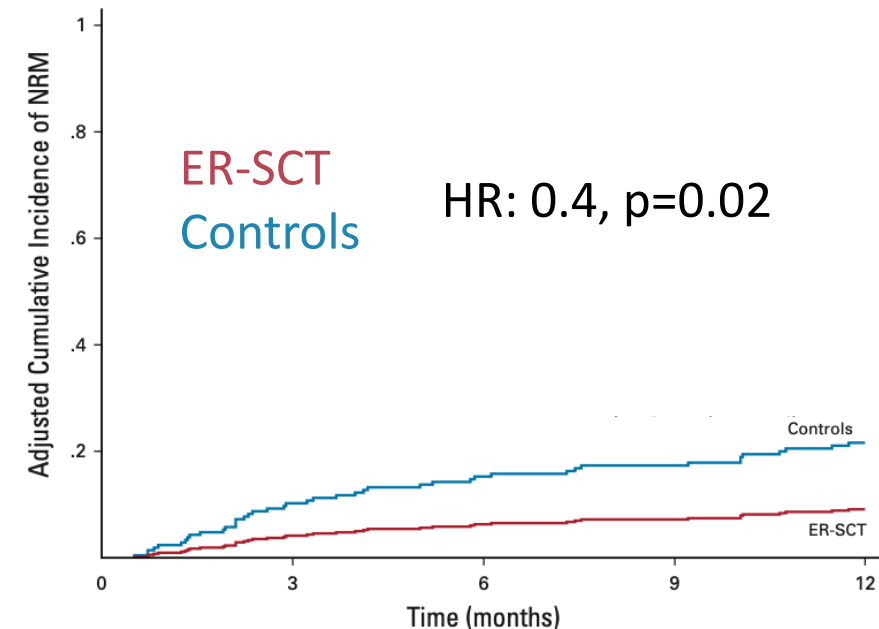
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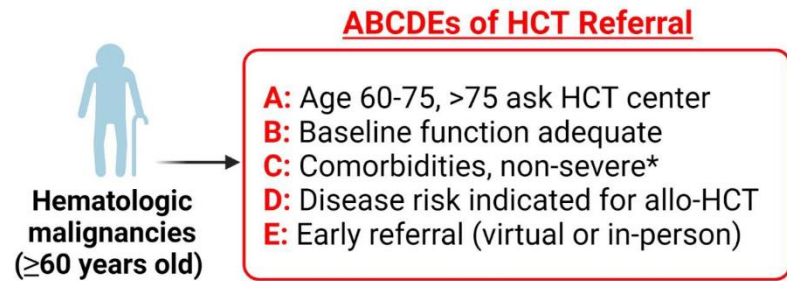
JCO[®] Oncology Practice

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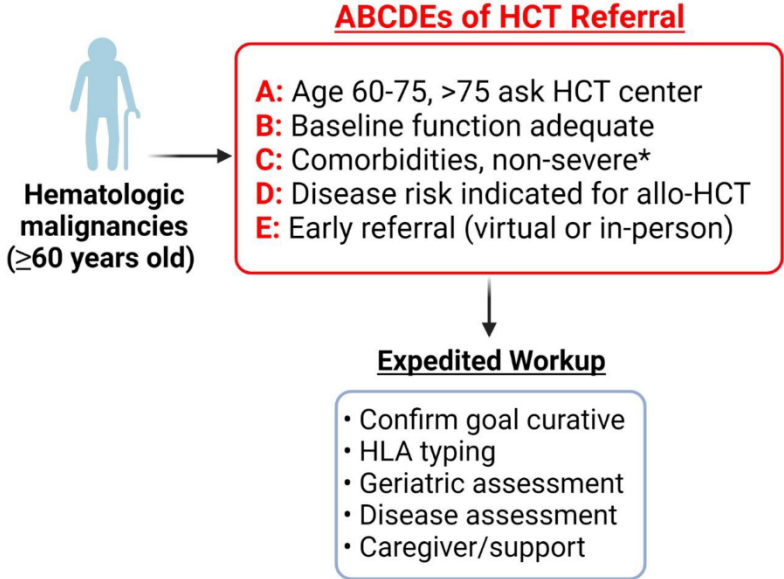
Prehabilitation	Geriatric assessment	Nutritional optimization	Pharmacological management	Nursing support
PM&R / PT / OT	Geriatrician	Clinical dietitian	Clinical pharmacist	Inpatient nursing team
Medical oversight of prehabilitation needs Manage mobility concerns/barriers Optimize physical function, cognition, routines, sleep, and fatigue	Identify and manage geriatric syndromes and comorbidities Advance care planning	Diagnose, risk-stratify and manage malnutrition Maintain adequate nutrition	Polypharmacy review Optimize meds and fluids	Delirium screen Fall risk Functional screening Encourage ambulation



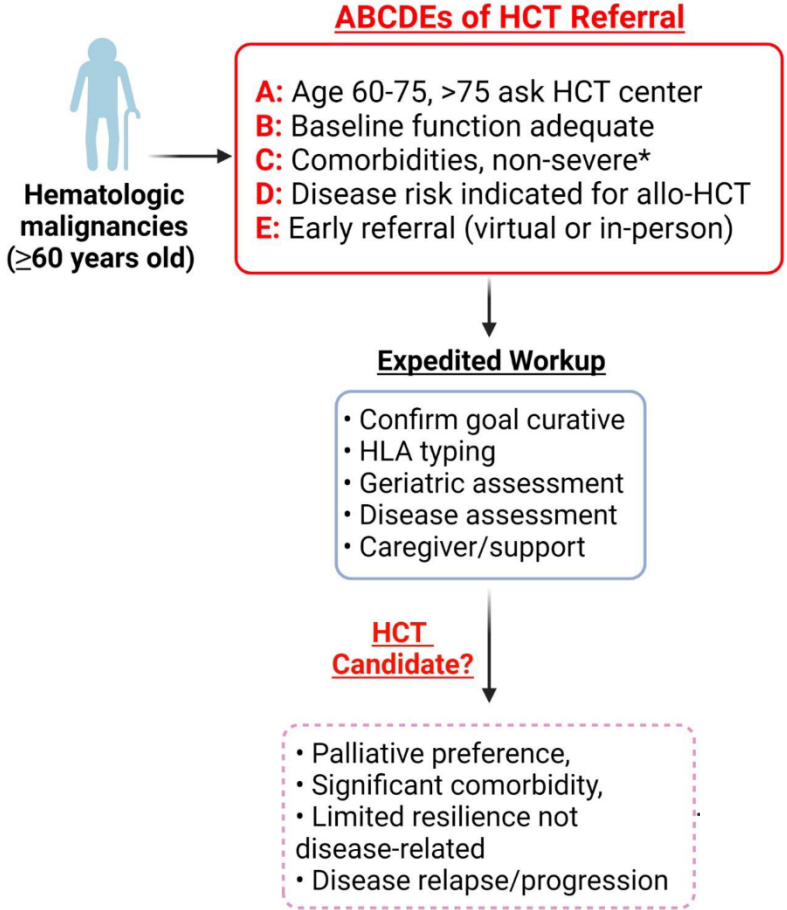
A Specific Allo-HSCT Strategy To Solve the Puzzle



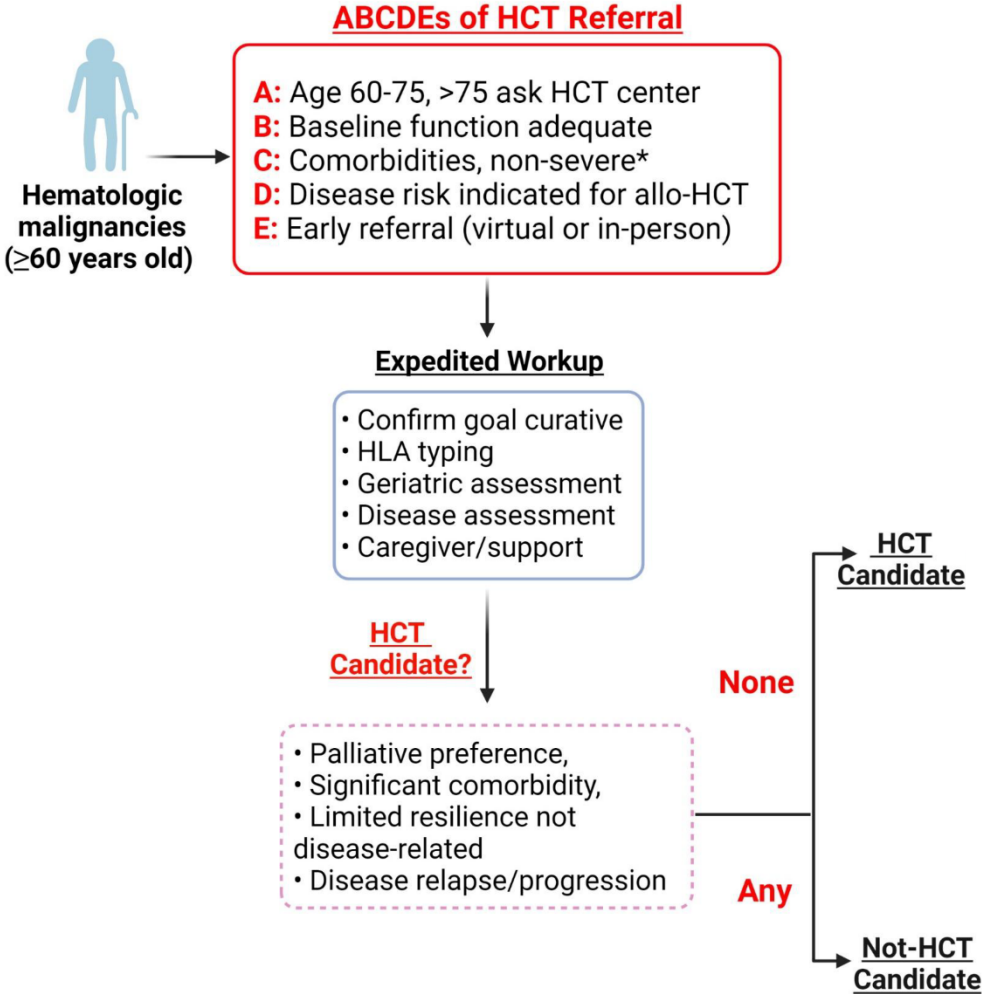
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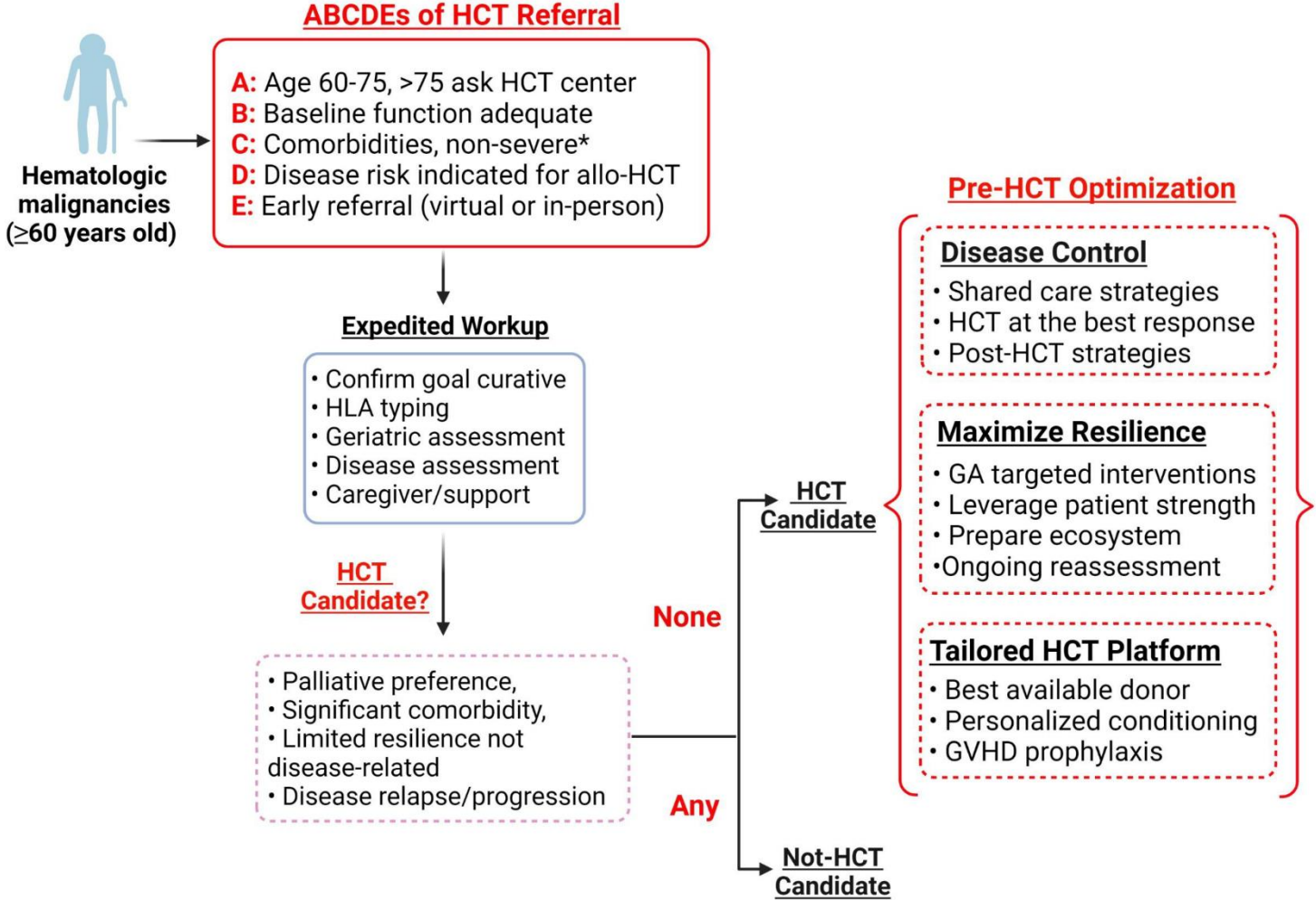
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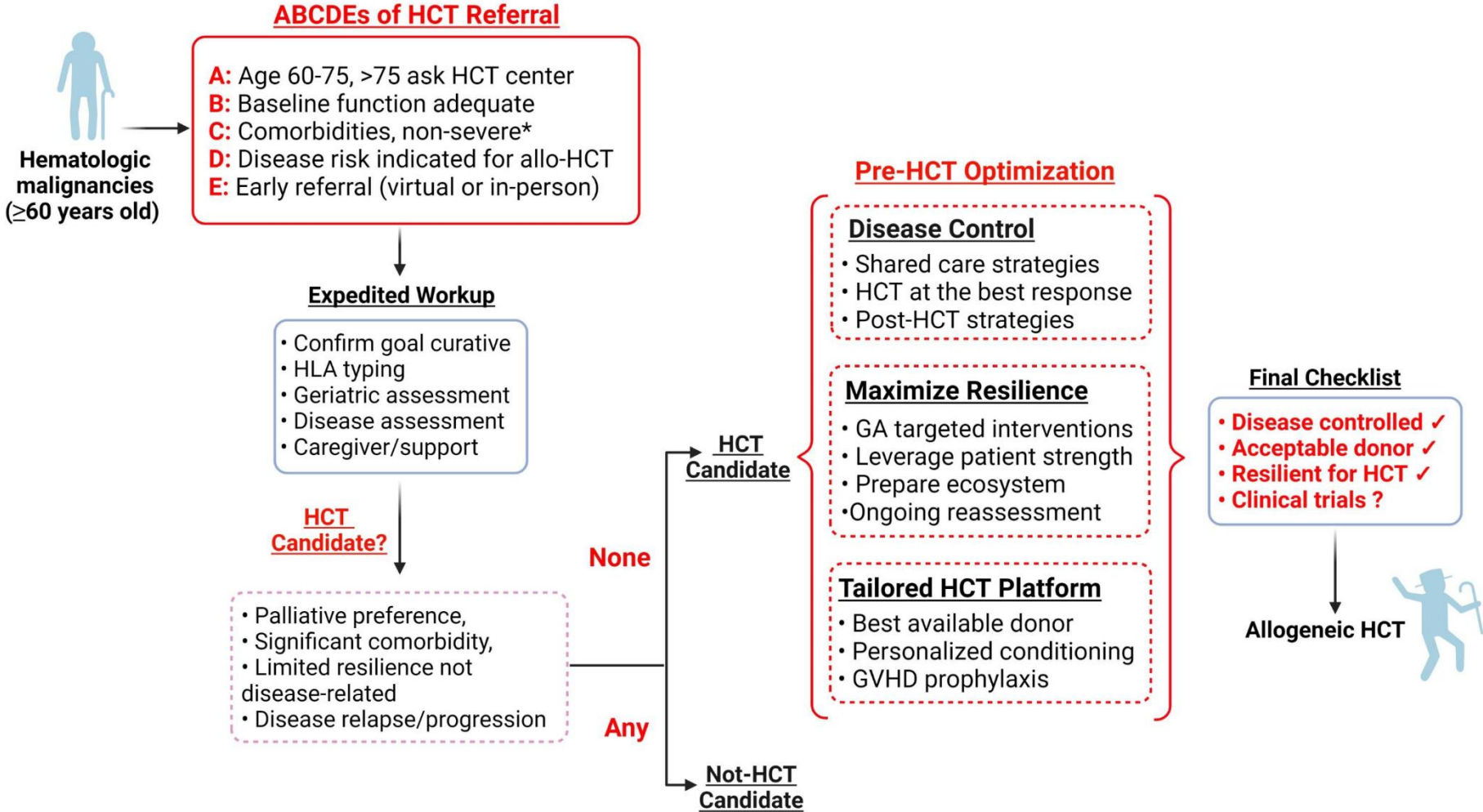
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A Specific Allo-HSCT Strategy To Solve the Puzzle



Conclusions

1. No Chronological Age Limit

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3. Tailored Allo-HSCT platform = Personalized Approach

Conclusions

1. No Chronological Age Limit
2. Relapse is the main cause of death after Allo-HSCT
3. Tailored Allo-HSCT platform = Personalized Approach
 - Need of standardized geriatric assessment and Prehabilitation
 - Low early toxicity
 - Rehabilitation and supportive cares
 - Early post transplantation maintenance therapy

Acknowledgments

Transplant Program

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7TH IPC SYMPOSIUM
ADVANCES IN TRANSPLANT AND CELLULAR IMMUNOTHERAPY : WHAT ABOUT OLDER PATIENTS?

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