ORAL PRESENTATIONS

ALLOGENEIC TRANSPLANTS

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Effect of Antithymocyte Globulin Source on Outcomes of Bone Marrow Transplantation for Severe Aplastic Anemia

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Both prospective and retrospective studies indicate that in primary immunosuppressive therapy of severe aplastic anemia (SAA), the use of horse antithymocyte globulin (hATG) results in higher response rates and better long term outcomes than rabbit ATG (rATG). However, rATG results in more profound and durable immunosuppression than hATG; thus, the relative benefit might be different when used in the setting of transplantation conditioning. We previously showed that bone marrow (BM) is a preferable stem cell source to PBSC in SAA (*Eapen et al Blood. 2011*), and we limited this analysis to patients given BM. We analyzed the outcomes of 699 SAA patients registered between 2007 and 2011 with the CIBMTR who were transplanted from HLA-identical sibling (MRD) or unrelated donors (URD) and received ATG as part of the conditioning regimen. Patient characteristics are shown in Table 1. Patients with URD transplants had a longer delay from diagnosis and were more likely to receive low dose TBI-based conditioning.

The proportions of patients achieving an ANC of 500/μL by 28 days were similar with rATG and hATG: MRD 90 vs. 88% (p=0.52), and URD, 86 vs. 90% (p=0.30). The corresponding incidence of platelet recovery by 100 days was 94 vs. 95% and 86 vs. 75%, respectively. However, the incidence of grades II-IV acute GVHD by day 100 was lower with rATG than with hATG for both MRD: 2 vs. 15% (p=0.01) and with URD transplants 23 vs. 43% (p=0.06). Chronic GVHD was lower with rATG at 1-year in MRD 5 vs. 12% (p=0.02), but both products gave similar risks of cGVHD in URD 16 vs. 14% (p=0.63). Overall cGVHD risk was low, and there was no significant difference at 3 years: MRD 9 vs. 13% (p=0.25) and URD 19 vs. 21% (p=0.75). Survival at 100 days was better with hATG in MRD transplants 97 vs. 94% (p=0.05) but not URD transplants 88 vs. 83% (p=0.25). However, 1 year survival was similar with both ATG formulations in MRD 92 vs. 92% (p=.92) and in URD 80 vs. 71% (p=0.16), although in both settings rATG was slightly superior. Thus, rATG use leads to significantly less aGVHD in both MRD and URD transplantation. While an advantage in survival was noted in URD receiving rATG, at the power of this study statistical significance was not achieved.

	Related		Unrelated	
	hATG	rATG	hATG	rATG
N	214	233	88	164
Male n (%)	121 (57)	130 (56)	46 (52)	91 (55)
Median age (range)	16 (1–68)	19 (2–65)	20 (1–66)	17 (1–67)
Diagnosis to BMT				
<6 months	169 (79)	163 (70)	12 (14)	31 (19)
6 – 12 months	22 (10)	42 (18)	39 (44)	48 (29)
≥ 1 year	23 (11)	28 (12)	37 (42)	84 (51)
Conditioning				
Cy/ATG	198 (93)	168 (72)	8 (9)	2 (1)
Cy/ATG/Flu	16 (7)	65 (28)	9 (10)	45 (27)
Cy/ATG/TBI (3-8Gy)	—	—	4 (5)	5 (3)
Cy/ATG/TBI (2Gy)	—	—	38 (43)	30 (18)
Cy/ATG/Flu/TBI (2Gy)	—	—	28 (32)	70 (43)
ATG /other	—	—	1 (1)	12 (7)
GVHD Prophylaxis, N (%)				
Tacrolimus-containing	63 (29)	49 (21)	36 (41)	58 (35)
Cyclosporine-containing	151 (71)	184 (79)	52 (59)	106 (65)

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Iron Overload in Allogeneic Stem Cell Transplantation Outcome: A Meta-Analysis

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An elevated serum ferritin before allogeneic stem cell transplantation (HSCT) is an adverse prognostic factor for overall survival (OS) and non-relapse mortality (NRM); but because ferritin is an imperfect surrogate of iron stores, the exact prognostic role of iron overload remains unproven. Four prospective studies using liver MRI to estimate liver iron content (LIC) have examined the impact of elevated LIC on HSCT outcome (Armand et al. *Am J Hematol*. 2012;87(6):569, Wermke et al. *Clin Cancer Res*. 2012;18(23):6460, Virtanen et al. *Eur J Haematol*. 2013;91(1):85, Trottier et al. *Blood*. 2013;122(9):1678), but have reached different conclusions on the prognostic relevance of LIC in HSCT. We therefore conducted an individual patient data meta-analysis of those 4 studies, using a random effects model. The outcomes of interest were OS and NRM. 276 patients were included in this analysis. The median serum ferritin pre-HSCT was 1523 (range, 20-8,878) ng/ml, and the median LIC was 5.0 (range, 0.3-25.4) mg/gdw. 38% of patients received a myeloablative conditioning regimen. With a median follow-up of 22 months for survivors, the estimated 2-year OS was 62% (95CI, 55-68), and the NRM was 25% (95CI, 20-31). The pooled hazard ratio (HR) for mortality associated with a pre-HSCT LIC>7 mg/gdw (the primary endpoint) was 1.39 (95CI, 0.85-2.27), p=0.18 (Figure 1A). The pooled hazard ratio (HR) for mortality associated with a pre-HSCT ferritin >1000 ng/ml was 1.68 (95CI, 1.03-2.73), p=0.036 (Figure 1B). There was no significant association between LIC>5 mg/gdw and OS, or between ferritin>2500 ng/ml and OS. The significant