discharge, there was a significant difference found between the two groups for three muscle tests; chest press (p=0.023), leg extension (p=0.007) and the isometric right knee flexor test (p=0.033). Though significant values were not reached on all tests, the differences between the pre- and post-scores of the two groups for all physical capacity tests are between 16% and 35%, suggesting that the intervention was efficient in preventing loss of and maintaining physical capacity.

Findings revealed that exercising patients during hospitalization for allo-HSCT was feasible, safe and effective. In conclusion, preventative and anticipatory interventions can minimize physical and functional loss during hospitalization for allo-HSCT.

**250**

**CO-STIMULATORY MOLECULE EXPRESSION BY TRANSPPLANTED DONOR APC AND HOST CD4 T CELLS IS REQUIRED TO ELICIT RESISTANCE AGAINST MHC-MATCHED HEMATOPOIETIC ALLOGRAFTS FOLLOWING REDUCED INTENSITY CONDITIONING**

Jones, M.1, Blazar, B. P.2, Zimmerman, Z.1, Levy, R. B.1 1University of Miami Miller School of Medicine, Miami, FL; 2University of Minnesota, Minneapolis, MN.

Circumventing host resistance to hematopoietic progenitor cell grafts is crucial for successful engraftment and the induction and maintenance of immune tolerance. We are studying the regulation of pathways that lead to T cell resistance in recipients transplanted with MHC-matched allogeneic BM (“MiHA-mis”) following reduced intensity conditioning (RIC). To examine the involvement of CD80/CD86 expression in this resistance, CD80 and CD86 mabs were administered to B6 (wt) BMT recipients. Donor BALB.B BM was not rejected in these recipients. To investigate the requirement of CD80/86 expression on recipient cells with respect to development of resistance, BM was transplanted into wt or B6-CD80−/−86−/− mice. Donor chimerism in both recipients was transient indicating resistance had been elicited against the donor BM. CD80−/−86−/− BM was then transplanted into “MiHA-mis” recipients following RIC. These interactions subsequently result in host antigen-presenting cells as well as infused donor T cells and hence minimize GVHD. Here we describe 55 patients who received NST; 23 were conditioned with chemotherapy alone and 33 were conditioned with alemtuzumab in addition to flu/Cy (n=31) or flu/melphalan (n=2). All received CSA/MTX post-transplant. The median age at NST was 50 years. Indications for transplant were Hodgkin’s disease (13), NHL (22), MDS (7), CML (5), myeloma (5) and 1 each with AML, breast cancer, and ovarian cancer. Most patients were heavily pretreated and 62% had relapsed disease after prior autologous SCT. There were no significant differences between the groups that did and did not receive alemtuzumab. Donor chimerism was evaluated in all patients. 36% of patients conditioned with alemtuzumab had sustained chimerism over 90%, and 42% attained donor chimerism over 50%. This was significantly lower than in patients conditioned without alemtuzumab; 77% and 82% had sustained donor chimerism >90% and >50% respectively (p<0.005). There was no significant difference in median survival between patients treated with (12 mo) and without (16 mo) alemtuzumab (p=0.36). Relapse was not significantly higher with alemtuzumab-containing regimens. Alemtuzumab at this dose and schedule markedly decreased the incidence of severe GVHD, but resulted in a higher incidence of graft rejection and hence lower rates of full and mixed donor chimerism. Since full donor chimerism may be associated with freedom from relapse, alternative conditioning regimens, and alternative dosing and schedule of alemtuzumab administration (to deplete host APC without in vivo T cell depletion of the donor graft) are being explored.

**252**

**OUTCOME OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION FOR PEDIATRIC PATIENTS WITH CHRONIC MYELOID LEUKEMIA**

Kennedy-Naser, A.A.1, Arcu, J.1, Leung, K.S.1, Gottschalk, S.1, Bollard, C.M.1, Heslop, H.E.1, Brenner, M.K.1, Krance, R.A.1 1Center for Cell and Gene Therapy, Baylor College of Medicine, Texas Children’s Hospital, The Methodist Hospital, Houston, TX.

Although allogeneic hematopoietic stem cell transplantation (HSCT) from an HLA-matched sibling offers curative therapy for the small number of children who develop chronic myeloid leukemia (CML), less than one third of patients have an appropriately matched sibling. Alternative donor transplantation has had a higher procedure-associated risk, particularly for graft-versus-host disease (GVHD). We have attempted to reduce these risks by incorporating alemtuzumab (Campath 1H) into the preparative regimen for alternative donor grafts. Between 1996 and 2006, 19 pediatric CML patients were treated with either matched sibling (MSD; n=9) or alternative donor (AD; 5 matched unrelated; 2 mismatched unrelated; 3 mismatched related). All recipients of MSD grafts were in chronic phase at the time of transplant as were 6 of the AD recipients; three of the AD recipients were in accelerated phase and 1 in chronic phase presenting in lymphoid blast crisis at the time of transplant. All recipients received myeloablative conditioning consisting of cyclophosphamide 45mg/kg x 2, cytarabine arbit
nositide 5g/m² x 6 and TBI 1200-1400 cGy. In addition, AD recipients underwent either ex vivo or in situ T-cell depletion of the marrow to achieve in vivo T-cell depletion in an effort to reduce the risk of GVHD. Five AD patients died; 4 patients in chronic phase and 1 patient in accelerated phase prior to transplant. One patient died from recurrent disease and the other 4 from complications of therapy: 1 engraftment failure; 1 poor engraftment and fungal disease; 1 cryptosporidium parasitemia; and 1 pulmonary hemorrhage with viral infections. After transplant, 30% in each group (MSD and AD) required additional Gleevec or donor leukocyte infusions for BCR/ABL positivity. The Kaplan-Meier estimate of disease-free survival at 2 years was 78% for the entire cohort: 100% for the MSD group and 56% for the AD group. Only 1 patient (AD recipient) developed grade 3-4 acute GVHD and only 1 patient (AD recipient) developed extensive, chronic GVHD. We conclude that stem cell transplantation provides effective leukemia control and potential cure even for patients with advanced disease who lack an MSD. Regimen-related mortality remains an impediment to improved outcome for pediatric CML patients receiving stem cells from unrelated or mismatched donors.

Results: Plasma specimens tested with the pan-Adv assay had viral loads ranging from 7.34 x 10⁹ – 5.73 x 10⁶ copies/ml. Urine specimens had viral loads ranging from 1.24 x 10⁸ – 1.57 x 10⁷ copies/ml, and fecal/rectal samples had viral loads ranging from 9.04 x 10⁶ – 1.02 x 10⁶ copies/ml. Subgenus determination for plasma demonstrated that 21% (6 samples) were Subgenus B, and 79% (22 samples) were Subgenus C. Results from urine demonstrated that 81% (17 samples) were Subgenus B, 14% (3 samples) were Subgenus C, and 5% (1 sample) was Subgenus D. Of the three fecal/rectal samples two were Subgenus D and one was Subgenus F. Using Fisher’s Exact Test, the subgenus distribution among plasma and urine was determined to be significantly different (P=0.0001; odds ratio=20.78, 95% CI: 4.526 to 95.38).

Conclusion: Results of this study demonstrate that the prevalence of AdV subgenus differs significantly among specimen types collected from immunocompromised patients. The predominant subgenus identified in urine was B while the predominant subgenus identified in plasma was C. These results support previous findings for prevalence in plasma and urine. Real-time PCR technology provides an efficient means to accurately diagnose Adenovirus infections and identification of AdV subgenera.

254 SUCCESSFUL HSCT AFTER MULTIVISCERAL TRANSPLANTATION

Kleiner, G. 1, Gonzalez-Brito, M. 1, Weppler, D. 2, White, E. 2, Simon, N. 1, Davul, A. 2, Sebaggi, G. 2, Katu, T. 2, Shariatmadar, S. 2, Tsakir, A. 2 1Department of Pediatric, University of Miami, Miami, FL; 2Division of Liver-GI Transplantation, University of Miami, Miami, FL; 3Jackson Memorial Hospital, Miami, FL; 4Department of Pathology, University of Miami, Miami, FL.

Severe aplastic anemia following liver transplantation is a rare phenomenon. We report the case of an eight year old girl who developed SAA following multivisceral transplantation. The patient was diagnosed with intestinal pseudo obstruction and underwent modified multivisceral transplant (stomach, pancreas, spleen, small and large intestine) in December 2005. Post operative course was uncomplicated but the patient developed SAA six months later. There was no response to growth factors or increased immunosuppression. The patient was housed in the Pediatric ICU. Her brother was found to be HLA identical and the patient underwent conditioning with Fludarabine 25mg/m² x 5, Cyclophosphamide 50mg/kg x4, and ATG 30mg/kg x3. She received 1.33 x 10⁶ nuc/kg bone marrow. The patient tolerated chemotherapy well. Post transplant course was complicated by VRE treated with parenteral antibiotics and granulocyte transfusion support. The patient engrafted on day16. FISH XY revealed 100% donor. We conclude that this reduced intensity regimen may be effective in SAA cases following solid organ transplantation.

255 CORRELATION BETWEEN INFUSED MONONUCLEAR CELLS (MNC) AND TRANSPLANT OUTCOME IN PEDIATRIC CORD BLOOD TRANSPLANTATION (CBT). A STUDY OF 92 SINGLE CBT DONE AT CHILDREN’S MEMORIAL HOSPITAL, CHICAGO, IL

Merchant, M. 1, Oleksiw, M. 1, Huang, W. 1, Duerst, R. 1, Jacobson, D. 1, Klezel, M. 1, 2 1Children’s Memorial Hospital, Chicago, IL, 2Northwestern University Feinberg School of Medicine, Chicago, IL.

Objective: To evaluate if there is a correlation between infused MNC cell dose and transplant outcome in pediatric CBT.

Method: Between January 1995 and February 2006, 125 CBT were carried out at Children’s Memorial Hospital. 15 patients already had a previous transplant and 18 patients required a subsequent transplant after the initial CBT failed (primary or secondary graft failure or relapse). Remaining 92 patients (43 female, 49 male) who underwent a single CBT were evaluated in this study. 26 patients had non-malignant conditions (SCID 7, HPCS 5, Wiskott-Aldrich syndrome 3, 2 each of Aplastic anemia, Hurler’s syndrome and Osteopetrosis, others 3) and 66 had malignancy (ALL 13, AML 21, MDS 5, 2 each of Non-Hodgkin’s lymphoma and JMML, others 3). Disease status for malignancy at time of CBT was PR 7, CR1 24, CR2 28, CR 3/3 + 7. 69 patients received myeloablative conditioning regimen (TBI, VP-Cy, or Thiotepa. 4 patients received Busulphan in place of fTBI); 23 patients had reduced intensity conditioning (Busulphan, Fludarabine, ATG). The median age at transplant was 34.5 months (range 1 to 200), with median HLA match of 4/6; ratio of cord sex was 53 female to 39 male. The median MNC cell dose infused was 0.57 x 10⁹/kg (range 0.08-2.83). See table.

Results/Outcome:
Overall, 65 (68.5%) patients showed ANC engraftment (>500 cells/µL) in a median of 24 (range 15-60) and 44 (range 14-105) days respectively, 22 patients (23.9%) died within day +100 of CBT from transplant related mortality. 13 patients (14.1%) had a relapse. Overall 57 patients (62%) are event free at the present time with an overall survival (OS) of 706 days.

Conclusions:
1. As the MNC cell dose increases, days required to achieve engraftment (both ANC and PLT) decrease, showing these outcome parameters are cell dose dependent.
2. Group 1 received the lowest cell dose (0.08-0.29 x 10⁹/kg)