Table 1. Characteristics of Patients with New Allergic Symptoms after Cord Blood Transplantation

Variable lists	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Age (gender)	54 (F)	41 (F)	39 (F)	3 (F)	43 (F)
Disease	MDS	CML/FCCL	NK tcell lymphoma	AML	MDS/MPD
Pre-CBT allergy	Codfish, celery, ginger	None	None	None	None
Conditioning regimen	Flu/cy/tbi	Flu/cy/tbi	Flu/cy/tbi	Cy/tbi/atg	Flu/cy/tbi
CB cell dose	3.57×10^7	2.15×10^7 female	3.5×10^7	3.86×10^7	5.02×10^7
GVHD prophylaxis	FK and MMF	FK and MMF	FK and MMF	FK and MMF	FK and MMF
Acute GVHD	+ skin, + gut grade 2	+ gut grade 2	+ skin grade 3	None	+ gut grade 2
Chronic GVHD	None	+ skin, gut , oral	+gut and vaginal	None	None
Chimerism at the time of new allergy	100%	100%	100%	100%	100%
New allergy documented (days post- CBT)	+290	+250	+298	+809	+380
Impact on pre-CBT allergy	Negative for previous allergies	Na	Na	Na	Na
Presenting sign and symptoms	Vomiting with ingestion of peanuts	Severe vomiting	Throat closing swelling	Painful itching blisters to lips and mouth	Nausea/vomiting/diarrhea
Skin testing results		+ mites, cat, grass, weed, tree, egg white and yolk	+ grass, weeds, tress, almond, walnut, brazil nut, cashew, coconut	+ trees, grass, weeds, ragweed, dust mites, dog, cat, peanut, walnut, cashew, pecan, milk, and egg	
RAST	0.16kU/L (low)				5.88 kU/L (high)- almond; and peanut 2.39 kU/L (high)
Current IST	None	None	None	None	None
Duration of follow-up (mo)	37 mo	39 mo	43 mo	46 mo	15mo
Current status	Alive	Alive	Alive	Alive	Alive

CBT, cord blood transplantation; GVHD; Graft versus host disease.
*Result at the time of allergy evaluation; IST, immunosuppressive therapy; ALC, absolute lymphocyte count; mo, months; RAST, radioallergosorbent test.

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MAGNITUDE OF DYSLIPIDEMIAS AND CARDIOVASCULAR RISK IN SURVIVORS OF ALLOGENEIC HEMATOPOIETIC STEM CELL TRANSPLANTATION (SCT) UP TO THE SECOND DECADE POST-TRANSPLANT

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Introduction: Long term survivors of SCT have an increased risk of cardiovascular disease which has not been well characterized. Chronic GVHD (cGVHD) has been suspected to contribute to this increased risk.

Methods: We evaluated the cardiovascular risk profiles in 109 survivors (62 males and 47 females) of SCT performed between 1993 and 2006. Median ages at transplant, 5 and 10 year post-SCT follow-up were 34, 40 and 46 years, respectively. Transplant indications were CML (56), acute leukemia (29), MDS (13), and others (9). Ninety-nine patients received ≥12 Gy TBI-based conditioning and 10 patients received non-myeloablative conditioning followed by marrow (15) or T cell depleted peripheral blood stem cell graft (94). All females received hormone replacement therapy post-SCT.

Results: At the time of analysis, of 12 deaths, one was due to a cardiovascular cause (stroke). Three survivors had non-fatal cardiovascular events. There were significant increases in the prevalence of hypertension ($p \leq 0.001$), diabetes ($p = 0.018$), elevated C-reactive protein (CRP) ($p<0.001$) and Body Mass Index (BMI) ($p = 0.044$) at follow-up compared to baseline (Table). Survivors had higher rates of dyslipidemia meeting ATP III thresholds for drug therapy at 5 years post-transplant (23%) compared to the general population (15%, MESA study) ($p<0.001$). On calculating the Framingham general cardiovascular risk score, the 10-year risk of developing a cardiovascular event in male survivors at 5 years post-SCT nearly doubled compared to normal (median 10.4% vs. 5.4%). The median calculated heart/vascular age was 8 years greater than the chronological age for males. Females showed no increase in the cardiovascular risk score. All risk factors stabilized between 5 and 10 years post-SCT. cGVHD was not significantly associated with cardiovascular risk factors at any time-point.

Conclusions: 1. Therapy requiring dyslipidemia in SCT survivors occurs earlier and with a significantly greater frequency than in the general population.

2. At 5 years post transplant, male survivors have a doubling in the 10-year risk of developing a cardiovascular event and an 8-year increase in heart/vascular age.

3. Although elevations in CRP suggest a persistent chronic inflammatory state, cGVHD does not impact cardiovascular risk.

Table.

Percentage increase in cardiovascular risk factors from pre-transplant baseline at follow-up	5yrs (%)	10yrs (%)
Diabetes	810	1005
Hypertension	292	563
Elevated BMI	14	58
CRP (as a continuous variable)	441	721

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PEDIATRIC REDUCED INTENSITY HEMATOPOIETIC PROGENITOR CELL TRANSPLANTATION (HPCT) MAY CONFER LOWER RISK OF SECOND MALIGNANT NEOPLASMS (SMNS)

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The occurrence of SMNs after HPCT is a potentially serious problem for the pediatric population. Our initial intent was to compare the incidence of SMNs in HPCT between traditional myeloablative conditioning (TMC) and reduced intensity conditioning (RIC) regimens, however, SMNs were only seen in the TMC group. Conditioning regimen backbones were consistent within groups with all allogeneic TMC SMNs having received total body irradiation (TBI) 12 Gy, and RIC group with Fludarabine/Busulfan without any radiation. Therefore, we compared the time at risk to develop SMNs in the RIC group vs time to development in the TMC group. Among pediatric patients who underwent HPCT in our institution since 1992 and survived ≥ 3 years (n = 478; 166 allogeneic), 23 (5%) developed SMNs. Medical record review and

analysis of TMC and RIC cohorts from time of first HPCT showed that all SMNs occurred in TMC patients who underwent HPCT for malignancies, and 12/23 (52%) of SMNs were among allogeneic HPCTs; 7% (12/166) SMNs developing in this total allogeneic cohort. Mean follow up for all TMCs in this group is 8.8 years and for SMNs is 2.6 years from SMN onset (std. error = 0.37) with overall mortality of 26%. Mean time of SMN from HPCT was 15 years with a range of 3.8–16 years. SMNs included thyroid papillary carcinoma (8), MDS/AML (7), osteogenic sarcoma (3), chondrosarcoma (1), gastrointestinal stromal tumor (GIST) (1), primitive neuroectodermal tumor (PNET) (1), mucinous bile duct adenocarcinoma (1), and Kaposi's sarcoma (1). Comparing allogeneic TMC with SMN to allogeneic RIC treated for malignancies, survival analysis censoring for time at risk in RIC and time to SMN in TMC showed no significant difference (log rank p = .8364) with a mean follow up for this RIC group at 10.95 years and 15.03 years for the SMN in TMCs. There was a difference between the same RIC group and autologous HPCT with SMNs (n = 11) in which 9/11 (82%) had HPCT for NBL IV; despite no TBI for autologous HPCT these patients are likely high risk for SMNs due to factors of prior exposure including high doses of alkylating agents, topoisomerases, epidophyllotoxins, and focal radiation. Although overall follow up time is relatively short at a mean of 10 years, comparing time at risk among RIC patients to time to development of SMNs in TMC patients showed no significant difference. This may support the hypothesis that decreasing or avoiding total body irradiation doses will lead to fewer SMNs in survivors.

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A PROSPECTIVE COMPARISON OF SELF REPORTED QUALITY OF LIFE OF CHILDREN AND THEIR PARENTS AFTER PEDIATRIC HEMATOPOIETIC STEM-CELL TRANSPLANTATION

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Background: Advances in hematopoeitic stem-cell transplantation (HSCT) have significantly improved long-term survival and HSCT is now the therapeutic treatment offered to patients with malignant and nonmalignant hematological diseases. The goal of HSCT is to cure and enhance patient's overall quality of life (QOL); yet, QOL is multidimensional and rarely static. Further, little research has compared parental and child perceptions of health related quality of life. This study examined parental and child perceived QOL over the first year after HSCT, exploring physical, emotional, psychosocial, school function, and domains related to therapy such as worry, nausea, and procedural and treatment anxiety.
Methods: Pediatric HSCT recipients and their parent each completed a questionnaire package at 3, 6, and 12 months post transplant which included the Pediatric Quality of Life Inventory 4.0 (PedsQL 4.0) and the PedsQL Cancer Module. Scale scores for physical, psychosocial, school domains were reported out of 100 where higher scores reflect better functional status. Data were analyzed using descriptive and univariate analyses with SAS software.
Results: There were 19 participants (68% male); 8 adolescents (age 13-18); 10 children ages 8-12; and 1 parent of a child ages 2-7. The median age at HSCT was 11.5 yrs (range 2-17.2yrs).

Table. PedsQL 4.0 Mean (range) Core Scales for Children and Parents, and Healthy Reference Scores and PedsQL Cancer Module: Parent and Child Reports (Median Scores)

PedsQL 4.0	Parent Report	Child Self-Report	Mean Reference*
Physical Function Scale			
3mo (n = 19)	66 (16-97)	63 (38-97)	88.7
6 mo (n = 14)	66 (59-100)	89 (47-97)	
12 mo (n = 9)	65 (25-100)	91 (53-100)	
School Function Scale			
3mo (n = 19)	75 (35-100)	73 (0-90)	80.4
6 mo (n = 14)	65 (45-100)	78 (50-100)	
12 mo (n = 9)	75 (30-100)	80 (45-90)	
Psychosocial Summary Score			
3mo (n = 19)	63 (38-93)	60 (0-93)	83.8
6 mo (n = 14)	80 (25-98)	87 (40-98)	
12 mo (n = 9)	80 (37-100)	88 (38-97)	
Cancer Module (median scores at 3m, 6m, 12m)			
Pain and Hurt	81, 88, 63	75, 81, 81	
Nausea	90, 90, 85	80, 90, 70	
Procedural Anxiety	93, 75, 92	75, 75, 85	
Treatment Anxiety	75, 83, 98	92, 92, 83	
Worry	58.3, 75, 92	92, 85, 67	
Physical Appearance	71, 83, 100	83, 88, 83	

Conclusions: These results suggest that parent and children report discordant perceptions of QOL ratings after HSCT with parents reporting lower functional status across almost all domains. For the physical and psychosocial, and school scores are lower than healthy child reference norms for parental ratings indicating concerns in these domains. However by the 6 and 12 month mark after HSCT, children are rating their QOL comparable to healthy peer scores. Of note, parents experienced markedly less "worry" over the first year (about treatment, side effects, social and interpersonal relations, and child's future), while children reported increasing 'worry' over the first year. We will further explore the role of etiology for transplant and age of child and its impact on these findings; studies are needed to explore discordant parental and child perceptions of QOL to improve outcomes for pediatric HSCT recipients.

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PHASE ANGLE FROM BIA IN PATIENTS WITH FANCONI ANEMIA UNDERGOING HEMATOPOIETIC STEM CELL TRANSPLANTATION

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Patients with Fanconi Anemia (FA) often have compromised nutritional status, especially low birth weight and short stature. Once the Hematopoietic Stem Cell Transplantation (HSCT) causes loss of appetite and increased energy expenditure, nutritional status of these patients may be further compromised. Knowing that the phase angle (PA) has been considered a prognostic and nutritional status indicator in several clinical situations, considering its use as an body cell mass estimate value, the aim of this study was to evaluate the PA in patients with FA undergoing HSCT and the association between PA and nutritional parameters. The nutritional status of 24 patients and 25 controls, aged from 5 to 16 years old, was assessed by bioelectric impedance analysis (BIA) and anthropometric measurements before patients started conditioning for HSCT and 30 and 180 days after HSCT. The PA was calculated (reactance/resistance) and expressed in degrees. Dietary intake was assessed by 24-hour recall. Of the 24 patients studied, 11 (45.8%) were male, with an average age 9.74 ± 3.2 years and mean PA of 5.8° ± 0.82. The patients had lower PA values than the control (5.8° ± 0.16 versus 6.3° ± 0.13, respectively, p = 0.02). Was observed a decrease of 17.3% in the value of AF 30 days after transplantation (p = 0.02). On the other hand, there was no reduction in mean BMI and FFM after transplantation (p>0.05). Lower values of AF were found in patients classified as malnourished according to weight / age (p = 0.007) as well as patients with weight loss 180 days after transplantation (p = 0.002). The PA was positively correlated with age (r = 0.660 p <0.001), protein intake (r = 0.663 p = 0.003), BMI (r = 0.762 p <0.001), Triceps skinfold thickness (r = 0.457 p = 0.02), Arm muscle circunference (r = 0.754 p<0,001) and Fat free mass (r = 0.694 p <0.001). The present study demonstrated that PA can be used as an indicator of nutritional status in children with AF undergoing HSCT.