

Does size matter? Center-specific characteristics and survival after allogeneic hematopoietic cell transplantation for acute myeloid leukemia: an analysis of the German Registry for Stem Cell Transplantation and Cell Therapy

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Supplemental Tables

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Supplemental Table 1: Overall survival without 1 year cut off follow-up

Variable	Reference	Exposure	univariable analysis (HR [95%-CI], p-value)	multivariable analysis (HR [95%-CI], p-value)
Center Size (HCT/year)	≥ 40	< 40	1.178 [1.057; 1.312], 0.003	1.193 [1.026; 1.389], 0.022
University Hospital	yes	no	1.171 [1.023; 1.340], 0.022	1.113 [0.930; 1.331], 0.244
Center Experience	≥ 10 years	5-10 years	1.144 [0.987; 1.325], 0.075	1.087 [0.925; 1.277], 0.310
		< 5 years	1.121 [0.842; 1.493], 0.434	1.042 [0.767; 1.416], 0.793
JACIE	yes	no	1.013 [0.919; 1.117], 0.797	
Age	continuous	-	1.020 [1.016; 1.023], <0.001	1.015 [1.012; 1.019], <0.001
Gender	m	f	0.872 [0.801; 0.950], 0.002	0.939 [0.859; 1.027], 0.171
Karnofsky Index	90/100	70/80	1.461 [1.332; 1.602], <0.001	1.335 [1.210; 1.473], <0.001
		10-60	2.166 [1.757; 2.671], <0.001	1.795 [1.446; 2.227], <0.001
		unknown	1.551 [1.328; 1.812], <0.001	1.421 [1.189; 1.698], <0.001
HCT-CI	0-2	3-10	1.344 [1.218; 1.483], <0.001	1.182 [1.066; 1.310], 0.001
		unknown	1.454 [1.302; 1.624], <0.001	1.390 [1.230; 1.572], <0.001
ELN	adverse	BPDCN	0.874 [0.505; 1.513], 0.632	0.929 [0.523; 1.650], 0.801
		favorable	0.530 [0.459; 0.612], <0.001	0.535 [0.461; 0.621], <0.001
		intermediate	0.692 [0.623; 0.769], <0.001	0.757 [0.679; 0.844], <0.001
		unknown	0.766 [0.684; 0.858], <0.001	0.716 [0.634; 0.809], <0.001
Conditioning	MAC	non-MAC	1.139 [1.045; 1.241], 0.003	1.005 [0.913; 1.105], 0.926
Disease status at Tx	1. CR	not 1. CR	1.822 [1.671; 1.986], <0.001	1.702 [1.556; 1.863], <0.001
Graft	PB	BM	1.285 [1.072; 1.541], 0.007	1.167 [0.950; 1.433], 0.141
Donor	MRD	MMRD	1.257 [1.087; 1.454], 0.002	1.130 [0.962; 1.327], 0.137
		MMUD	1.374 [1.196; 1.580], <0.001	1.287 [1.113; 1.489], 0.001
		MUD	0.991 [0.895; 1.097], 0.855	0.945 [0.848; 1.052], 0.300

Legend: HCT-CI: Hematopoietic Cell Transplantation-Comorbidity Index, ELN: European Leukemia Network Classification, CR: Complete Remission; PB: Peripheral Blood; BM: Bone Marrow; CB: Cord Blood; MRD: Matched Related Donor; MMRD: Mismatched Related Donor; MUD: Matched Unrelated Donor; MMUD: Mismatched Unrelated Donor; MAC: Myeloablative Conditioning; HCT/Tx: Hematopoietic Cell Transplantation; JACIE: Joint Accreditation Committee IHCT-Europe & EBMT; BPDCN: blastic plasmacytoid dendritic cell neoplasm

Supplemental Table 2: Event free survival without 1 year cut off follow-up

Variable	Reference	Exposure	univariable analysis (HR [95%-CI], p-value)	multivariable analysis (HR [95%-CI], p-value)
Center Size (HCT/year)	≥ 40	< 40	1.116 [1.006; 1.238], 0.038	1.089 [0.943; 1.258], 0.242
University Hospital	yes	no	1.142 [1.005; 1.298], 0.042	1.121 [0.946; 1.328], 0.188
Center Experience	≥ 10 years	5-10 years	1.104 [0.959; 1.271], 0.170	1.076 [0.923; 1.255], 0.350
		< 5 years	1.018 [0.767; 1.351], 0.901	0.937 [0.695; 1.264], 0.670
JACIE	yes	no	1.000 [0.913; 1.096], 0.999	
Age	continuous	-	1.011 [1.008; 1.015], <0.001	1.009 [1.005; 1.012], <0.001
Gender	m	f	0.908 [0.838; 0.984], 0.018	0.946 [0.870; 1.028], 0.190
Karnofsky Index	90/100	70/80	1.273 [1.166; 1.390], <0.001	1.197 [1.091; 1.313], <0.001
		10-60	1.753 [1.427; 2.155], <0.001	1.486 [1.203; 1.837], <0.001
		unknown	1.425 [1.225; 1.657], <0.001	1.385 [1.169; 1.641], <0.001
HCT-CI	0-2	3-10	1.158 [1.054; 1.271], 0.002	1.048 [0.950; 1.155], 0.350
		unknown	1.307 [1.176; 1.453], <0.001	1.298 [1.156; 1.458], <0.001
ELN	adverse	BPDCN	0.795 [0.469; 1.349], 0.395	0.825 [0.475; 1.432], 0.493
		favorable	0.580 [0.508; 0.662], <0.001	0.573 [0.499; 0.657], <0.001
		intermediate	0.744 [0.674; 0.821], <0.001	0.789 [0.712; 0.874], <0.001
		unknown	0.769 [0.690; 0.858], <0.001	0.721 [0.641; 0.809], <0.001
Conditioning	MAC	non-MAC	1.071 [0.988; 1.162], 0.095	0.991 [0.906; 1.083], 0.836
Disease status at Tx	1. CR	not 1. CR	1.692 [1.562; 1.834], <0.001	1.643 [1.511; 1.787], <0.001
Graft	PB	BM	1.307 [1.099; 1.554], 0.002	1.222 [1.008; 1.483], 0.042
Donor	MRD	MMRD	1.131 [0.984; 1.300], 0.084	1.021 [0.877; 1.189], 0.789
		MMUD	1.242 [1.087; 1.420], 0.001	1.167 [1.014; 1.342], 0.031
		MUD	0.983 [0.894; 1.080], 0.720	0.966 [0.875; 1.068], 0.500

Legend: HCT-CI: Hematopoietic Cell Transplantation-Comorbidity Index, ELN: European Leukemia Network Classification, CR: Complete Remission; PB: Peripheral Blood; BM: Bone Marrow; CB: Cord Blood; MRD: Matched Related Donor; MMRD: Mismatched Related Donor; MUD: Matched Unrelated Donor; MMUD: Mismatched Unrelated Donor; MAC: Myeloablative Conditioning; HCT/Tx: Hematopoietic Cell Transplantation; JACIE: Joint Accreditation Committee IHCT-Europe & EBMT; BPDCN: blastic plasmacytoid dendritic cell neoplasm

Supplemental Table 3: Relapse/Progression without 1 year cut off follow-up

Variable	Reference	Exposure	univariable analysis (HR [95%-CI], p-value)	multivariable analysis (HR [95%-CI], p-value)
Center Size (HCT/year)	≥ 40	< 40	1.034 [0.907; 1.178], 0.615	0.994 [0.830; 1.190], 0.947
University Hospital	yes	no	1.036 [0.881; 1.217], 0.671	1.000 [0.808; 1.238], 0.998
Center Experience	≥ 10 years	5-10 years	1.189 [1.004; 1.407], 0.045	1.186 [0.987; 1.425], 0.068
		< 5 years	0.921 [0.641; 1.324], 0.658	0.796 [0.538; 1.180], 0.256
JACIE	yes	no	0.978 [0.873; 1.095], 0.697	
Age	continuous	-	0.994 [0.990; 0.997], 0.001	0.993 [0.989; 0.997], 0.001
Gender	m	f	0.914 [0.827; 1.009], 0.074	0.926 [0.835; 1.027], 0.144
Karnofsky Index	90/100	70/80	0.988 [0.884; 1.104], 0.833	0.993 [0.883; 1.116], 0.904
		10-60	0.967 [0.723; 1.294], 0.823	0.891 [0.661; 1.200], 0.446
		unknown	1.338 [1.119; 1.599], 0.001	1.248 [1.024; 1.522], 0.028
HCT-CI	0-2	3-10	0.831 [0.735; 0.939], 0.003	0.820 [0.721; 0.933], 0.003
		unknown	1.178 [1.037; 1.338], 0.012	1.174 [1.022; 1.350], 0.024
ELN	adverse	BPDCN	0.656 [0.312; 1.382], 0.268	0.614 [0.271; 1.393], 0.243
		favorable	0.610 [0.518; 0.719], <0.001	0.586 [0.494; 0.696], <0.001
		intermediate	0.739 [0.654; 0.834], <0.001	0.745 [0.657; 0.846], <0.001
		unknown	0.776 [0.680; 0.886], <0.001	0.718 [0.624; 0.827], <0.001
Conditioning	MAC	non-MAC	0.945 [0.855; 1.045], 0.269	0.997 [0.895; 1.111], 0.959
Disease status at Tx	1. CR	not 1. CR	1.402 [1.270; 1.548], <0.001	1.448 [1.306; 1.606], <0.001
Graft	PB	BM	1.444 [1.176; 1.773], <0.001	1.449 [1.148; 1.829], 0.002
Donor	MRD	MMRD	0.910 [0.763; 1.087], 0.299	0.800 [0.659; 0.972], 0.025
		MMUD	0.944 [0.793; 1.123], 0.515	0.924 [0.768; 1.112], 0.403
		MUD	0.931 [0.831; 1.044], 0.222	0.987 [0.875; 1.113], 0.830

Legend: HCT-CI: Hematopoietic Cell Transplantation-Comorbidity Index, ELN: European Leukemia Network Classification, CR: Complete Remission; PB: Peripheral Blood; BM: Bone Marrow; CB: Cord Blood; MRD: Matched Related Donor; MMRD: Mismatched Related Donor; MUD: Matched Unrelated Donor; MMUD: Mismatched Unrelated Donor; MAC: Myeloablative Conditioning; HCT/Tx: Hematopoietic Cell Transplantation; JACIE: Joint Accreditation Committee IHCT-Europe & EBMT; BPDCN: blastic plasmacytoid dendritic cell neoplasm

Supplemental Table 4: Non-relapse mortality without 1 year cut off follow-up

Variable	Reference	Exposure	univariable analysis (HR [95%-CI], p-value)	multivariable analysis (HR [95%-CI], p-value)
Center Size (HCT/year)	≥ 40	< 40	1.172 [1.001; 1.374], 0.049	1.229 [0.995; 1.517], 0.056
University Hospital	yes	no	1.202 [0.989; 1.462], 0.065	1.179 [0.914; 1.521], 0.204
Center Experience	≥ 10 years	5-10 years	0.973 [0.773; 1.225], 0.815	0.896 [0.699; 1.148], 0.386
		< 5 years	1.109 [0.717; 1.715], 0.643	1.066 [0.692; 1.640], 0.772
JACIE	yes	no	0.992 [0.861; 1.143], 0.912	
Age	continuous	-	1.037 [1.031; 1.044], <0.001	1.031 [1.025; 1.038], <0.001
Gender	m	f	0.927 [0.818; 1.051], 0.237	0.997 [0.877; 1.134], 0.963
Karnofsky Index	90/100	70/80	1.571 [1.375; 1.795], <0.001	1.358 [1.181; 1.562], <0.001
		10-60	2.537 [1.940; 3.316], <0.001	2.056 [1.556; 2.717], <0.001
		unknown	1.306 [1.015; 1.680], 0.038	1.282 [0.971; 1.692], 0.080
HCT-CI	0-2	3-10	1.658 [1.444; 1.904], <0.001	1.399 [1.211; 1.616], <0.001
		unknown	1.392 [1.176; 1.647], <0.001	1.349 [1.124; 1.619], 0.001
ELN	adverse	BPDCN	1.152 [0.568; 2.336], 0.695	1.294 [0.649; 2.583], 0.464
		favorable	0.692 [0.563; 0.852], 0.001	0.715 [0.577; 0.885], 0.002
		intermediate	0.863 [0.740; 1.007], 0.061	0.966 [0.826; 1.130], 0.666
		unknown	0.913 [0.771; 1.080], 0.289	0.919 [0.769; 1.099], 0.357
Conditioning	MAC	non-MAC	1.262 [1.113; 1.431], <0.001	1.026 [0.893; 1.178], 0.718
Disease status at Tx	1. CR	not 1. CR	1.679 [1.480; 1.904], <0.001	1.487 [1.306; 1.694], <0.001
Graft	PB	BM	0.961 [0.715; 1.291], 0.790	0.845 [0.610; 1.169], 0.309
Donor	MRD	MMRD	1.395 [1.129; 1.723], 0.002	1.371 [1.090; 1.725], 0.007
		MMUD	1.595 [1.308; 1.945], <0.001	1.447 [1.179; 1.777], <0.001
		MUD	1.080 [0.926; 1.258], 0.326	0.954 [0.813; 1.120], 0.563

Legend: HCT-CI: Hematopoietic Cell Transplantation-Comorbidity Index, ELN: European Leukemia Network Classification, CR: Complete Remission; PB: Peripheral Blood; BM: Bone Marrow; CB: Cord Blood; MRD: Matched Related Donor; MMRD: Mismatched Related Donor; MUD: Matched Unrelated Donor; MMUD: Mismatched Unrelated Donor; MAC: Myeloablative Conditioning; HCT/Tx: Hematopoietic Cell Transplantation; JACIE: Joint Accreditation Committee IHCT-Europe & EBMT; BPDCN: blastic plasmacytoid dendritic cell neoplasm