patients with unidentified relapse at TPO start, TPO preceded diagnosis of relapse by median 62 days (range 22-281). Of the 9 patients who started TPO as inpatient, 7 subsequently died with median time from TPO to death 195 days (range 18-398). No significant toxicities to TPO were identified. The median time from TPO outpatient prescription to start was 22 days due to insurance delays (range 8-40).

Conclusion: While causality is difficult to establish, TPO was associated with improvement of platelet counts in a subset of patients, with responses most likely to occur in outpatients with viral reactivation, GvHD, or primary poor engraftment. In 5 patients with unidentified relapse, start of TPO preceded a diagnosis of relapse by median 62 days. This should alert clinicians to assess for relapse when considering TPO. The start of TPO in inpatients generally reflects grave clinical outlook given low response rates and high number of subsequent deaths.

184

CT-Defined Body Composition in Adult Patients with Hematological Malignancies Prior to Allogeneic Hematopoietic Stem Cell Transplantation (alloHSCT): Endemic Sarcopenia and Reduced Muscle Radiodensity Associate with Impaired Forced Expiratory Volume (FEV)1

***Asmita Mishra MD*[1]**, *Kevin Bigam*[2], *Martine Extermann MD*[3], *Rawan Faramand MD*[4], *Sonam Puri MD*[4], *Joseph A. Pidala MD, PhD*[1], *Vickie Baracos PhD*[2]. [1] *Blood and Marrow Transplantation and Cellular Immunotherapy, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL;* [2] *Department of Oncology, University of Alberta, Edmonton, AB, Canada;* [3] *Senior Adult Oncology, H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL;* [4] *University of South Florida, Tampa, FL*

Background: Precise quantification of skeletal muscle using computed tomography is accessible using cancer patients' standard oncologic images. Reduced muscle mass (i.e. sarcopenia) has been related to mortality, treatment complications and QOL and reduced respiratory muscle strength, however these associations are not well characterized in adult alloHSCT recipients.

Methods: A consecutive retrospective series (n=296) patients who had allogeneic BMT at a comprehensive Center between 01/2016 and 12/2017. Pre-transplant CT scans were used to quantify skeletal muscle and adipose tissue at the 3rd lumbar (L3) and/or 4th thoracic (T4) vertebra. Tumor and patient characteristics were recorded, including FEV1 by spirometry. Sarcopenia was defined according to Prado et al. (PMID:18539529)

Results: 296 patients (male n=161; female n=135) were included, all of whom had thoracic-CT; a subset of these (n=195) also had lumbar-CT. Diagnoses were NHL (n=172), AML (n=66) HD (n=14), ALL (n=14), MDS (n=18) and other (MM, MPN, CML; n=12).

Patients had increased BMI (male= 28.7 kg/m^2, female =26.5 kg/m^2), with many patients (♂64.7%; ♀57.0%) meeting criteria for sarcopenia. Rates of sarcopenia were higher ($p<0.001$) than in age- and sex-matched patients with solid tumors (male 56.4% n=1094; female 40.0%; n=685). Similar rates of sarcopenia (78%) were seen in in male BMT patients aged 50-60 years, as had been reported in our population of male patients with metastatic solid tumors aged 70-80 years (Kazemi-Bajestani et al. PMID: 23819995).

Men and women were more muscular at T4 than L3. L3 and T4 skeletal muscle areas were moderately correlated (r^2 =0.33-0.47), as were L3 and T4 muscle radiodensities (r^2 =0.58-0.63) and subcutaneous fat areas (r^2 =0.69- 0.71), ($p<0.001$).

In multivariable linear regression, independent predictors of muscularity (i.e. T4 muscle index) were age (p=0.005), sex (p=0.000), BMI (p=0.000) and HCT-CI (p=0.057). Disease severity (Armand DRI) (p=0.131) was not significantly associated with T4 muscle index. Similar conclusions were obtained for L3 muscle index.

In multivariable linear regression adjusted for sex (p=0.000), age (p=0.000) and HCT-CI (p=0.000) and both T4 muscle index (b 0.252 [95%CI 0.126;0.412] p=0.000) and T4 muscle radiodensity (b 0.165 [95%CI 0.110;0.630] p=0.006) were independently associated with FEV1; Armand DRI (p=0.712) and KPS (p=0.991) were not associated with FEV1. Similar conclusions were obtained when muscle index and radiodensity at L3 were considered.

Discussion and Conclusion: Lumbar or thoracic CT images are useful for body composition assessment in this population, and reveal high rates of sarcopenia, similar to those reported in very elderly patients. Reduced muscle mass and radiodensity associate with impaired FEV1. More muscular patients were male, younger, of high BMI and had fewer comorbidities.

185

Cytokine Release Syndrome after Peripheral Blood T-Cell Replete Haploidentical Transplantation Is Not Prevented By Dexamethasone and Limits Its Full-Outpatient Conduction

***Perla R. Colunga-Pedraza MD*[1]**, *Andrés Gómez-De León MD*[2], *Julia E. Colunga-Pedraza MD*[1], *Paola Santana-Hernández MD*[2], *Emmanuel Bugarín-Estrada MD*[2], *Cesar Homero Gutierrez-Aguirre MD*[1], *Olga G. Cantu-Rodriguez MD*[1], *David Gómez-Almaguer MD*[2]. [1] *Hematology, Universidad Autónoma de Nuevo León, Hospital Universitario "Dr. José Eleuterio González", Monterrey, NL, Mexico;* [2] *Servicio de Hematología, Hospital Universitario "Dr. José Eleuterio González", Universidad Autónoma de Nuevo León, Monterrey, Mexico*

Introduction: Cytokine release syndrome (CRS) associated with T-cell replete haplo-HSCT is characterized by fever and high levels of inflammatory cytokines with symptom onset occurring early after infusion. We report our analysis of CRS development after T cell-replete haplo-HSCT after using prophylactic dexamethasone.

Objetive: To evaluate the incidence of CRS with dexamethasone prophylaxis during an outpatient-based peripheral blood haplo-HSCT, factors associated to CRS and its impact on transplant outcomes.

Methods: Adults undergoing T-cell replete haplo-HSCT in our transplant center between 2016-2018 were included. CRS was graded using the criteria described by Lee et. al. Conditioning was performed with fludarabine 25 mg/m2/day (day -5 to -3), cyclophosphamide 350 mg/m2/day (day -5 to -3), and oral melphalan 50-100 mg/m2 (day -2 to -1). Graft-versus-host disease (GVHD) prophylaxis consisted of post-transplant cyclophosphamide (PTCy) 50 mg/kg (days +3 to +4) as well as mycophenolate and either cyclosporine or tacrolimus starting on day +5. Dexamethasone 8 mg IV was administered on day 0 to +2 as CRS prophylaxis.

Results: Forty two patients were included. The most common underlying diagnosis was acute leukemia (n=22, 52%). Conditioning was myeloablative (n=33, 79%) or reduced-intensity (n=9, 21%). Thirty patients (71.4%) developed CRS. CRS severity was grade 1/2 in n=28 (66.7%) and grade 3 in n=2 (4.8%). Median time to onset occurred on day +2 (0-4) and usually resolved after PTCy on day +5 (range, 1-11). CRS incidence was not associated with CD34+ cells infused, DRI/HCT-CI scores, or conditioning intensity. Time to neutrophil and platelet engraftment were similar regardless of CRS. Hospitalization was required in 36 cases (87%) while n=6 (13%) were followed in a

fully-outpatient basis, including 2 patients with grade 1 CRS. Survival outcomes and GVHD were similar (Table 1)

Conclusion: CRS was common despite dexamethasone prophylaxis, and most were grade 1/2. None of the factors evaluated were associated to CRS and it did not influence outcomes. Completely ambulatory conduct of HSCT was limited by the development of CRS. New strategies are required to prevent CRS and hospitalizations associated with haplo-HSCT.

Table 1
Patients characteristics by CRS grade

Characteristic	All (n=42)	No CRS (n=12)	CRS Grade1-4 (n=30)	*P*
Conditioning regimen				0.247
RIC	9 (21.4%)	1 (8.3%)	8 (26.7%)	
Myeloablative	33 (78.6%)	11 (91.7%)	22 (73.3%)	
Neutrophil engraftment, median days (range)	16 (12-32)	17 (12-32)	16 (13-29)	0.77
Platelet engraftment, median days (range)	17 (12-32)	15.5 (13-24)	18 (10-100)	0.36
1-year cumulative incidence cGVHD, % (95%CI)	43 (32-61)	60 (46-74)	29 (12-46)	0.42*
2-year overall survival, % (95%CI)	57 (45-69)	66 (57-75)	75 (63-87)	0.40*

CRS: Cytokine release syndrome; RIC: Reduced-intensity conditioning, cGVHD: chronic graft versus host disease.
* Kaplan-Meier method

186

Day 100 Risk Assessment Tool Predicts 1-Year Mortality after Allogeneic Hematopoietic Cell Transplantation

***Betty K. Hamilton MD*[1]**, *Sheila Serafino MT(ASCP), MBA*[2], *Lisa Rybicki MS*[3], *Laura Bernhard RN BSN*[4], *Jamie Elberson RN, BSN*[5], *Brittany Hodgeman RN, BSN*[6], *Jamie Starn RN, BSN*[5], *Victoria Winslow RN, BSN*[5], *Amy Colver LSW*[6], *Jane Dabney LISW-S, OSW-C*[7], *Christine Lawrence LISW-S*[6], *Robert M. Dean MD*[1], *Aaron T. Gerds MD*[1], *Brian T. Hill MD, PhD*[1], *Deepa Jagadeesh MD, MPH*[1], *Matt E. Kalaycio MD*[1], *Brad Pohlman MD*[1], *Ronald M. Sobecks MD*[1], *Navneet S. Majhail MD, MS*[6]. *[1] Blood and Marrow Transplantation, Department of Hematology and Medical Oncology, Taussig Cancer Institute, Cleveland Clinic, Cleveland, OH; [2] Blood & Marrow Transplant, Cleveland Clinic, Cleveland, OH; [3] Quantitative Health Sciences, Cleveland Clinic, Cleveland, OH; [4] Blood & Marrow Transplant Program, Cleveland Clinic Foundation, Cleveland, OH; [5] Blood & Marrow Transplant Program, Cleveland Clinic, Cleveland, OH; [6] Blood and Marrow Transplant Program, Cleveland Clinic, Cleveland, OH; [7] Adult BMT Program Social Worker, The Cleveland Clinic Foundation, Cleveland, OH*

Advances in allogeneic hematopoietic cell transplantation (HCT) have led to significantly improved day 100 survival over time. Longer-term (≥1 year) survival, however, has not changed significantly. In an effort to improve outcomes and identify patients (pts) at higher risk for 1-year mortality, we created a day 100 risk assessment tool.

The Day 100 Risk Assessment tool includes 11 items: HCT-comorbidity index, distance from transplant center, performance status (PS) at day 100, GVHD requiring systemic corticosteroids, infection requiring intravenous antimicrobials, caregiver support, poor coping skills/motivation, substance abuse, poor health literacy/access, medication compliance, and "other" concerns from the care team. Pts were given a point for each identified factor and categorized as low risk (score 0-2) or high risk (score≥3). High risk pts were targeted for closer follow up beyond 100 days. Cox regression was used to identify risk factors for overall survival (OS) within the first year after HCT.

Between 11/2015-6/2018, 208 pts underwent allogeneic HCT and 161 pts survived without relapse at day 100 (Table). Median follow up is 12 months (range 3-33). 1-year OS for low-risk pts was significantly better than for high-risk pts (82% vs 68%, P=0.006; Figure). Multivariable analysis accounting for both pre-transplant and Day 100 risk factors identified older age (≥55), (HR 2.92, 95% CI 1.21-7.08, P=0.017); high disease risk (HR 2.93, 95% CI 1.34-6.39, P=0.007), and day 100 high-risk score (HR 2.29, 95% CI 1.17-4.48, P=0.015) as significant factors for poor OS. Univariate analysis of individual components of the day 100 risk score identified poor PS at day 100, infection, and caregiving concerns as significant variables, P<0.004. A second multivariable model including individual factors demonstrated that poor PS (HR 2.68, P=0.013), infection (HR 2.57, P=0.009) and older age (HR 2.55, P=0.041) remained significantly associated with poor OS.

In sum, we developed a Day 100 Risk Assessment tool and identified factors occurring within the first 100 days beyond

Variable	N (%)
Pre-transplant	
Gender	
Male	86 (53)
Female	75 (47)
Age at HCT, years	
Median (range)	58 (20-74)
HCT-CI	
Low	24 (15)
Intermediate	43 (27)
High	94 (58)
Household income	
Median (range)	52,603 (24,770-127,313)
Diagnosis	
AML	82 (51)
MDS	30 (19)
ALL	11 (7)
CML	9 (6)
MPN	10 (6)
NHL	5 (3)
Other	13 (8)
ASBMT Disease risk	
Low	84 (52)
Intermediate	38 (24)
High	23 (14)
Unclassified	16 (10)
Conditioning	
Myeloablative	76 (47)
Reduced-intensity	85 (53)
Donor source	
Matched unrelated	89 (55)
Matched sibling	35 (22)
Haploidentical	31 (19)
Cord blood	6 (4)
Graft source	
Peripheral blood	80 (50)
Bone Marrow	75 (47)
Cord Blood	6 (4)
Day 100 Risk Score	
Risk Score	
0-2 (Low)	104 (65)
≥3 (High)	57 (35)
HCT-CI ≥3	
0 (No)	65 (40)
1 (Yes)	96 (60)
Distance >1 hour	
0	89 (55)
1	72 (45)
ECOG >2	
0	140 (87)
1	21 (13)
GVHD	
0	114 (71)
1	47 (29)
Infection	
0	129 (80)
1	32 (20)
Caregiver concerns	
0	141 (88)
1	20 (12)
Poor coping	
0	128 (80)
1	33 (20)
Substance abuse	
0	156 (97)
1	5 (3)
Poor health literacy	
0	152 (94)
1	9 (6)
Medication non-compliance	
0	153 (95)
1	8 (5)
Other concerns	
0	130 (81)
1	31 (19)