

Supplementary Table 1. ICI dose, GVHD prophylaxis and GVHD outcomes.

Patient	Primary disease	ICI	ICI dose, mg/kg	GVHD prophylaxis	GVHD (grade)
1	AML	IPI	1	PTCy	None
2	AML	IPI	1	PTCy	None
3	AML	IPI	10	Non-PTCy	None
4	AML	NV	1	PTCy	None
5	AML	NV	3	Non-PTCy	None
6	AML	NV	1	PTCy	None
7	AML	NV	1	PTCy	aGVHD (2) *
8	AML	NV + cytarabine + idarubicin	1	Non-PTCy	None
9	AML	NV + Aza	3	PTCy	None
10	AML	NV + Aza	3	Non-PTCy	None
11	AML	NV + Aza	3	Non-PTCy	None
12	AML	NV + Aza	3	PTCy	None
13	AML	NV + Aza	3	Non-PTCy	aGVHD (2) *
14	AML	NV + Aza	3	PTCy	aGVHD (3) †
15	AML	NV + Aza	3	Non-PTCy	aGVHD (3) *
16	AML	PZ	2	PTCy	None
17 [#]	MDS	IPI	1	PTCy	None
18	MDS	IPI + Aza	3	PTCy	None
19	MDS	NV	1	PTCy	None
20	MDS	NV +Aza	3	Non-PTCy	None
21	MDS	NV +Aza	3	Non-PTCy	None

Abbreviations: AML, acute myeloid leukemia; MDS, myelodysplastic syndromes; ICI, immune checkpoint inhibitor; GVHD, graft versus host disease; IPI, ipilimumab; NV, nivolumab; Aza, 5-azacytidine; PTCy, post-transplant cyclophosphamide.

*exacerbation of previous history of aGVHD following initiation of ICI.

† new onset aGVHD following initiation of ICI.

[#] Patient 17 received ICI prior to alloHCT in the form of combination of ipilimumab, nivolumab and azacytidine

Supplementary Table 2. Cox regression analysis of acute GVHD incidence.

Covariate	Univariate			Multivariable		
	HR	95% CI	P*	HR	95% CI	P*
Age at alloHCT	0.97	0.91-1.02	0.2023			
Sex (Female vs Male)	0.59	0.07-4.74	0.6209			
HCT-CI score (continuous)	0.57	0.37-0.89	0.0131	0.54	0.31-0.94	0.0278
Stem cell type (ref=HPC-A)	2.12	0.33-13.54	0.4268			
Myeloablative status (ref=nonmyeloablative)	1.69	0.21-13.53	0.6209			
Sex match/mismatch (ref=M/M and F/F)	3.71	0.36-38.60	0.2728			
Recipient CMV serostatus (ref=R/R)	0.29	0.03-2.71	0.2767			
Donor relation (ref=unrelated)	0.95	0.15-6.15	0.9580			
Donor type (ref=matched unrelated)	2.59	0.32-21.11	0.3730			
PTCy (yes vs no)	0.73	0.11-4.74	0.7415	0.10	0.02-0.63	0.0143
Pre-ICI history of GVHD (yes vs no)	3.66	0.58-23.30	0.1693			
Months from alloHCT to ICI therapy initiation	1.00	0.99-1.00	0.0664	0.99	0.98-1.00	0.0748

Abbreviations: GVHD, graft-versus-host disease; HR, hazard ratio; CI, confidence interval; alloHCT, allogeneic hematopoietic stem cell transplantation; HCT-CI, hematopoietic cell transplantation-specific comorbidity index; Ref, reference group; HPC-A, hematopoietic progenitor stem cell via apheresis; CMV, cytomegalovirus; R, reactive; PTCy, post-transplantation cyclophosphamide; ICI, immune checkpoint inhibitor.

*P values shown in bold represent $P < 0.05$.