



The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

722.ALLOGENEIC TRANSPLANTATION: ACUTE AND CHRONIC GVHD, IMMUNE RECONSTITUTION

ATG or Post-Transplant Cyclophosphamide to Prevent Gvhd in Matched Unrelated Stem Cell Transplantation? - a Registry Analysis By the EBMT Transplant Complications Working Party

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There is a considerable risk of GVHD and non-relapse mortality (NRM) after allogeneic stem cell transplantations (alloSCT) when matched unrelated donors (MUD) are used. Prophylaxis with either rabbit anti-thymocyte globulin (rATG, also termed anti-T-lymphocyte globulin) or post-transplantation Cyclophosphamide (PTCy) is in standard clinical use. The unresolved question is whether to prefer PTCy or rATG in this setting. So far, two randomized trials, several retrospective studies and a meta-analysis comparing PTCy to rATG in MUD alloSCT gave contradictory results. Current data from large registry cohorts has not been published.

To improve the evidence base, we analyzed outcomes of rATG vs. PTCy prophylaxis in adult patients with hematologic malignancies undergoing peripheral blood alloSCT from 10/10 antigen MUD between Jan 2018 and June 2021 in the EBMT database. We performed multivariate analyses using Cox cause-specific hazard models, adjusting for known risk factors, and variables that showed significant difference between the two comparison groups.

Overall 8764 patients were included, treatment- and patient characteristics are shown in Table 1. Patients receiving PTCy (n=1039) were younger, had undergone alloSCT more recently, and had a lower disease risk compared to patients receiving rATG (n=7725). Median follow up was 2.1 years in both groups. Outcomes graphs are shown in figure 1. All outcomes are

given starting from alloSCT (with 95% CI): NRM (fig 1A) was higher in the rATG arm (2-years NRM: PTCy 12.4% [10.2 - 14.7] vs. rATG 16.1% [15.3 - 17]; HR 0.72, $p=0.016$), same for Relapse incidence, (2-years RI: PTCy 22.8% [19.9 - 25.8] vs. rATG 26.6% [25.5 - 27.7]; HR 0.87, $p=0.046$), Overall survival (fig 1B) was better in the PTCy arm (2-years OS: PTCy 73.1% [70 - 76] vs. rATG 65.9% [64.7 - 67.1]; HR 0.82, $p=0.001$), same for Progression free survival (fig 1C) (2-years PFS: PTCy 64.9% [61.4 - 68.1] vs. rATG 57.2% [56 - 58.5]; HR 0.83, $p<0.001$), Chronic GVHD was lower in the PTCy arm (2-years cGVHD: PTCy 28.4% [25.2 - 31.7] vs. rATG 31.4% [30.3 - 32.6]; HR 0.77, $p=0.012$), whereas acute GVHD grades II-IV was not significantly different between the two arms (100-day aGVHD: PTCy 24.1% [21.3 - 27] vs. rATG 26.5% [25.5 - 27.6]; HR 0.85, $p=0.11$)

In conclusion, we found a lower NRM, lower incidence of chronic GVHD as well as higher survival outcomes in adult recipients of peripheral blood alloSCTs from MUD receiving PTCy compared to rATG. The current analysis improves the evidence basis for decision making on GVHD prophylaxis in MUD alloSCT.

Disclosures Penack: *Gilead, Jazz, MSD, Novartis, Pfizer and Therakos:* Honoraria, Other: Travel support; *Incyte and Priothera:* Research Funding; *Equillium Bio, Jazz, Gilead, Novartis, MSD, Omeros, Priothera, Sanofi, Shionogi and SOBI:* Membership on an entity's Board of Directors or advisory committees. **Peffault De Latour:** *Jazz Pharmaceuticals:* Honoraria. **Mielke:** *Immunicum/Mendes, Miltenyi:* Other: Participation on a Data Safety Monitoring Board or Advisory Board; *SWE-CARNET:* Other: Founder/Leadership (via my institution) ; *ScientifyResearch:* Other: Founder (spouse) ; *Celgene/BMS, Novartis, Janssen, Gilead/KITE, JSMO, Pfizer:* Speakers Bureau. **Finke:** *Gilead Sciences:* Current holder of stock options in a privately-held company; *AbbVie:* Current holder of stock options in a privately-held company; *Roche:* Current holder of stock options in a privately-held company; *Riemser:* Honoraria, Research Funding, Speakers Bureau; *Neovii:* Honoraria, Research Funding, Speakers Bureau; *Medac:* Honoraria, Research Funding. **Schoemans:** *Janssen:* Consultancy, Honoraria; *Novartis:* Consultancy, Honoraria; *BHS:* Honoraria; *Sanofi:* Consultancy, Honoraria. **Koenecke:** *Sanofi-Aventis:* Consultancy, Speakers Bureau; *Janssen:* Consultancy, Speakers Bureau; *Medigene:* Consultancy; *Miltenyi Biotec:* Consultancy; *Novartis:* Consultancy, Speakers Bureau; *Pierre Fabre:* Consultancy; *Kite/Gilead:* Consultancy; *BMS:* Consultancy; *Glaxo Smith Kline:* Consultancy; *Pfizer:* Consultancy; *Amgen:* Consultancy; *Roche:* Consultancy, Speakers Bureau. **Peric:** *Sanofi:* Honoraria.

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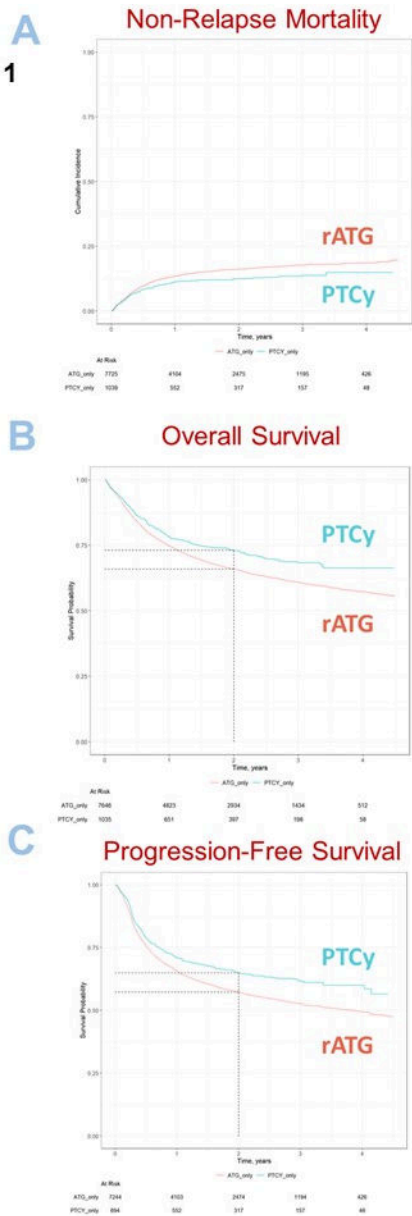


Figure 1

Table 1

	ATG_only (N=7725)	PTCy_only (N=1039)	Total (N=8764)	p value
Patient Gender				0.33
Male	4427 (57.3%)	612 (58.9%)	5039 (57.5%)	
Female	3298 (42.7%)	427 (41.1%)	3725 (42.5%)	
Age at Transplant, yrs				< 0.01 ²
median [Q1, Q3]	58.6 (48.1, 65.4)	53.0 (38.6, 62.3)	58.1 (46.9, 65.1)	
[Min, Max]	18.0 - 79.1	18.2 - 79.5	18.0 - 79.5	
Karnofsky ≥90				0.83
< 90	2271 (31.0%)	311 (31.4%)	2582 (31.1%)	
≥ 90	5045 (69.0%)	680 (68.6%)	5725 (68.9%)	
Missing count	409	48	457	
SORROR Comorbidity Index				0.14
0	3367 (48.6%)	494 (50.7%)	3861 (48.9%)	
1-2	1694 (24.5%)	210 (21.6%)	1904 (24.1%)	
≥3	1861 (26.9%)	270 (27.7%)	2131 (27.0%)	
Missing count	803	65	868	
DRI				< 0.01 ¹
Low	585 (7.6%)	124 (11.9%)	709 (8.1%)	
Int	4959 (64.2%)	649 (62.5%)	5608 (64.0%)	
High	1839 (23.8%)	243 (23.4%)	2082 (23.8%)	
Very high	342 (4.4%)	23 (2.2%)	365 (4.2%)	
Hematological Malignancies				
AML	3728 (48.3%)	412 (39.7%)	4140 (47.2%)	
MDS	1185 (15.3%)	158 (15.2%)	1343 (15.3%)	
ALL	791 (10.2%)	157 (15.1%)	948 (10.8%)	
MPN	781 (10.1%)	67 (6.4%)	848 (9.7%)	
NHL	543 (7.0%)	123 (11.8%)	666 (7.6%)	
MDS & MPN	350 (4.5%)	34 (3.3%)	384 (4.4%)	
CML	189 (2.4%)	35 (3.4%)	224 (2.6%)	
Hodgkins	84 (1.1%)	36 (3.5%)	120 (1.4%)	
CLL	74 (1.0%)	17 (1.6%)	91 (1.0%)	
Transplant Year				0.03
2018	2132 (27.6%)	242 (23.3%)	2374 (27.1%)	
2019	2311 (29.9%)	333 (32.1%)	2644 (30.2%)	
2020	2086 (27.0%)	302 (29.1%)	2388 (27.2%)	
2021	1196 (15.5%)	162 (15.6%)	1358 (15.5%)	
Myeloablative Conditioning				< 0.01 ¹
No	3664 (48.0%)	391 (37.7%)	4055 (46.7%)	
Yes	3975 (52.0%)	646 (62.3%)	4621 (53.3%)	
Missing count	86	2	88	
TBI				< 0.01 ¹
No	6607 (85.5%)	782 (75.3%)	7389 (84.3%)	
Yes	1118 (14.5%)	257 (24.7%)	1375 (15.7%)	
GVHD Prevention Regimen				
CSA+MTX	3849 (49.8%)	6 (0.6%)	3855 (44.0%)	
CSA+MMF	2690 (34.8%)	260 (25.0%)	2950 (33.7%)	
MMF+TACRO/SIRO	459 (5.9%)	461 (44.4%)	920 (10.5%)	
CSA	470 (6.1%)	101 (9.7%)	571 (6.5%)	
TACRO/SIRO	36 (0.5%)	159 (15.3%)	195 (2.2%)	
MTX+TACRO	143 (1.9%)	0 (0.0%)	143 (1.6%)	
Other	78 (1.0%)	52 (5.0%)	130 (1.5%)	

Figure 1