

Supplementary Appendices

Table 1s. Univariate outcomes of patients receiving myeloablative allogeneic transplants surviving at least two years in remission post transplant reported to the CIBMTR through 2003

Outcome	AML		ALL		MDS		Lymphoma		SAA	
	N Eval	Probability (95% CI)	N Eval	Probability (95% CI)	N Eval	Probability (95% CI)	N Eval	Probability (95% CI)	N Eval	Probability (95% CI)
Relapse	4017		2895		930		619		--	
3 year	3678	3 (3-4)	2625	5 (4-5)	826	3 (2-5)	564	3 (2-4)		
5 years	2963	7 (6-8)	2125	7 (6-8)	610	6 (5-8)	433	5 (3-7)		
8 years	2009	9 (8-10)	1445	9 (7-10)	348	9 (7-11)	281	6 (4-8)		
10 years	1436	10 (9-11)	1005	9 (8-10)	218	10 (8-12)	182	6 (4-8)		
15 years	452	12 (11-13)	294	12 (10-14)	37	11 (9-14)	43	8 (5-12)		
Non-relapse mortality	4017		2895		930		619		--	
3 year	3678	2 (2-3)	2625	2 (1-2)	826	4 (2-5)	564	3 (2-4)		
5 years	2963	5 (4-6)	2125	4 (3-5)	610	7 (6-9)	433	7 (5-10)		
8 years	2009	7 (7-8)	1445	7 (6-8)	348	10 (8-13)	281	11 (8-13)		
10 years	1436	9 (8-10)	1005	9 (8-10)	218	12 (10-15)	182	11 (9-14)		
15 years	452	13 (12-15)	294	13 (11-15)	37	21 (15-27)	43	17 (12-22)		
Disease-free survival	4017		2895		930		619		--	
3 year	3678	94 (93-95)	2625	94 (93-95)	826	93 (91-95)	564	94 (92-96)		
5 years	2963	88 (87-89)	2125	89 (87-90)	610	86 (84-88)	433	87 (85-90)		
8 years	2009	84 (83-85)	1445	85 (83-86)	348	81 (78-84)	281	84 (80-87)		
10 years	1436	82 (80-83)	1005	82 (81-84)	218	78 (74-81)	182	82 (79-86)		
15 years	452	75 (73-77)	294	76 (73-78)	37	68 (62-74)	43	75 (69-80)		
Overall survival	4017		2895		930		619		2171	
3 year	3761	96 (96-97)	2705	97 (96-97)	846	95 (94-97)	577	96 (95-98)	2032	98 (97-99)
5 years	3046	91 (90-92)	2183	91 (90-92)	628	89 (86-91)	444	90 (87-92)	1692	96 (95-97)
8 years	2071	86 (85-87)	1479	87 (85-88)	359	84 (81-86)	287	85 (82-88)	1191	93 (92-94)
10 years	1478	84 (82-85)	1022	84 (82-85)	226	80 (77-83)	188	84 (81-87)	874	92 (91-93)
15 years	474	79 (77-81)	307	79 (76-81)	39	71 (65-77)	44	77 (70-82)	343	88 (86-90)

Table 2s. Multivariate analysis of relapse in patients receiving myeloablative allogeneic transplants surviving at least two years in remission post transplant reported to the CIBMTR transplanted through 2003

Variables	N	Relative risk	P-value
<u>AML</u>			
Disease risk			<.001 ^a
Early	2676	1.00	
Intermediate	673	1.22 (0.90-1.64)	0.184
Late	637	1.79 (1.39-2.32)	<.001
History of aGvHD II-IV			0.003 ^a
No aGvHD or aGvHD I	2436	1.00	
aGvHD II-IV,	1550		
prior to 7 years post tx ^b		0.70 (0.55-0.89)	0.003
after 7 years post tx ^b		1.63 (0.96-2.76)	0.072
Karnofsky score at transplant			0.020 ^a
<90	719	1.00	
≥90	3157	0.74 (0.57-0.94)	0.015
Unknown	110	0.47 (0.22-1.01)	0.054
T-depletion			0.012 ^a
No T-depletion	3213	1.00	
Ex-vivo T-depletion	485	0.64 (0.44-0.92)	0.015
In-vivo T-depletion	288	0.61 (0.37-1.02)	0.059
<u>ALL</u>			
Age			0.006 ^a
0-14	1347	1.00	
15-44	1436	1.51 (1.15-1.98)	0.003
≥45	87	1.93 (0.97-3.85)	0.063
History of aGvHD, II-IV			0.022 ^a
No	1555	1.00	
Yes	1315	0.74 (0.58-0.96)	
Disease risk			0.001 ^a
Early	1259	1.00	
Intermediate	1144	1.69 (1.26-2.27)	<.001
Late	467	1.59 (1.11-2.27)	0.011
Conditioning regimen			<.001 ^a
TBI+Cy	2134	1.00	
Bu+Cy	248	1.83 (1.29-2.61)	<.001
Other/unknown	488	0.74 (0.50-1.08)	0.119
<u>MDS: No significant risk factors</u>			

Table 2s. Continued

Variables	N	Relative risk	P-value
<u>Lymphoma</u>			
History of cGvHD ^c			<.001 ^a
No	299	1.00	
Yes	304	0.34 (0.15-0.75)	0.008
Unknown	11	4.71 (1.62-13.7)	0.004
TBI dose			<.001 ^a
No TBI	106	1.00	
<1200 cGy	118	0.46 (0.20-1.03)	0.061
≥1200 cGy	390	0.18 (0.08-0.39)	<.001

^a Test of overall equality among categories P-value.

^b Up to 7 year after transplantation, patients with aGvHD history have significantly lower risk of relapse as compared to those without history of aGvHD (RR: 0.70, 95% CI: 0.55-0.89). After 7 years the risk of relapse is not significantly different between those who had and those who did not have aGvHD after transplantation (RR: 1.63, 95%CI: 0.96-2.76, p=0.072).

^c Within first 2 years after HCT.

Table 3s. Multivariate analysis of non-relapse mortality in patients receiving myeloablative allogeneic transplants surviving at least two years in remission post transplant reported to the CIBMTR transplanted through 2003

Variables	N	Relative risk	P-value
<u>AML</u>			
Age			<.001 ^a
0-14	776	1.00	
15-29	1354	1.38 (0.92-2.07)	0.124
30-44	1325	2.33 (1.58-3.44)	<.001
≥45	531	3.47 (2.27-5.30)	<.001
Disease risk			<.001 ^a
Early	2676	1.00	
Intermediate	673	1.55 (1.17-2.04)	0.002
Late	637	1.50 (1.15-1.95)	0.003
History of cGvHD ^b			<.001 ^a
No	2053	1.00	
Yes	961	2.47 (1.93-3.16)	<.001
Unknown	216	2.78 (1.59-4.89)	0.004
Graft type			0.016 ^a
BM	3386	1.00	
PB	600	1.44 (1.07-1.94)	
Region			<.001 ^a
USA	1373	1.00	
Canada	205	0.44 (0.27-0.74)	0.002
Europe	1733	0.58 (0.46-0.74)	<.001
Asia	176	0.36 (0.16-0.81)	0.014
Australia/New Zealand	232	0.60 (0.39-0.95)	0.028
Mideast/Africa	156	0.54 (0.25-1.16)	0.117
Central/South America	111	0.35 (0.13-0.96)	0.041
Sex			0.030 ^a
Male	2088	1.00	
Female	1898	0.79 (0.64-0.99)	
<u>ALL</u>			
Age			<.001 ^a
0-14	1347	1.00	
15-44	1436	1.63 (1.20-2.22)	0.002
≥45	87	4.87 (2.85-8.32)	<.001
History of aGvHD, II-IV			<.001 ^a
No	1555	1.00	
Yes	1315	1.65 (1.25-2.19)	
Disease risk			0.020 ^a
Early	1259	1.00	
Intermediate	1144	0.94 (0.68-1.31)	0.719
Late	467	1.50 (1.07-2.11)	0.020

Table 3s. Continued

Variables	N	Relative risk	P-value
Region			<.001 ^a
USA	1013	1.00	
Canada	113	0.47 (0.23-0.94)	0.034
Europe	1283	0.49 (0.34-0.65)	<.001
Asia	108	0.73 (0.35-1.53)	0.407
Australia/New Zealand	205	0.61 (0.33-1.10)	0.098
Mideast/Africa	98	0.62 (0.25-1.54)	0.307
Central/South America	50	1.16 (0.47-2.88)	0.747
Sex			0.011 ^a
Male	1806	1.00	
Female	1064	0.69 (0.52-0.92)	
TBI dose			0.004 ^a
No TBI	274	1.00	
<1200 cGy	650	1.54 (0.90-2.65)	0.116
≥1200 cGy	1946	0.90 (0.54-1.49)	0.687
Graft type			0.005 ^a
BM	2625	1.00	
PB	245	1.95 (1.23-3.10)	
History of cGvHD ^b			<.001 ^a
No	1642	1.00	
Yes	1162		
Prior to 4 years post tx ^c		4.23 (2.47-7.24)	<.001
After 4 year post tx ^c		1.34 (0.94-1.90)	0.104
Unknown	66	2.47 (1.38-4.45)	0.003
<u>MDS</u>			
Age			<.001 ^a
0-29	390	1.00	
30-54	478	1.48 (0.94-2.33)	0.094
≥55	56	3.79 (1.88-7.61)	<.001
History of aGvHD, II-IV			0.001 ^a
No	511	1.00	
Yes	413	2.07 (1.35-3.20)	
History of cGvHD ^b			0.001 ^a
No	402	1.00	
Yes	500	2.28 (1.38-3.76)	0.001
Unknown	22	0.32 (0.04-2.50)	0.279
Year of transplant			0.009 ^a
≤1985	20	1.00	
1986-1990	120	0.21 (0.08-0.56)	0.002
1991-1995	243	0.26 (0.11-0.64)	0.003
1996-2000	357	0.23 (0.10-0.57)	0.001
2001-2003	184	0.16 (0.05-0.45)	<.001

Table 3s. Continued

Variables	N	Relative risk	P-value
<u>Lymphoma</u>			
Age			0.004 ^a
0-24	184	1.00	
≥25	430	2.99 (1.41-6.37)	
Degree of HLA match			0.004 ^a
HLA-identical Siblings	491	1.00	
Unrelated-Well matched	40	4.73 (2.31-9.68)	<.001
Unrelated-Partially matched	45	1.96 (0.87-4.38)	0.103
Unrelated-Mismatched	30	0.67 (0.16-2.76)	0.576
Unknown	8	2.30 (0.53-9.86)	0.264
History of cGvHD ^b			0.002 ^a
No	299	1.00	
Yes	304	2.96 (1.62-5.42)	<.001
Unknown	11	3.75 (0.82-17.1)	0.088

^a Test of overall equality among categories P-value.

^b Within first 2 years after HCT

^c Up to 4 year after transplantation, patients with cGvHD history prior to 2 years after transplant have significantly higher risk of non-relapse mortality as compared to those without history of cGvHD (RR: 4.23, 95% CI: 2.47-7.24). After 4 years the risk of non-relapse death is not significantly different between those with and without CGVHD within 2 years after transplantation (RR: 1.34, 95%CI: 0.94-1.90, p=0.104).