on day +112. One recipient is pregnant 9 months post transplant. In summary, this regimen is well tolerated, without increased TRM or GVHD, and supports engraftment with varied stem cell sources despite risk factors for graft rejection. Lymphopenia in the early post transplant period requires close vigilance and early intervention for infection.

Table.

Disease	Age (years)	Source	Cell dose (TNC/kg)	Engraftment	GVHD
Hurler's	1.5	BM	3.26 × 10 (8)	donor	0
Langerhan's	19	S BM	3.38 × 10 (8)	donor	Gr1-sk
Thalassemia	10	S BM	2.2 × 10 (8)	BM-d;PB-mixed	0
Evan's	12	UCB4/6	1.3 × 10 (7)	donor	0
Aplastic anemia	12	S PB	1.9 × 10 (10)	donor	Gr1-sk
Adrenoleukodystrophy	3	S PB	4.58 × 10 (8)	donor	0
Sickle cell anemia	2	S BM	3.3 × 10 (8)	donor	0
Aplastic anemia	20	S BM 5/6	4.2 × 10 (8)	NA	0
Hemophagocytosis	3	S BM	3.7 × 10 (8)	NA	0
Aplastic anemia	32	UCB5/6	2.02 × 10 (7)	NA	0

sk = skin; s = sibling; d = donor; NA = Not available.

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FREQUENCY AND MAGNITUDE OF DOSE ADJUSTMENT OF IV BUSULFAN IN TARGETED DOSING STRATEGY FOR PEDIATRIC ALLOGENEIC TRANSPLANTATION

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Busulfan is an important therapuetic agent in pediatric allogeneic transplantation. The recent introduction of IV busulfan (IV Busulfex®, ESPpharma) has descreased the intra-and interpatient dose variations associated with oral absorption and allows for targeted therapy. Children have increased drug clearance and varying degrees of hepatic function both developmentally and associated with the underlying disorders for which they are being treated. Because of this variability, first dose pharmacokinetics were perfomed on all of our patients to ensure the targeted AUC was achieved. In a series of 85 consecutive children undergoing allogeneic transplant at Methodist Children's Hospital/Texas Transplant Institute from June 2001 to October 2003, 45 children received myeloablative doses of busulfan (0.8 mg/kg for patients 3-10 kgs; 1 mg/kg for patients > 10 kgs till age 4 yrs; 0.8 mg/kg for patients > 4 yrs given every 6 hours for 16 doses) as part of a busulfan/cyclophosphamide, busulfan/melphalan or busulfan/fludarabine preparative regimen. 42/45 patients had their actual weight used for dosing calculations. Adjusted IBW was used in 3 patients. All patients received dilantin for seizure prophylaxis. First dose pharmcokinetics were performed by the Clinical Pharmokinetics Lab at Seattle Cancer Care Alliance, targetting an AUC of 900-1300 umol.min, with dose adjustments done starting with dose 7, if needed. Donor source was matched sibling donor bone marrow or cord blood in 10 and unrelated donor sources in 35 (2 marrow and 33 mismatched umbilical cord units). The median age was 4.7 yrs (range 1 month to 17 years). Patients underwent transplant for a variety of conditions: 12 AML, 5 CML, 1 JMML, 9 ALL, 1 lymphoma, 3 HLH, 10 primary immunodefiencies, 4 hematology disorders. No patients developed VOD. 32/33 patients of patients who received a fully myeloabalative preparative regimen engrafted. A targeted AUC (900-1300 umoles.min) was achieved with initial dosing in 50% of the patients. However, many children required dose adjustment to achieve the targeted AUC, mostly dose escalation (see table). Given the variability of metabolism in children, first dose pharmacokintics are recommended. Additionally, the starting dose in infants is lower than the currently recommended dose.

Table.

Age/ Weight	Starting Dose (mg/kg)	AUC μmol · min: Median (range)	Final Dosing (mg/kg): Median (range)	Percent of Patients Requiring Dose Adjustment	Dose Increased/ Dose Decreased
3-10 kg (n = 12)	0.8	1167 (825-1869)	0.93 (0.67-1.25)	50%-6/12 pts	4 ↑ /2 ↓
10 kg-4 years (n = 11)	1	1142 (908-1518)	1 (0.76-1.25)	27%-3/11	2 ↑ /1 ↓
>4 years (n = 22)	0.8	1089 (620-1827)	0.82 (0.57-1.25)	65%-15/23	11 ↑ /4 ↓

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LARGE VOLUME LEUKAPHERESIS FOR AUTOLOGOUS PERIPHERAL BLOOD STEM CELL COLLECTION IN CHILDREN WEIGHTING LESS THAN 25 KG

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Peripheral blood stem cells (PBSC) are the most frequent source of hematopoietic stem cells used to rescue patients from high-dose chemotherapy. The theoretical advantages of PBSC collections are decreased tumor contamination and faster hematological engraftment after the transplant. Small children are usually not eligible for such protocols due to little experience of most Hematotherapy teams, poor venous access and concern with a large extracorporeal volume. In large volume leukapheresis (LVL) three or more blood volumes are processed in the same procedure. LVL is also warranted in pediatric patients to decrease the number of procedures and potentially decrease tumor contamination. Twenty-five patients underwent LVL using a Cobe Spectra® cell separator between 2000-2003. All had the circuit primed with irradiated, filtered and resuspended red blood cells. All patients needed a central venous catheter placed for the procedure. During the procedure, the patients received continuous IV infusion with 10% calcium gluconate 2cc/kg, 10% magnesium sulfate 1 cc/kg, 19.1% potassium chloride 0.3 mEq/kg/hr over four hours to decrease the adverse effects of ADC infusion. They had vital signs, EKG and O2 saturation continuously monitored. Patients were 13M:12F with a median age of 3.5 years-of-age (1-10). The median weight was 14 kg (8-24). Underlying diagnoses were neuroblastoma (21), germ cell tumors (2), non-Hodgkin's lymphoma (1) and alveolar soft tissue sarcoma (1). The median number of procedures was 2 (1-4). The median total nucleated cell count/kg was 16 (5-66) and CD34+/kg 6 (0.6-71). In conclusion, LVL can be safely performed in small children if vital signs are adequately monitored and electrolytes are replaced and promptly corrected.

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AUTOLOGOUS STEM CELL TRANSPLANTATION FOR THE TREATMENT OF PEDIATRIC SOLID TUMORS IN BRAZIL

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High-dose chemotherapy and autologous stem cell rescue can be used in the treatment of poor prognosis responsive pediatric solid tumors. Our objective is to describe the experience of four Brazilian hematopoietic stem cell transplantation (HSCT) centers in