units homozygous for the *CCR5*-delta32 allele will provide an improved probability of finding an appropriately HLA-matched donor for a patient with HIV infection in need of a HCT.
Methods: *CCR5* genotype analysis is performed on DNA extracted from cord blood using a PCR based assay. Biomathematicians at the NMDP developed estimates regarding the probability of providing an adequately HLA matched cord blood unit.
Results: We have tested about 10,000 cryopreserved cord blood units and have identified 81 homozygous *CCR5*-delta32 units. Testing an additional 25,000 cord blood units from Caucasians is expected to increase the special inventory to about 300 units which is projected to provide for Caucasians an adequately HLA matched cord blood unit with an adequate cell dose for 73.61% of pediatric patients and 27.92% of adults. The initial population for transplantation is patients in need of a HCT for a hematologic malignancy or other indication, and who are also infected with HIV, although some selected patients with AIDS who have no other illness may also ultimately be considered for transplantation.
Conclusions: Cord blood transplantation has a unique role in providing for long term control or possible cure of HIV infection.
Disclosure: No relevant conflicts of interest to declare.

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LONG TERM OUTCOMES FOR ALEMTUZUMAB BASED REDUCED INTENSITY CONDITIONING TRANSPLANT FOR MYELODYSPLASTIC SYNDROMES AND ACUTE MYELOID LEUKAEMIA

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Haematopoietic Stem Cell Transplantation (HSCT) remains the only curative therapy for patients with myelodysplastic syndromes (MDS) and acute myeloid leukaemia with tri-lineage dysplasia (TLD-AML). Reduced intensity conditioning (RIC) has expanded this approach to older patients and to those with comorbidities. Previously published data from our institution has shown excellent overall survival and low rates of GVHD at one year with alemtuzumab-based RIC-HSCT. Herein we report the long-term follow-up data of 237 patients with high risk MDS and TLD-AML treated at our institution from 1999 to June 2010.

All patients received a conditioning protocol consisting of fludarabine (150mg/m^2), busulphan and alemtuzumab (100mg) from sibling (n = 57) or matched unrelated donors (MUD) (n = 180). 30 patients received 4 days of busulphan (total dose 12.8mg/kg iv or 16mg po) while the remainder received 2 days (total dose 6.4mg/kg iv 8mg po). The majority of patients receiving an unrelated transplant had a fully matched donor (n = 128), with 45 having a 1-antigen mm donor and 7 having a 2-antigen mm donor. The median age of the cohort was 56 years (range:19-72) and median follow-up for survivors was 5.2 years (range:0.12-11.4). OS and DFS for the entire cohort was 44% and 34% respectively at five years with no significant difference between sibling and MUD transplants. NRM was 23% at one year and 31% at five years. Relapse at five years was 51%. Acute GVHD occurred in 35% and chronic GVHD in 27%. The rate of extensive de-novo chronic GVHD was very low at 10%. Outcomes were similar for those receiving four doses of busulphan despite a higher proportion of patients not in CR at the time of HSCT in this group.

On multivariate analysis, age remained the only significant factor with regard to OS, DFS and NRM. For patients aged less than 60 vs greater than 60 years at five years OS was 55 vs 23%, DFS was 46 vs 15% and NRM 27 vs 50%. To our knowledge this analysis represents the largest series of patients receiving alemtuzumab based RIC for MDS and TLD-AML. Long-term outcomes remain excellent for younger patients. Novel strategies are required for the prevention of relapse and to improve outcomes in older patients.

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RESULTS OF PHASE II CLINICAL TRIAL MPD-RC 101: ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION CONDITIONED WITH FLUDARABINE/MELPHALAN IN PATIENTS WITH MYELOFIBROSIS

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The Myeloproliferative Disorder-Research Consortium (MPD-RC) designed the first US prospective phase II study of reduced intensity allogeneic hematopoietic stem cell transplantation (HSCT) in patients with primary myelofibrosis (PMF) or MF secondary to essential thrombocythemia (ET-MF) or polycythemia vera (PV-MF). Between May 2007 and March 2011, 66 patients were enrolled into MPD-RC 101 study and transplanted from related (n = 32) or unrelated (n = 34) donors using a fludarabine/melphalan ± ATG regimen. Of 66 patients, 63 were at intermediate/high risk according to Lille score system and 3 low risk patients had thrombocytopenia. Recipients of related and unrelated HSCT were comparable with respect to age (median: 54 vs 55 years), gender, Lille score, time from diagnosis to transplant, presence of Jak-2 V617F mutation, splenomegaly and splenectomy. Donors were HLA matched in 94% of related and 74% of unrelated transplants. Engraftment of neutrophils and platelets occurred in 31/32 related and 26/34 unrelated transplants. Five secondary graft failures occurred (4 among unrelated recipients). Median time to ANC $>$ 0.5 x 10^9/L and platelets $>$20 x 10^9/L engraftment was: day 22 and 28 in the related, and day 18 and 28 in the unrelated cohort, respectively. Acute GVHD grade II-IV occurred in 37% related (grade III-IV: 12%) and 42% unrelated transplants (grade III-IV: 21%). In patients with ≥ 6 months follow-up, there were 7 CR, 8 PR, and 11 CI according to the IWG criteria among the 28 patients in the related group, and 5 CR, 1 PR, and 5 CI among the 16 patients in the unrelated group. After a median follow-up of 24 months for survivors in the related group, 78% of the patients are alive, TRM was 18% and relapse-related mortality was 3%. In the unrelated group, 44% of the patients are alive after 12 months follow-up, TRM was 53% and 3% died due to relapse. Median survival time has not been reached in the related group and is 7 months in the unrelated group (hazard ratio 4.2, 95% CI: 1.7-10.1, p$<$0.001). Survival in unrelated transplants was not associated with PBSC or BM HSCT, HLA matching, diagnosis, Jak-2 mutation. In this prospective study a reduced intensity allogeneic HSCT with Flu/Mel regimen was very effective in myelofibrosis patients transplanted from related donors. In unrelated transplants, a high rate of primary or secondary graft failure led to a high rate of TRM. For these patients a different conditioning regimen may be required.

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IDENTIFICATION AND CHARACTERIZATION OF H-Y SPECIFIC ALLOGENEIC B CELLS FOLLOWING SEX-MISMATCHED TRANSPLANTATION

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H-Y allo-antibody develop in association with chronic graft-versus-host disease (cGVHD) following sex-mismatched transplant. We hypothesize that H-Y specific B cells contribute to cGVHD pathogenesis and have developed H-Y specific FACS stain for their isolation and characterization.