mismatched with the pt, fewer 10/10 donors and increased 4/6 or worse CBUs were used. API pts were more often transplanted with an HLA mismatched source when the source is also race/ethnic mismatched.
Conclusion: This study shows that AFA, API, CAU, and HIS pts, transplanted in the past 5 years, most utilized a race/matched donor. From 2008 to present, greater than 70% of donors and greater than 50% of CBU transplants were race/ethnic matched between the pt and cell source. In addition, better HLA matching was observed when the pt and cell source were matched for race/ethnicity.

15

Outcome and Prognostic Factors for Pediatric Patients Receiving an Haploidentical Transplantation Using CD3/CD19 Depleted Grafts

Miguel Angel Diaz [1], Antonio Perez-Martinez [2], Manuel Ramírez [3], Julian Sevilla [2], Marta Gonzalez-Vicent [2].
[1]Hospital Nino Jesus, Madrid, Spain; [2]Hospital Niño Jesús, Madrid, Spain; [3]Trasplante Hematopoyetico, Hospital Infantil Universitario Nino Jesus, Madrid, Spain

Haploidentical hematopoietic stem cell transplantation using T-cell depleted grafts (haploHSCT) is an option for pediatric patients with high-risk hematological malignancies lacking an HLA-identical donor. Since December 2006 to September 2013; 55 children underwent an haploHSCT using CD3+/CD19+ depletion for graft manipulation. Eleven patients were in 1st CR, 22 in 2nd CR and 22 were in >2nd CR at time of transplantation. The conditionig regimen consisted of 30 mg/m2/d of i.v. fludarabine on days -6 to -2, 3.2-4.8 mg/kg/day of i.v. busulfan on days -6 and -4 and 5 mg/kg/day of i.v. thiotepa on days -3 to -2. PBPC were mobilized and collected in the standard manner. GvHD prophylaxis included CsA 3 mg/kg/day from day -1. Allografts contained a median of 5.75 x10^6 CD34 cells/kg and 1.0 x 10^4 CD3 cells/kg. Median times to neutrophil and platelet recovery were 13 and 10 days, respectively. The probability of aGvHD and cGvHD were 13±5% and 31±10% respectively. NRM was 14±5% by day +100 and 21±6% by 2 years after transplant. Cause of dead were relapse in 9 cases, severe viral infections in 7 and graft failure in 2. The probability of relapse was 29±8%. With a median follow-up of 24 months, the probability of DFS was 55±8%. On a multivariate analysis the factors that positive impact on DFS were age below 12 years (HR;0.26, 95%CI: 0.09-0.79 $p<0.009$) and cGvHD (HR;0.68, 95%CI: 0.01-0.53 $p<0.01$). Our results suggest that haploidentical donors are a good option for pediatric patients with high-risk hematological malignancies who need an allogeneic transplantation. Graft manipulation resulted on low incidence of severe aGvHD. DFS was better for patients with cGvHD mainly due to lower relapse incidence. Severe viral infections is a relevant problem in the early phase after transplantation.

16

Donor Telomere Length Predicts Recipient Survival after Allogeneic Hematopoietic Cell Transplantation in Patients with Bone Marrow Failure Syndromes

Shahinaz Gadalla [1], Tao Wang [2], Michael Haagenson [3], Stephen R. Spellman [4], Stephanie J. Lee [5], Kirsten M. Williams [6], Jason Y. Wong [7], Immaculata De Vivo [7], Sharon A. Savage [8].
[1]Clinical Genetics Branch, National Cancer Institute, Rockville, MD; [2]CIBMTR and Division of Biostatistics, Medical College of Wisconsin, Milwaukee, WI; [3]CIBMTR, Minneapolis, MN; [4]Immunobiology and Observational Research, Center for International Blood and Marrow Transplant Research, Minneapolis, MN; [5]CIBMTR and Clinical Research Division, Fred Hutchinson Cancer Research Center, Seattle, WA; [6]National Cancer Institute, NIH, Bethesda, MD; [7]Harvard School of Public Health, Boston, MA; [8]Clinical Genetics Branch, Division of Cancer Epidemiology and Genetics, National Cancer Institute, Bethesda, MD

Background: Telomeres are long nucleotide repeats and an associated protein complex at chromosome ends essential for chromosomal stability. They shorten with every cell division and thus are a marker of cellular replicative capacity. We hypothesized that telomere length may be a predictive marker for outcomes after hematopoietic cell transplantation (HCT).
Method: We used quantitative PCR (qPCR) to measure pre-transplant relative telomere length (RTL) in blood DNA of 342 young recipients (median age=14 yr; range=0.5–39) and their matched unrelated donors (median age=36 yr; range=19-61). HCTs were performed for marrow failure syndromes between 1989 and 2007 and reported to the Center for International Blood and Marrow Transplant Research (CIBMTR), and the National Marrow Donor Program (NMDP). The log-rank test was used to compare survival across RTL categories. For multivariable models, we used Cox proportional hazard models and calculated hazard ratios (HR) and 95% confidence intervals (CI) comparing outcome across RTL categories.
Results: Patients were followed for up to 20 years (median=6.3 years; range=0.5–20.7), with an overall survival (OS) probability at 3 years of 49% (44-55). There were 243 (71%) with severe aplastic anemia, 87 (25%) with Fanconi anemia, and 12 (4%) with Diamond Blackfan anemia. Pre-transplant RTL in the recipients was not associated with post-transplant outcomes, including OS (3-year survival probability=51% and 46%, in RTL ≥25% percentile and <25th percentile-for age, respectively; $p=0.76$); acute ($p=0.53$ at 100 days) or chronic GVHD ($p=0.99$ at 1 year) and neutrophil engraftment ($p=0.48$). Pre-transplant donor RTL was a significant predictor for OS after HCT, with longer donor telomere length associated with improved survival (3 year OS 59%, 49%, and 38%, in the longest, intermediate, and shortest tertiles, respectively; $p=0.006$). No association between donor RTL and either acute or chronic GVHD or engraftment was observed. Donor RTL was correlated with age ($R^2=0.12$, $p<0.0001$), but after adjusting for donor age and factors known to influence patient survival after HCT (such as prior treatment and time between diagnosis and transplant),