

Supplementary Table 1. Patient and transplant characteristics after propensity score matching

		With prior solid tumor (n = 277)	Without prior solid tumor (n = 1,108)	P value*	SMD
Age, years	Median [range]	59 [20–73]	50 [18–72]	0.477	0.047
	< 50, n (%)	53 (19.1)	204 (18.4)		
	≥ 50, n (%)	224 (80.9)	904 (81.7)		
Sex, No, %	Female	153 (55.2)	598 (54.0)	0.736	0.025
	Male	124 (44.8)	510 (46.0)		
ECOG PS, No, %	0–1	263 (94.9)	1,047 (94.5)	0.882	0.02
	2–4	14 (5.1)	61 (5.5)		
Hematologic disorder type, No, %	AML	154 (55.6)	611 (55.1)	0.997	0.02
	MDS or MPN	61 (22.0)	253 (22.8)		
	ALL	44 (15.9)	174 (15.7)		
	Lymphoma	12 (4.3)	47 (4.2)		
	Others	6 (2.2)	23 (2.1)		
Disease risk, No, %	Standard-risk	138 (49.8)	548 (49.5)	0.99	0.007
	High-risk	133 (48.0)	536 (48.4)		
	Others	6 (2.2)	24 (2.2)		
Donor source, No, %	Related bone marrow	20 (7.2)	72 (6.5)	0.976	0.045
	Related peripheral blood	47 (17.0)	191 (17.2)		
	Unrelated bone marrow	112 (40.4)	434 (39.2)		
	Unrelated peripheral blood	9 (3.2)	38 (3.4)		
	Unrelated cord blood	89 (32.1)	373 (33.7)		
Conditioning intensity, No, %	Reduced-intensity	168 (60.6)	674 (60.8)	1	0.004
	Myeloablative	109 (39.4)	434 (39.2)		
GVHD prophylaxis, No, %	Tacrolimus-based	188 (67.9)	755 (68.1)	0.987	0.009
	Cyclosporine-based	85 (30.7)	338 (30.5)		
	Others	4 (1.4)	15 (1.4)		
Year of allo-HSCT, No, %	2010–2014	69 (24.9)	301 (27.2)	0.718	0.056
	2015–2018	90 (32.5)	359 (32.4)		
	2018–2022	118 (42.6)	448 (40.4)		

*P values were calculated using the Fisher's exact test for categorical variables, and the Mann-Whitney U test for continuous variables.

SMD standard mean difference, ECOG Eastern Cooperative Oncology Group, PS performance status, AML acute myeloid leukemia, MDS myelodysplastic syndrome, MPN myeloproliferative neoplasms, ALL acute lymphoblastic leukemia, GVHD graft-versus-host disease, allo-HSCT allogeneic hematopoietic stem cell transplantation

Supplementary Table 2. Characteristics of prior solid tumors after propensity score matching

	Total (n = 277)
Type, No, %	
Brain	2 (0.7)
Head and neck	15 (5.4)
Thyroid	5 (1.8)
Breast	68 (24.5)
Lung	14 (5.1)
Esophagogastric	41 (14.8)
Colorectal	29 (10.5)
Hepatobiliary and pancreatic	7 (2.5)
Gynecological	34 (12.3)
Urological	30 (10.8)
Germ cell	15 (5.4)
Sarcoma	10 (3.6)
Skin	4 (1.4)
Others	3 (1.1)
Stage, No, %	
0–I	66 (23.8)
II–III	45 (16.2)
IV	10 (3.6)
Unknown	156 (56.3)
Status at the time of allo-HSCT, No, %	
Complete remission	246 (88.8)
Partial remission	3 (1.1)
Stable disease	11 (4.0)
Progressive disease	1 (0.4)
Unknown	16 (5.8)
Treatment, No, %	
Radical resection	96 (34.7)
Chemotherapy	74 (26.7)
Radiation therapy	28 (10.1)
Chemotherapy + Radiation therapy	45 (16.2)
Others	29 (10.5)
Unknown	5 (1.8)
Curative treatment, No, %	
Curative	224 (80.9)
No curative	12 (4.3)
Unknown	41 (14.8)
Years from diagnosis of solid tumor to allo-HSCT	6.1 [0.1–41.7]

allo-HSCT allogeneic hematopoietic stem cell transplantation

Supplementary Table 3. Patient and transplant characteristics: Chemo + RT vs Others among patients with prior solid tumors

		Chemo + RT (n = 45)	Others (n = 227)	P value*
Age, years	Median [range]	56 [23–70]	59 [20–73]	0.168
	< 50 (%)	10 (22.2)	42 (18.5)	
	≥ 50 (%)	35 (77.8)	185 (81.5)	
Sex, No, %	Female	34 (75.6)	117 (51.5)	0.005
	Male	11 (24.4)	110 (48.5)	
ECOG PS, No, %	0–1	41 (91.1)	217 (95.6)	0.259
	2–4	4 (8.9)	10 (4.4)	
Hematologic disorder type, No, %	AML	31 (68.9)	121 (53.3)	0.383
	MDS or MPN	8 (17.8)	51 (22.5)	
	ALL	4 (8.9)	39 (17.2)	
	Lymphoma	2 (4.4)	10 (4.4)	
	Others	0 (0.0)	6 (2.6)	
Disease risk, No, %	Standard-risk	20 (44.4)	115 (50.7)	0.206
	High-risk	25 (55.6)	106 (46.7)	
	Others	0 (0.0)	6 (2.6)	
Donor source, No, %	Related bone marrow	2 (4.4)	17 (7.5)	0.664
	Related peripheral blood	9 (20.0)	38 (16.7)	
	Unrelated bone marrow	15 (33.3)	95 (41.9)	
	Unrelated peripheral blood	1 (2.2)	8 (3.5)	
	Unrelated cord blood	18 (40.0)	69 (30.4)	
Conditioning intensity, No, %	Reduced-intensity	28 (62.2)	139 (61.2)	1
	Myeloablative	17 (37.8)	88 (38.8)	
GVHD prophylaxis, No, %	Tacrolimus-based	31 (68.9)	154 (67.8)	1
	Cyclosporine-based	14 (31.1)	69 (30.4)	
	Others	0 (0.0)	4 (1.8)	
Year of allo-HSCT, No, %	2010–2014	11 (24.4)	55 (24.2)	0.913
	2015–2018	16 (35.6)	74 (32.6)	
	2018–2022	18 (40.0)	98 (43.2)	

*P values were calculated using the Fisher's exact test for categorical variables, and the Mann-Whitney U test for continuous variables.

Chemo + RT chemotherapy and radiation therapy, ECOG Eastern Cooperative Oncology Group, PS performance status, AML acute myeloid leukemia, MDS myelodysplastic syndrome, MPN myeloproliferative neoplasms, ALL acute lymphoblastic leukemia, GVHD graft-versus-host disease, allo-HSCT allogeneic hematopoietic stem cell transplantation

Supplementary Table 4. Patient and transplant characteristics: Chemo + RT vs Others among patients with prior solid tumors

	Chemo + RT (n = 45)	Others (n = 227)	P value*
Type, No, %			<0.001
Brain	1 (2.2)	1 (0.4)	
Head and neck	3 (6.7)	11 (4.8)	
Thyroid	1 (2.2)	4 (1.8)	
Breast	26 (57.7)	42 (18.5)	
Lung	2 (4.4)	12 (5.3)	
Esophagogastric	4 (8.9)	36 (15.9)	
Hepatobiliary and pancreatic	1 (2.2)	6 (2.6)	
Gynecological	3 (6.7)	31 (13.7)	
Urological	0 (0.0)	28 (12.3)	
Germ cell	1 (2.2)	14 (6.2)	
Sarcoma	3 (6.7)	7 (3.1)	
Skin	0 (0.0)	4 (1.8)	
Others	0 (0.0)	2 (4.4)	
Stage, No, %			
0–I	9 (20.0)	55 (24.2)	0.002
II–III	13 (28.9)	32 (14.1)	
IV	5 (11.1)	5 (2.2)	
Unknown	18 (40.0)	135 (59.5)	
Status at the time of allo-HSCT, No, %			
Complete remission	42 (93.3)	202 (89.0)	0.39
Partial remission	1 (2.2)	2 (0.9)	
Stable disease	0 (0)	10 (4.4)	
Progressive disease	0 (0)	0 (0.0)	
Unknown	2 (4.4)	13 (5.7)	
Curative treatment, No, %			
Curative	34 (75.6)	189 (83.3)	0.21
No curative	4 (8.9)	8 (3.5)	
Unknown	7 (15.6)	30 (13.2)	
Years from diagnosis of solid tumor to allo-HSCT	6.5 [1.3–41.7]	6.1 [0.1–35.3]	0.86

*P values were calculated using the Fisher's exact test for categorical variables.

Chemo + RT chemotherapy and radiation therapy, allo-HSCT allogeneic hematopoietic stem cell transplantation

Supplementary Table 5. Causes of non-relapse mortality in the Chemo + RT vs Others among patients with prior solid tumors

	Chemo + RT (n = 20)	Others (n = 68)	<i>P</i> value*
Causes of non-relapse mortality, No, %			0.239
Acute GVHD	3 (15.0)	4 (5.9)	
Bleeding	3 (15.0)	5 (7.4)	
Cardiomyopathy	0 (0.0)	3 (4.4)	
Chronic GVHD	1 (5.0)	7 (10.3)	
Encephalopathy	1 (5.0)	1 (1.5)	
Graft failure	3 (15.0)	3 (4.4)	
Infection	4 (20.0)	23 (33.8)	
Idiopathic pneumonia	1 (5.0)	9 (13.2)	
Secondary malignancy	1 (5.0)	3 (4.4)	
Sinusoidal obstruction syndrome (SOS)	2 (10.0)	1 (1.5)	
Thrombotic microangiopathy (TMA)	1 (5.0)	3 (4.4)	
Relapse of solid tumor	0 (0.0)	2 (2.9)	
Unknown	0 (0.0)	4 (5.9)	

**P* values were calculated using the Fisher's exact test for categorical variables.

Chemo + RT chemotherapy and radiation therapy, GVHD graft-versus-host disease

Supplementary Figure 1. Cumulative incidences of GVHD in patients with and without a history of solid tumors

The cumulative incidences of (A) grade II-IV acute GVHD and (B) chronic GVHD in patients with and without prior solid tumors.

