Will PTCy replace ATG as GVHD prophylaxis in unrelated donor HSCT for AML?

YES

Giorgia Battipaglia
Responsabile Unità Clinica Trapianti
AOU Federico II di Napoli

No COI to disclose

Background: GVHD prophylaxis with ATG

- GVHD is associated with considerable morbidity and mortality related to allo-HSCT
- In vivo TCD with ATG has been shown to reduce the incidence of GVHD, particularly in its chronic form and when using PBSC
- ATG represents the standard GVHD prophylaxis in EU in HLA-id sib allo-HSCT or UD allo-HSCT

Table 4. Proposed indications for immunoregulation with ATG in patients given PBSC from allogeneic donors.

	Recommendation for ATG	Dose and timing of ATG
Myeloablative PBSCT from matched sibling donors[58]	standard of care	ATG-F 10 mg/kg/day on days -3, -2 and -1.
Myeloablative PBSCT from HLA-matchedunrelated donors[56,61,57]	standard of care	ATG-F 20 mg/kg/day on days -3, -2 and -1*. ATG-T 0.5 mg/kg on day -2 and 2 mg/kg on days -1 and +1.
RIC-PBSCT fludarabine-busulfan[68]	recommended	ATG-T 2.5 mg/kg/day on days -2 and -1.
Non-myeloablative PBSCT	developmental	/
HLA-haplo-identical stem cell transplantation (Bejing approach)[88]	standard of care	ATG-T 2.5 mg/kg/day from days -5 to -2.

* some centers use smaller doses such as 15 mg/kg total dose

Baron F et al. Haematologica 2017

ATG in GVHD prophylaxis

Table 1. Summary of 3 randomized trials

	GITMO[6,7]		Finke[8,9]		Kröger[10]		Total			
	ATG	noATG	ATG	noATG	ATG	noATG	ATG	noATG	RR	P
Patients, n	56	53	103	98	83	72	242	223	–	–
aGVHD II-IV, %	50%	70%	33%	51%	11%	18%	31%	46%	1.47	.001
aGVHD III-IV, %	23%	43%	11%	24%	2%	8%	12%	25%	2.08	.0003
cGVHD, %	37%	60%	26%	50%	22%	46%	28%	52%	1.83	.00001
ext cGVHD, %	15%	41%	12%	45%	5%	24%	11%	37%	3.43	.00001
NRM, %	39%	47%	19%	33%	14%	12%	24%	31%	1.27	.1
Relapse, %	23%	21%	33%	28%	32%	25%	29%	25%	0.84	.2
Survival, %	55%	56%	55%	43%	74%	77%	61%	59%	1.04	.6

ext, extensive; GITMO, Italian Cooperative Transplant Group; NRM, non-relapse mortality; RR, relative risk of patients not receiving ATG as compared with ATG.

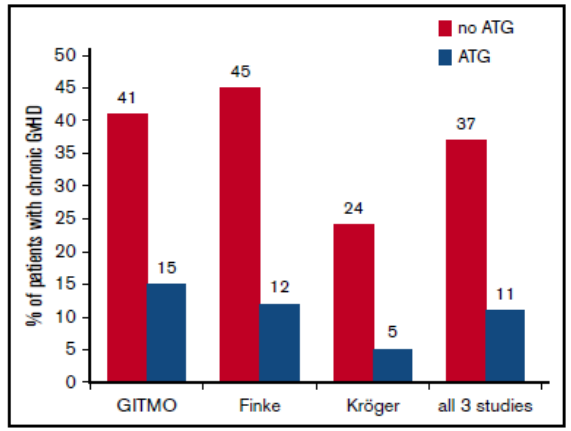


Figure 1. Percentage of patients with severe cGVHD in 3 randomized trials. (GITMO,[6,7] Finke,[8,9] Kröger,[10] and combined data [total] are shown).

ARTICLES | VOLUME 17, ISSUE 2, P164–173, FEBRUARY 2016

Pretreatment with anti-thymocyte globulin versus no anti-thymocyte globulin in patients with haematological malignancies undergoing haemopoietic cell transplantation from unrelated donors: a randomised, controlled, open-label, phase 3, multicentre trial

Prof Irwin Walker, MBBS • Tony Panzarella, MSc • Prof Stephen Couban, MD • Prof Felix Couture, MD • Prof Gerald Devins, PhD • Mohamed Elemary, MD • Prof Geneviève Gallagher, MD • Holly Kerr, RN • John Kuruvilla, MD • Prof Stephanie J Lee, MD • John Moore, MD • Prof Thomas Nevill, MD • Gizelle Popradi, MD • Prof Jean Roy, MD • Kirk R Schultz, MD • David Szwajcer, MD • Prof Cynthia Toze, MD • Ronan Foley, MD • on behalf of the Canadian Blood and Marrow Transplant Group • Show less

Bacigalupo A. Blood Adv 2017

ATG for GVHD prophylaxis: counterpoints

- Not all ATG formulations are the same → interpatient variability and lack of head-to-head comparative studies
- Delayed immune reconstitution[1]
- Higher infectious risk, EBV reactivation and PTLD[2,3]
- Higher relapse incidence[4]

[1]*Mohty M et al. Bone Marrow Transplant 2000*
[2]*Bacigalupo A et al. Blood 2001*
[3]*Walker I et al. Lancet Oncol 2016*
[4]*Soiffer RJ et al. Blood 2011*

The PTCy “revolution”

- In vivo T-cell depletion with the use of PTCy initially pioneered in the Haplo setting, resulted in favorable rates of both acute and chronic GVHD[1]

- Ease manageability and availability, low cost, no PTLD are other potential advantages of PTCy

- Use of PTCy has subsequently been expanded to other donor settings, i.e. HLA-identical sibling, MUD and MMUD, confirming its safety and efficacy as GVHD prophylactic agent[2,3,4]

[1]*Luznik L et al. Biol Blood Marrow Transplant 2008*

[2]*Battipaglia G et al. Cancer 2021*

[3]*Ruggeri A et al. J Hematol Oncol 2018*

[4]*Battipaglia G et al. Blood 2019*

ATG vs PTCy: pick up the winner

ATG

PTCy

ATG vs PTCy in UD allo-HSCT

Reference	Population	Donor type	N	Grade II-IV aGVHD	Grade III-IV aGVHD	All grades cGVHD	RI	NRM	PFS	OS	GRFS
Nykolyszyn 2020 (Marseille)	Hem malignancies PBSC	1-Ag MMUD	ATG, n=40 PTCy, n=22	**35%** **14%**	**18%** **0%**	26% 29%	32% 15%	22% 5%	**45%** **81%**	**56%** **85%**	**27%** **60%**
Modi 2021 (USA)	AML, MDS	1-Ag MMUD	ATG, n=51 PTCy, n=25	**52.9%** **24.4%**	19.6% 12%	**49%** **16%**	15.7% 17%	31.4% 17%	52.9% 66%	56.9% 70.3%	**21.6%** **55.5%**
Moiseev 2016 (Russian federation)	AML, ALL PBSC	MUD 1 or 2-Ag MMUD	ATG, n=125 PTCy, n=86	**45%** **19%**	**27%** **4%**	**65%** **16%**	27% 19%	**36%** **16%**	**38%** **65%**	**40%** **69%**	**12%** **52%**
Ballen 2020 (Spain)	Hem malignancies	MUD 1-Ag MMUD	ATG, n=60 PTCy, n=72	**67%** **46%**	**34%** **3%**	23% 24%	22% 26%	24% 22%	51% 50%	58% 60%	44% 40%
Battipaglia, 2019 (EBMT)	AML	1-Ag MMUD	ATG, n=179 PTCy, n=93	32% 30%	**19%** **9%**	36% 39%	37% 29%	29% 16%	**34%** **55%**	38% 56%	**21%** **37%**
Brissot, 2020 (EBMT)	AML	MUD	ATG, n=1452 PTCy, n=154	29.2% 28.8%	9% 8.8%	33.6% 31.4%	23.7% 25.2%	16.7% 15.2%	59.6% 59.7%	64.8% 62.7%	49.3% 41.6%

ATG vs PTCy: pick up the winner

ATG

PTCy

10/10 MUD allo-HSCT

ATG vs PTCy in 10/10 MUD: GVHD

Table 2 Cumulative incidence of GVHD

	180-day acute GVHD II–IV	180-day acute GVHD III–IV	2-year chronic GVHD	2-year ext. chronic GVHD
PTCY	28.8% [22.2–35.7]	8.8% [5.1–13.7]	31.4% [23.3–39.8]	18.5% [12–26.1]
ATG	29.2% [26.8–31.6]	9% [7.6–10.6]	33.6% [31–36.2]	13.1% [11.2–15]
***p* value**	0.68	0.89	0.43	0.11

Abbreviations: *ATG* antithymocyte globulin, *Ext* extensive, *GVHD* graft-versus host disease, *PTCY* post-transplantation cyclophosphamide

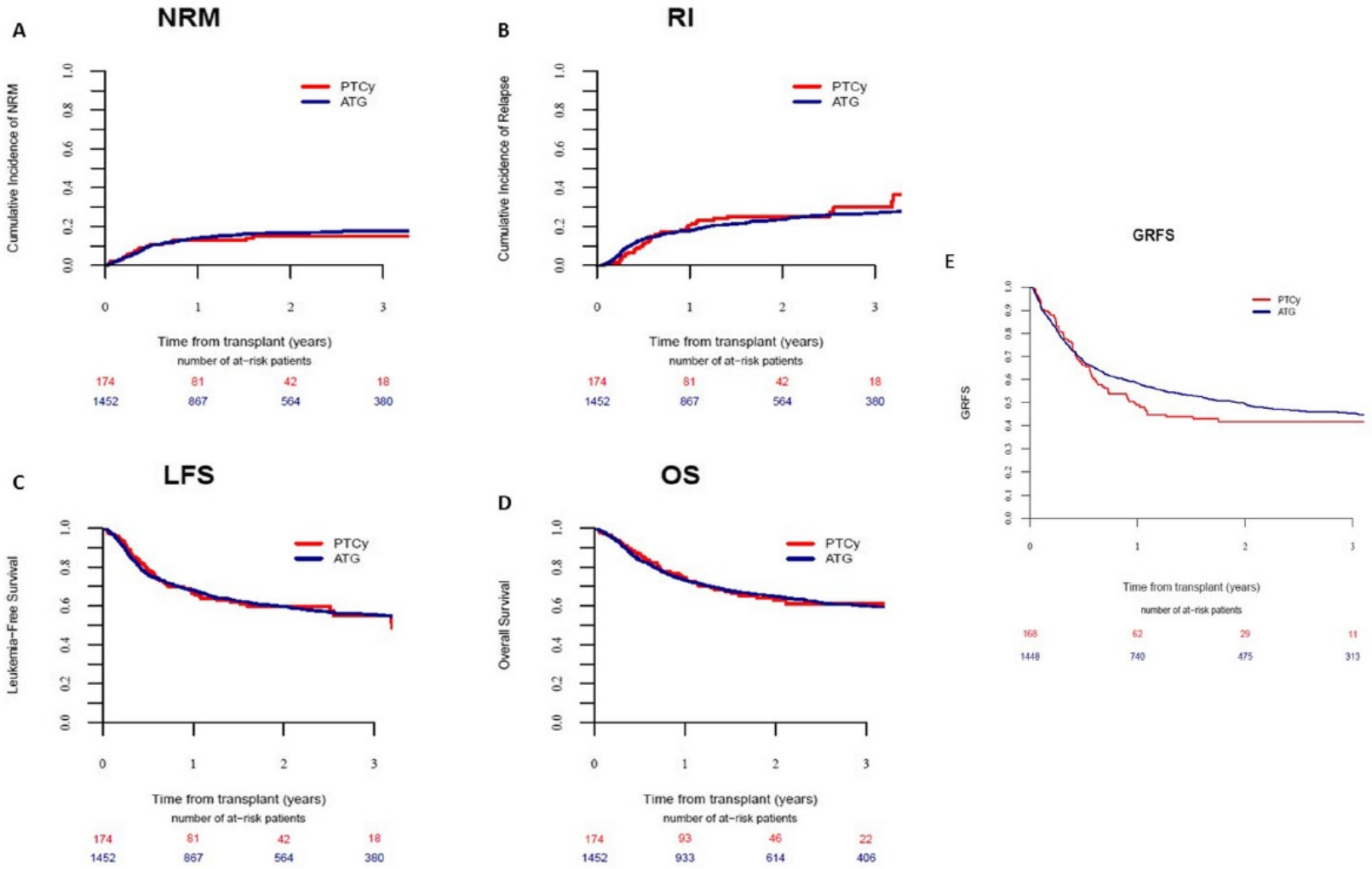
No differences in GVHD incidence

Table 3 Multivariate analysis for GVHD

	Acute GVHD II–IV		Acute GVHD III–IV		Chronic GVHD		Ext. chronic GVHD	
	HR (95% CI)	*p* value	HR (95% CI)	*p* value	HR (95% CI)	*p* value	HR (95% CI)	*p* value
ATG vs PTCY	0.98 (0.66–1.46)	0.93	0.84 (0.42–1.71)	0.64	1.22 (0.79–1.87)	0.37	0.64 (0.37–1.09)	0.09
Age (per 10 years)	1 (0.91–1.09)	0.92	1.01 (0.86–1.18)	0.92	1.06 (0.97–1.16)	0.20	1.03 (0.89–1.18)	0.73
sec. AML vs de novo	1.23 (0.95–1.61)	0.12	1.26 (0.79–2)	0.34	1.01 (0.76–1.33)	0.96	1.62 (1.1–2.39)	0.01
Adverse cytogenetics vs other	0.94 (0.74–1.21)	0.65	1.12 (0.73–1.71)	0.60	0.73 (0.56–0.96)	0.03	0.61 (0.39–0.95)	0.03
Female donor-male recipient vs other	1.27 (0.96–1.68)	0.10	1.67 (1.05–2.66)	0.03	1.07 (0.79–1.45)	0.65	1.05 (0.66–1.67)	0.83
RIC vs MAC	0.79 (0.62–1)	0.046	0.89 (0.59–1.36)	0.60	0.97 (0.76–1.23)	0.79	0.78 (0.54–1.14)	0.20
KPS ≥ 90	0.83 (0.65–1.06)	0.13	0.64 (0.42–0.97)	0.03	0.91 (0.71–1.17)	0.45	0.92 (0.63–1.34)	0.67
Patient CMV positivity	1.05 (0.85–1.31)	0.64	1.01 (0.68–1.48)	0.98	1.28 (1.03–1.6)	0.03	1.05 (0.75–1.47)	0.77
Donor CMV positivity	1 (0.81–1.23)	0.99	1.06 (0.73–1.53)	0.77	0.97 (0.79–1.2)	0.80	1.32 (0.96–1.82)	0.09
Year of transplantation	1.01 (0.96–1.06)	0.75	1.03 (0.94–1.12)	0.57	1 (0.95–1.05)	0.94	1.07 (0.99–1.16)	0.09
PBSC vs BM	1.05 (0.75–1.47)	0.77	1.1 (0.6–2)	0.76	1.1 (0.78–1.55)	0.59	1.37 (0.79–2.4)	0.26

Brissot E et al. J Hematol Oncol 2020

ATG vs PTCy in 10/10 MUD: survival



No differences in survival outcomes

Brissot E et al. J Hematol Oncol 2020

ATG vs PTCy in 10/10 MUD: available data

→ no differences between the two GVHD prophylaxis strategies

→ PTCy is safe and feasible in 10/10 MUD allo-HSCT

ATG vs PTCy: pick up the winner

ATG

PTCy

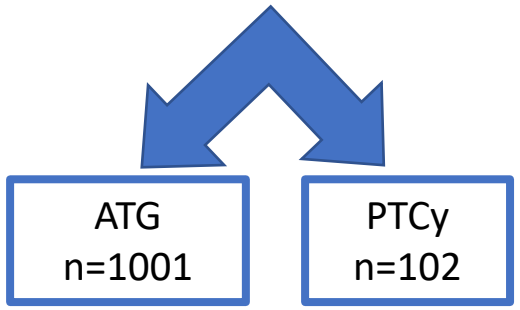
What about 1-Ag MMUD allo-HSCT?

TRANSPLANTATION

Posttransplant cyclophosphamide vs antithymocyte globulin in HLA-mismatched unrelated donor transplantation

Giorgia Battipaglia,[1,2] Myriam Labopin,[1,3,4] Nicolaus Kröger,[5] Antonin Vitek,[6] Boris Afanasyev,[7] Inken Hilgendorf,[8] Johannes Schetelig,[9] Arnold Ganser,[10] Didier Blaise,[11] Maija Itälä-Remes,[12] Jakob R. Passweg,[13] Francesca Bonifazi,[14] Jurgen Finke,[15] Annalisa Ruggeri,[16] Arnon Nagler,[3,17] and Mohamad Mohty[1,3,4]

Inclusion criteria
Age ≥ 18 years
Diagnosis of AML (all disease status allowed)
Transplant from 1Ag-MMUD
High-resolution HLA-allele typing available in EBMT registry
Use of either ATG or PTCy as GVHD prevention strategy
Transplant performed between 2011-2017

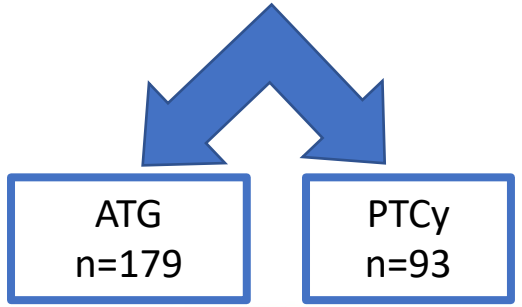


Propensity score matching was performed to reduce and eliminate confounding effects:

Each identified PTCy was matched with 2 ATG using the nearest neighbor or exact matching

Factors included in the propensity score model were:

Disease status at time of allo-HSCT, conditioning regimen, age, secondary AML, female donor to male recipient, source of stem cells, patient and donor CMV serology status.



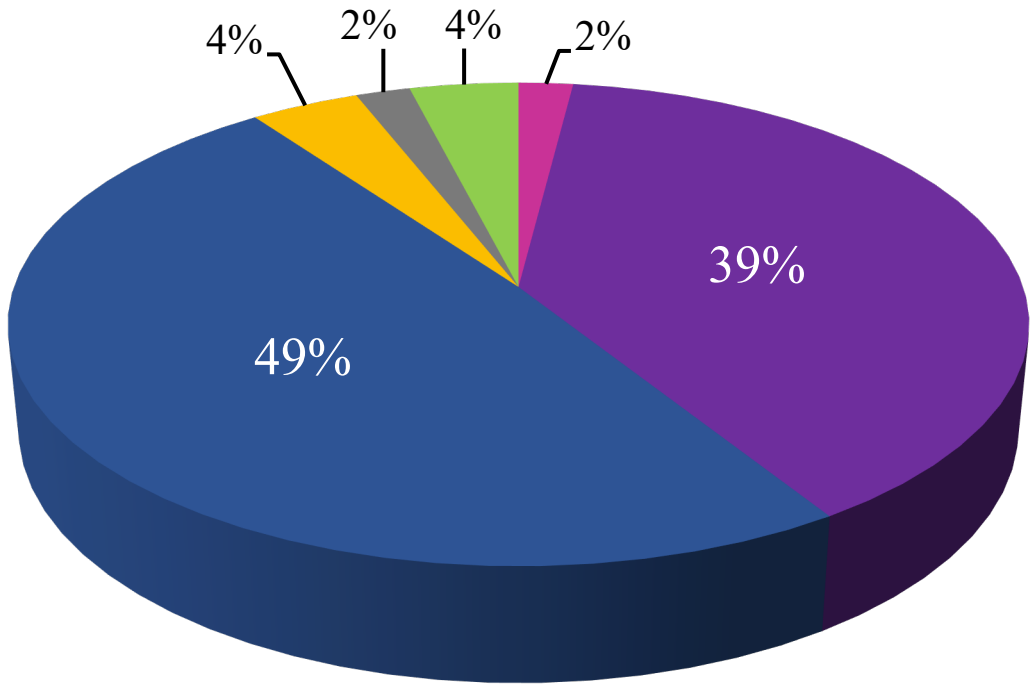
Patients and transplant characteristics (after pair-matching)

Characteristics	ATG, n=179 (%)	PTCy, n=93 (%)	p-value
Median age at allo-HSCT, years (range)	53 (19-75)	51 (20-73)	0.98
F/M	81 (45) / 98(55)	56(60) / 37(40)	**<0.02**
Secondary AML	36 (20)	17 (18)	0.72
Disease status at allo-HSCT **CR1** **CR2/3** **Active disease**	 100 (56) 28 (16) 51 (28)	 51 (55) 15 (16) 27 (29)	0.99
Karnofsky performance status < 80%	12 (7)	3 (3)	0.24
Female donor into male recipient	18 (10)	10 (11)	0.86
Interval from diagnosis to allo-HSCT, months (range)	6 (2-63)	6 (2-47)	0.98
Year of allo-HSCT (range)	2014 (2011-2017)	2015 (2011-2017)	**<0.01**
Conditioning regimen **MAC** **RIC**	 90 (50) 89 (50)	 47 (50) 46 (50)	0.97
Source of stem cells **BM** **PBSC**	 15 (8) 164 (92)	 8 (9) 85 (91)	0.95
Median follow-up, months (range)	27 (2-83)	14 (2-56)	**<0.01**

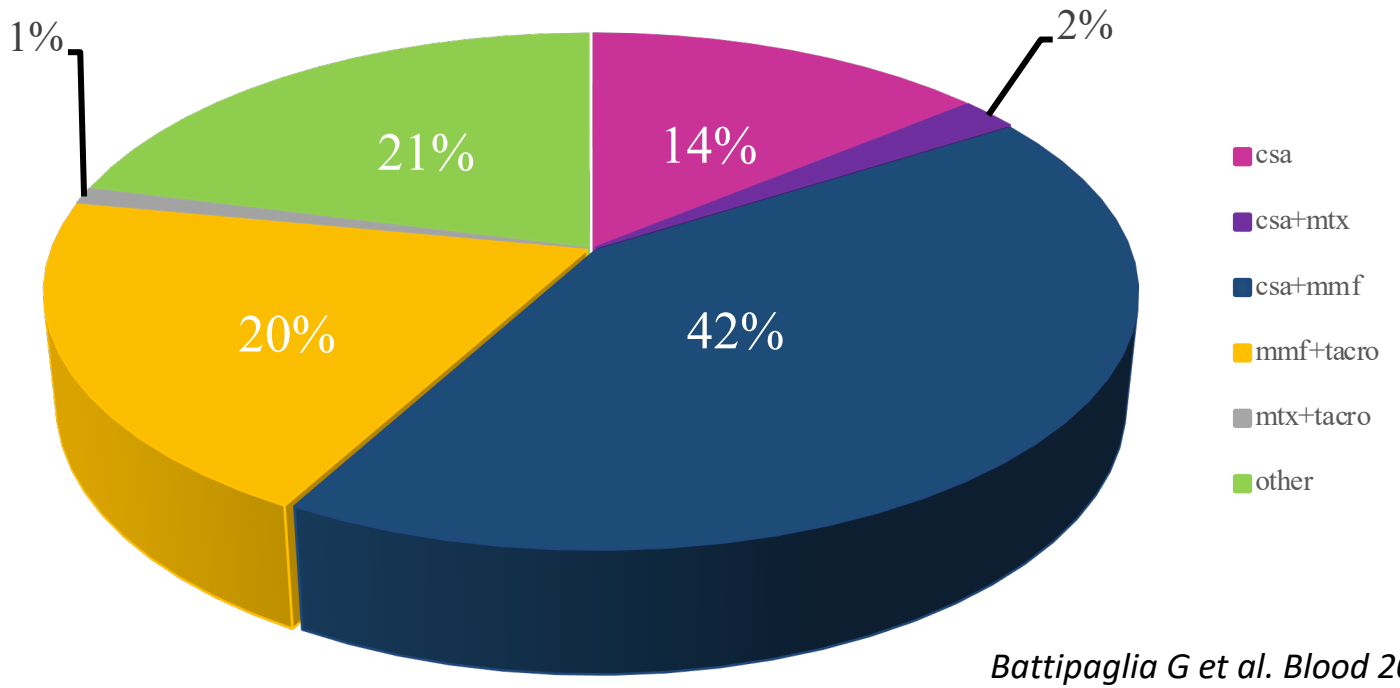
Battipaglia G et al. Blood 2019

Associated GVHD prophylaxis

ATG (n=179)



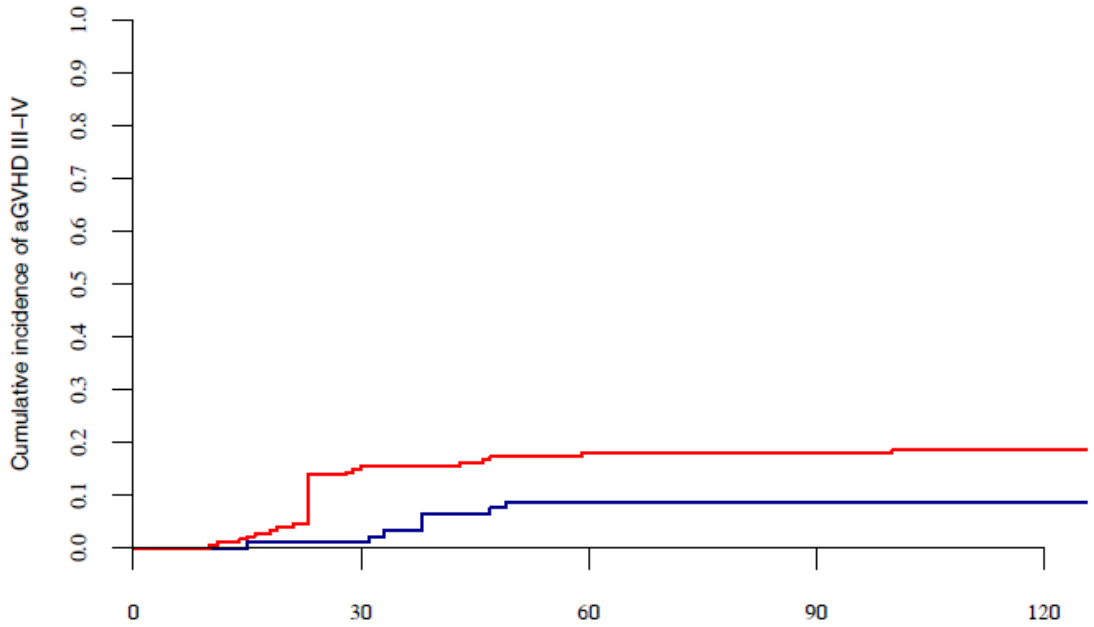
PTCy (n=93)



Battipaglia G et al. Blood 2019

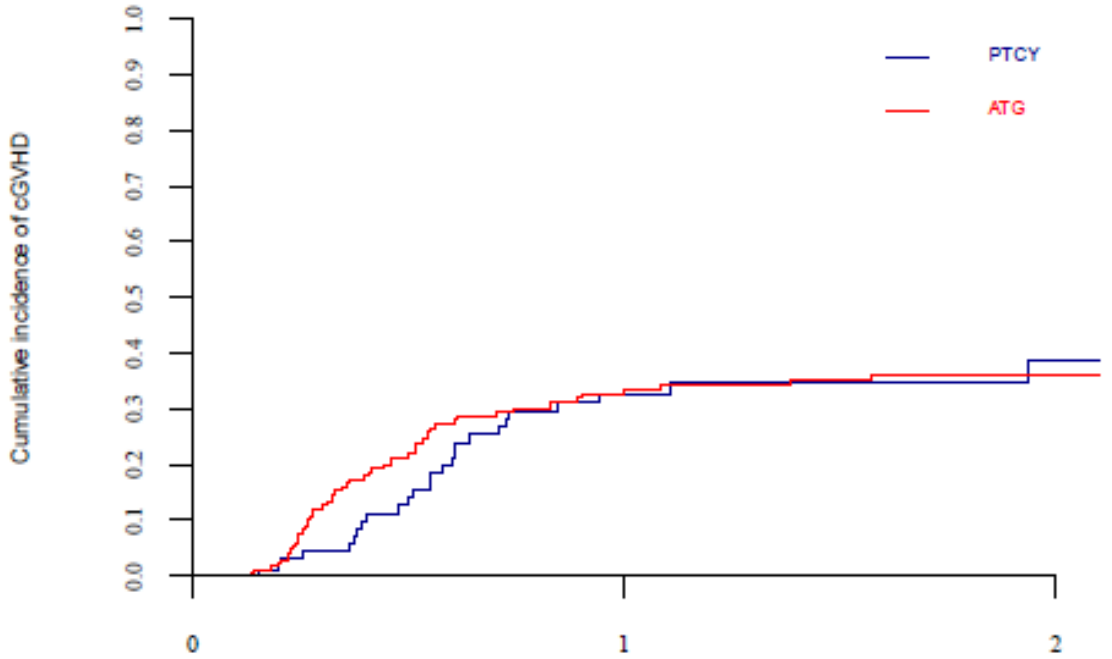
Acute and chronic GVHD

Grade III-IV aGVHD@100d



	Grade II-IV aGVHD, % [95% CI]	Grade III-IV aGVHD, % [95% CI]
PTCy	30 [21-40]	9 [4-16]
ATG	32 [26-40]	19 [13-25]
P-value	0.39	**0.03**

cGVHD@2y

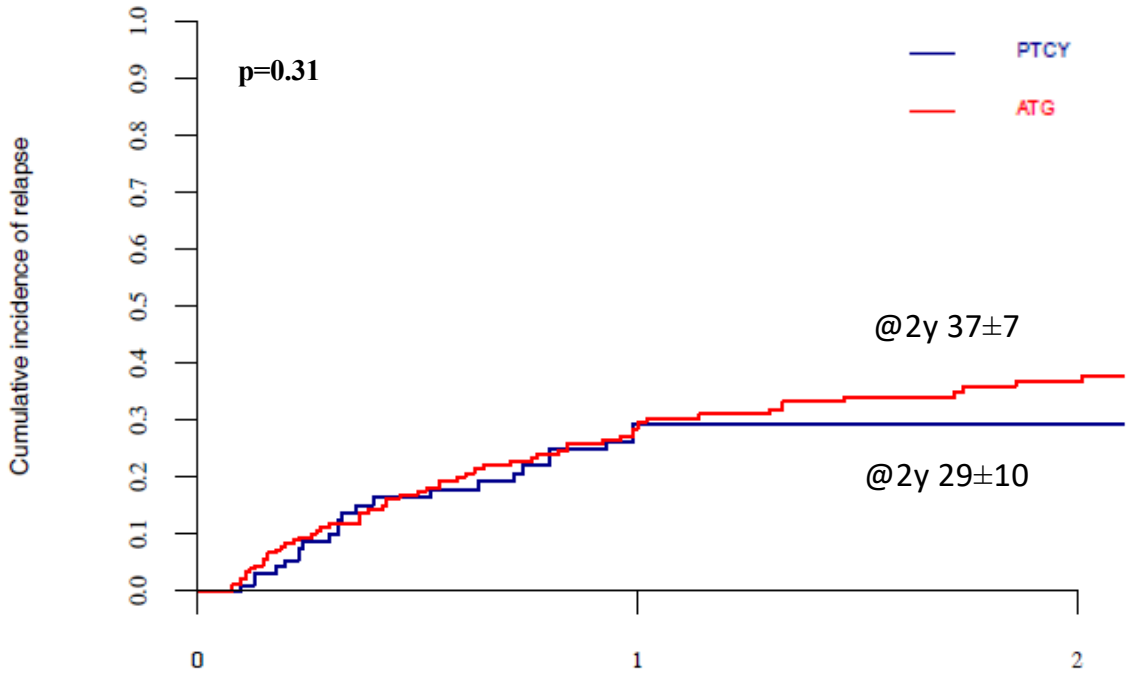


	cGVHD, % [95% CI]	Extensive cGVHD, % [95% CI]
PTCy	39 [26-51]	17 [8-28]
ATG	36 [28-44]	20 [14-28]
P-value	0.35	0.31

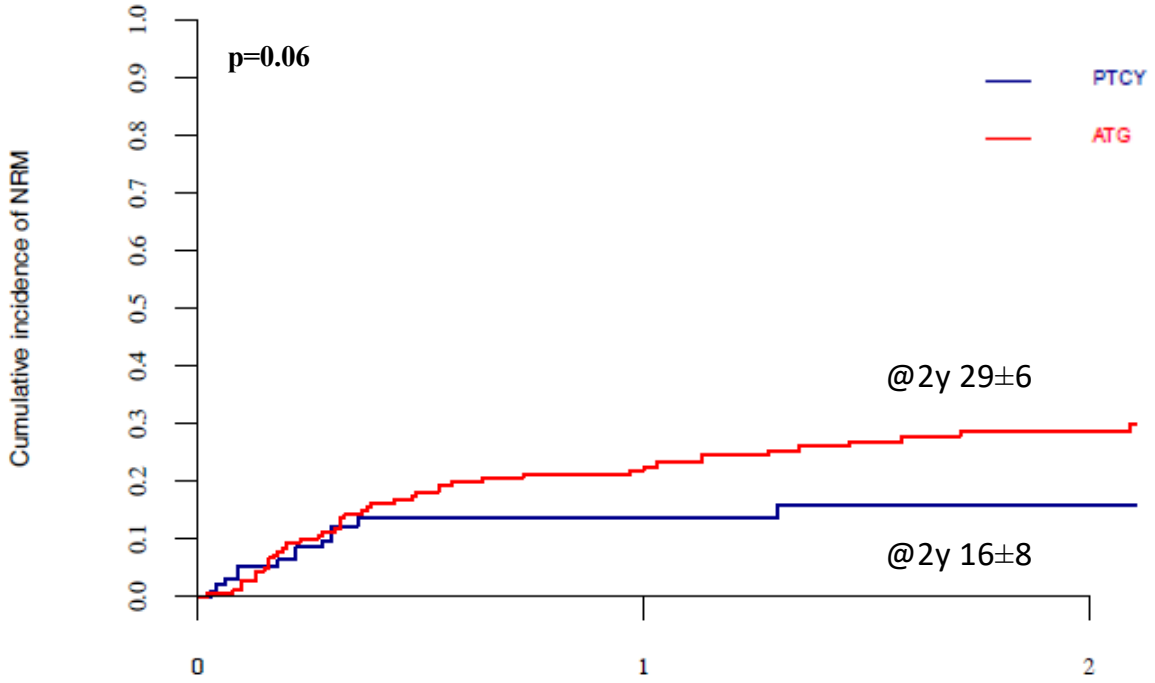
Battipaglia G et al. Blood 2019

RI and NRM at 2 years

RI



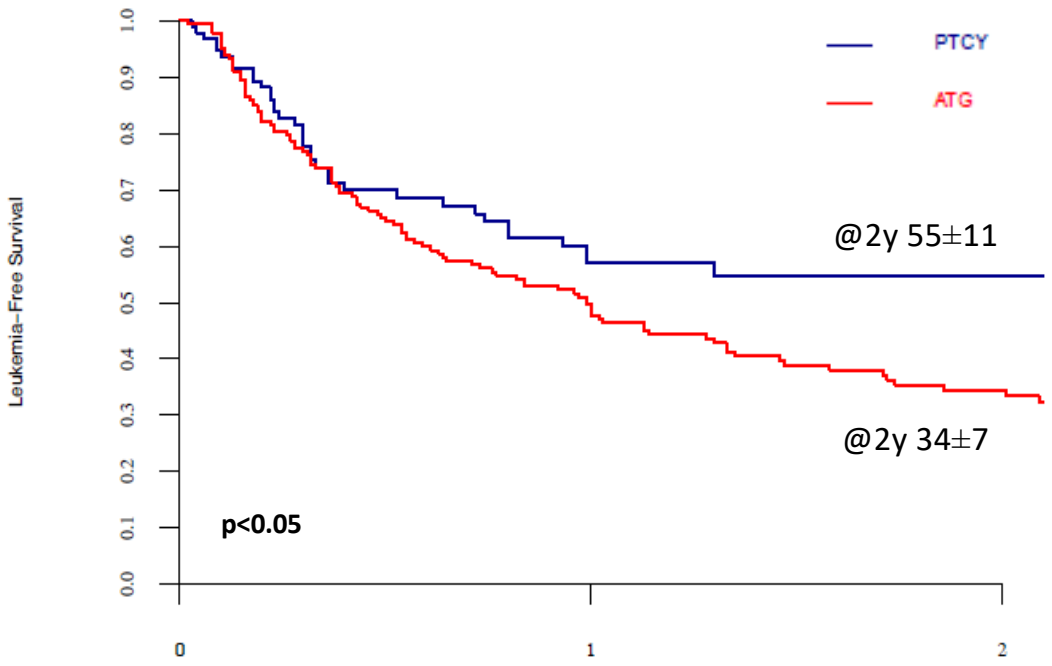
NRM



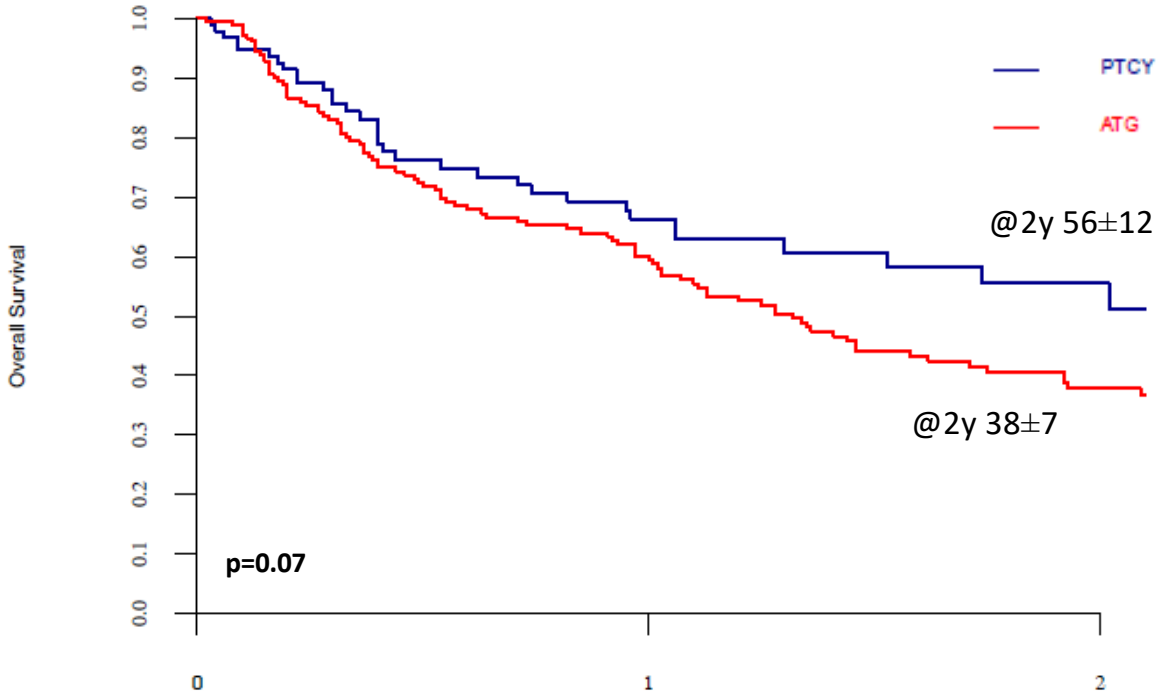
Battipaglia G et al. Blood 2019

LFS and OS at 2 years

LFS

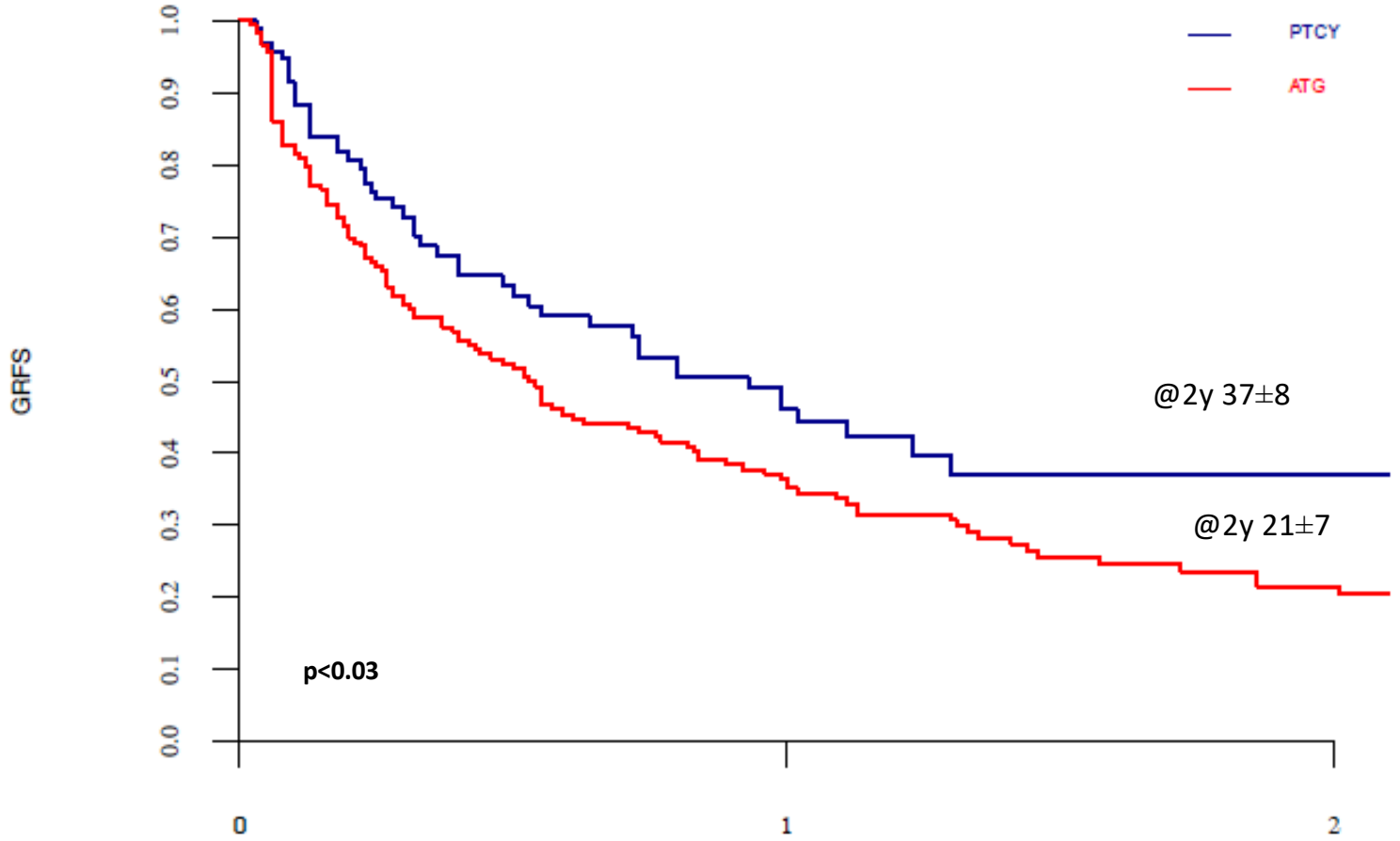


OS



Battipaglia G et al. Blood 2019

GRFS at 2 years



Battipaglia G et al. Blood 2019

Subgroups analysis: PTCY or ATG with CsA+MMF

	Grade II-IV aGVHD, % [95% CI]	Grade III-IV aGVHD, % [95% CI]	2y-cGVHD, any grade [95% CI]	2y-cGVHD, extensive [95% CI]
PTCy (n=38)	27 [14-42]	8 [2-19]	28 [13-46]	19 [5-40]
ATG (n=87)	36 [26-47]	22 [14-32]	31 [21-42]	21 [12-31]
P-value	0.23	*0.07*	0.42	0.48

	LFS, % [95% CI]	OS, % [95% CI]	GRFS [95% CI]	RI [95% CI]	NRM [95% CI]
PTCy (n=38)	58 [41-76]	59 [41-77]	40 [19-60]	31 [15-48]	11 [3-23]
ATG (n=87)	29 [19-39]	33 [22-43]	14 [6-22]	38 [27-49]	33 [22-43]
P-value	*0.08*	0.12	**<0.02**	0.52	*0.07*

Battipaglia G et al. Blood 2019

Subgroups analysis: CR at allo-HSCT

	Grade II-IV aGVHD, % [95% CI]	Grade III-IV aGVHD, % [95% CI]	2y-cGVHD, any grade [95% CI]	2y-cGVHD, extensive [95% CI]
PTCY (n=66)	32 [21-43]	8 [3-16]	45 [28-60]	21 [10-34]
ATG (n=128)	30 [22-38]	16 [10-24]	37 [28-46]	23 [15-32]
P-value	0.98	0.10	0.71	0.74

	LFS, % [95% CI]	OS, % [95% CI]	GRFS [95% CI]	RI [95% CI]	NRM [95% CI]
PTCY (n=66)	63 [50-77]	63 [48-78]	41 [26-56]	22 [12-34]	14 [6-26]
ATG (n=128)	42 [33-52]	45 [35-54]	25 [16-34]	30 [22-39]	27 [19-36]
P-value	**0.04**	**<0.05**	**<0.05**	0.29	0.13

Battipaglia G et al. Blood 2019

Subgroups analysis: PBSC as stem cell source

	Grade II-IV aGVHD, % [95% CI]	Grade III-IV aGVHD, % [95% CI]	2y-cGVHD, any grade [95% CI]	2y-cGVHD, extensive [95% CI]
PTCY (n=85)	29 [20-39]	8 [4-16]	38 [24-51]	19 [10-31]
ATG (n=164)	32 [25-39]	18 [13-25]	36 [28-44]	20 [14-28]
P-value	0.41	**0.04**	0.61	0.72

	LFS, % [95% CI]	OS, % [95% CI]	GRFS [95% CI]	RI [95% CI]	NRM [95% CI]
PTCY (n=85)	57 [45-69]	60 [48-72]	37 [24-50]	29 [19-40]	14 [7-24]
ATG (n=164)	34 [26-43]	38 [30-47]	23 [15-30]	37 [29-45]	28 [21-36]
P-value	**0.03**	**0.04**	**0.03**	0.48	**0.04**

Battipaglia G et al. Blood 2019

ATG vs PTCy in UD: metanalysis

In the setting of unrelated donor allo-HSCT, prophylaxis based on PTCy compared to ATG has shown to be associated to:

- Lower incidence of grade II-IV aGVHD
- Lower incidence of grade III-IV aGVHD
- Lower NRM and EBV-related complications
- Higher OS

No differences between the 2 GVHD prophylaxis strategies in terms of:

- cGVHD
- RI
- CMV reactivation and BKV-related HC

Tang L et al.Front Oncol 2023

Is PTCy the answer?

- Studies comparing Haplo to UD showed no differences in transplant outcomes[1,2]

PTCy-MMUD

PTCy-Haplo

[1]*Piemontese S J Hematol Oncol 2017*
[2]*Ciurea et al, Blood 2015*

ARTICLE

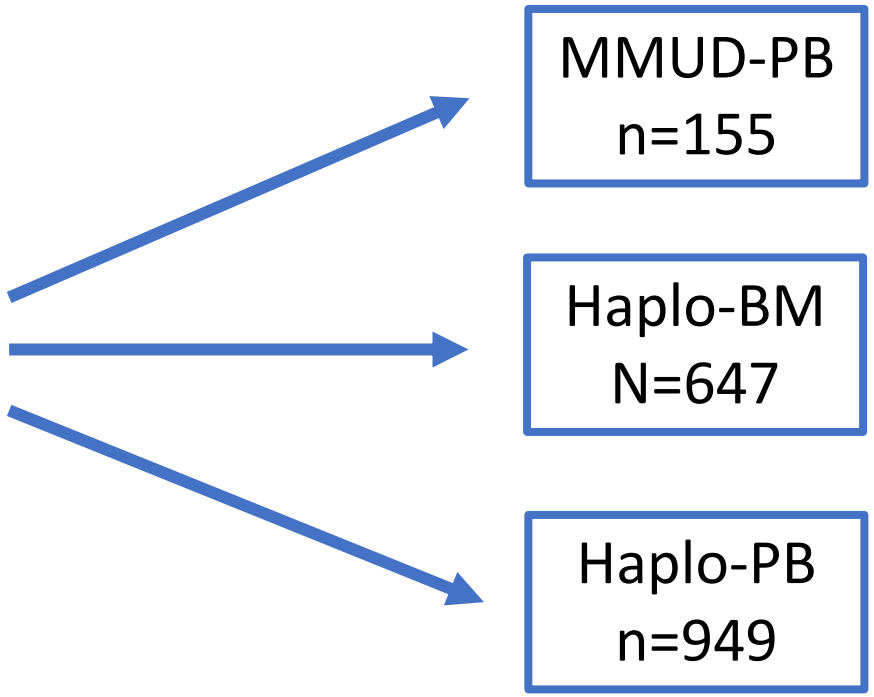
Check for updates

Post-transplant cyclophosphamide in one-antigen mismatched unrelated donor transplantation versus haploidentical transplantation in acute myeloid leukemia: a study from the Acute Leukemia Working Party of the EBMT

Giorgia Battipaglia[1,2], Jacques-Emmanuel Galimard[3], Myriam Labopin[3,4,5], Anna Maria Raiola[6], Didier Blaise[7], Annalisa Ruggeri[8], Yener Koc[9], Zafer Gülbas[10], Antonin Vitek[11], Simona Sica[12], Jose Luiz Diez-Martin[13], Luca Castagna[14], Benedetto Bruno[15], Montserrat Rovira[16], Ivan Moiseev[17], Massimo Martino[18], Giovanni Grillo[19], Mercedes Colorado Araujo[20], Claude Eric Bulabois[21], Stéphanie Nguyen[22], Gerard Socié[23], Mutlu Arat[24], Jiri Pavlu[25], Johanna Tischer[26], Hans Martin[27], Lucia Lopez Corral[28], Goda Choi[29], Edouard Forcade[30], Andrew McDonald[31], Fabrizio Pane[1,2], Ali Bazarbachi[32], Fabio Ciceri[8], Arnon Nagler[3,33] and Mohamad Mohty[3,4,5]

Inclusion criteria
Age ≥ 18 years
Diagnosis of AML in CR1 or CR2
First allo-HCT from Haplo or MMUD
Use of PTCy as GVHD prophylaxis
Transplant performed between 2009-2019

Exclusion criteria
In vivo T-cell depletion with ATG or alemtuzumab
Ex vivo T-cell depletion



Patients and transplant characteristics

Characteristics (%)	MMUD-PB, n=155	Haplo-BM, n=647	Haplo-PB, n=949	p-value
Median age at allo-HSCT, years (range) **Age > 55**	52 (18-79) 70 (45)	52 (18-79) 298 (46)	55 (18-76) 510 (54)	**<0.01**
F/M	67 (43) / 88 (57)	287 (44) / 359 (56)	413 (43.5) / 536 (56.5)	0.93
Secondary AML	31 (20)	65 (10)	148 (16)	**<0.01**
Disease status at allo-HCT **CR1** **CR2**	 124 (80) 31 (20)	 474 (73) 173 (27)	 712 (75) 237 (25)	0.22
HLA mismatch **Class I** **Class II**	 119 (77) 36 (23)	 - -	 - -	
Karnofsky performance status < 90	35 (24)	125 (20)	214 (24)	0.24
Female donor to male recipient	17 (11)	131 (20)	196 (21)	**0.02**
Interval from diagnosis to allo-HSCT, months (range)	5.7 (1.3-86.3)	6.2 (1.8-82.6)	5.9 (0.8-154.9)	0.16
Year of allo-HSCT (range)	2018 (2012-2019)	2016 (2009-2019)	2017 (2010-2019)	**<0.01**
Conditioning regimen **RIC** **MAC**	 72 (46.5) 83 (53.5)	 190 (29.4) 457 (70.6)	 394 (41.5) 555 (58.5)	**<0.01**
Median follow-up, years (95% CI)	1.9 (1.3 - 2.1)	3 (2.7 - 3.3)	1.9 (1.7 - 2)	-

Battipaglia G et al. Bone Marrow Transplant 2022

Results

- The most frequently used conditioning regimen in the Haplo- setting was TBF, both as MAC and RIC. Flu-Cy-TBI was also frequently used as RIC.
- Bu-Flu followed by TBF were the preferred conditioning regimens, both as MAC and RIC, in the MMUD-PB group. Flu-Cy-TBI was also frequently used as RIC.
- A CNI (mainly CsA) with MMF were the most frequent adjuvant immunosuppressive agents in all groups.
- At 30 days, CI of neutrophil engraftment was 92%, 88% and 90% in MMUD-PB, Haplo-BM and Haplo-PB, respectively (p=0.01)
- Median time to neutrophil engraftment was 15 (range 5-42), 19 (range 1-62) and 16 (range 1-78) in MMUD-PB, Haplo-BM and Haplo-PB, respectively.

Battipaglia G et al. Bone Marrow Transplant 2022

Results: acute and chronic GVHD

Univariate analysis

Outcome [95% CI]	MMUD-PB	Haplo-BM	Haplo-PB	p-value
Grade II-IV aGVHD@100 days	30 [23-38]	20 [17-23]	32 [29-35]	**<0.01**
Grade III-IV aGVHD@100 days	12 [7-18]	5 [4-8]	12 [10-14]	**<0.01**
cGVHD all grades@2 years*	34 [25-43]	26 [22-29]	34 [30-37]	**0.01**
Extensive cGVHD@2 years*	14 [8-22]	9 [7-11]	13 [10-15]	0.09

*Due to the longer follow-up in Haplo-BM, outcomes were censored at 2 years.

Multivariate analysis*

	Grade II-IV Acute GVHD		Grade III-IV Acute GVHD		Chronic GVHD, all grades		Chronic GVHD, extensive	
	HR (95% CI)	p value	HR (95% CI)	p value	HR (95% CI)	p value	HR (95% CI)	p value
MMUD-PB (ref)	1		1		1		1	
Haplo-BM	0.70 (0.47-1.03)	0.07	0.44 (0.24-0.81)	**<0.01**	0.74 (0.42-1.29)	0.29	0.87 (0.35-2.14)	0.76
Haplo-PB	1.17 (0.83-1.65)	0.37	1.05 (0.63-1.78)	0.84	1.08 (0.66-1.78)	0.76	1.17 (0.51-2.66)	0.71

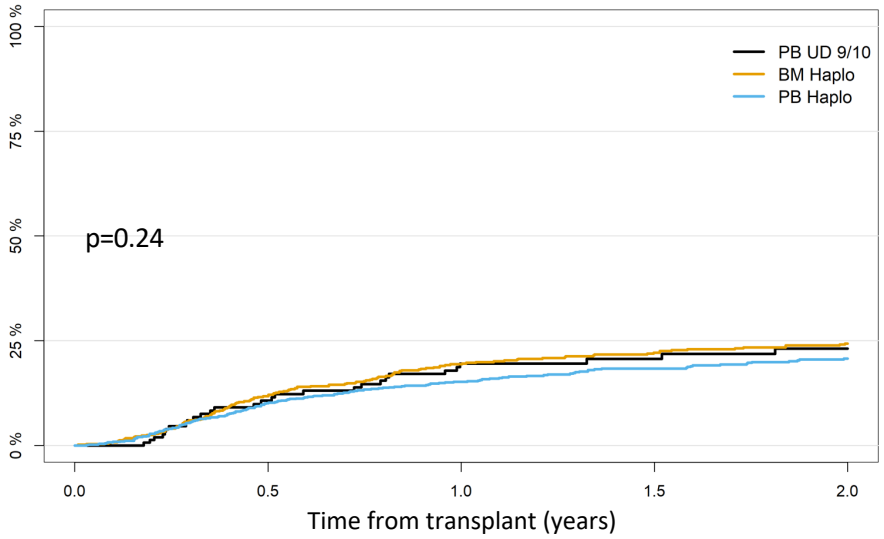
*Adjusted for donor type and stem cell source, secondary AML, F donor to M recipient, conditioning regimen intensity, age, year of transplant, patient CMV serology, disease status at transplant (CR1 vs CR2)

Battipaglia G et al. Bone Marrow Transplant 2022

Results: NRM and RI

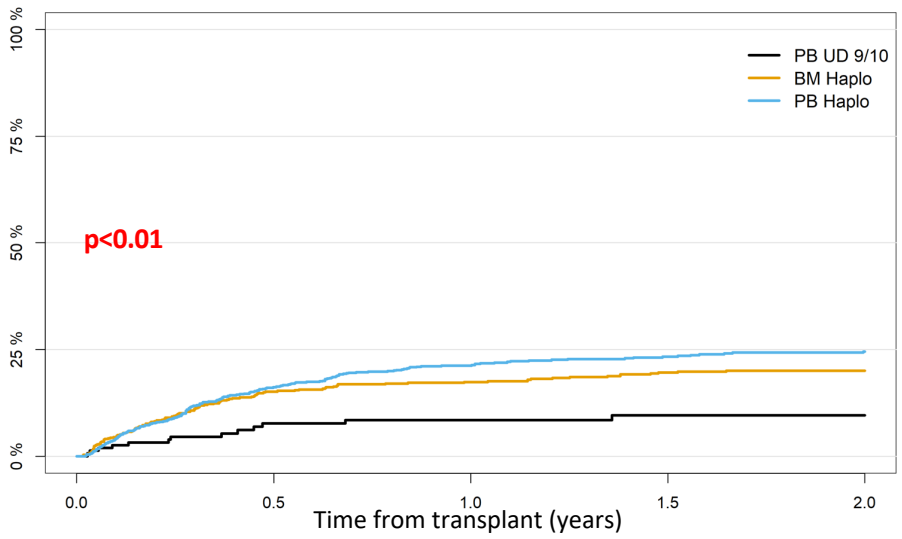
Due to the longer follow-up in Haplo-BM, outcomes were censored at 2 years.

Relapse incidence



	RI [95% CI]
MMUD-PB	23 [16-31]
Haplo-BM	24 [21-28]
Haplo-PB	21 [18-24]

Non-relapse mortality*



	NRM [95% CI]
MMUD-PB	10 [5-15]
Haplo-BM	20 [17-23]
Haplo-PB	24 [21-27]

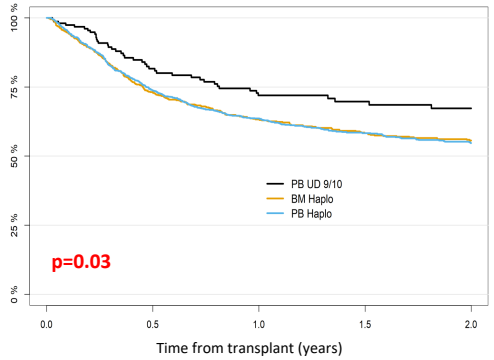
*main cause of death was attributable to infections in the Haplo groups (Haplo-BM 28%, Haplo-PB 27% versus 11% in MMUD-PB)

Battipaglia G et al. Bone Marrow Transplant 2022

Results: LFS, OS and GRFS

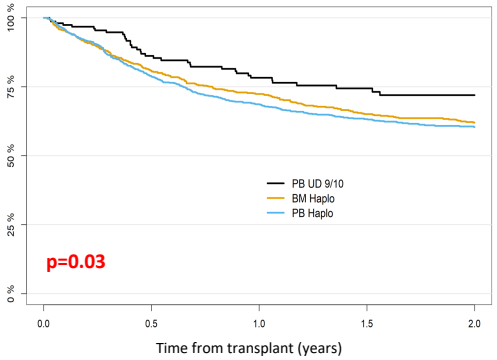
Due to the longer follow-up in Haplo-BM, outcomes were censored at 2 years.

Leukemia-free survival



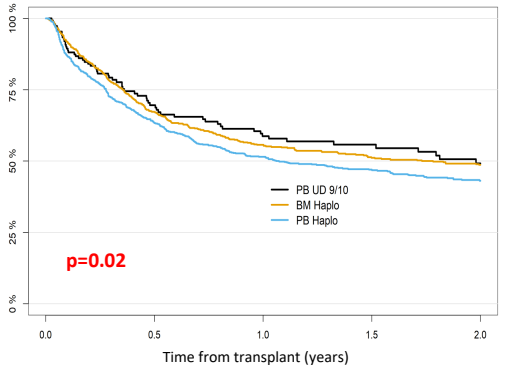
	LFS [95% CI]
MMUD-PB	67 [58-75]
Haplo-BM	56 [51-60]
Haplo-PB	55 [51-58]

Overall survival



	OS [95% CI]
MMUD-PB	72 [63-79]
Haplo-BM	62 [58-66]
Haplo-PB	60 [57-64]

GRFS



	GRFS [95% CI]
MMUD-PB	49 [39-58]
Haplo-BM	49 [44-53]
Haplo-PB	43 [39-47]

Battipaglia G et al. Bone Marrow Transplant 2022

Results: MV analysis for survival

Multivariate analysis for RI and NRM*

	RI		NRM	
	HR (95% CI)	p value	HR (95% CI)	p value
MMUD-PB (ref)	1		1	
Haplo-BM	1.21 (0.80-1.83)	0.36	2.28 (1.23-4.24)	**<0.01**
Haplo-PB	0.96 (0.64-1.43)	0.83	2.65 (1.46-4.81)	**<0.01**

Multivariate analysis for LFS, OS and GRFS

	LFS		OS		GRFS	
	HR (95% CI)	p value	HR (95% CI)	p value		
MMUD-PB (ref)	1		1		1	
Haplo-BM	1.51 (1.06-2.14)	**0.02**	1.50 (1.02-2.21)	**0.04**	1.02 (0.76-1.36)	0.91
Haplo-PB	1.47 (1.05-2.05)	**0.02**	1.51 (1.05-2.19)	**0.03**	1.19 (0.91-1.56)	0.20

*Adjusted for donor type and stem cell source, secondary AML, F donor to M recipient, conditioning regimen intensity, age, year of transplant, patient CMV serology, disease status at transplant (CR1 vs CR2)

Battipaglia G et al. Bone Marrow Transplant 2022

Conclusions

- Available data are still not mature to promote the use of PTCy over ATG in the 10/10 MUD

- Despite mainly retrospective, available data in the 1-Ag MMUD setting favor the use of PTCy over ATG as GVHD prophylaxis

- When facing the “alternative donor” options, preferring a 1-Ag MMUD with PTCy over a Haplo (if timing allows) should be considered

UNIVERSITÀ DEGLI STUDI DI NAPOLI
FEDERICO II

Azienda Ospedaliera Universitaria Federico II

GRAZIE PER L'ATTENZIONE