

Il condizionamento del paziente anziano/con comorbidità

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e Terapie Cellulari
San Giovanni Rotondo (FG)**



Corso di Formazione **GITMO**

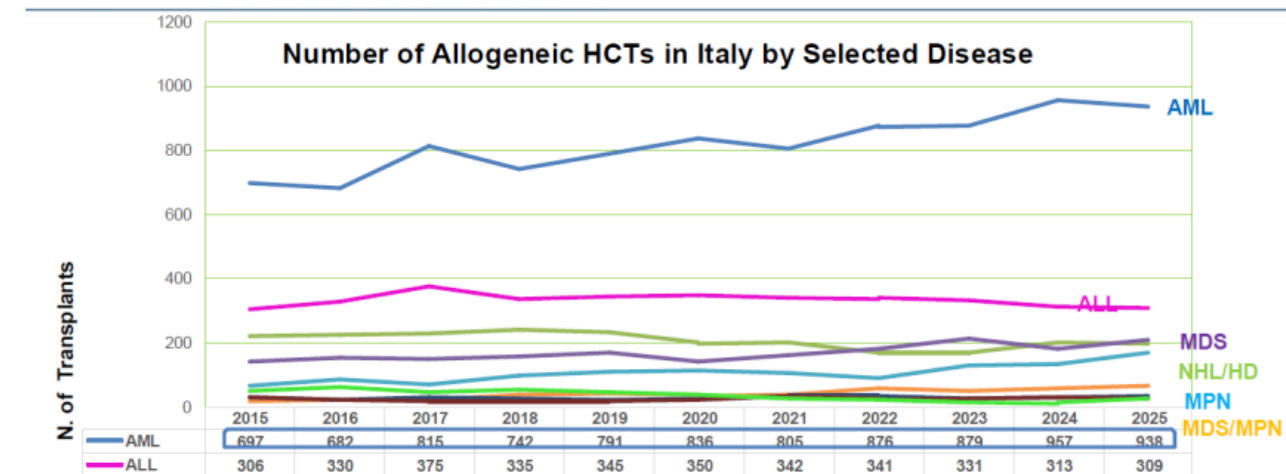
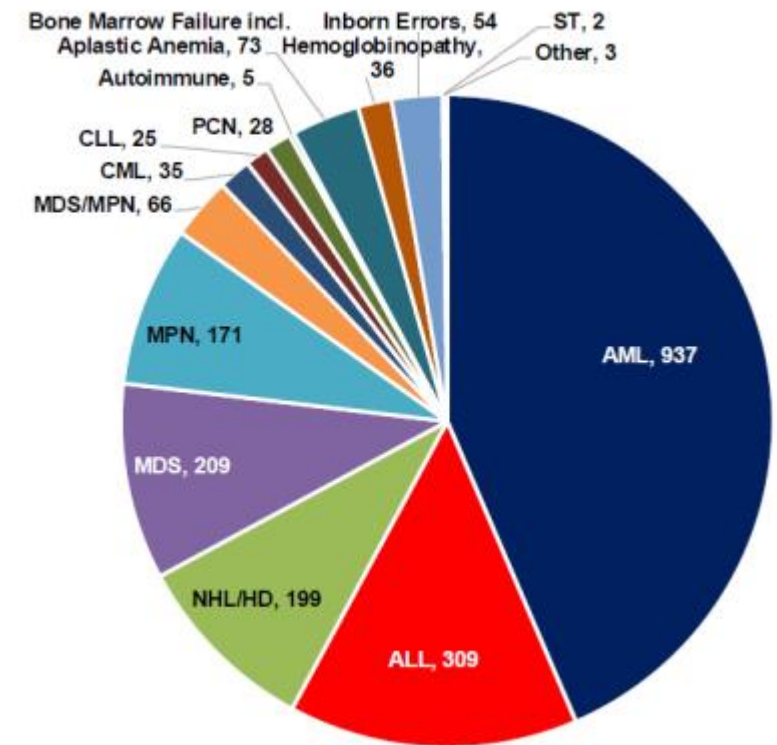
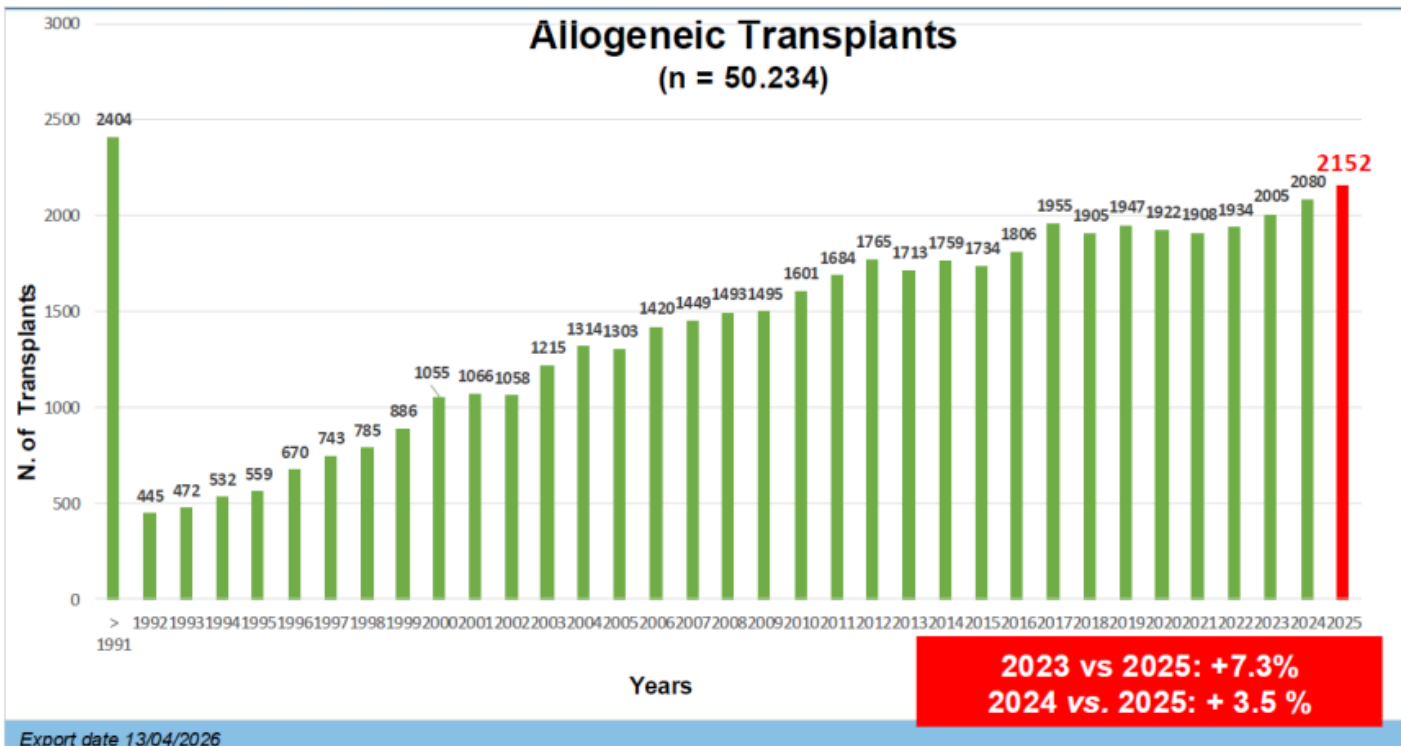
Trapianto e terapie cellulari: cellule, donatori e condizionamenti

Udine, 8-9 Ottobre 2026

Aula Polifunzionale Ospedale di Udine

Disclosures of Name Surname

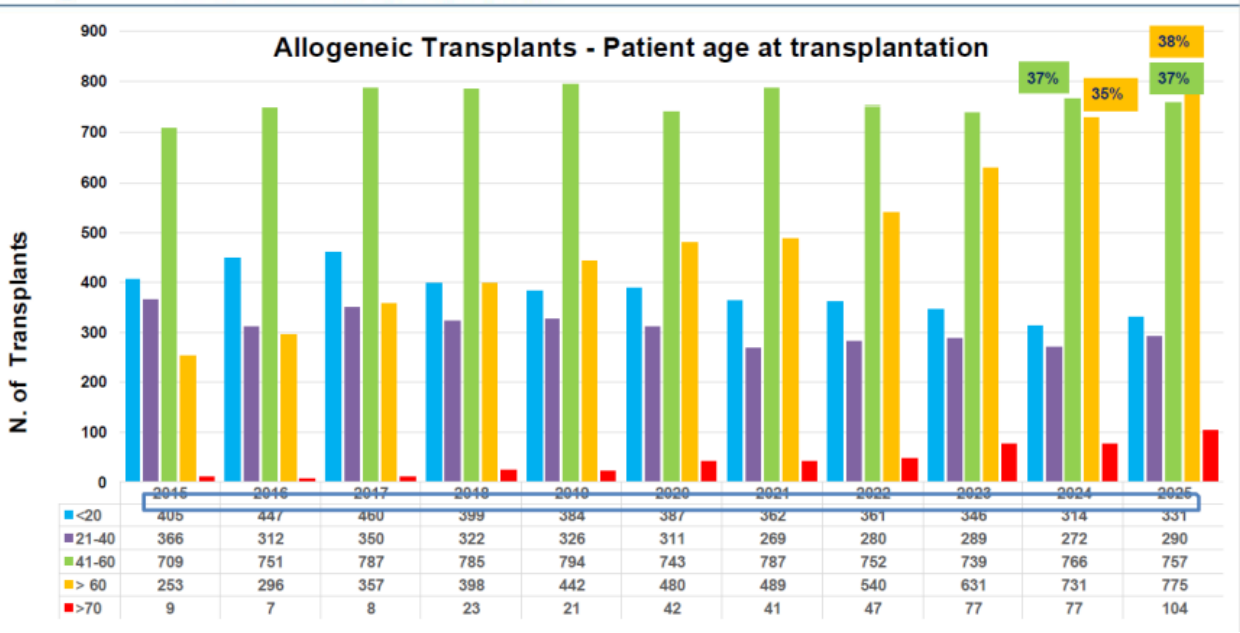
Company name	Research support	Employee	Consultant	Stockholder	Speakers bureau	Advisory board	Other



Disease	%
AML	44
ALL	14
MDS	9
NHL/HD	9
MPN	8

Allogeneico: variazioni percentuali per patologia tra il 2024 e il 2025

Patologia	2024	2025	Variazione
AML	957	938	-2,0%
ALL	313	309	-1,3%
NHL/HD	200	199	-0,5%
MDS	183	209	+14,2%
MPN	132	171	+29,5%
MDS/MPN	57	66	+15,8%
CML	31	35	+12,9%
CLL	30	25	-16,7%
PCN	14	28	+100,0%



Allogeneic Transplants

Anno	≤20	21-40	41-60	>60	≥70
2015	405 (23%)	366 (21%)	709 (40%)	253 (14%)	9 (1%)
2016	447 (24%)	312 (17%)	751 (41%)	296 (16%)	7 (0%)
2017	460 (23%)	350 (18%)	787 (40%)	357 (18%)	8 (0%)
2018	399 (20%)	322 (16%)	785 (39%)	398 (20%)	23 (1%)
2019	384 (19%)	326 (16%)	794 (40%)	442 (22%)	21 (1%)
2020	387 (20%)	311 (16%)	743 (38%)	480 (25%)	42 (2%)
2021	362 (18%)	269 (14%)	787 (40%)	489 (25%)	41 (2%)
2022	361 (18%)	280 (14%)	752 (38%)	540 (27%)	47 (2%)
2023	346 (17%)	289 (14%)	739 (36%)	631 (31%)	77 (4%)
2024	314 (15%)	272 (13%)	766 (37%)	731 (35%)	77 (4%)
2025	331 (16%)	290 (14%)	757 (37%)	775 (38%)	104 (5%)

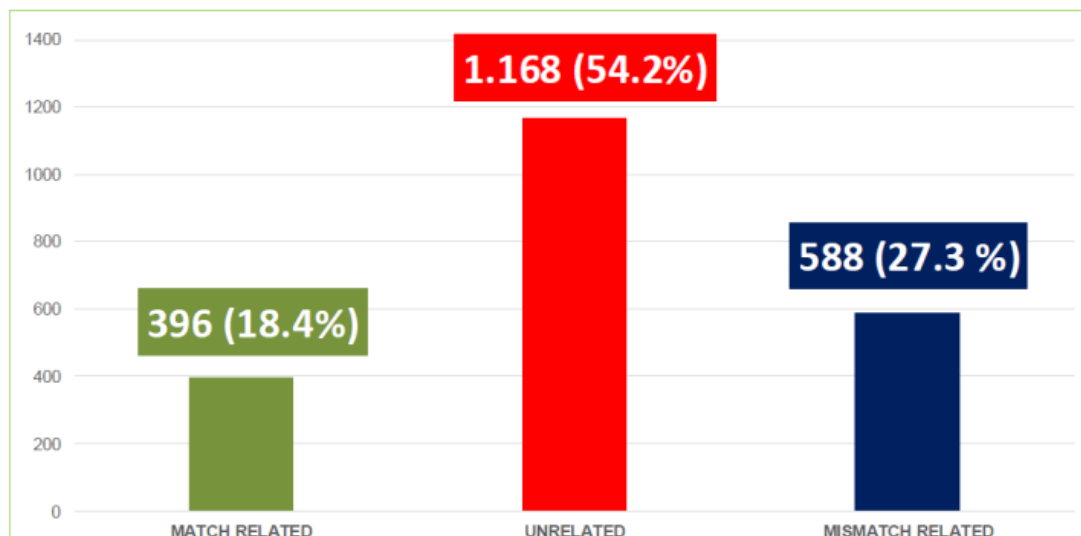
Il dato più evidente è che nel 2025 la fascia >60 anni supera per la prima volta le altre fasce

Allogeneic Transplants

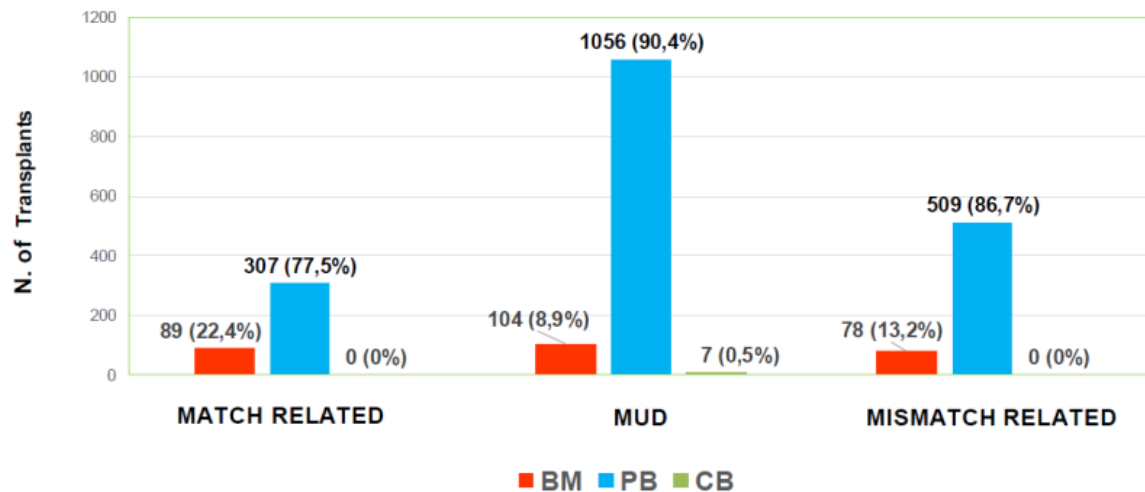
Fascia d'età	Trend	2015	2025	Δ assoluto	Δ %
≤ 20 anni	↘ calo	405 (23%)	331 (16%)	-74	-18%
21-40 anni	↘ calo	366 (21%)	290 (14%)	-76	-21%
41-60 anni	→ stabile	709 (40%)	757 (37%)	+48	+7%
> 60 anni	↗ forte crescita	253 (14%)	775 (38%)	+522	+206%
≥ 70 anni	↗ rapida crescita	9 (1%)	104 (5%)	+95	+1.056%
TOTALE				+515	+30%

Crescita del 30% in volume, ma il baricentro demografico si è spostato verso i pazienti anziani.

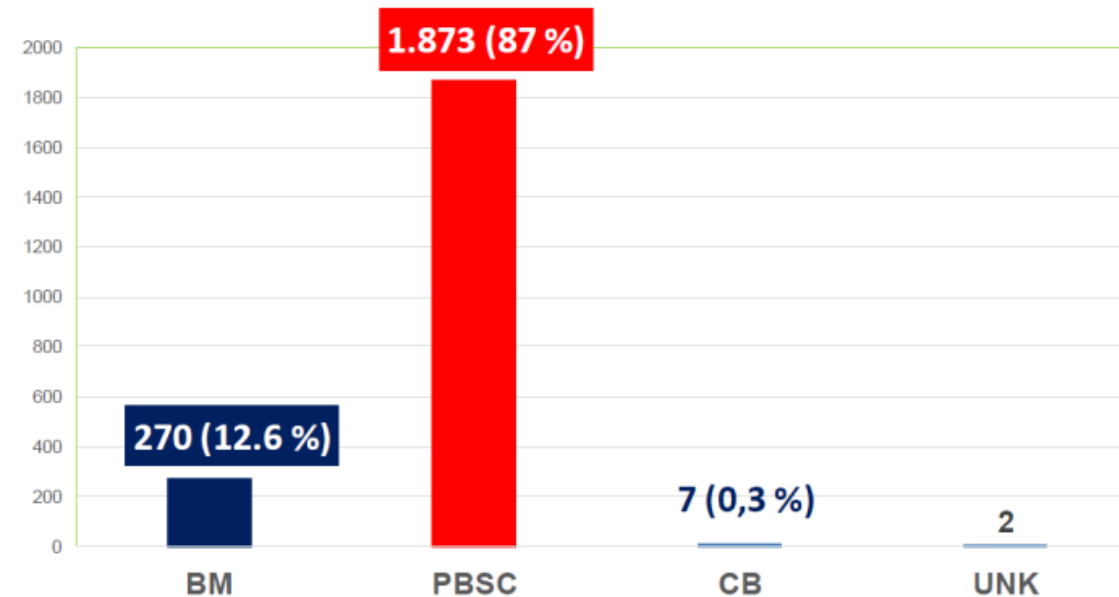
2025: Allogeneic Transplants (n. 2.152) – Donor Type

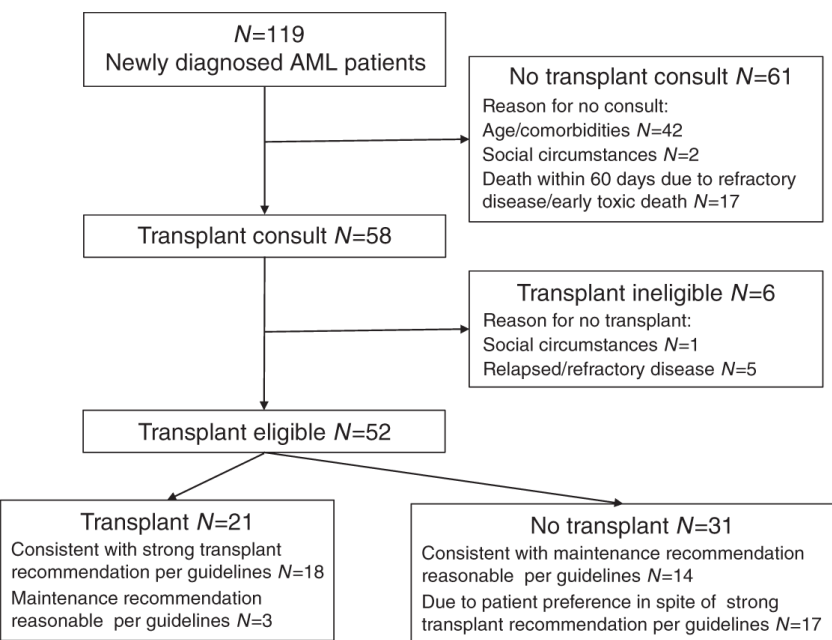


2025: Allogeneic Transplants (n. 2152) – Donor and Source of HSC



2025: Allogeneic Transplants (n. 2152) – Source of HSC





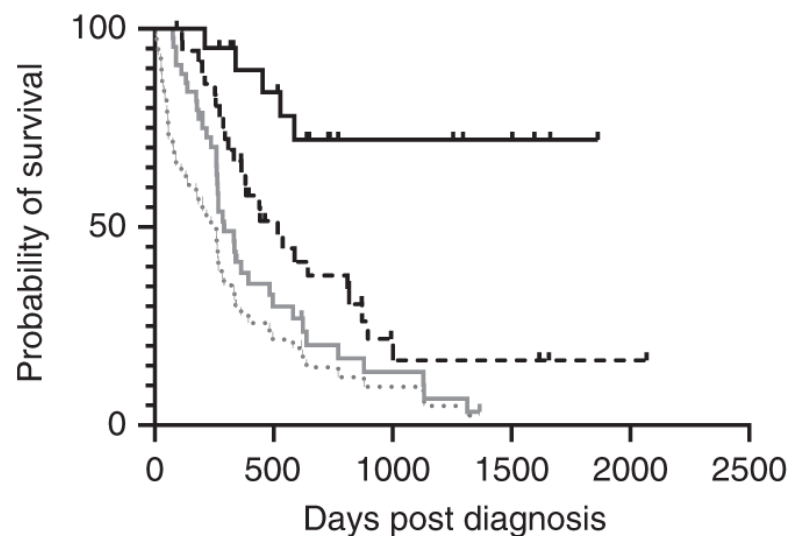
Guidelines for transplant recommendation for transplant eligible patients:

Transplant strongly recommended for:

- (1) baseline adverse european leukemia network (ELN) criteria and/or
- (2) persistent measurable residual disease (MRD) after 3-4 cycles of ven/aza and/or
- (3) evidence of rising MRD on serial bone marrow biopsies

Maintenance therapy advised as reasonable, but transplant offered for highly motivated patients for:

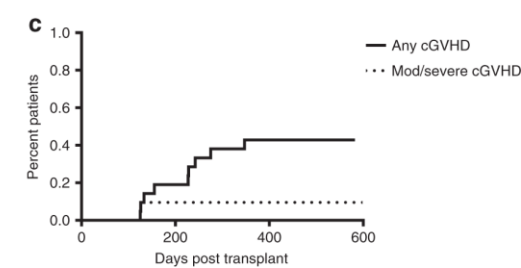
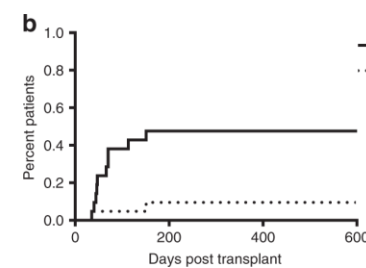
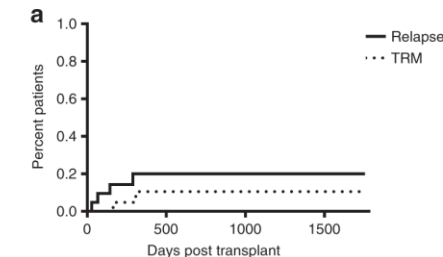
- (1) intermediate or favorable risk ELN disease and
- (2) CR or CRi without detectable MRD after 3-4 cycles



— SCT
 - - - SCT eligible, no SCT
 — Not SCT candidate, survived at least 60 days from diagnosis
 ... No SCT consult

SCT versus SCT eligible, no SCT $P=0.002$

SCT eligible, no SCT versus not SCT candidate survived 60 days $P=0.035$



Pollyea Da et al Bone Marrow Transplant 2022

Research paper

Not type of induction therapy but consolidation with allogeneic hematopoietic cell transplantation determines outcome in older AML patients: A single center experience of 355 consecutive patients

Jacobiën Hilberink^{a,*}, Carin Hazenberg^a, Eva van den Berg^b, André Mulder^c, Jan Jacob Schuringa^a, Lieke van der Helm^a, Marco de Groot^a, Goda Choi^a, Geertruida H. de Bock^d, Edo Vellenga^a, Emanuele Ammatuna^a, Gerwin Huls^a

Table 1

Patient characteristics.

	All (n = 355)	IC (n = 155)	HMA (n = 83)	BSC (n = 117)
			Aza (n = 51)	Dec (n = 32)
Gender				
- Male (n)	216 (60.8%)	90 (58.1%)	34 (66.7%)	18 (56.3%)
- Female (n)	139 (39.2%)	65 (41.9%)	17 (33.3%)	14 (43.8%)
Age at diagnosis (median in years, range)	69 (60–96)	67 (60–76)	71 (60–83)	69 (61–79)
Performance score ≥ 2 (n)	151 (42.5%)	62 (40%)	12 (23.5%)	5 (15.6%)
Co-morbidity score				
- < 3	246 (69.3%)	117 (75.5%)	34 (66.7%)	23 (71.9%)
- ≥ 3	109 (30.7%)	38 (24.5%)	17 (33.3%)	9 (28.1%)

Studio retrospettivo 2002–2017

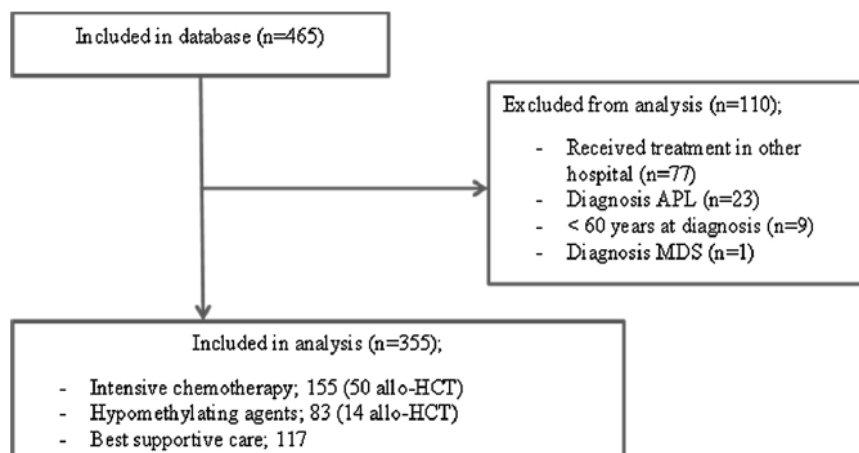
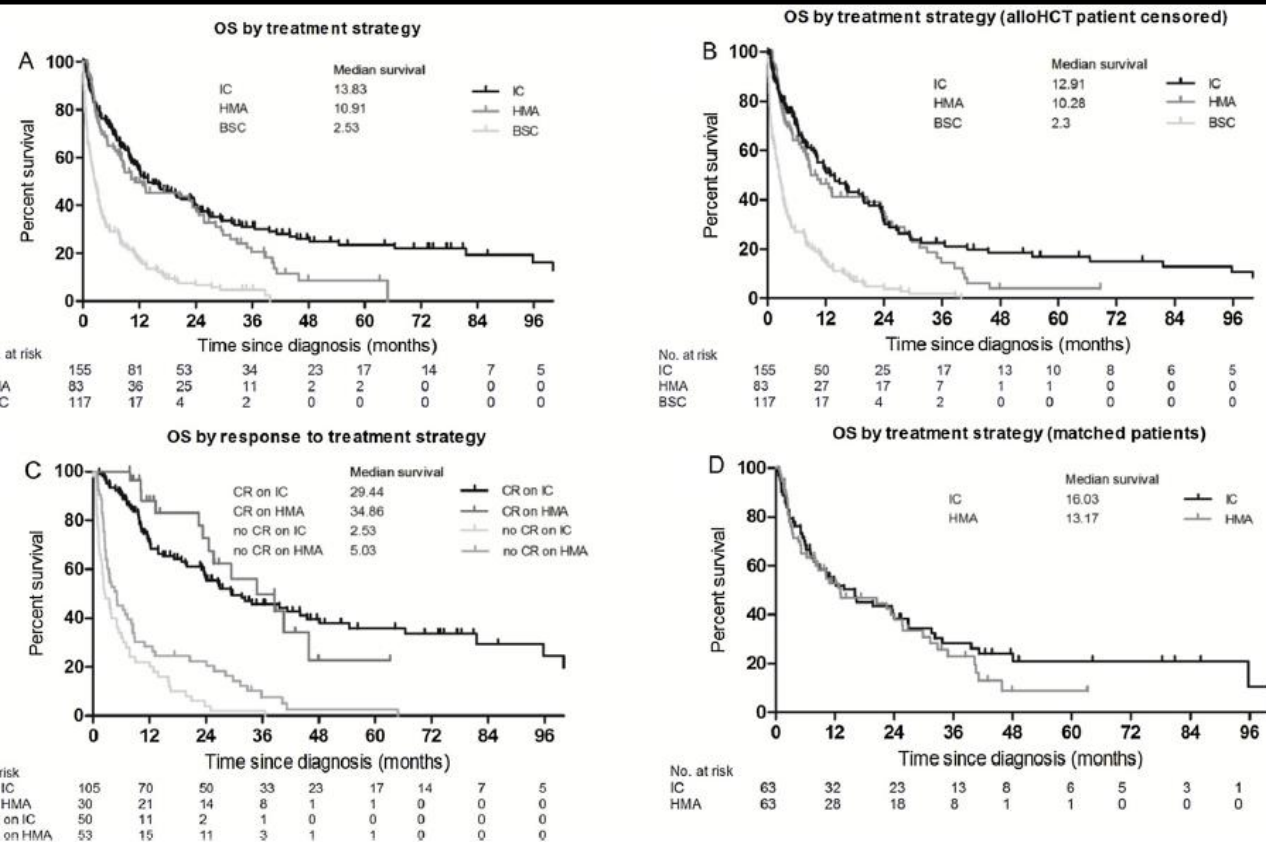


Fig. 1. Flowchart of the study population.



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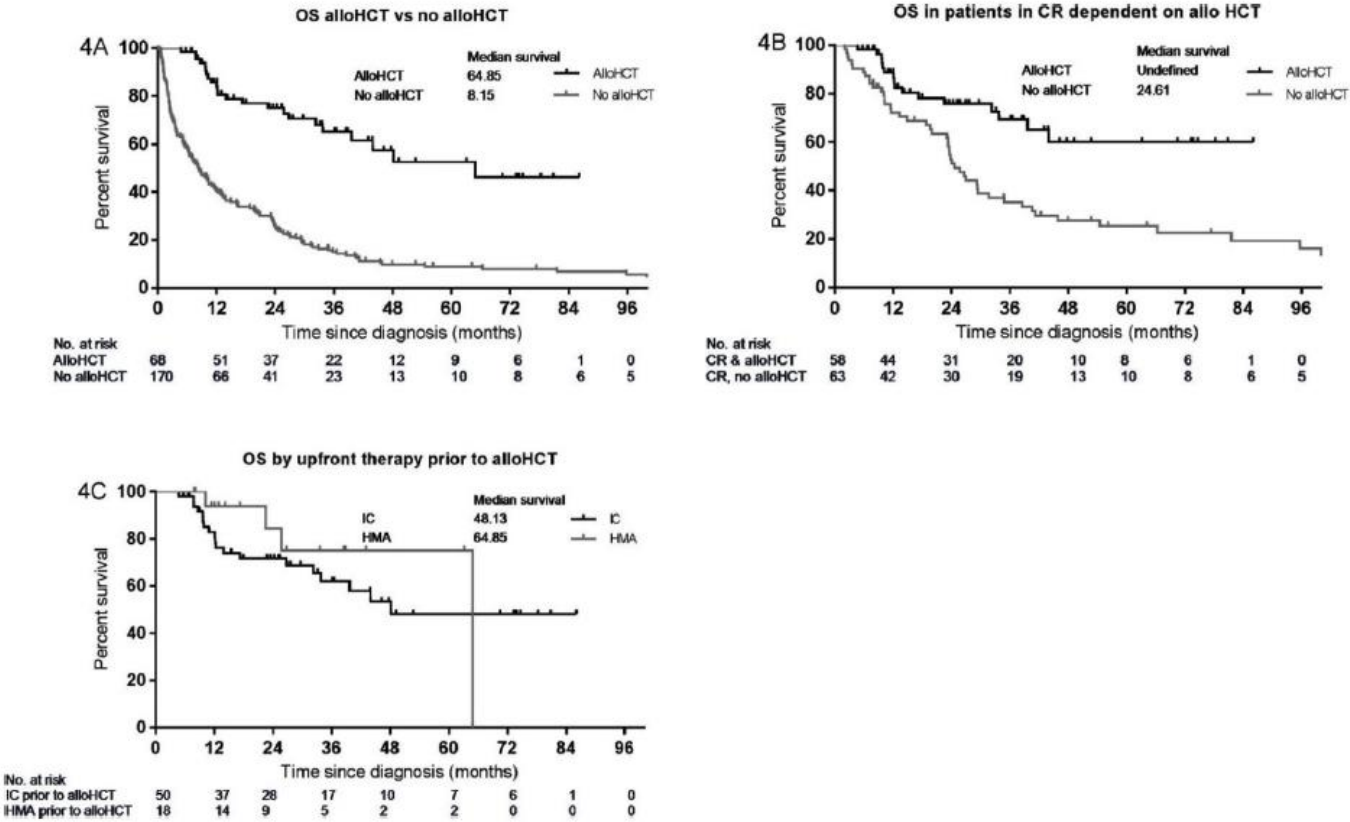


Fig. 4. OS after receiving allo HCT. (A) OS in patients who received an allo HCT and patients who didn't receive an allo HCT, independent of upfront treatment strategy ($p < 0.001$). (B) OS in patients that obtained CR, separated by consolidation with an allo HCT, independent of upfront treatment strategy ($p = 0.005$). (C) OS by upfront therapy prior to allo HCT ($p = 0.440$).

Patients who received a allogeneic hematopoietic cell transplantation (allo HCT) after treatment with IC or HMA had a significant survival benefit compared to patient who didn't proceed to allo HCT (median OS 65 vs 8 months, respectively, $p < 0.001$). The type of induction therapy (i.e. IC or HMA) did not impact on survival after allo HCT (48 vs 65 months, respectively, $p=0.440$). In conclusion, consolidation with an allo HCT provides a significant benefit for older AML patients independent of upfront treatment with IC or HMA. Our data suggest that more older patients should be considered for an alloHCT

Table 3
Univariate and multivariate analyses for predictors of OS.

Univariate analysis	HR (95% CI)	P-value
Upfront treatment strategy		
- IC	Ref.	
- HMA	1.324 (0.971–1.805)	0.076
Consolidation with allo HCT	0.225 (0.145–0.349)	< 0.001
Age (continuous)	1.047 (1.016–1.079)	0.003
Performance score (continuous)	1.214 (1.019–1.445)	0.030
Comorbidity score (continuous)	1.092 (0.998–1.194)	0.055
WBC count (continuous)	1.003 (1.000–1.006)	0.030
Cytogenetic risk		
- Favorable	Ref.	
Intermediate	1.747 (1.094–2.790)	0.020
- Favorable	Ref.	
Adverse	2.375 (1.477–3.820)	< 0.001
- Intermediate	Ref.	
Adverse	1.360	0.072
Multivariate analysis		
Treatment strategy		
- IC	Ref.	
- HMA	1.270 (0.895–1.801)	0.181
Consolidation with allo HCT	0.198 (0.125–0.311)	< 0.001
Performance score (continuous)	1.289 (1.060–1.569)	0.011
WBC count (continuous)	1.006 (1.003–1.009)	< 0.001
Cytogenetic risk		
- Favorable	Ref.	
Intermediate	3.127 (1.851–5.282)	< 0.001
- Favorable	Ref.	
Adverse	4.777 (2.785–8.194)	< 0.001
- Intermediate	Ref.	
Adverse	1.559 (1.111–2.189)	0.010

Review Article**Allogeneic Hematopoietic Stem Cell Transplantation for Acute Myeloid Leukemia of the Elderly: Review of Literature and New Perspectives**

Gabriele Magliano¹ and Andrea Bacigalupo^{1,2}.

Old Patients with AML. Older age in AML has a significant impact on the disease's features and is associated with a poor outcome.

Prognosis and Initial Treatment. The median survival for patients over the age of 60 years ranges from 6 to 10 months, with remission rates in the order of 40%, and overall survival (OS) at one year is in the order of 15%.

Allogeneic Hematopoietic Stem Cell Transplantation (HSCT). Allogeneic hematopoietic stem cell transplantation (HSCT), with its graft versus leukemia (GVL) effect, may offer long-term disease-free survival (DFS) in older patients with AML. Currently, 22% of allogeneic HSCT recipients for malignant diseases are older than 60 years, and allogeneic HSCT has significantly increased also above the age of 70.

Patient-, Disease-, and Transplant-Related Factors

Other Factors

Institutional expertise, regimen availability, and specific contraindications; customization is integral for optimal outcomes^[1-3]

Patient Factors

Age, comorbidities, organ function, performance status; frailty and coexisting conditions may preclude MAC use^[1]

Selecting a Conditioning Regimen

Disease Factors

Diagnosis, disease burden, risk of relapse, prior treatments, urgency, sensitivity to chemotherapy/radiation

Transplant Factors

Donor type (matched sibling, unrelated, Haplo); graft source (BM, PBSC, UCB), HLA matching^[1,2]

BM, bone marrow; Haplo, haploidentical; PBSC, peripheral blood stem cell; UCB, umbilical cord blood.

1. Gyurkocza B, et al. Blood. 2014;124:344-353; 2. Hayek SS, et al. Circulation. 2024;149:e1113-e1127; 3. Sugita J, et al. Hematology. 2024;29:2332866.

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Goals of Conditioning Regimens

Eradication of disease

Achieve maximal cytoreduction

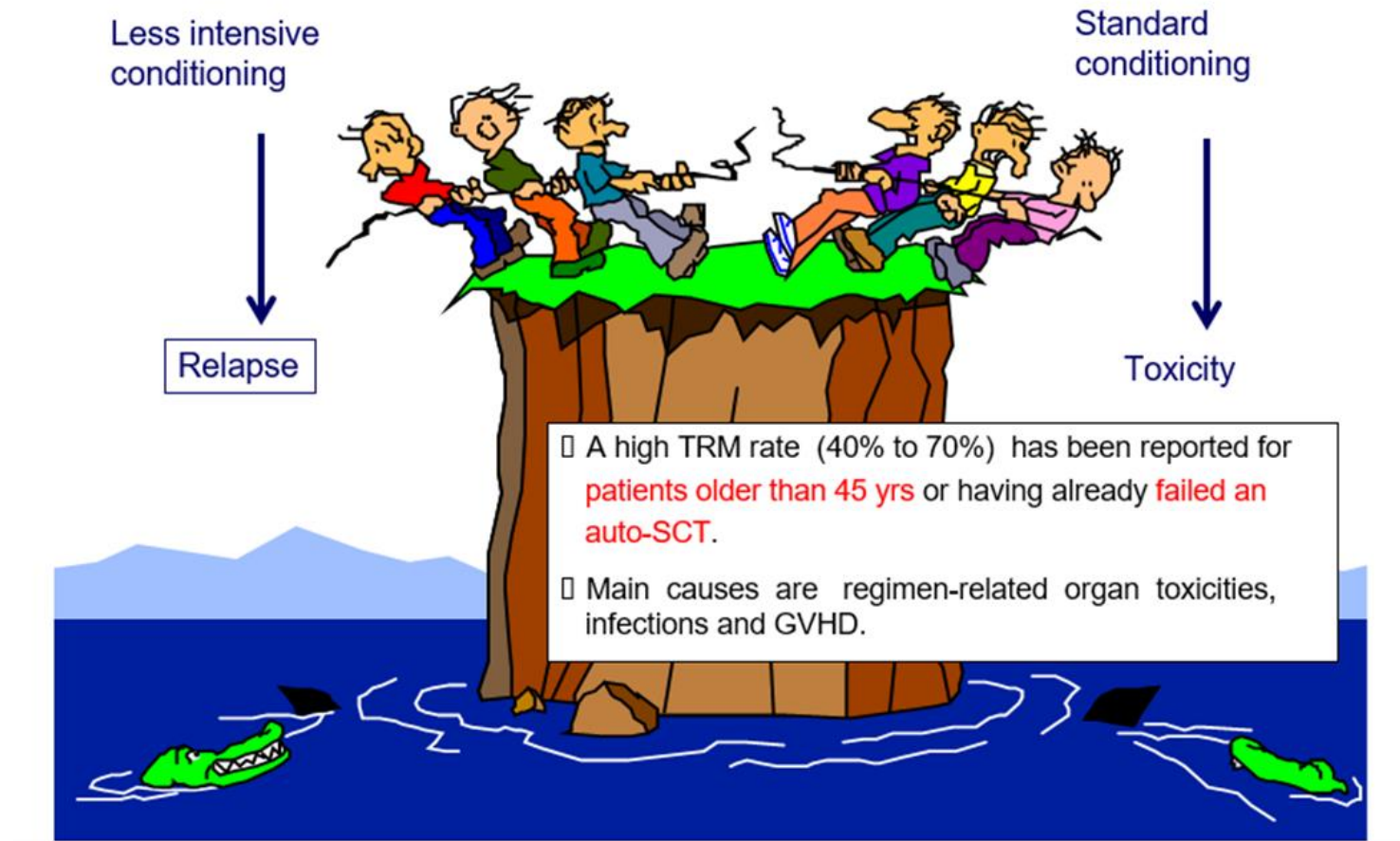
Immunosuppression

Prevent graft rejection and facilitate engraftment

Marrow ablation

Eliminate recipient hematopoiesis to make space for donor stem cells

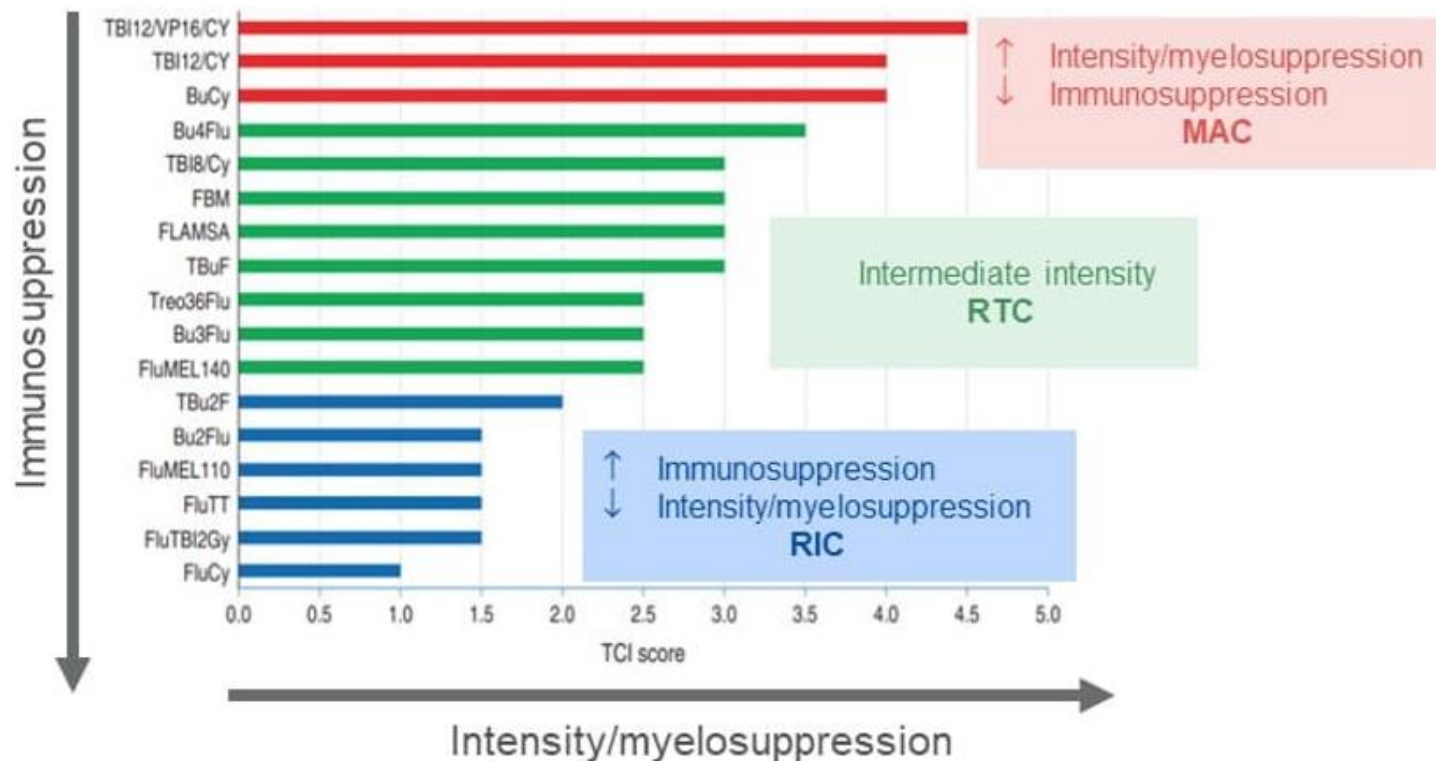
Gyurkocza B, et al. Blood. 2014;124:344-353.



Intensity-Weighted Scores for Conditioning Agents

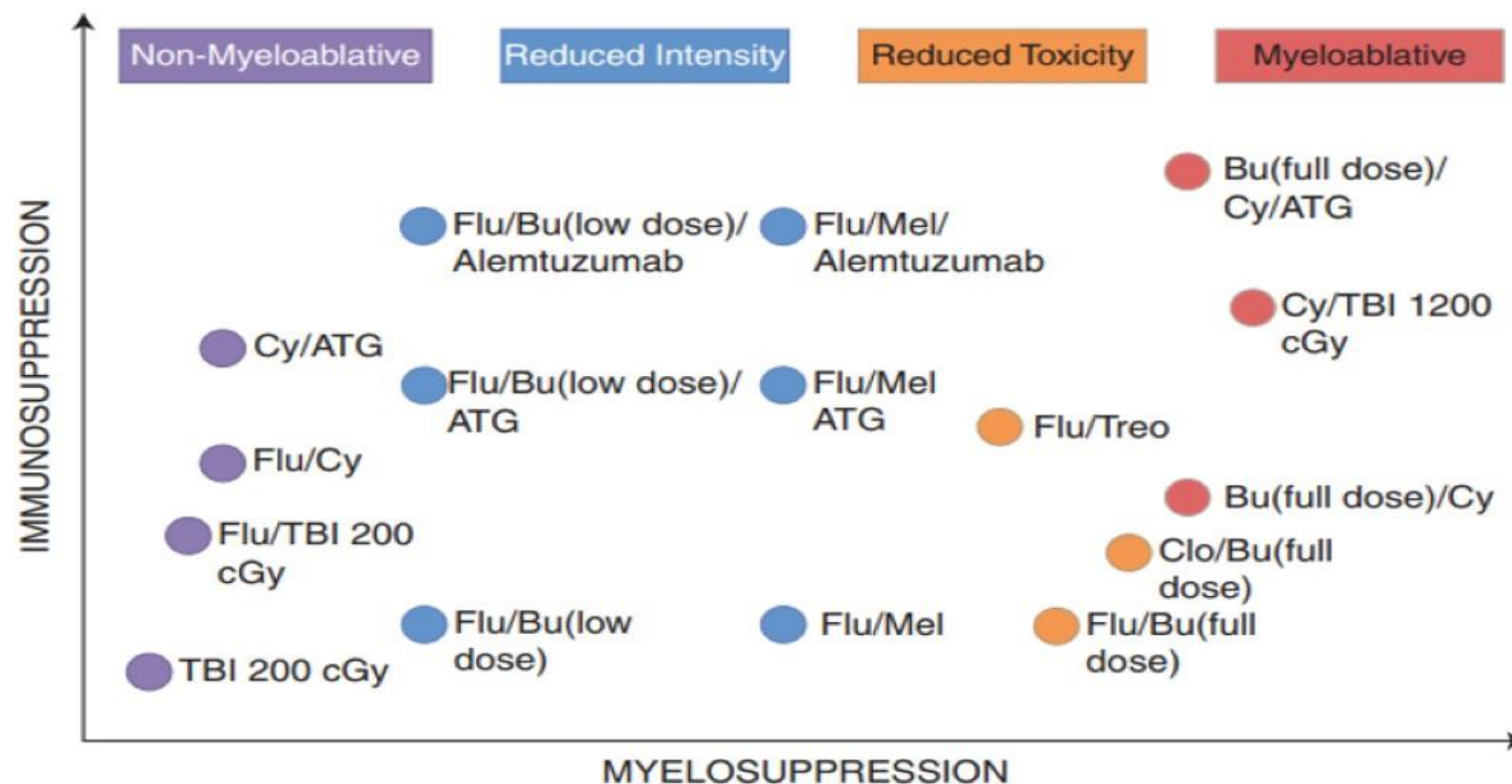
Component	Dose level			Added points for each dose level
	Low	Intermediate	High	
TBI fractionated (Gray)	≤5	6–8	≥9	1
Busulphan (mg/kg)	≤6.4 iv & ≤8 po	9.6 iv & 12 po	12.8 iv & 16 po	1
Treosulfan (g/m ²)	30	36	42	1
Melphalan (mg/m ²)	<140	≥140	≥200	1
Thiotepa (mg/kg)	<10	≥10	≥20	0.5
Fludarabine (mg/m ²)	≤160	>160		0.5
Clofarabine (mg/m ²)	≤150	>150		0.5
Cyclophosphamide (mg/kg)	<90	≥90		0.5
Carmustine (mg/m ²)	≤250	280–310	≥350	0.5
Cytarabine (g/m ²)	<6	≥6		0.5
Etoposide (mg/kg)	<50	≥50		0.5

TCI Scores of Common Conditioning Regimens



FBM, fludarabine, busulfan, melphalan; FLAMSA, fludarabine, amsacrine, cytarabine; FluTT, fludarabine and thiotepa or total body irradiation; TCI, transplant conditioning intensity. Spyridonidis A, et al. Bone Marrow Transplant. 2020;55:1114-1125.

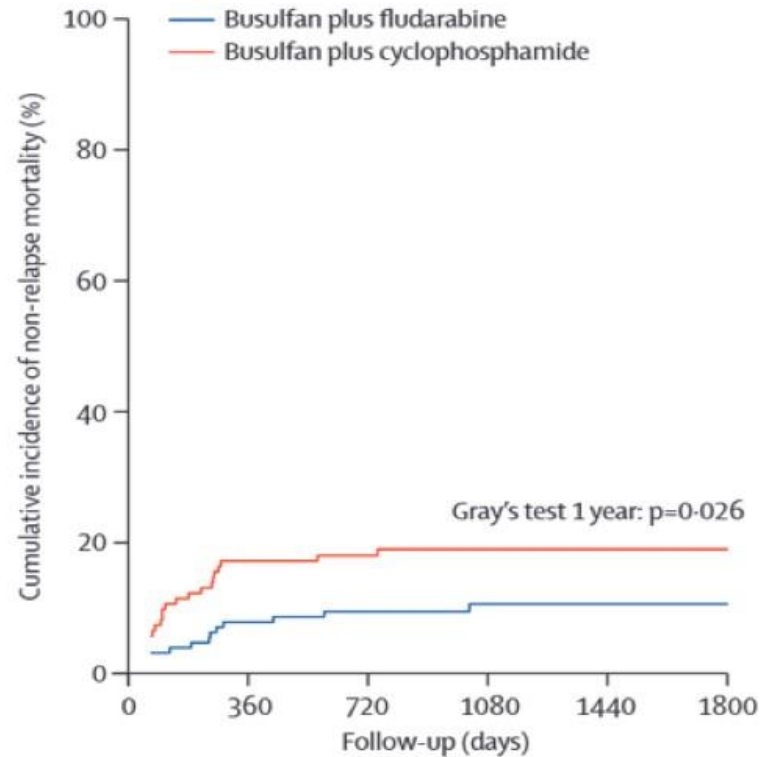
Balancing Conditioning Intensity, Toxicity, and GVT Effects



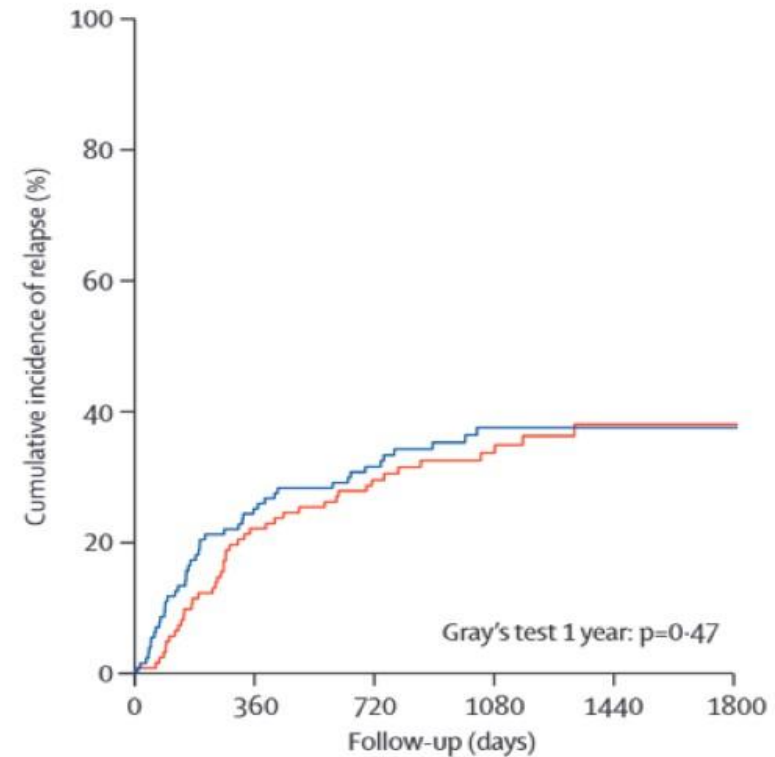
ATG, antithymocyte globulin; Bu, busulfan; Clo, clofarabine; Cy, cyclophosphamide; Flu, fludarabine; GVT, graft-vs-tumor; Mel, melphalan; Treo, treosulfan.

Kitko CL, et al. Preparing the patient for HSCT: conditioning regimens and their scientific rationale. In: Brown V, ed. Hematopoietic Stem Cell Transplantation for the Pediatric Hematologist/Oncologist. Springer; 2018:139-174.

From BuCy2 to BuFlu (FB4)



Number at risk							
Busulfan plus fludarabine	127	85	69	44	29	12	
Busulfan plus cyclophosphamide	125	74	62	39	18	13	



	127	85	69	44	29	12	
	125	74	62	39	18	13	

FB4, busulfan-fludarabine.
Rambaldi A. et al. Lancet Oncol. 2015;16:1525-1536.



GITMO Registry Study on Allogeneic Transplantation in Patients Aged ≥60 Years from 2000 to 2017: Improvements and Criticisms

Michele Malagola^{1,4}, Nicola Polverelli¹, Vicky Rubini¹, Massimo Martino², Francesca Patriarca³, Benedetto Bruno⁴, Luisa Giaccone⁴, Giovanni Grillo⁵, Stefania Bramanti⁶, Paolo Bernasconi⁷, Marco De Gobbi⁸, Annalisa Natale⁹, Elisabetta Terruzzi¹⁰, Attilio Olivieri¹¹, Patrizia Chiusolo¹², Angelo Michele Carella¹³, Marco Casini¹⁴, Chiara Nozzoli¹⁵, Patrizio Mazza¹⁶, Simona Bassi¹⁷, Francesco Onida¹⁸, Adriana Vacca¹⁹, Sadi Falcioni²⁰, Mario Luppi²¹, Anna Paola Iori²², Vincenzo Pavone²³, Cristina Skert²⁴, Paola Carluccio²⁵, Carlo Borghero²⁶, Anna Proia²⁷, Carmine Selleri²⁸, Nicoletta Sacchi²⁹, Sonia Mammoliti³⁰, Elena Oldani³¹, Fabio Ciceri³², Domenico Russo¹, Francesca Bonifazi³³

Table 1

Characteristics of the 1996 Allo-SCT Recipients Included in the Analysis

Characteristics	Total, 2000-2017 (N = 1996)	Time A, 2000-2005 (N = 256; 12%)	Time B, 2006-2011 (N = 584; 29%)	Time C, 2012-2017 (N = 1156; 58%)	P Value
Age, yr, median (range)	63.5 (60-77.8)	62.6 (60-74.5)	63.02 (60-76.4)	63.94 (60-77.8)	<.001
Males, n (%)	1229 (62)	161 (63)	367 (63)	701 (61)	.612
Females, n (%)	764 (38)	95 (37)	216 (37)	453 (39)	
Diagnosis, n (%)					<.001
Acute leukemias	1054 (53)	70 (27)	279 (48)	705 (61)	
Myelodysplastic syndrome	291 (15)	32 (12)	75 (13)	184 (16)	
Lymphomas	277 (14)	41 (16)	116 (20)	120 (11)	
MPNs	178 (9)	18 (7)	56 (10)	104 (9)	
Multiple myeloma	158 (8)	63 (24)	56 (10)	39 (3)	
Other	38 (1)	32 (13)	2 (0.5)	4 (0.5)	

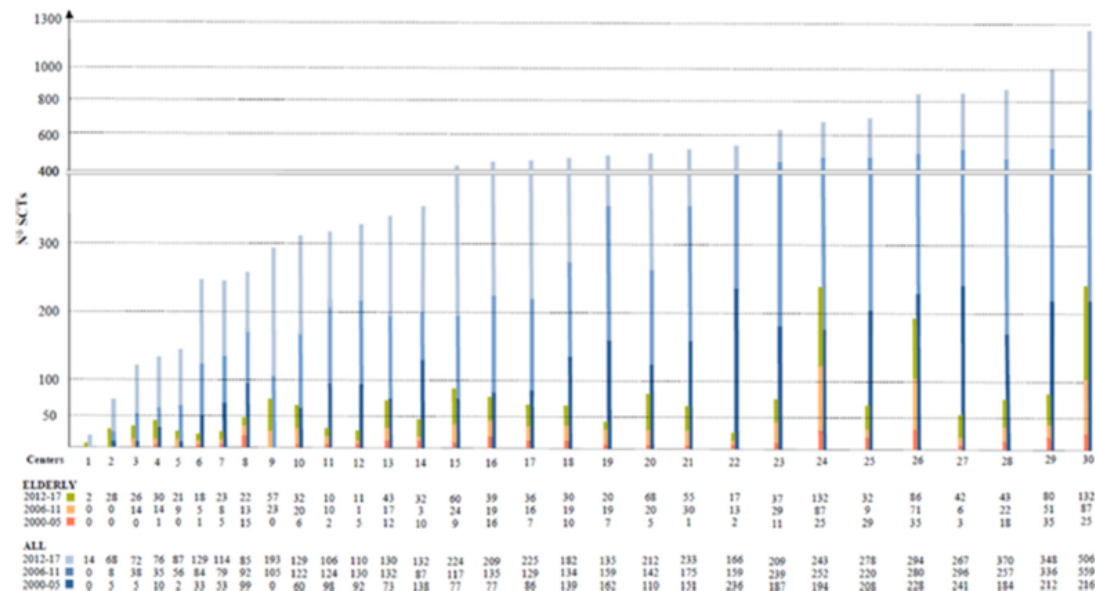


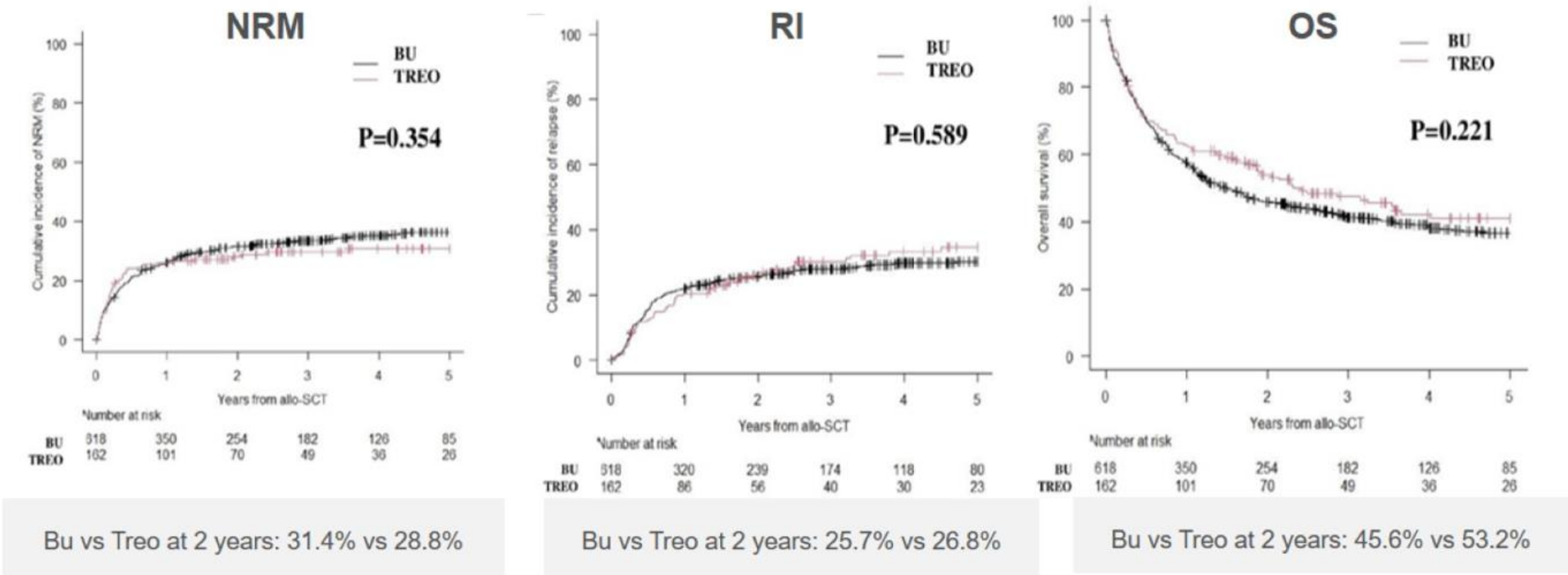
Figure 1. Distribution of allo-SCT according to time A (2000-2005), time B (2006-2011), and time C (2012-2017) in the 30 transplant Centers included in the study.

HCT-CT, n (%)					
0	694 (45)	57 (70)	207 (46)	430 (42)	<.001
1 or 2	435 (28)	16 (20)	123 (28)	296 (29)	
≥3	422 (27)	8 (10)	114 (26)	300 (29)	
Missing	445 (22)	175 (68)	140 (24)	130 (11)	
KPS, n (%)					<.001
100	479 (27)	10 (10)	123 (24)	346 (30)	
90	754 (43)	69 (72)	209 (40)	476 (42)	
80	388 (22)	15 (16)	120 (23)	253 (22)	
<80	138 (8)	2 (2)	65 (13)	71 (6)	
Missing	240 (12)	160 (62)	67 (13)	10 (1)	

Conditioning, n (%)					<.001
Alkylator-based	1566 (83)	86 (40)	431 (77)	1040 (91)	
Treosulfan-based	237 (15)	2 (2)	91 (21)	144 (14)	
Busulfan-based	422 (27)	6 (5)	107 (25)	309 (29)	
Thiotepa-based	858 (55)	71 (82)	210 (48)	577 (55)	
Melfalan-based	49 (3)	7 (8)	23 (5)	19 (2)	
TBI-based	255 (13)	76 (43)	99 (18)	80 (7)	
Other	63 (4)	15 (8)	26 (5)	22 (2)	
Missing	112 (6)	79 (31)	28 (5)	5 (<1)	
Conditioning intensity, n (%)					<.001
MAC	638 (32)	34 (14)	121 (21)	483 (42)	
Reduced intensity	1340 (68)	209 (86)	461 (79)	670 (58)	
Missing	18 (<1)	13 (5)	2 (<1)	3 (<1)	
GVHD prophylaxis, n (%)					<.001
Cnl ± MMF	775 (42)	134 (83)	295 (54)	346 (30)	
In vivo T cell depletion	745 (40)	27 (16.5)	229 (42)	277 (43)	
EDX post-SCT	286 (15)	0 (0)	9 (2)	490 (24)	
Other	45 (3)	1 (0.5)	10 (2)	34 (3)	
Missing	145 (7)	94 (37)	41 (7)	9 (<1)	
Donor, n (%)					<.001
Sibling	791 (40)	216 (86)	263 (46)	312 (27)	
UD	738 (37)	16 (6)	226 (39)	495 (43)	
Haplo	419 (21)	18 (7)	76 (13)	325 (28)	
UCB	31 (2)	2 (1)	12 (2)	20 (2)	
Missing	14 (<1)	4 (2)	7 (1)	4 (<1)	

Busulfan or Treosulfan Conditioning Platform for Allogeneic Stem Cell Transplantation in Patients Aged >60 Y With Acute Myeloid Leukemia/ Myelodysplastic Syndrome: A Subanalysis of the GITMO AlloEld Study

Bu and Treo Are Equivalent in NRM, RI, and OS in AML/MDS

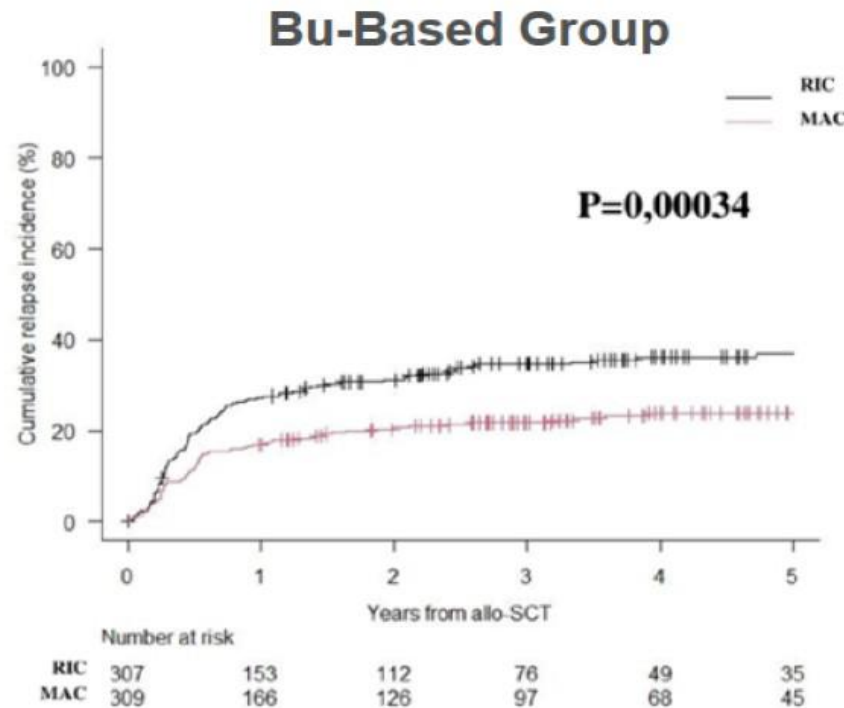


Malagola M et al Transplant Direct 2023

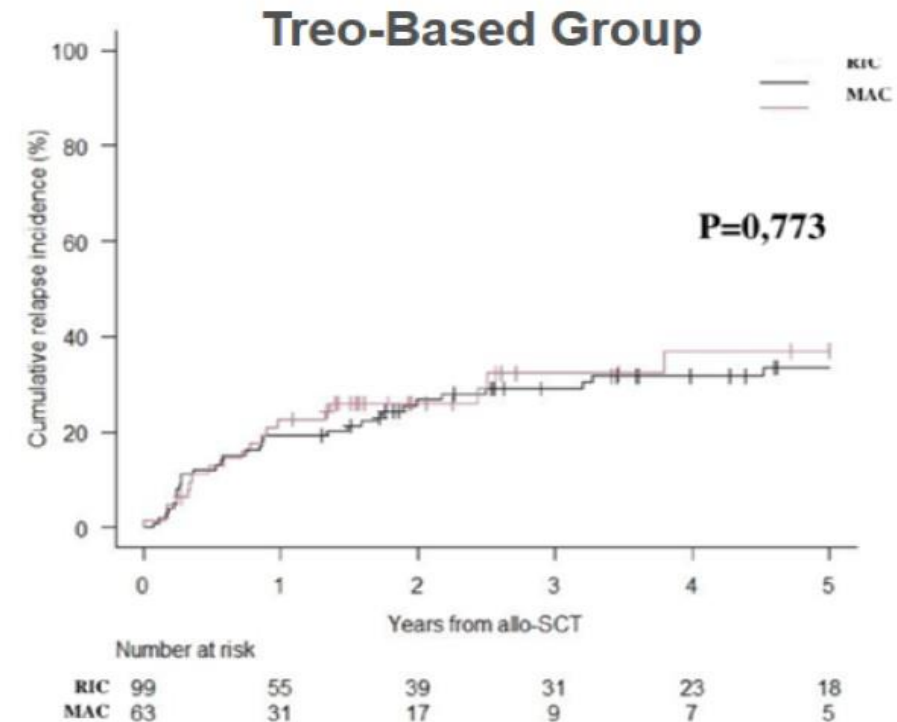
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GITMO AlloEld Subanalysis

RI According to Alkylator and Conditioning Intensity



MAC vs RIC at 2 years: 21% vs 31%



MAC vs RIC at 2 years: 26% vs 28%

Malagola M, et al. Transplant Direct. 2023;9:e1451.

Treosulfan + Fludarabine prospective studies

Bone Marrow Transplantation (2012) 47, 1171–1177
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www.nature.com/bmt

ORIGINAL ARTICLE

Allogeneic hematopoietic SCT in patients with AML following treosulfan/fludarabine conditioning

J Casper^{1,2}, J Holowiecki^{3,13}, R Trensche¹, H Wandt⁴, K Schaefer-Eckart⁴, T Ruutu⁵, L Volin⁵, H Einsele⁶, G Stuhler⁶, L Uharek⁷, I Blau⁷, M Bornhaeuser⁸, A R Zander⁹, K Larsson¹⁰, M Markiewicz², S Giebel^{2,11}, T Kruza², H A Mylius¹¹, J Baumgart¹¹, U Pichlmeier¹¹, M Freund¹ and DW Beelen¹

- **75 AML pts (2004-2006) 18-60 ys old**
- **Prospective, non-randomized phase II study**
- **Regime: FT 14**
- **Low incidence of grade III-IV toxicities**
- **Infection incidence: 59%**
- **OS and DFS of 61% and 55% at 2 ys**

Inclusion criteria:

- **AML in CR or MDS aged ≥ 50 years at HSCT and/or an HCT-CI score > 2**
- **18 to 70 years of age**
- **KI ≥ 60%**

Original Articles

Reduced-toxicity conditioning with treosulfan and fludarabine in allogeneic hematopoietic stem cell transplantation for myelodysplastic syndromes: final results of an international prospective phase II trial

Tapani Ruutu¹, Liisa Volin¹, Dietrich W. Beelen², Rudolf Trensche², Juergen Finke³, Marc Schnitzler³, Jerzy Holowiecki^{4,13}, Sebastian Giebel^{4,13}, Mirosław Markiewicz⁴, Lutz Uharek⁵, Igor W. Blau⁵, Joachim Kienast⁶, Matthias Stelljes⁶, Kajsa Larsson⁷, Axel R. Zander⁸, Martin Gramatzki⁹, Roland Repp⁹, Hermann Einsele¹⁰, Gernot Stuhler¹⁰, Joachim Baumgart¹¹, Heidrun A. Mylius¹¹, Uwe Pichlmeier¹¹, Mathias Freund¹² and Jochen Casper^{12,14}

- **45 MDS pts (2004-2007) 18-65 ys old**
- **Prospective, non-randomized phase II study**
- **Regime: FT 14**
- **Low incidence of grade III-IV toxicities**
- **OS and DFS of 71% and 67% at 2 ys**

Treosulfan or busulfan plus fludarabine as conditioning treatment before allogeneic haemopoietic stem cell transplantation for older patients with acute myeloid leukaemia or myelodysplastic syndrome (MC-FludT.14/L): a randomised, non-inferiority, phase 3 trial



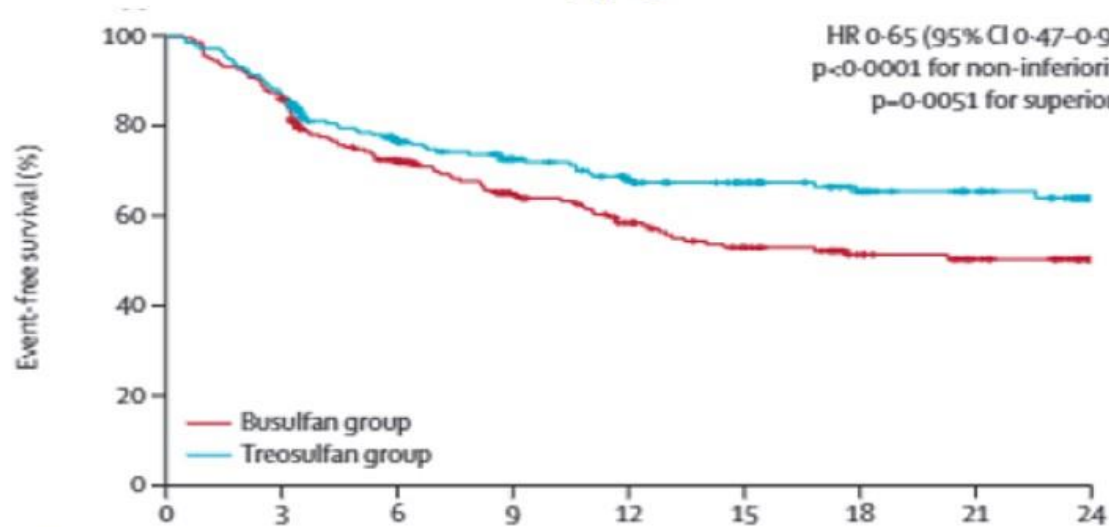
Dietrich Wilhelm Beelen, Rudolf Trensche, Matthias Stelljes, Christoph Groth, Tamás Masszi, Péter Reményi, Eva-Maria Wagner-Drauet, Beate Hauptrock, Peter Dreger, Thomas Luft, Wolfgang Bethge, Wichard Vogel, Fabio Cicci, Jacopo Peccatori, Friedrich Stölzel, Johannes Schetelig, Christian Junghans, Christina Grosse-Thie, Mauricette Michallet, Hélène Labussière-Wallet, Kerstin Schaefer-Eckart, Sabine Dressler, Goetz Ulrich Grigoleit, Stephan Mielke, Christof Scheid, Udo Holtick, Francesca Patriarca, Marta Medea, Alessandro Rambaldi, Maria Caterina Micò, Dieter Niederwieser, Georg-Nikolaus Franke, Inken Hilgendorf, Nils Rudolf Winkelmann, Domenico Russo, Gérard Socié, Régis Peffault de Latour, Ernst Holler, Daniel Wolff, Bertram Glass, Jochen Casper, Gerald Wulf, Helge Menzel, Nadezda Basara, Maria Bieniaszewska, Gernot Stuhler, Mareike Verbeek, Sandra Grass, Anna Paola Iori, Juergen Finke, Fabio Benedetti, Uwe Pichlmeier, Claudia Hemmelmann, Michael Tribanek, Anja Klein, Heidrun Anke Mylius, Joachim Baumgart, Monika Dzierzak-Mietla, Mirosław Markiewicz

MC-FludT.14/L Phase 3 Trial

Treosulfan or Busulfan on Background Fludarabine (cont)

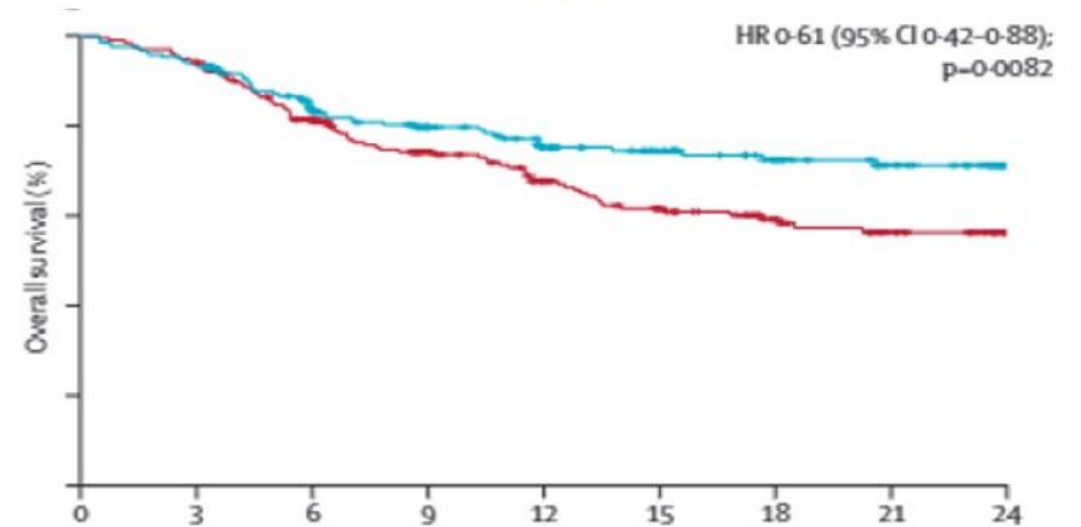
EFS

HR 0.65 (95% CI 0.47-0.90);
p<0.0001 for non-inferiority;
p=0.0051 for superiority



OS

HR 0.61 (95% CI 0.42-0.88);
p=0.0082



Number at risk
(number censored)

Busulfan group	240 (0)	206 (3)	151 (25)	112 (50)	92 (59)	74 (69)	57 (84)	44 (96)	25 (117)
Treosulfan group	220 (0)	190 (0)	144 (27)	121 (45)	97 (59)	82 (73)	62 (91)	49 (104)	16 (138)

240 (0)	227 (2)	172 (27)	133 (52)	107 (66)	87 (77)	65 (96)	48 (110)	27 (133)
220 (0)	206 (0)	159 (28)	133 (50)	107 (65)	88 (83)	68 (101)	54 (114)	18 (152)

Similar cumulative incidence of relapse between groups:
HR 0.87 (95% CI: 0.59, 1.30; $P = .5$)

EFS, event-free survival.

Beelen DW, et al. Lancet Haematol. 2020;7:e28-e39.

Udine, 8-9 Ottobre 2026

Corso di Formazione **GITMO** Trapianto e terapie cellulari: cellule, donatori e condizionamenti

Aula Polifunzionale Ospedale di Udine

✓ TREO/FLU BETTER THEN BU/FLU IN EFS, OS, NRM

TABLE 2 Event-free survival and secondary outcomes (full analysis set)

	BusulfanN = 283	TreosulfanN = 268	p-value
Median follow-up of those surviving ^a , months (range)	29.4 (3.0, 54.3)	29.7 (3.0, 52.1)	
Event-free survival			
Patients with event, n (%)	137 (48.4)	97 (36.2)	
Death ^b , n (%)	56 (19.8)	35 (13.1)	
Relapse/progression ^b , n (%)	72 (25.4)	61 (22.8)	
Primary graft failure ^b , n (%)	1 (0.4)	1 (0.4)	
Secondary graft failure ^b , n (%)	8 (2.8)	0 (0.0)	
Event-free survival at 24 months ^c , % (95% CI)	51.2 (45.0, 57.0)	65.7 (59.5, 71.2)	
Event-free survival at 36 months ^c , % (95% CI)	49.7 (43.3, 55.7)	59.5 (52.2, 66.1)	.0000001 ^{*,**} .0005787 ^{*,***}
Overall survival			
Patients with event, n (%)	112 (39.6)	81 (30.2)	
Overall survival at 24 months ^c , % (95% CI)	60.2 (54.0, 65.8)	72.7 (66.8, 77.8)	
Overall survival at 36 months ^c , % (95% CI)	56.3 (49.6, 62.6)	66.8 (59.9, 72.9)	.0037 [*]
Relapse/progression			
Patients with event, n (%)	72 (25.4)	61 (22.8)	
Cumulative relapse/progression incidence at 24 months, % (95% CI)	25.2 (20.0, 30.3)	22.0 (16.9, 27.1)	
Cumulative relapse/progression incidence at 36 months, % (95% CI)	26.0 (20.6, 31.4)	25.9 (19.8, 32.1)	.2631 [†]
Nonrelapse mortality			
Patients with event, n (%)	56 (19.8)	35 (13.1)	
Cumulative nonrelapse mortality incidence at 24 months, % (95% CI)	20.4 (15.5, 25.2)	12.0 (8.0, 15.9)	
Cumulative nonrelapse mortality incidence at 36 months, % (95% CI)	21.0 (16.1, 26.0)	14.2 (9.5, 18.9)	.0343 [†]

✓ TREO/FLU BETTER THEN BU/FLU IN PLT RECOVERY, MEDIAN DURATION NEUTROPENIA, INCIDENCE OF FULL DONOR CHIMERISM AT 28d, INCIDENCE OF GF

TABLE 2 Event-free survival and secondary outcomes (full analysis set)

	BusulfanN = 283	TreosulfanN = 268	p-value
Median follow-up of those surviving ^a , months (range)	29.4 (3.0, 54.3)	29.7 (3.0, 52.1)	
Recovery of Neutrophils, $>0.5 \times 10^9/L$			
Patients with event, n (%)	279 (98.6)	263 (98.1)	
Conditional cumulative incidence of neutrophil engraftment at 28 days, % (95% CI)	96.8 (94.6, 99.1)	96.2 (93.4, 99.1)	.4235 [†]
Recovery of leukocytes, $>1.0 \times 10^9/L$			
Patients with event, n (%)	280 (98.9)	263 (98.1)	
Conditional cumulative incidence of leukocyte engraftment at 28 days, % (95% CI)	98.5 (96.1, 100.0)	97.2 (95.2, 99.1)	.2307 [†]
Recovery of platelets ($>20 \times 10^9/L$)			
Patients with event, n (%)	274 (96.8)	260 (97.0)	
Conditional cumulative incidence of platelet engraftment at 28 days, % (95% CI)	97.8% (96.3, 99.4)	94.7% (92.0, 97.4)	.0038 [†]
Mean duration of neutropenia, $<0.5 \times 10^9/L$			
Patients with event, n (%)	280 (98.9)	268 (100.0)	
Duration, Days (SD)	13.8 (7.3)	16.2 (6.4)	.0001 [†]
Incidence of complete donor chimerism, n (%)			
Day +28	235 (83.3)	245 (93.2)	.0159 ^{††}
Graft failure, (95% CI)			
Patients with event, n (%)	9 (3.2)	1 (0.4)	
Cumulative incidence at 36 months, % (95% CI)	3.2 (1.1, 5.3)	0.4 (0.0, 1.1)	.0392 [†]

Am J Hematol. 2022;97:1023–1034.

Fludarabine-treosulfan versus fludarabine-melphalan or busulfan-cyclophosphamide conditioning in older AML or MDS patients – A clinical trial to registry data comparison

Dietrich Wilhelm Beelen^{1,2,3}, Simona Iacobelli², Linda Koster³, Dirk-Jan Eikema³, Anja van Biezen³, Friedrich Stölzel^{4,5}, Fabio Ciceri⁶, Wolfgang Bethge⁷, Peter Dreger⁸, Eva-Maria Wagner-Drouot⁹, Péter Reményi¹⁰, Matthias Stelljes¹¹, Mirosław Markiewicz¹², Donal P. McLoman¹³, Ibrahim Yakoub-Agha¹⁴ and Mohamad Mohty¹⁵

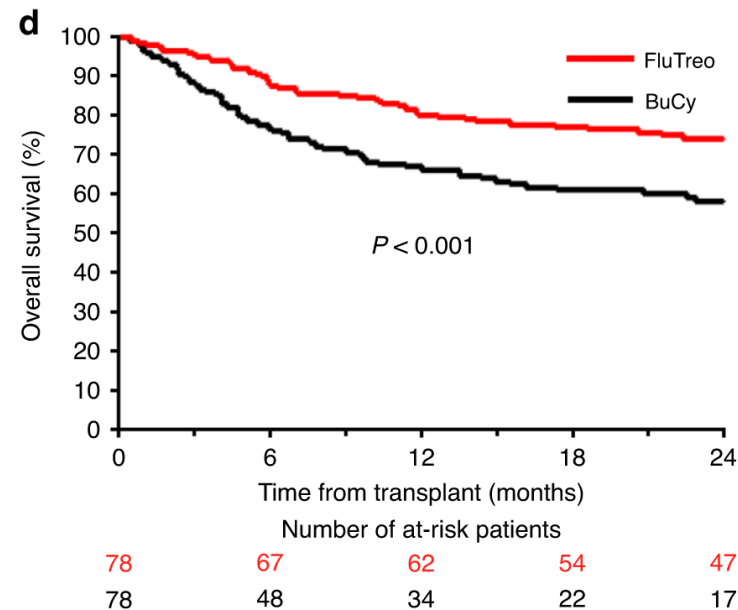
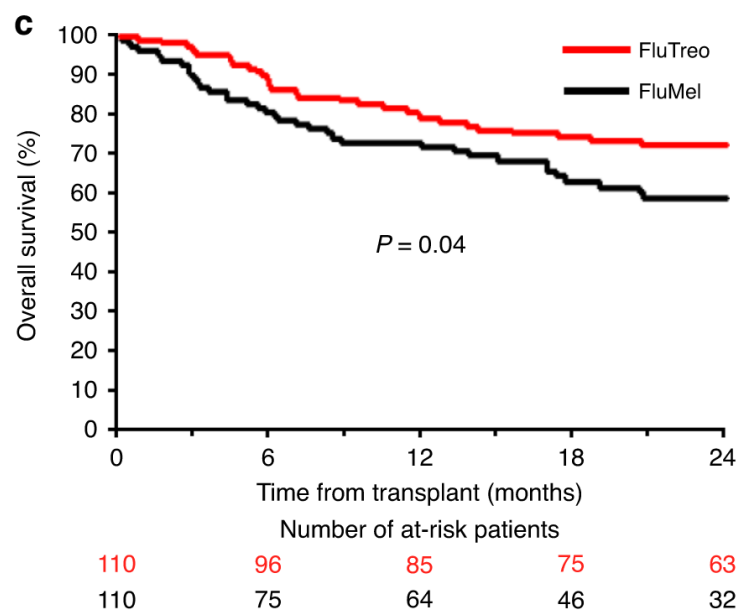
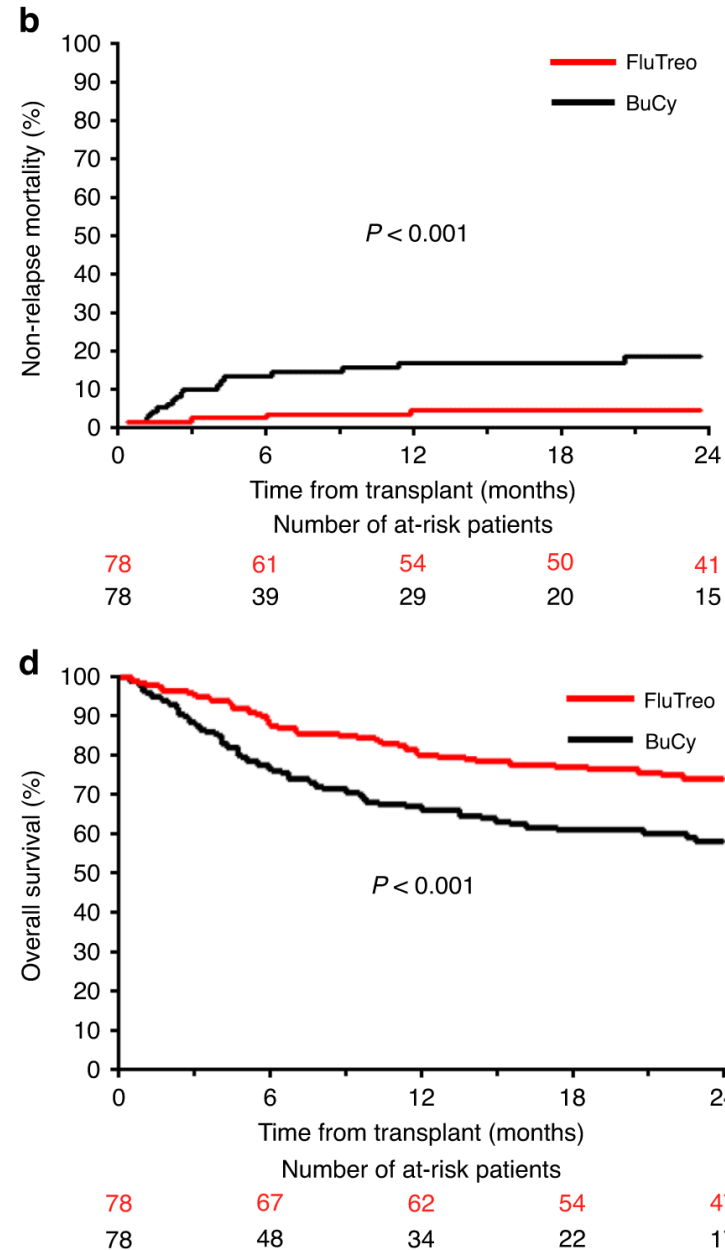
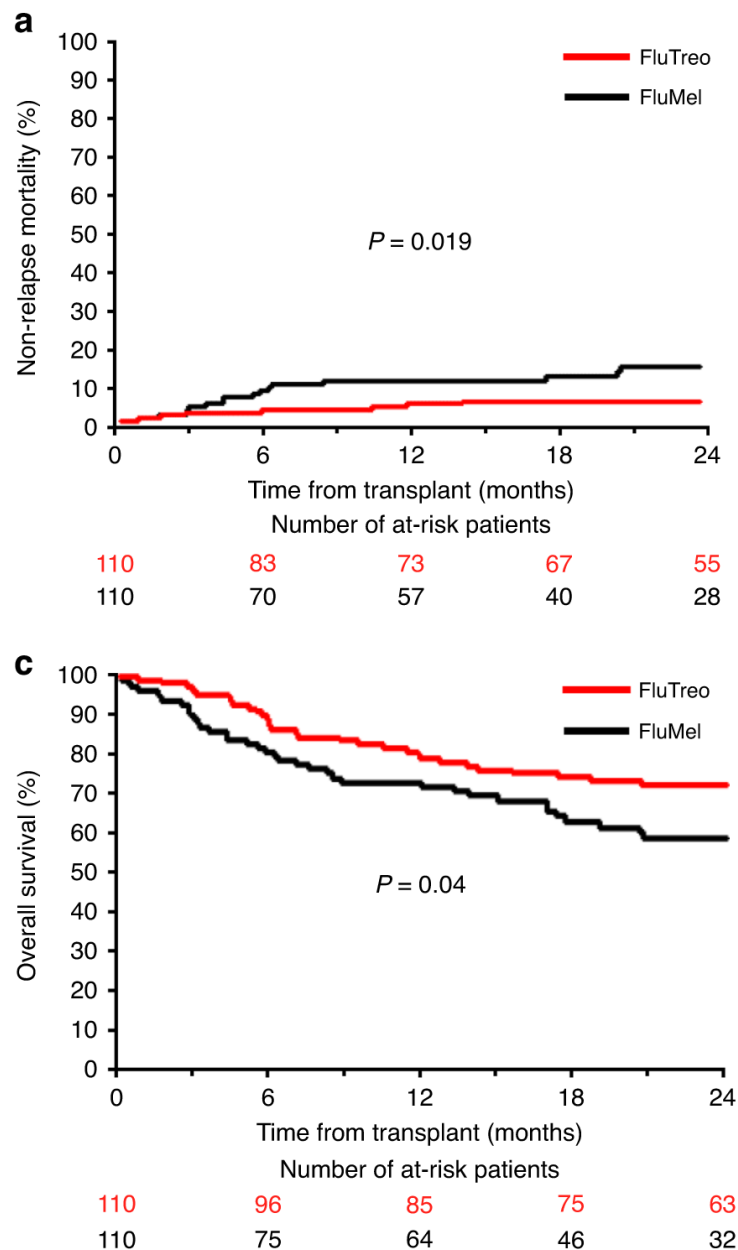
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To further evaluate this regimen, all 252 study patients aged 50 to 70 years were compared with similar patients, who underwent allo-HCT after fludarabine/melphalan (140 mg/m²) (FluMel) or busulfan (12.8 mg/kg)/cyclophosphamide (120 mg/kg) (BuCy) regimens and whose data was provided by the European Society for Blood and Marrow Transplantation registry.

In 1:1 propensity-score matched-paired analysis (PSA) of AML patients, there was no difference in 2-year-relapse-incidence after FluTreo compared with either FluMel ($n = 110$, $p = 0.28$) or BuCy ($n = 78$, $p = 0.98$).

However, 2-year-non-relapse-mortality (NRM) was lower compared with FluMel ($p = 0.019$) and BuCy ($p < 0.001$). Consequently, 2-year-overall-survival (OS) after FluTreo was higher compared with FluMel ($p = 0.04$) and BuCy ($p < 0.001$).

FluTreo (30 g/m²) seems to retain efficacy compared with FluMel and BuCy, but is better tolerated by older patients.



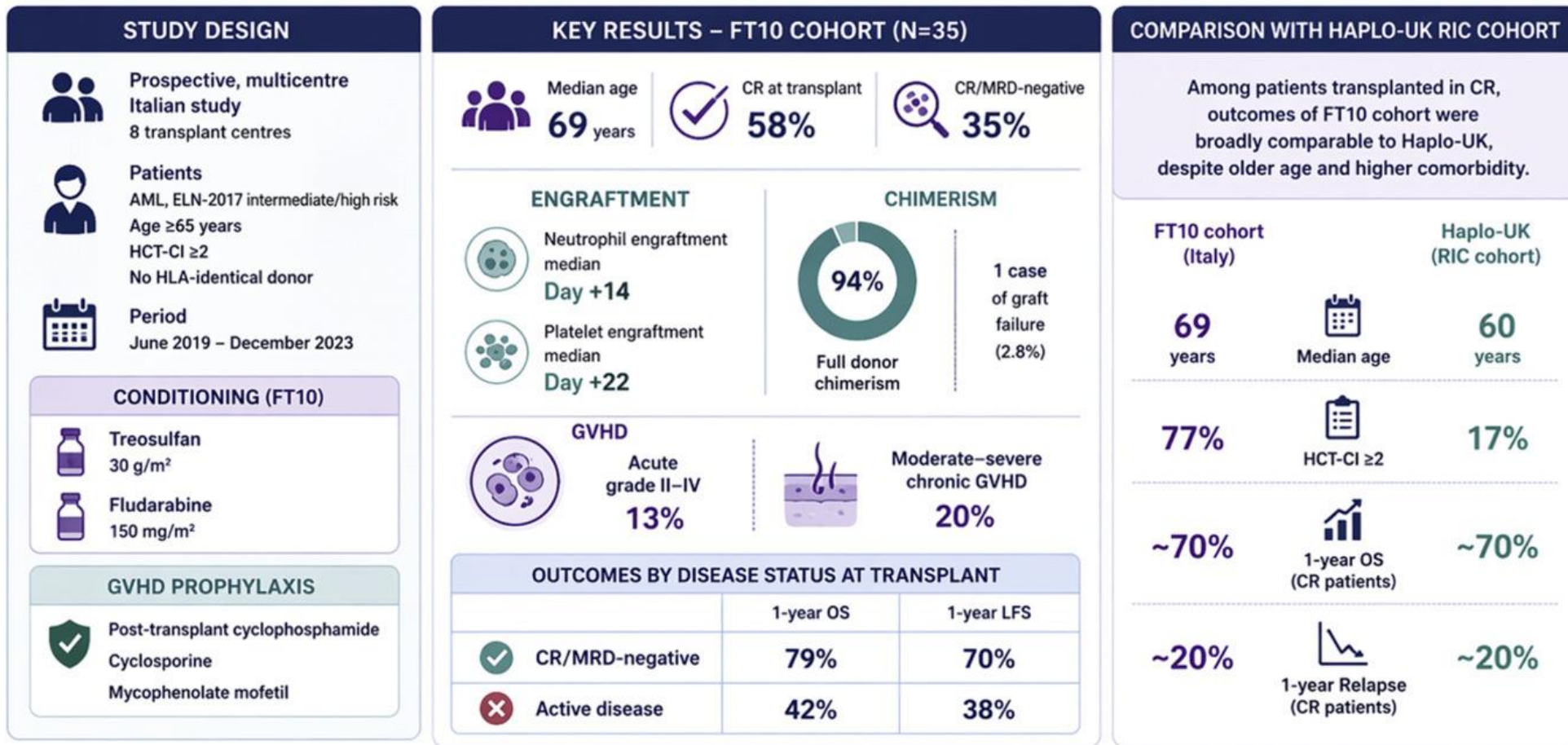
Udine, 8-9 Ottobre 2026

Primary endpoint
was cumulative
incidence of NRM

Haplo UK RIC Cohort
FCTBI
Cy 14.5 mg/kg on
days -6,-5
Flu 30 mg/m² from
day -6 to day -2
TBI 2 Gy on day -1

FT10 CONDITIONING IN OLDER AML PATIENTS UNDERGOING HAPLOIDENTICAL TRANSPLANTATION

A Prospective Italian Study with External Comparison to the Haplo-UK RIC Cohort

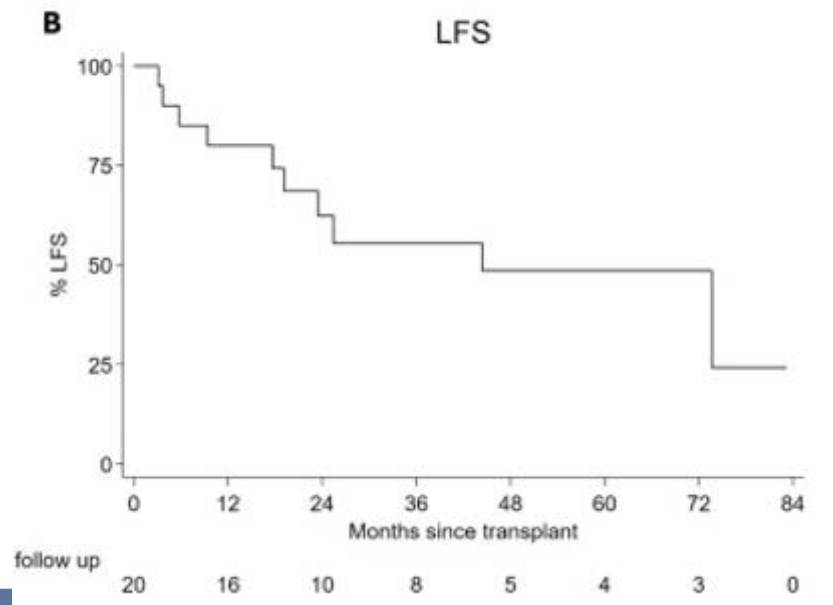
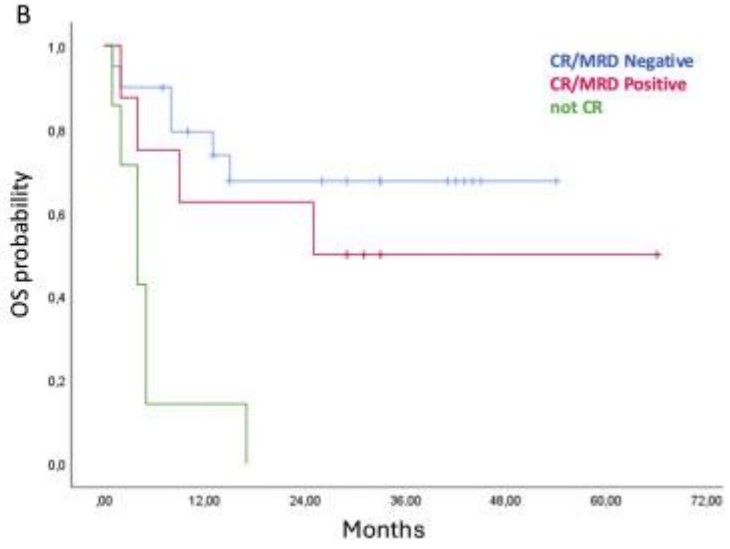
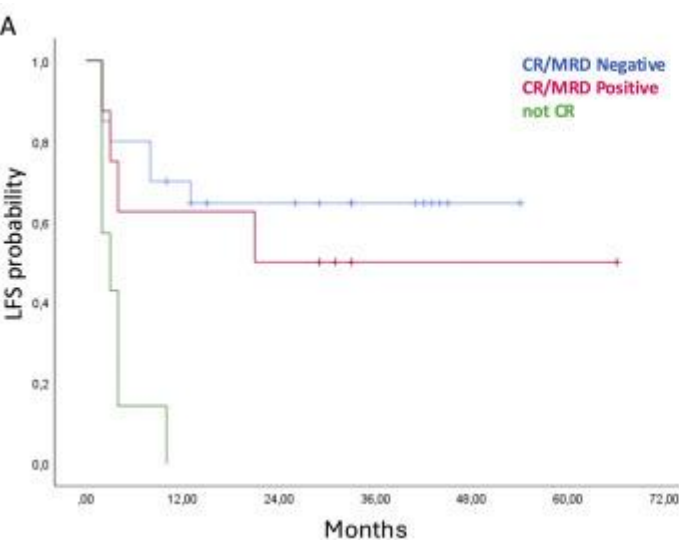
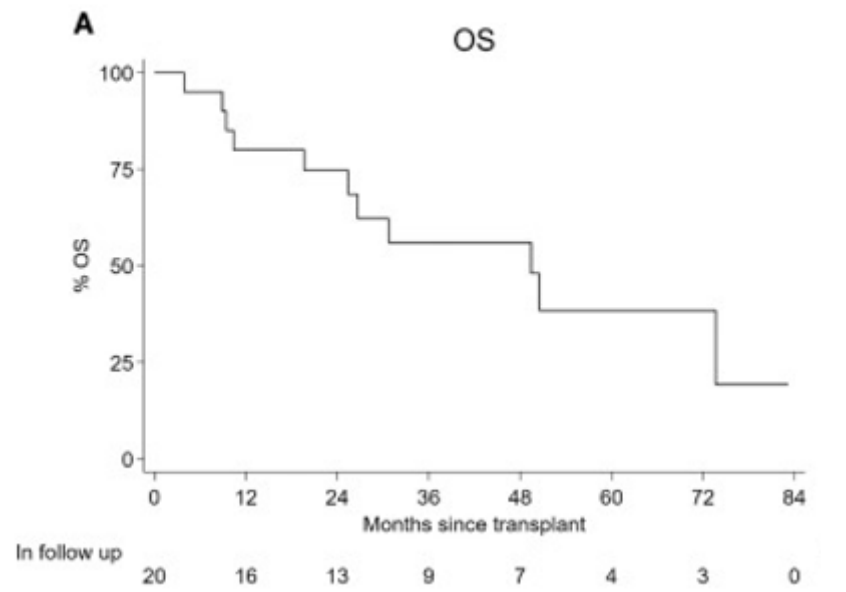
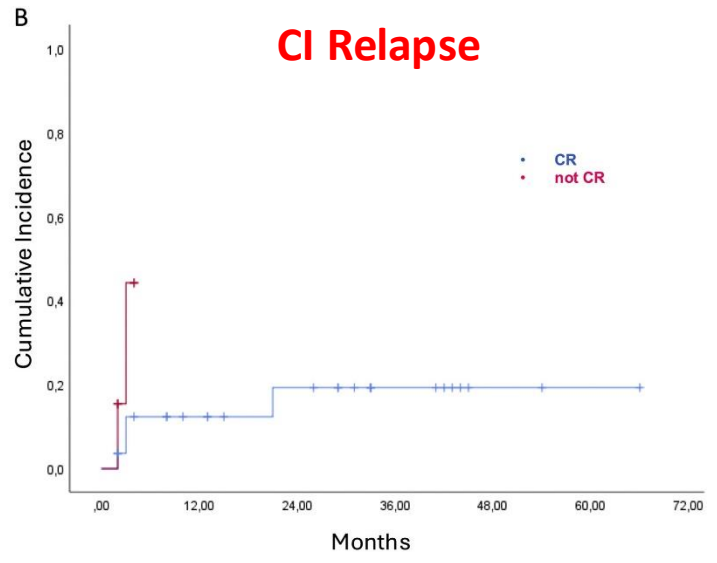
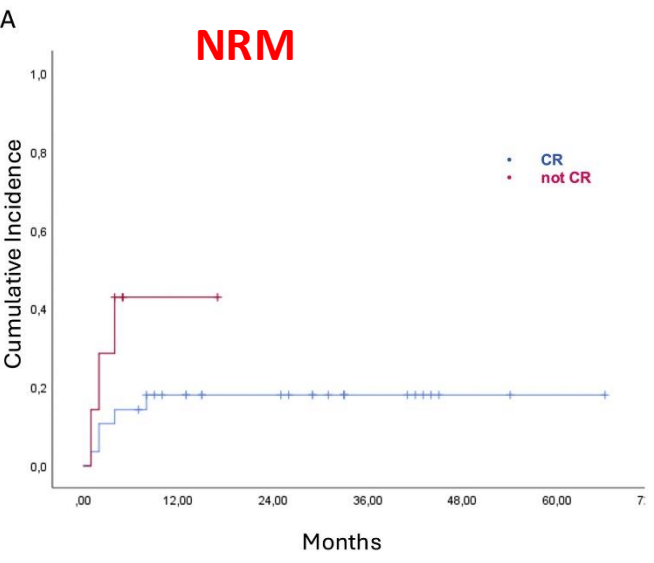


CONCLUSION

In this prospective, real-world study, FT10 conditioning with PTCy-based GVHD prophylaxis is a feasible and effective option for older, comorbid AML patients undergoing haploidentical transplantation. Outcomes in CR patients are comparable to those of the Haplo-UK RIC cohort.

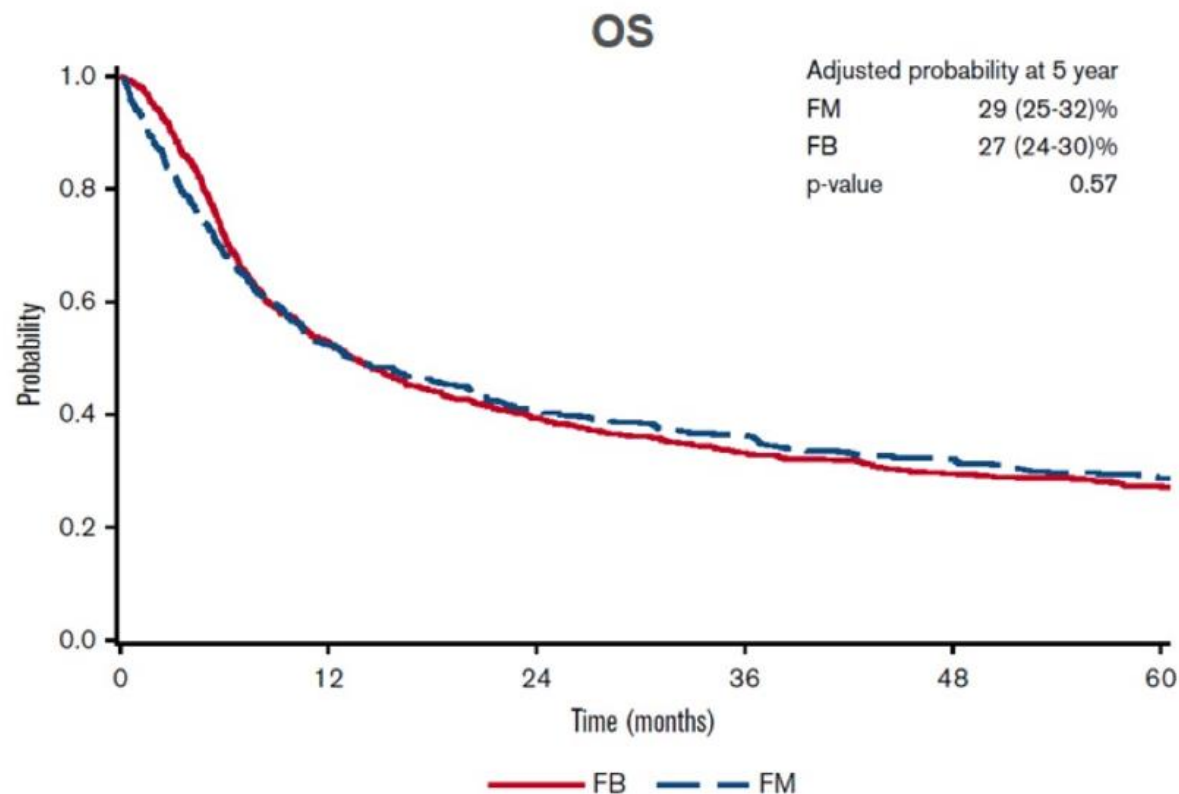


Udine, 8-9 Ottobre 2026



CIBMTR Report

RIC FM vs RIC FB2 in AML



- RIC FM offers marginally superior long-term survival in AML vs RIC FB
- Compared with RIC FB, RIC FM is associated with higher short-term posttransplant nonrelapse mortality, yet lower long-term leukemia relapse rate

FB, fludarabine-busulfan, FM, fludarabine-melphalan.
Zhou Z, et al. Blood Adv. 2020;4:3180-3190.

Table 1. Selected results of different conditioning regimens in elderly patients.

Research design (n)	Disease and characteristics	Median age (years)	Intensity	Conditioning	ATG or PT-Cy	Outcomes (95% CI)	Reference
Prospective (83)	AML in CR1	67.3 (IQR, 64.7–70.4)	RIC	FLU/TBI: Flu, 30 mg/m ² /d from days –4 to –2; TBI 2 Gy d0	NA	5-year outcomes: OS, 31.3% (22.6–43.2%) LFS, 28.8% (20.4–40.6%) NRM, 33.4% (23.0–43.9%) Relapse, 37.8% (27.2–48.4%)	[24]
Retrospective (287 for elderly patients)	AML in CR1 or CR2	65.4 (IQR, 62.7–67.7)	RIC	TBF: Bu, maximal total dose of 6.4 mg/kg or 260 mg/m ² (2-day equivalent IV busulfan); Thiotepe, a total dose ranging from 5 mg/kg to 12 mg/kg	PT-Cy	2-year outcomes, TBF vs Cy/Flu/TBI: OS, 54% vs 55%, P = 0.84; LFS, 48% vs 49%, P = 0.76; RR, 22% vs 28%, P = 0.09; NRM, 30% vs 23%, P = 0.20	[56]
		67.6 (IQR, 65.5–70.3)	NMAC	Cy/Flu/TBI: Cy, 14.5 mg/kg/d on –6, –5 d; Flu, 30 mg/m ² /d on –6 to –2d; TBI, 200 cGy on –1d	PT-Cy		
Prospective (460)	AML (blast counts <5% BM) or MDS (blast counts <20% in BM); age ≥50 and/or HCT-CI	61.0 (56.5–64.0)	RIC	Bu/Flu: Bu, 0.8 mg/kg at 6 h intervals on –4, –3d; Flu, 30 mg/m ² on –6 to –2d	ATG	2-year outcomes, Bu/Flu vs Treo/Flu: OS, 56.4% vs 71.3%, P = 0.0082; EFS, 50.4% vs 64.0%, P = 0.0051 for superiority; Relapse or progression incidence, 23.3% vs 24.6%, P = 0.50; NRM, 22.6% vs 11.4%, P = 0.053	[62]
		60.0 (55.0–65.0)	Reduced toxicity conditioning	Treo/Flu: treosulfan, 10 g/m ² /d on –4 to –2d after modification; Flu, 30 mg/m ² on –6 to –2d	ATG		
Retrospective (933 for AML; 287 for MDS)	AML in complete remission, propensity score matching	60.9 (range, 50.1–69.9)	RIC	Flu/Mel: Flu, 150 mg/m ² in total; melphalan, 140 mg/m ² in total	NA	2-year outcomes, Flu/Mel vs Flu/Treo: OS, 58.7% vs 72.7%, P = 0.04; RR, 24.7% vs 30.6%, P = 0.28; NRM, 17.5% vs 6.4%, P = 0.019.	[63]
		60.9 (range, 50.1–69.9)	MAC	Bu/Cy: Bu, 12.8 mg/kg in total; Cy, 120 mg/kg in total	NA	Bu/Cy vs Flu/Treo: OS, 49.2% vs 76.4, P < 0.001; RR, 30.3% vs 29.1%, P = 0.98; NRM, 23.5% vs 3.9%, P < 0.001	
		61.0 (range, 50.0–70.0)	Reduced toxicity conditioning	Flu/Treo: Flu, 30 mg/m ² on –6 to –2d; treosulfan, 10 g/m ² /d on –4 to –2d	ATG		
	MDS, propensity score matching	62.2 (range, 50.1–69.9)	RIC	Flu/Mel: Flu, 150 mg/m ² in total; melphalan, 140 mg/m ² in total	NA	2-year outcomes: Flu/Mel vs Flu/Treo: OS, 56.5% vs 70.0%, P = 0.57; RR, 23.8% vs 13.3%, P = 0.50; NRM, 12.5% vs 16.7%, P = 0.72.	
		55.9 (range, 50.0–67.2)	MAC	Bu/Cy: Bu, 12.8 mg/kg in total; Cy, 120 mg/kg in total	NA	Bu/Cy vs Flu/Treo: OS, 30.5% vs 72.0, P = 0.01; RR, 25.8% vs 4.0%, P = 0.098; NRM, 43.1% vs 24.0%, P = 0.18	
		61.0 (range, 50.0–70.0)	Reduced toxicity conditioning	Flu/Treo: Flu, 30 mg/m ² on –6 to –2d; treosulfan, 10 g/m ² /d on –4 to –2d	ATG		

M. Wang et al.

Table 1. continued

Research design (n)	Disease and characteristics	Median age (years)	Intensity	Conditioning	ATG or PT-Cy	Outcomes (95% CI)	Reference
Prospective (114)	AML in CR1 (achieve CR1 within 2 cycles of induction chemotherapy)	65 (range, 60–74)	RIC	Flu/Bu: Flu, 30 mg/m ² on -7 to -3d; Bu, 0.8 mg/kg every 6 h on -4, -3d	ATG	2-year outcomes: OS, 48% (39–58%); DFS, 42% (33–52%); NRM, 15% (8–21%); 100-day: grade 2–4 aGVHD, 9.6% (4–15%)	[91]
Prospective (50)	AML or MDS	59 (range, 55–64)	MAC	ARAC/Bu/Flu/Cy/semustine: Ara-C, 2 g/m ² /d on -10-9d; Bu, 9.6 mg/kg in total on -8 to -6d; Flu, 30 mg/m ² /d on -6 to -2 d; Cy, 1 g/m ² /d on -5 – 4 d; semustine, 250 mg/m ² orally on -3d	ATG	1-year outcomes: OS, 63.5% (46.5–80.5%); LFS, 60.2% (42.4–78.0%); RR, 16.5% (1.9–31.1%); TRM, 23.3% (9.1–37.5%)	[92]

MDS myelodysplastic syndromes, AML acute myeloid leukemia, RIC reduced-intensity conditioning, MAC myeloablative conditioning, NMAC non-MAC, HCT-CI hematopoietic cell transplantation comorbidity index, Flu fludarabine, Bu busulfan, TBI total body irradiation, MeI melphalan, ATG antithymocyte globulin, Cy cyclophosphamide, PT-Cy post-transplant cyclophosphamide, Ara-C cytarabine, OS overall survival, DFS disease-free survival, LFS leukemia-free survival, RR cumulative relapse rate.

Rationale for Antibody-Based Conditioning Regimen



Reduced toxicity



Improved selectivity



Suitable for pediatric and older adult patients



Lower risk of secondary malignancies vs chemotherapy/radiation



Potential to be administered in outpatient settings

Expert opinion of Sergio Giralt, MD, FACP, FASTCT.

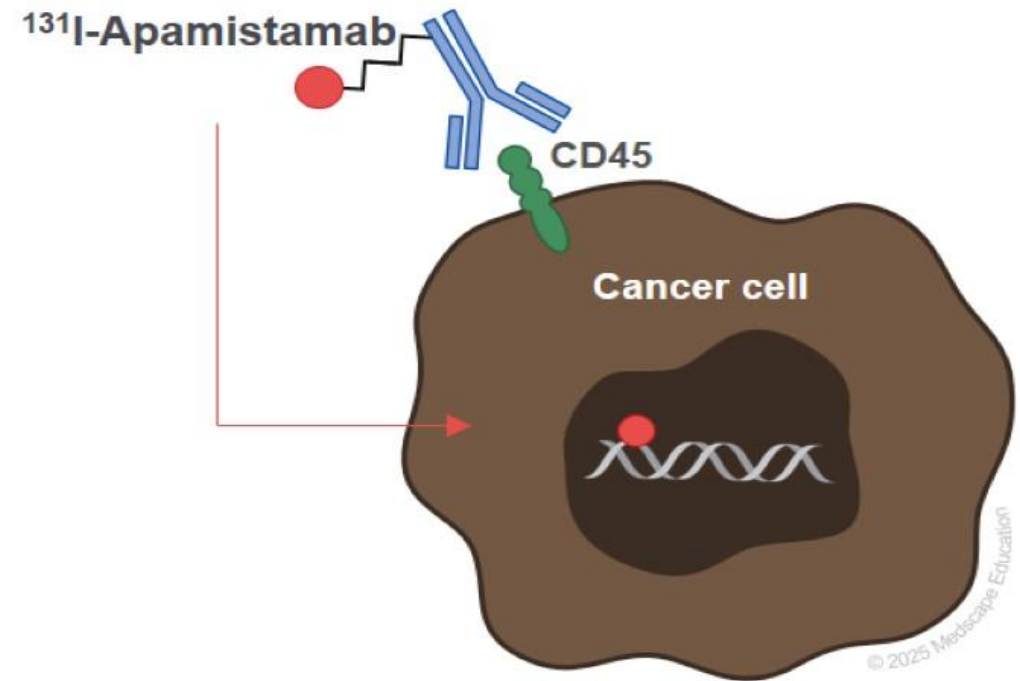
^{131}I -Apamistamab

A Novel Radioimmunotherapy

First-in-Class Anti-CD45 Antibody Conjugated to Radioactive Iodine

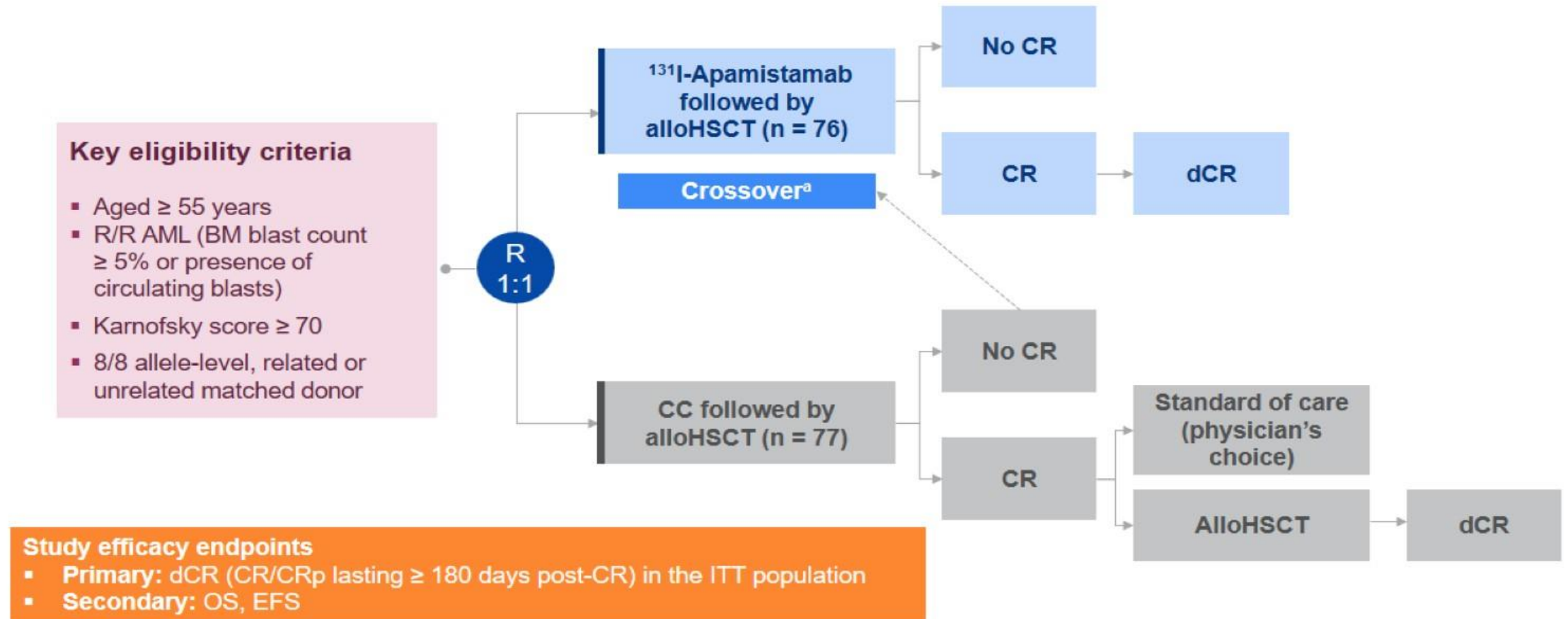
^{131}I -Apamistamab

- CD45 is highly expressed in blood cancer, immune, and marrow cells
- ^{131}I -Apamistamab is designed to deliver targeted myeloablative radiation to hematopoietic cells prior to alloHSCT



Gyurkocza B, et al. 2023 Tandem Transplantation and Cellular Therapy Meeting. Abstract LBA3.

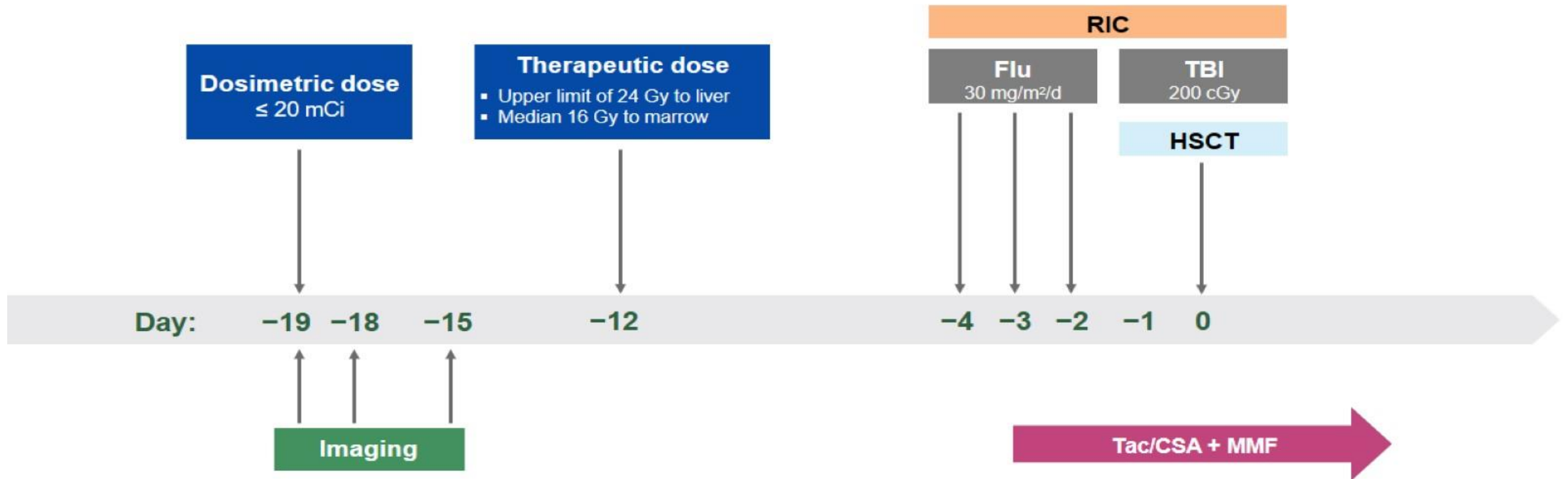
Phase 3 SIERRA Trial of ^{131}I -Apamistamab in R/R AML Study Design



^aControl arm patients with no CR were offered crossover to the investigational arm.

CC, conventional care; CRp, complete remission with incomplete platelet recovery; dCR, durable complete remission; ITT, intention-to-treat; R/R, relapsed/refractory. Gyurkocza B, et al. 2023 Tandem Transplantation and Cellular Therapy Meeting. Abstract LBA3; Gyurkocza B, et al. J Clin Oncol. 2025;43:201-213.

Phase 3 SIERRA Trial of ^{131}I -Apamistamab in R/R AML Treatment Schedule



Tac/CSA, tacrolimus/cyclosporine A.

Gyurkocza B, et al. 2023 Tandem Transplantation and Cellular Therapy Meeting. Abstract LBA3; Gyurkocza B, et al. J Clin Oncol. 2025;43:201-213.

Phase 3 SIERRA Trial of ^{131}I -Apamistamab in R/R AML

Patient Characteristics

	^{131}I -Apamistamab (n = 76)	CC (n = 77)	Crossed Over to ^{131}I -Apamistamab (n = 44)
Age , median (range), years	64 (55–77) Patients ≥ 70 y: 14 (18.4%)	66 (55–76) Patients ≥ 70 y: 16 (20.8%)	64 (55–76) Patients ≥ 70 y: 12 (27.3%)
Cytogenetic and molecular risk , n (%)	Favorable: 5 (6.6) Intermediate: 27 (35.5) Adverse/poor: 43 (56.6)	Favorable: 2 (2.6) Intermediate: 31 (40.3) Adverse/poor: 43 (55.8)	Favorable: 1 (2.3) Intermediate: 21 (47.7) Adverse/poor: 21 (47.7)
Disease status at randomization , n (%)	Primary induction failure: 43 (56.6) First early relapse: 16 (21.1) R/R: 10 (13.2) Second + relapse: 7 (9.2)	Primary induction failure: 40 (51.9) First early relapse: 22 (28.6) R/R: 10 (13.0) Second + relapse: 5 (6.5)	Primary induction failure: 24 (54.5) First early relapse: 11 (25.0) R/R: 7 (15.9) Second + relapse: 2 (4.5)
No. of prior lines of treatment , median (range)	3 (1–8)	3 (1–8)	3 (1–8)
Received prior targeted therapy , n (%)	47 (61.8)	47 (61.0)	26 (59.1)
Karnofsky Performance Status , n (%)	≥ 90 : 31 (40.8) < 90: 45 (59.2)	≥ 90 : 34 (44.2) < 90: 43 (55.8)	≥ 90 : 22 (50.0) < 90: 22 (50.0)
%BM blasts at randomization , median (range)	30 (2–97) ^a	20 (3–97) ^a	At randomization: 24.5 (3–87) ^a At crossover: 35 (2–89) ^a

^aPatients with < 5% BM blasts had circulating leukemic blasts.
Gyurkocza B, et al. J Clin Oncol. 2025;43:201-213.

Phase 3 SIERRA Trial of ^{131}I -Apamistamab in R/R AML

dCR (Primary Endpoint)

dCR: CR/CRp Maintained for ≥ 180 Days

	^{131}I -Apamistamab (n = 76)	CC (n = 77)
CR/CRp, n %	46 (60.5)	5 (6.5)
dCR, n (%) ^a	13 (17.1)	0 (0.0)
	$P < .0001$	

^{131}I -Apamistamab showed a significantly higher dCR rate vs CC ($P < .0001$)

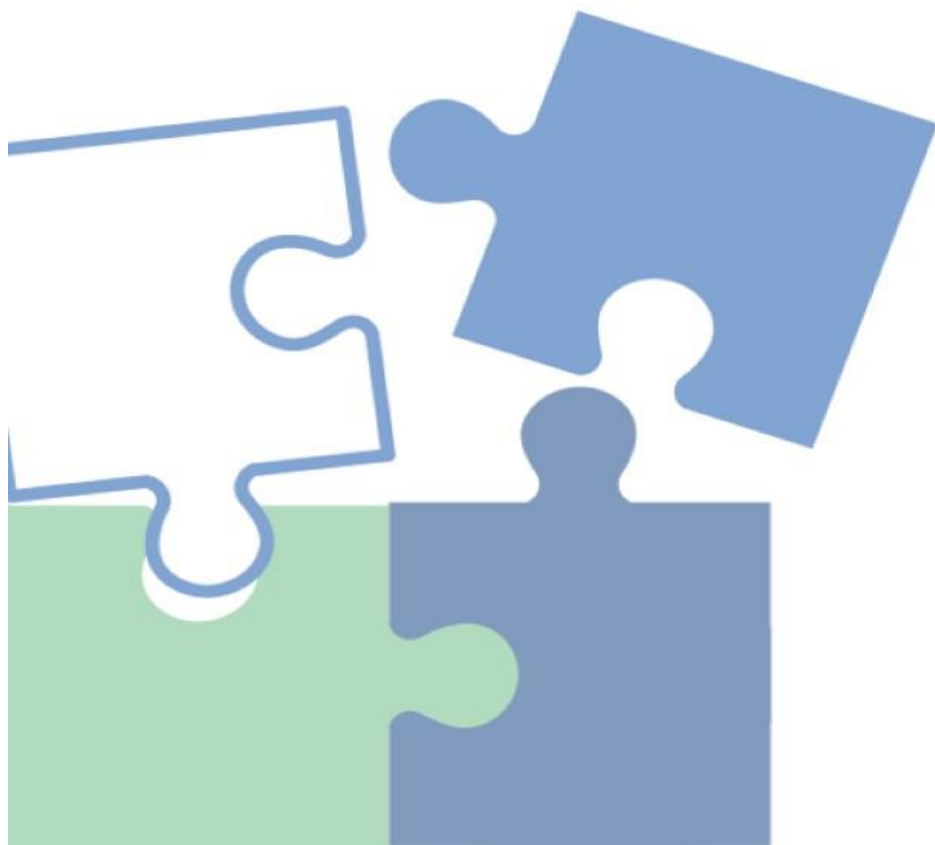
- In the crossover arm (n = 44), 91% received transplant, with 23 (52.3%) patients achieving CR/CRp
- 6 (13.6%) crossover patients achieved a dCR

In the ^{131}I -apamistamab arm, post-HSCT maintenance therapy was restricted to those with a *FLT3* mutation or *BCR::ABL* translocation at screening

Patients in the CC arm received investigator's choice of post-HSCT maintenance therapy

^adCR was assessed by independent endpoint adjudication committee.
Gyurkocza B, et al. J Clin Oncol. 2025;43:201-213.

Conclusions



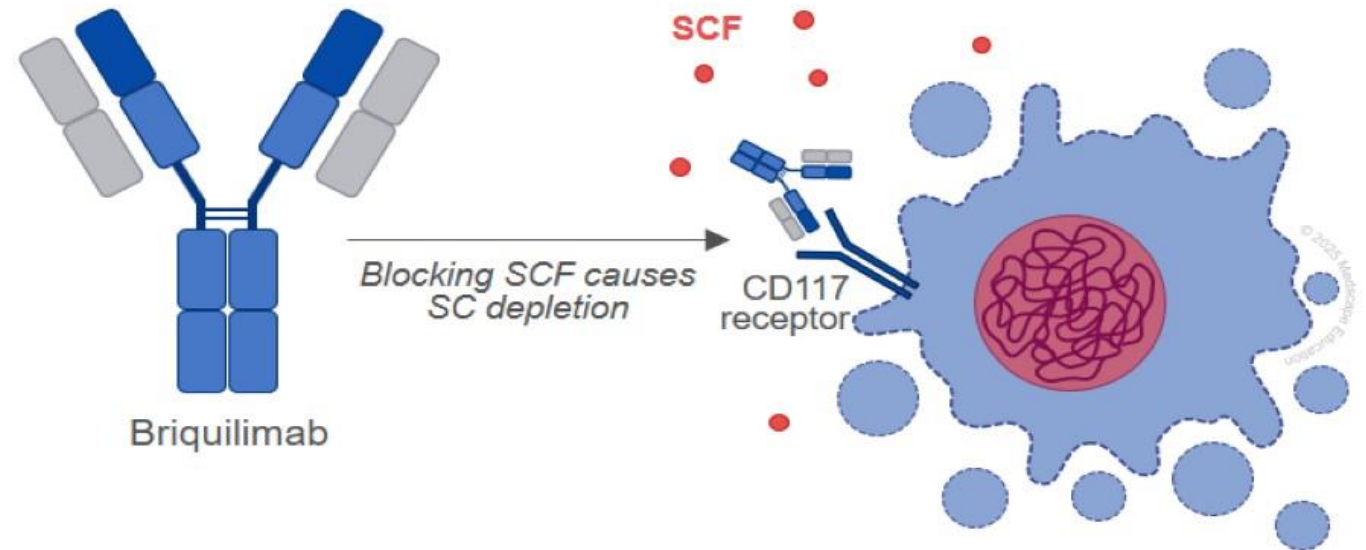
In patients aged ≥ 55 years with active R/R AML

- ^{131}I -Apamistamab followed by RIC and low-dose TBI enabled alloHSCT in a population not typically eligible for transplant
- ^{131}I -Apamistamab regimen was associated with a higher dCR rate than CC
- ^{131}I -Apamistamab was well tolerated
- ~60% of patients who achieved dCR with ^{131}I -apamistamab were alive at 2 years

Briquilimab (JSP191) Background

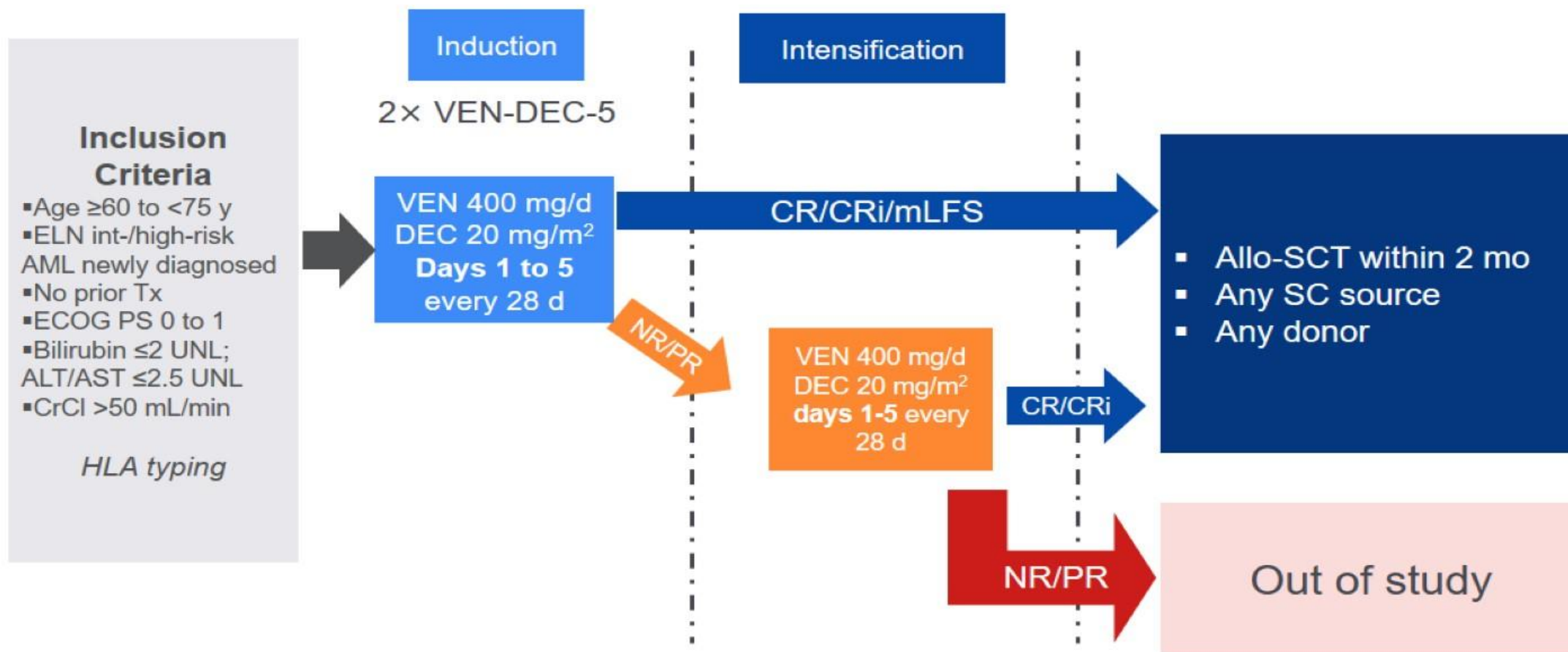
- Briquilimab inhibits SCF binding to CD117 (c-Kit) to deplete HSPCs
- Preclinical studies suggest that briquilimab synergizes with low-dose TBI to deplete normal and malignant HSPCs and facilitate donor cell engraftment

An Anti-c-Kit (CD117) mAb



HSPC, hematopoietic stem and progenitor cell; SCF, stem cell factor.
Muffy L, et al. 2023 Tandem Transplantation and Cellular Therapy Meeting. Abstract 59.

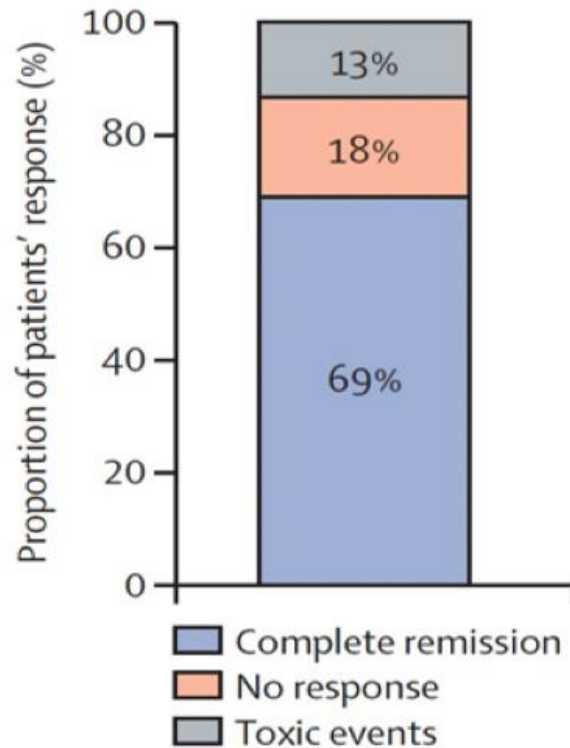
Phase 2 VEN-DEC GITMO Trial as "Bridge" to Allo-SCT



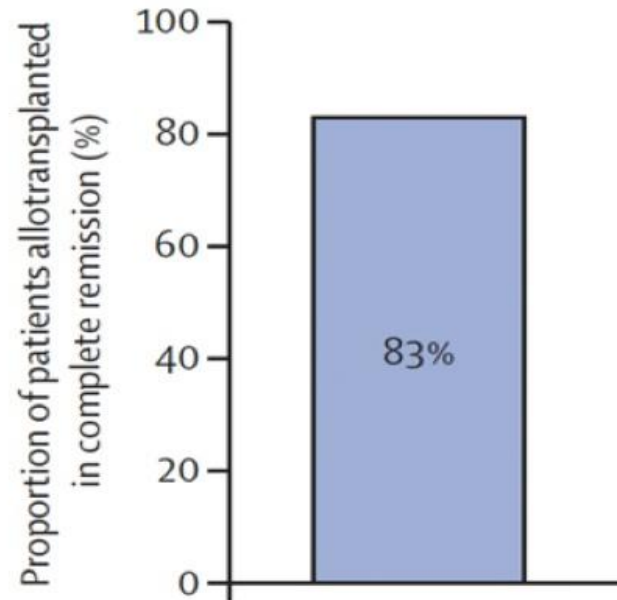
DEC, decitabine; NR, no response; PR, partial response; SC, stem cell; Tx, treatment; VEN, venetoclax.
Russo D, et al. Lancet Haematol. 2024;11:e830-e838.

Phase 2 VEN-DEC GITMO

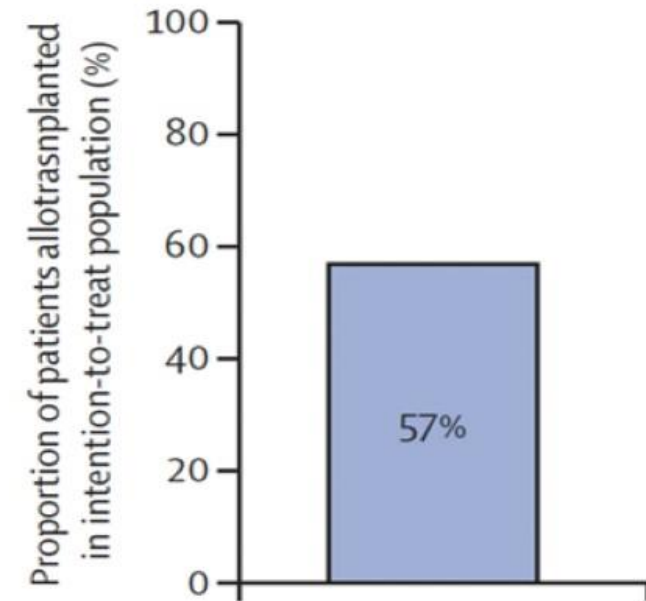
65/93 (=69%) achieved CR



53/65 CR patients (=83%)
underwent allo-SCT



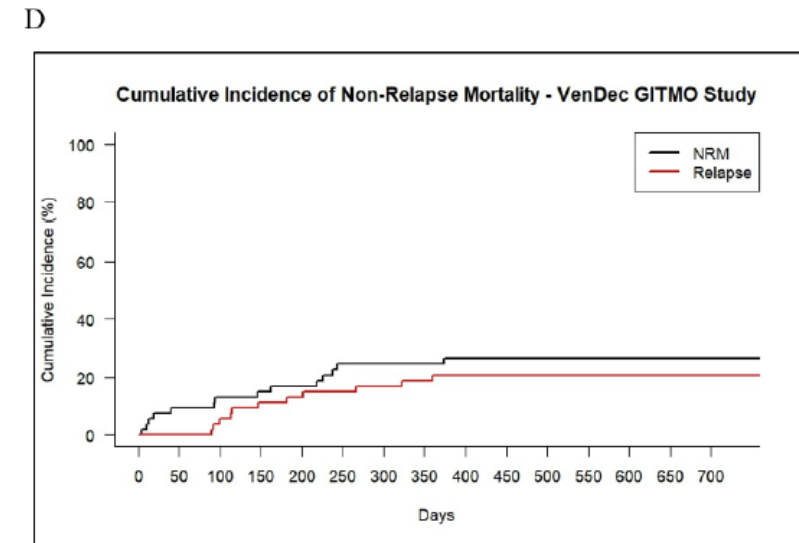
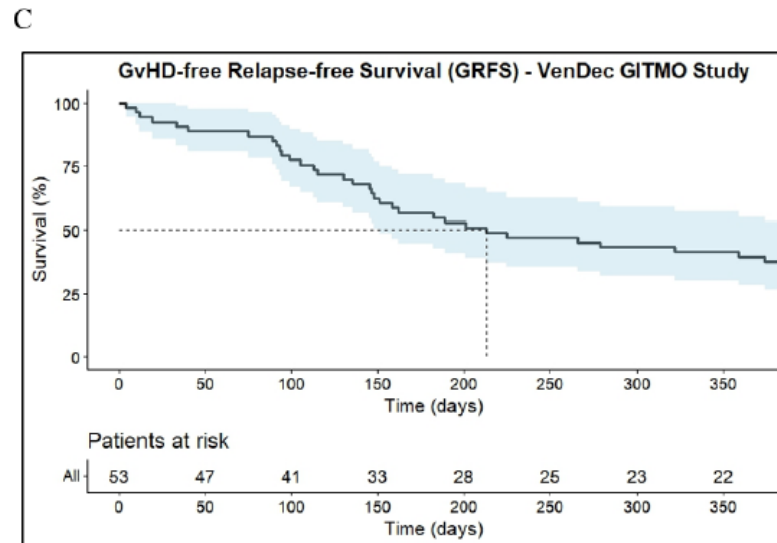
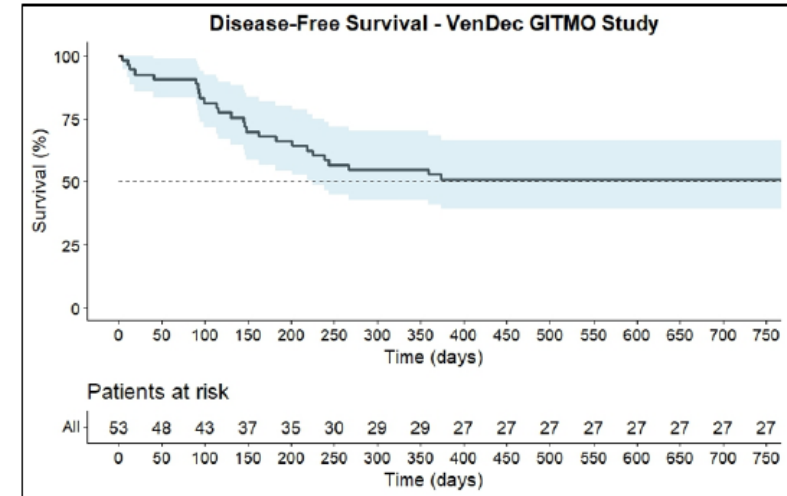
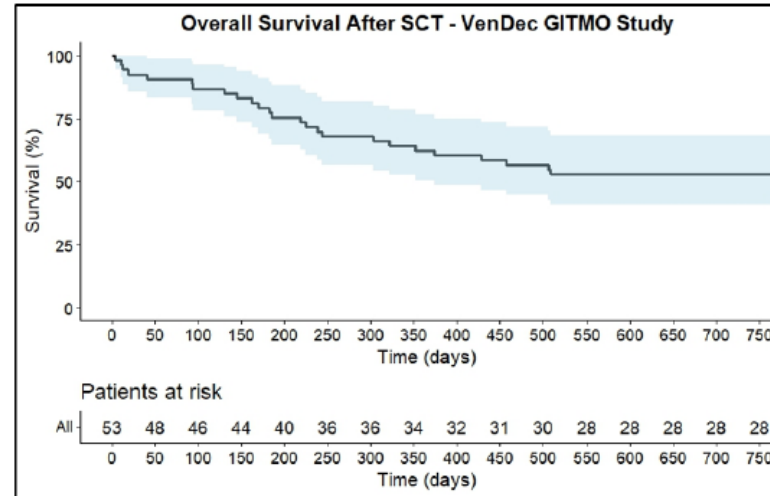
53/93 treated patients (=57%)
underwent allo-SCT



Russo D, et al. Lancet Haematol. 2024;11:e830-e838.

A Curative-Intent Treatment Programme in Older AML: Mature Post-Transplant Results from the VEN-DEC-GITMO Study

- September 2025 median follow-up after allo-HSCT was 36.1 months
- OS at 1 and 2 years was 62.3% and 52.8% respectively.
- LFS at 1 and 2 years was 52.8% and 50.9%, respectively.
- GRFS was 39.6% at 1 year and 37.7% at 2 years.
- Post-transplant relapse incidence remained low, with a cumulative incidence of 19.8% at 1 year and 20.1% at 2 years.
- NRM remained stable over time, with cumulative incidences of 25.3% at 1 year and 26.9% at 2 years.



Avenoso D Blood Advances 2026

Udine, 8-9 Ottobre 2026



Full Length Article
Allogeneic – Adult

Outcomes Are Similar After Allogeneic Hematopoietic Stem Cell Transplant for Newly Diagnosed Acute Myeloid Leukemia Patients who Received Venetoclax + Azacitidine Versus Intensive Chemotherapy



Amanda C. Winters^{1,*}, Grace Bosma², Diana Abbott², Mohd Minhajuddin³, Craig Jordan³, Daniel A. Pollyea³, Jonathan A. Gutman³

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³ Division of Hematology, Department of Medicine, University of Colorado, Aurora, Colorado

169 pts receiving SCT in 1
CR after IC or Ven/Aza

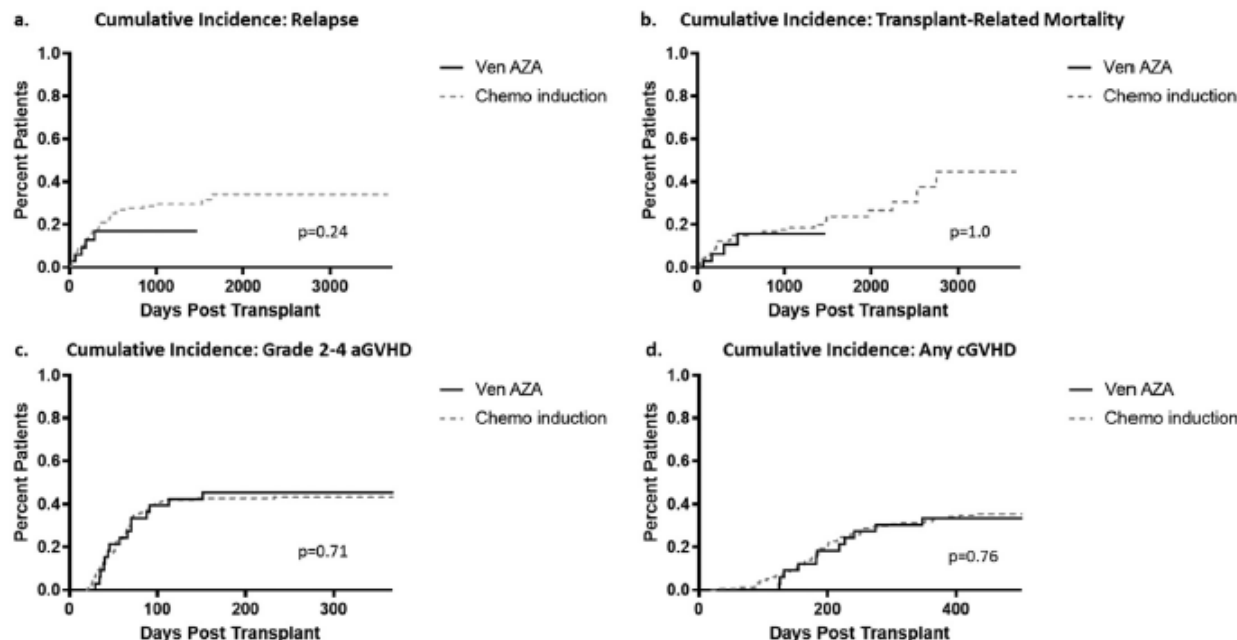


Figure 2. Competing risks of various post-transplant outcomes do not differ between patients receiving IC versus ven/aza for remission induction. (a) Cumulative incidence of relapse, (b) cumulative incidence of transplantation-related mortality, (c) cumulative incidence of aGVHD grades 2–4, and (d) cumulative incidence of any grade cGVHD are quantified from date of SCT for IC cohort patients (gray dashed lines) and for ven/aza cohort patients (black solid lines). *P* values are nonsignificant and are indicated on the respective charts.

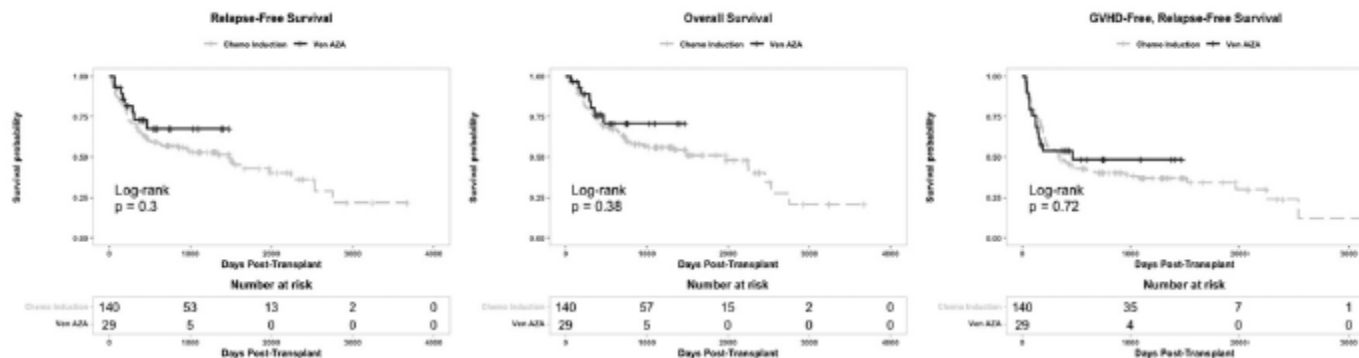


Figure 1. Post-transplantation survival outcomes do not differ among patients receiving IC versus ven/aza for remission induction. (a) RFS, (b) OS, and (c) GVHD-free relapse-free survival are measured from date of SCT for the IC cohort patients (gray dashed lines) and for ven/aza cohort patients (black solid lines). *P* values are nonsignificant and are indicated on the respective charts.

Udine, 8-9 Ottobre 2026

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Table 1. Common medications prescribed on day +45 of HCT

Tacrolimus or sirolimus
Acyclovir or valacyclovir
Valgancyclovir or letermovir
Trimethoprim-sulfamethoxazole or atovaquone
Posaconazole, fluconazole, or isavuconazonium
Oxycodone or tramadol
Prednisone
Potassium and/or magnesium
Cetirizine, diphenhydramine, or hydroxyzine

This list is based on a review of the medication administration records, post-HCT day 45, of 10 consecutive patients at Johns Hopkins Hospital in 2024. Not listed: medications for chronic medical conditions such as hypertension, diabetes, depression/anxiety, bladder issues, etc.

Table 2. Drugs that have been used as post-HCT maintenance therapy for patients with AML (a partial list)

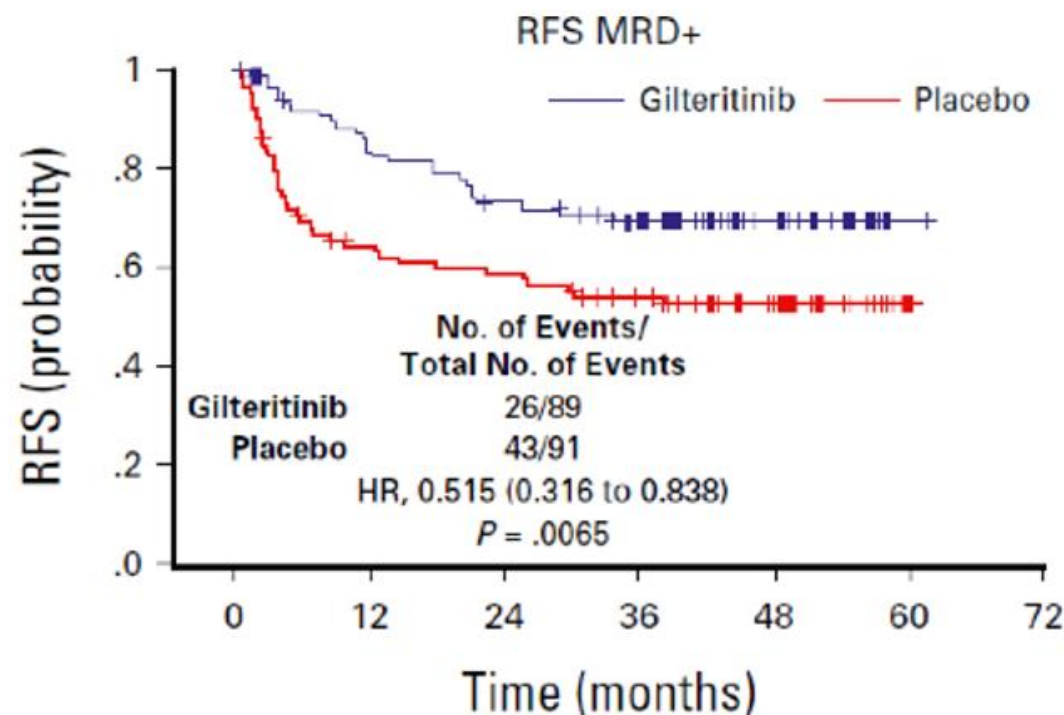
Intravenous or subcutaneous azacitidine ³⁹
Intravenous or subcutaneous decitabine ⁴⁰
Oral azacitidine ⁴⁶
Oral decitabine/cedazuridine ⁴⁵
Sorafenib ^{15,20}
Midostaurin ²³
Quizartinib ⁴⁶
Gilteritinib ⁹
Enasidenib ³¹
Ivosidenib ³²
Venetoclax ⁴⁷
Intravenous azacitidine and venetoclax ⁴²
Menin inhibitors ^{48*}

*Participants on the clinical trial of this agent were allowed to resume the drug after undergoing HCT while on study.

Table 3. FLT3 inhibitors

Drug	Class	Activity	U.S. regulatory status
Sorafenib	Type 2	FLT3-ITD	Approved for kidney, liver, and thyroid carcinoma. Not approved for AML
Midostaurin	Type 1	FLT3-ITD, FLT3-TKD	Approved for newly diagnosed FLT3-mutated AML in combination with induction and consolidation. No approval for any form of maintenance.
Gilteritinib	Type 1	FLT3-ITD, FLT3-TKD	Approved for relapsed or refractory FLT3-mutated AML. No approval for post-HCT maintenance.
Quizartinib	Type 2	FLT3-ITD	Approved for newly diagnosed FLT3-mutated AML in combination with induction and consolidation and as maintenance. No approval for post-HCT maintenance.

These drugs are the most commonly used clinically throughout the world as FLT3 inhibitors. Not listed are numerous other drugs that are approved for non-AML diseases that have activity against FLT3.



TTF Conditioning Regimen in Allo-HSCT: a single Center experience

THIOTEPA 5 mg/kg on day -7

FLUDARABINE 30 mg/m²/day on days -6 to-2

TREOSULFAN 10 gr/m²/day on days -4 to-2

Udine, 8-9 Ottobre 2026

TTF Conditioning Regimen in Allo-HSCT: a single Center experience

Patients and Transplant details	OVERALL (52)
Median Age, years (range) Age> 65 years, no(%)	61 years (43-69) 17 (32,7%)
Gender Male/Female	38/14
Diagnosis at allo-HSCT AML (MDS Related 1- Therapy related 1) MDS MF	32 6 14
Disease Status at allo-HSCT NO CR/CR/STABLE DISEASE	4/31/17

Ematologia e Centro Trapianti CSE San Giovanni Rotondo

Udine, 8-9 Ottobre 2026

Corso di Formazione **GITMO** Trapianto e terapie cellulari: cellule, donatori e condizionamenti

Aula Polifunzionale Ospedale di Udine

TTF Conditioning Regimen in Allo-HSCT: a single Center experience

Patients and Transplant details	OVERALL (52)
HSCT-CI-SCORE INTERMEDIATE HIGH MEDIAN HSCT-CI (range)	38 14 2 (1-4)
KARNOFSKY >=90 <90	40 12
RISK AT DIAGNOSIS LOW INT HIGH	1 24 27

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Udine, 8-9 Ottobre 2026

TTF Conditioning Regimen in Allo-HSCT: a single Center experience

Patients and transplant details	OVERALL (52) (%)
DONOR TYPE Matched related Matched unrelated (minimum 8/8) Mismatched unrelated Haploidentical Female into male recipient	13 (25%) 25 (47%) 7 (14%) 7 (14%) 19 (36,5%)
STEM CELLS SOURCE PB BONE MARROW	50 (96%) 2 (4%)
GVHD PROPHYLAXIS Post-transplant cyclophosphamide ATG-based Non-T cell depleted	10 (19%) 34 (66%) 8 (15%)

Udine, 8-9 Ottobre 2026

TTF Conditioning Regimen in Allo-HSCT: a single Center experience

Patients and Transplant details	OVERALL (52) (%)
Median follow-up (months) range	13 (0.5-61)
Alive at last follow-up CR Active disease	35 (67%) 34 1
Died at last follow-up	17 (33%)
Neutrophils engraftment occurs in all evaluable patients. Median time to neutrophils engraftment.	20 days (range 13-36)
Platelets engraftment occurred in all evaluable patients. Median time to platelets engraftment .	20 days (range 12-161)

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Udine, 8-9 Ottobre 2026

TTF Conditioning Regimen in Allo-HSCT: a single Center experience

Patients and Transplant details	OVERALL (52) (%)
aGvHD Grade I-II Grade III-IV	14 (27%) 10 (20%) 4 (7%)
cGvHD Limited Extensive	19 (36%) 16 (31%) 3 (5%)
Died at last follow-up AML (32) MDS (6) MF (14)	17 (33%) 10 (19%) 1 (2%) 6 (12%)

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Udine, 8-9 Ottobre 2026

TTF Conditioning Regimen in Allo-HSCT: a single Center experience

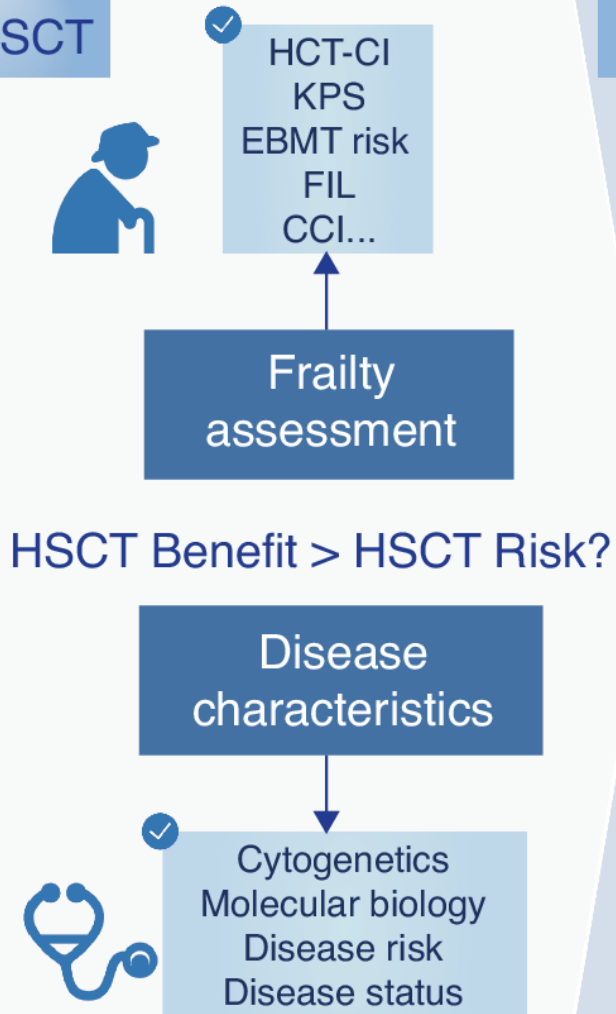
CAUSE OF DEATH	OVERALL (52) (%)
Transplant related mortality (TRM) 30 days (no. pts) 100 days 1 year	12 (23%) 3 (5.7%) 7 (13.4%) 11 (21.1%)
Other causes of death IMA (+711 days) Colon cancer (+419 days); Stomach cancer (+474 days)	3 (5.7%) 1 2
Died at last follow-up Non relapse mortality Relapse Other causes of death	17 (33%) 12 (23.5%) 2 (3.8%) 3 (5.7%)

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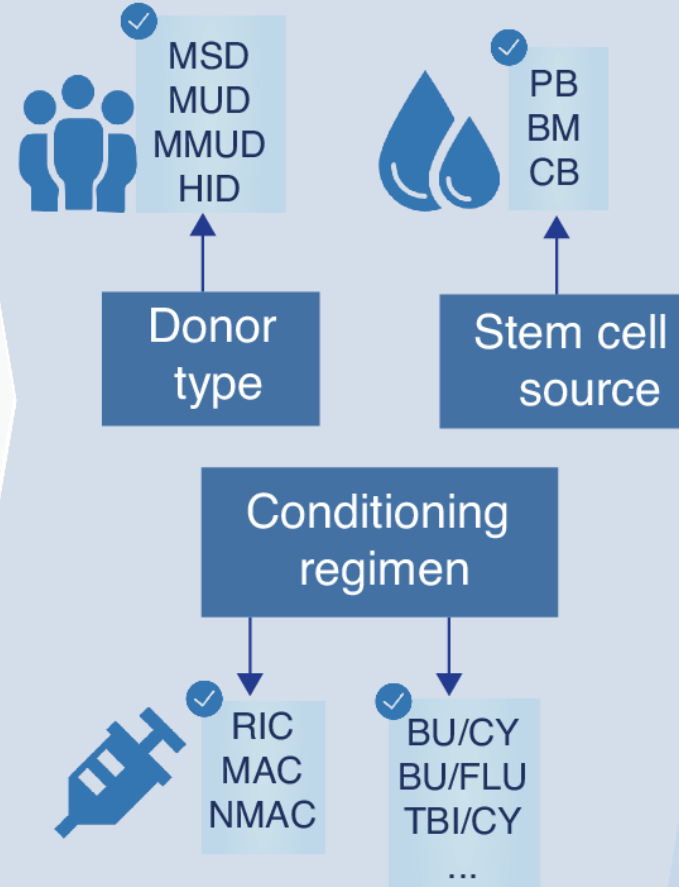
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Comprehensive management

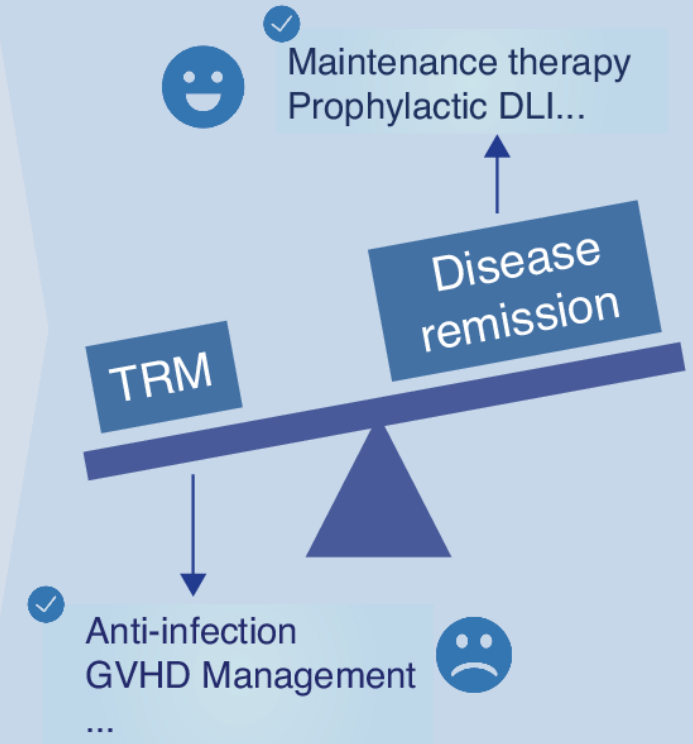
Pre-HSCT



HSCT



Post-HSCT



Dynamic assessment and supportive care

CONCLUSIONI

- Alcuni studi suggeriscono che 70 aa non sono una barriera insormontabile, è necessario selezionare il paziente sin dall'esordio e decidere se è candidabile al trapianto.
- Si possono ottenere risultati incoraggianti in particolare evitando cicli ripetuti di CT prima del trapianto. Nella nostra esperienza la terapia di induzione chemio-free nei pazienti con età >65 aa ha ridotto il carico di tossicità, l'ospedalizzazione e il rischio infettivo.
- Il miglioramento della terapia di supporto, i regimi di condizionamento ad intensità ridotta, la scelta del donatore e della profilassi della GvHD, hanno avuto un impatto favorevole sulla OS, NRM ed EFS dei pazienti con età >70 aa sottoposti ad ALLOTMO.

CONCLUSIONI

- **Lo stato della malattia e le comorbidità piuttosto che l'età cronologica hanno un impatto sull'outcome del trapianto in questo setting di pazienti.**
- **Il Sorrow Risk Score deve essere integrato con una valutazione geriatrica completa (CGA Comprehensive Geriatric Assessment) quale strumento per valutare lo stato di salute nei pazienti con età > 65 aa.**
- **L'associazione Treosulfano + Fludarabina può rappresentare la terapia di condizionamento standard nei pazienti affetti da LAM con età > 70 aa; nella nostra preliminare esperienza si è dimostrata efficace nel controllo della malattia e nel ridurre gli effetti collaterali della terapia di condizionamento.**



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