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nutrition. Red cell requirement was < 4 units in 9 children and > 4 units in 11 children. Platelet support was required < 5 in 5 children and > 5 in 15 children. Two of the eighteen children did not engraft and 4 children had graft versus host disease and 1 child died on day 10 due to acute cardiomyopathy. Two children had mild sinusoidal obstruction syndrome. Group two had 9 class I, 3 class II and 8 class III patients between age groups 1 to 13 years. Mucositis was grade two and above in 5 children and they needed partial parenteral nutrition. Less than 4 units of red cells were required in 15 children and > 4 units in 5 children. Platelet support was required on less than occasions in 10 children and > 5 in 10 children. All of the eighteen children engrafted and 2 children had graft versus host disease. There was no mortality and two children had early graft rejection before day 100. No child had sinusoidal obstruction syndrome.

We conclude that this treosulphan based regimen is well tolerated and results in durable engraftment even in Class III thalassaemia major children with no major toxicity or mortality.

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PULMONARY ARTERYOPATHY AND PULMONARY HYPERTENSION FOLLOWING TANDEM AUTOLOGOUS TRANSPLANTS IN PEDIATRIC PATIENTS WITH CNS TUMORS

Schechter, T.[1], Leucht, S.[1], Bouffet, E.[1], Cutz, E.[2], Gassas, A.[1], Huang, A.[1], Bartels, U.[1], Humpl, T.[3], Doyle, J.[1] [1]The Hospital for Sick Children, Toronto, ON, Canada; [2]The Hospital for Sick Children, Toronto, ON, Canada; [3]The Hospital for Sick Children, Toronto, ON, Canada

Introduction: Young children with central nervous system (CNS) tumors are frequently being treated with tandem cycles of high dose chemotherapy followed by autologous stem-cell transplants in an attempt to avoid cranial irradiation. The most common combinations of chemotherapy used is carboplatinum and thiotepa. Though, multiple side effects were documented, pulmonary arteriopathy leading to pulmonary hypertension (PH) was not previously documented in patients treated for primary CNS disease. We herein report PH as a complication post autologous transplantation using carboplatinum and thiotepa as conditioning therapy.

Methods: A retrospective evaluation of all pediatric patients diagnosed with primary CNS tumors between 2001-2010 who were scheduled to be treated with 3 cycles of high dose chemotherapy with carboplatinum (17mg/kd/day for 2 days) and thiotepa (10mg/kg/day for 2 days) followed by autologous stem-cell transplants was conducted. The primary objective was to evaluate the incidence of PH in this population and patients' outcome following the development of PH.

Results: 14 patients were scheduled to received 3 cycles of autologous transplantation. The median age was 28 months (range 3-41months). Patients' diagnoses were: atypical teratoid rhabdoid tumor – 8 patients, medulloblastoma- 4 patients and primitive neuroectodermal tumor- 2 patients. Three patients developed biopsy confirmed pulmonary arteriopathy. The two patients that developed echocardiographic evidence of PH after the third cycle of high dose therapy succumbed to right heart failure, while one patient who's PH was detected after the second cycle didn't receive the third cycle and survived this complication. The overall survival (OS) of the 14 patients was 0.48 +/- 0.15 at a median of 14.32 months (range 4.99-68.21 months). Death from progression was 0.43 +/- 0.16 and non-relapsed mortality was 0.15 +/- 0.10. The 2 patients who died from PH represented the only non-relapsed mortality in our cohort.

Conclusions: Pulmonary hypertension is a major complication following high dose chemotherapy and autologous transplantation with a high likelihood of mortality despite PH directed therapy. Echocardiographic evaluation of the right ventricle and screening specifically for PH should be included after each cycle of high dose chemotherapy in pediatric CNS tumor population. Consideration for longer interval between cycles should be done to allow proper follow-up between cycles.

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OUTCOMES OF HAEMATOPOIETIC STEM CELL TRANSPLANTATION FOR INHERITED METABOLIC DISORDERS: A REPORT FROM ANZCHOG AND ABMTRR

Mitchell, R.[1], Smith, Nivison-I.[2], Teidemann, K.[3], Mechinaud, F.[3], Shaw, P.J.[4], Teague, L.[5], Fraser, C.[6], Tapp, H.[7], Cole, C.H.[8], Alvaro, F.[9], O'Brien, T.A.[1] [1]Sydney Children's Hospital, Sydney, Australia; [2]Australasian Bone Marrow Transplant Recipient Registry, Sydney, Australia; [3]Royal Children's Hospital, Melbourne, Australia; [4]Children's Hospital Westmead, Sydney, Australia; [5]Starship Children's Hospital, Auckland, New Zealand; [6]Royal Children's Hospital, Brisbane, Australia; [7]Women and Children's Hospital, Adelaide, Australia; [8]Princess Margaret Hospital for Children, Perth, Australia; [9]John Hunter Children's Hospital, Newcastle, Australia

We report a retrospective analysis of 53 haematopoietic stem cell transplants for inherited metabolic disorders performed at Australia and New Zealand Children's Haematology Oncology Group (ANZCHOG) transplant centres between 1992 and 2008. The most common indications for transplant were Hurler syndrome (47%), adrenoleukodystrophy (ALD) (28%) and metachromatic leukodystrophy (17%). The median age of patients was 2 years (0-15). 11 (32%) patients received marrow from matched siblings, 1 from an HLA-identical parent. The remaining 66% received grafts from unrelated donors, with 22 (42%) using single UCB, 13 BM or PBSC (23%) and one double UCB transplant. 55% of patients received Busulphan and Cyclophosphamide as their conditioning regimen, and 34% received Bu/Cy + Other (Melphalan or Fludarabine). 54% had in-vivo T cell depletion using ATG or Campath, and 15% had ex-vivo T cell depletion. Median time to neutrophil and platelet engraftment was 16 and 35 days respectively, with a cumulative incidence (CI) at day +42 of 94% and 73% respectively. There were 3 graft failures, all engrafted after a second URD, and are alive at 10, 5 and 3 years post transplant. The CI of aGVHD grade II-IV and III-IV at day +100 was 39% and 14% respectively. 17% of patients had cGVHD at 1 year post transplant. Transplant related mortality (TRM) was 12% at day +100, and 19% at 1 year post transplant. Overall 5 year survival (OS) was 78% for the cohort, with 73% for ALD and 83% for Hurler syndrome. There were no late deaths reported for the cohort, with median follow up of 4 years. Neither age, year of transplant, donor source, or HLA match impacted OS. In contrast, the development of interstitial pneumonitis was the only significant variable associated with an increase in TRM and decrease in OS. This is keeping with previously reported literature for this patient cohort[1]. In summary, we report excellent OS in a large cohort of patients transplanted for a range of metabolic disorders.

1. Orchard PJ, Milla C, Braulin E et al. "Pre-transplant risk factors affecting outcome in Hurler syndrome" *Bone marrow transplant.* (2010) 45: 1239-1246.

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CHEMOTHERAPY-ONLY PREPARATIVE REGIMEN FOR ALTERNATIVE DONOR HEMATOPOIETIC STEM CELL TRANSPLANTATION FOR PATIENTS WITH FANCONI ANEMIA

Mehta, P.A.[1], Davies, S.M.[1], Duncan, C.[2], Guinan, E.[2], Klein, E.[4], Edwards, S.[1], Lehmann, L.[2], Margolis, D.[3], Williams, D.[2], Boulad, F.[4] [1]Cincinnati Children's Hospital Medical Center, OH; [2]Boston Children's Hospital, MA; [3]Children's Hospital of Wisconsin, WI; [4]Memorial Sloan-Kettering Hospital, NY

Background: A significant number of patients with Fanconi anemia (FA) who survive hematopoietic stem cell transplantation (HSCT), develop solid tumors. The relative contributions of total body irradiation (TBI) and chronic graft vs. host disease (GvHD) to the development of tumors are unknown. Our study aims to examine whether non-TBI based preparative regimen improves alternative donor HSCT outcome in FA. Here we report results of our interim analysis after first 17 patients.

Methods: Seventeen patients were enrolled in this phase II multicenter protocol between June 2009 and October 2011. See Table 1 for patient and donor characteristics. Preparative regimen included: Busulfan 0.8-1.0 mg/Kg/dose Q 12H x 4 doses (D-7&-6), Cyclophosphamide 10 mg/Kg/day, Fludarabine 35 mg/m2/day and Rabbit ATG 2.5 mg/Kg/day x 4 days (D-5 to D-2).GvHD prophylaxis was cyclosporine starting D-2. Filgrastim was used starting D+1. Busulfan doses were adjusted to keep the steady state concentration low in most cases. All grafts were T-cell depleted using the CliniMacs CD34 columns (Miltenyi). Cell doses of the grafts were: 4.9 -42.7 x 10^6 CD34 cells/Kg and 2.24- 49.90 x 10^3 CD3 cells/Kg.