donor). Complete donor whole blood (WB) chimerism (unsorted peripheral blood) was achieved in 7 of 11 pts by D + 14, while 4 pts had mixed chimerism (30%, 69%, 88%, 95% donor). D + 14 WB chimerism results were comparable to adult pts (13/18 complete, 5 mixed-65%, 95%, 95%, 95%, 95% donor). There was a trend towards a greater degree of mixed chimerism in younger pts and those with less pre-transplant immune depletion. **Conclusions:** Rapid, complete donor engraftment and chimerism can be achieved in pediatric pts with cancer using a NM alloSCT regimen. Pre-transplant immune depletion appears to be somewhat more difficult to achieve compared to adult pts, particularly in regard to CD8+ T cells. Intensive immune depletion might be required to consistently achieve rapid complete donor chimerism in pediatric pts undergoing NM alloSCT.

Table.

	Pre	Post	Day 0
Pediatrics			
CD4	**206**	**108 (54%)**	**5.5 (99.0%)**
CD8	**361**	**193* (69%)**	**0.5 (100%)**
Adults			
CD4	**253**	**70 (71%)**	**2.3 (99.7%)**
CD8	**217**	**47* (81%)**	**0.3 (99.9%)**

Data represent median cell counts/mm^3 (% depletion); *p = 0.001; Pre: entry; Post: after induction; Day 0: after conditioning.

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CYTOMEGALOVIRUS (CMV) INFECTION IN PATIENTS RECEIVING EITHER ALEMTUZUMAB (CAMPATH 1-H) OR ANTITHYMOCYTE GLOBULIN (ATG) AS GRAFT-VERSUS-HOST DISEASE (GVHD) PROPHYLAXIS PRIOR TO ALLOGENEIC STEM CELL TRANSPLANTATION (SCT)

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The potential of anti-leukocyte antibodies to decrease GVHD in allogeneic SCT recipients has lead to inclusion of these antibodies in chemotherapeutic regimens, some of which have been associated with increased CMV infection in adults despite antiviral therapy. To determine the effect of Campath 1-H or ATG on CMV infection in nonmyeloablative or myeloablative regimens in pediatric patients, we compared the retrospective incidence of CMV infection and disease in 105 pediatric SCT recipients at Texas Childrens Hospital over five years, from April 1998 through March 2002. Eighty-four of the 105 patients had either seropositive donor or recipient status, and all received either ganciclovir or foscarnet prophylaxis. CMV antigenemia, polymerase chain reaction (PCR), or buffy coat culture were monitored weekly for the first 120 days and subsequently as needed. CMV reactivation appeared similar with Campath 1-H, 22/37 (59%), and ATG, 24/47 (51%, P = .5, Power = 80) and also was similar with the myeloablative and nonmyeloablative groups, 39/70 (56%) and 7/14 (50%, P = .8), respectively. There was a trend towards higher CMV reactivation during the first 120 days with Campath 1-H versus ATG, 21/37 (59%) in comparison to 17/47 (36%, P = .06), but this was not statistically significant. The incidence of CMV recurrence was similar among all groups tested, as was the occurrence of GVHD. Although there was a trend towards earlier CMV reactivation in patients receiving Campath, disease was not more frequent, likely associated with an increase in ganciclovir or change to foscarnet upon positive CMV surveillance. One patient given Campath/myeloablation and two receiving ATG/myeloablation had CMV disease. A trend towards an increase in CMV reactivation during the first 100 days with Campath versus ATG likely reflects that Campath depletes more cell lines than ATG, and this effect diminishes with engraftment. In summary, Campath 1-H was not associated with a higher risk of CMV reactivation but was associated with earlier CMV reactivation without an increase in disease compared to ATG. We are currently initiating a study evaluating if adoptive immunotherapy with donor-derived CMV-specific cytotoxic T cells can reconstitute immunity to CMV and reduce the rate of reactivation.

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MATCHED AND MISMATCHED UNRELATED CORD BLOOD (UCB) STEM CELL TRANSPLANT (SCT) IN ADULTS: PRELIMINARY RESULTS OF AN ONGOING PROSPECTIVE TRIAL

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UCB has been commonly used as a source of allogeneic stem cells in infants and children who lack a suitable HLA-matched sibling donor. However, the success of UCB-SCT in adults is limited by lower number of stem cells in cord blood which results in delayed and reduced overall incidence of engraftment.

8 patients have been treated at SJRMC since August 2002. Diagnosis at transplant include MDS/AML (2), ALL (2), Burkitt Lymphoma (1), HD (1), NHL (2). 6/8 patients had active disease, 1 had Ph+ALL in 3rd remission, and 1 had testicular lymphoma with history of bone marrow involvement in 2nd remission. 2 had received prior radiation to the lungs/mediastinum. The median age was 52 years (range 29-60). The median weight was 86 kg (range 66-104). 7 out of 8 patients were CMV seropositive.

All patients were uniformly conditioned with Thiotepa (10 mg/kg day–7), Busulfan (3.2 mg/kg day –6 to –4), Cyclophosphamide (60 mg/kg day –3 to –2), Anti-thymocyte globulin (20 mg/kg day –4 and –2), and high dose Solu-medrol (500mg IV day –4 and –2). GVHD prophylaxis consisted of Mycophenolate Mofetil (IV/PO, day –1 to + 56) and Tacrolimus (levels 5-20 ng/ml from day –1). HLA match was 6/6 in one case, and 4/6 in seven cases based on intermediate resolution matching on class I loci and high resolution matching on class II loci. The median total nucleated cell (TNC) dose based on pre-cryopreserved sample was 2.57 (range 1.88-3.96) x10^7/kg. Patients were infused a median of 1.99 (range 0.81-5.68) x 10^7 TNC/kg and 0.96 (range 0.70-2.50) x 10^5 CD34 cells/kg. All 8 patients engrafted. The median time to ANC ≥ 200/μl, 500/μl, and 1000/μl was day 22 (range 17-30), day 24 (range 20-35), and day 26 (range 23-38), respectively. The median time to platelet count ≥ 20 x 10^9/l for 6 patients was day 64 (range 47 to156), and ≥50 x 10^9/l for 3 patients was day 170 (range 56-172). All 8 patients survived day 100. All 8 patients achieved 100% donor chimerism on day 30. 7/8 had 100% donor chimerism on day 100. 1 patient had 90% donor chimerism on day 100 and was found to have a leukemic relapse soon after. 5 patients developed BK virus-induced hemorrhagic cystitis at the median time of day 48 (range 25-60). 2 patients required surgical internention, one of which is currently asymptomatic.

Our preliminary results suggest that UCB-SCT is an appropriate alternative for adult patients with high-risk hematological malignancies who lack a suitable HLA-matched sibling donor.

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PROGNOSTIC FACTORS IN MYELODYSPLASTIC SYNDROMES FOLLOWING MYELOABLATIVE ALLOGENIC BONE MARROW TRANSPLANTATION-A TWELVE YEAR FOLLOW UP STUDY

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Significance of various prognostic factors in myelodysplastic syndromes was retrospectively explored in 82 patients who underwent myeloablative allogenic stem cell transplantation between years 1988-1999 at Karmanos Cancer Institute, Detroit, Michigan. Follow up ranged from 1 month to 12 years (median 4 years). Median age was 45 years (range: 4-66 years). Preparative regimen was busulfan, cytarabine and cyclophosphamide. Seventy-two patients