facility with abdominal pain and palpable LAD. A PET scan confirmed further progression of his disease. We began treatment with Nivolumab but the initial dose was cut by 50% to 1.5 mg/Kg due to concerns for GVHD in the mismatched setting. After two cycles of reduced dose Nivolumab, and no obvious signs of GVHD, the Nivolumab dose was increased to standard 3 mg/kg. A repeat PET/CT scan following 2 cycles showed significant improvement in LAD. The patient has currently completed 4 cycles of Nivolumab without any significant GVHD.

In conclusion, treatment with anti-PD1 antibody checkpoint inhibitor, Nivolumab, appears to be effective and safe in Hodgkin’s patients without GVHD following mismatched allogeneic stem cell transplantation.

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Outcomes of Second Allogeneic Stem Cell Transplantation: Single Center Analysis

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**Background:** Relapse after allogeneic stem cell transplant (alloSCT) remains a therapeutic enigma. Salvage chemotherapy, immunosuppression discontinuation, donor lymphocyte infusion, second alloSCT, supportive care and experimental use of checkpoint inhibitors (NEJM 2016; 375: 143) represent treatment options. Recent CIBMTR study reported outcomes of second alloSCT in AML patients with 1 year survival of 23% (BBMT 2015; 21: 454).

**Method:** We retrospectively analyzed the outcomes of patients that underwent second alloSCT (May 2008-July 2016) at University of Massachusetts Medical Center for relapse or graft failure.

**Results:** Ten patients (3 females) were identified, median age at second alloSCT was 49 years (range, 21–73), 4 (40%) patients had AML, 3 ALL, 2 MDS and 1 CLL. Eight patients experienced relapse or disease progression within median of 25 (6-52) months from first alloSCT, 2 patients had first graft failure. The disease status at 2nd alloSCT for relapsed patients was CR2+ in 4 patients, progressive disease in 4 patients. Four (40%) patients received myeloablative conditioning and remaining received RIC. Seven transplants were unrelated with 5 using stored cells from first alloSCT, two donors were different than during first alloSCT, 2 transplants were related, and one patient received cord blood transplant. The median CD34 cell dose used for adult donor transplants was 5.01 (1.03-7.5) × 10^6 per kg, 9 transplants were 10/10 matches or greater. Nine patients recovered neutrophils with median 13 (12-22) days, 8 patients recovered platelets (>20,000 cells/ml) with median 21 (14-37) days. Three patients died within 100 days (44, 48 and 52 days) as a result of persistent disease, parainfluenza with adenoviremia and acute G1 GVHD respectively; two late deaths were due to relapse or progression (15 and 28 months), one patient died of persistent disease with aGVHD and cGVHD at 4 months and one died of interstitial pneumonia at 9 months. Survival of all patients was 44% at one year after second alloSCT with median OS of 8.9 months (range, 0-27.6) of all patients.

**Conclusion:** Our institutional experience suggests that second alloSCT can provide a clinically meaningful survival benefit to patients who relapse after allogeneic transplant. Investigations of less toxic strategies that will enable more patients to benefit from second alloSCT e.g. novel immune therapeutics (checkpoint inhibitors, BiTE or monoclonal antibodies) are warranted.

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Reduced Intensity Conditioning (Fludarabine and Busulfan) for Allogeneic Hematopoietic Cell Transplantation in Patients with Severe Aplastic Anemia

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**Introduction:** Severe aplastic anemia (SAA) can be cured by allogeneic Hematopoietic Cell Transplantation (allo-HCT). The choice of conditioning regimen might influence outcome in SAA. Avoiding debilitating GVHD is a primary concern in the treatment of this disease. We report our institutional experience with a reduced intensity conditioning (RIC) regimen utilizing Fludarabine and Busulfan (FB2).

**Objective:** To demonstrate the efficacy and safety of FB2 in patients undergoing allogeneic HCT for SAA.

**Patients and Methods:** We conducted a retrospective analysis of 8 patients with SAA who underwent RIC prior to fully matched allo-HCT at our institution between the years 2009 and 2016 inclusive. FB2 consisted of Fludarabine 30 mg/m2/ day for 5 days on days -6 through -2 and Busulfan 3.2 mg/ kg/day on days -3 and -2. All patients received Thymoglobulin (ATG) at a total dose of 6 mg/kg administered in divided doses on days -2, -1 and 0. Post-transplantation graft versus host disease (GVHD) prophylaxis consisted of tacrolimus and mycophenolate mofetil. Five (5) were matched unrelated donors (MUD) and 3 were matched related donors (MRD). The graft source was peripheral blood stem cells (PBSC) in 7 patients and bone marrow (BM) in one. Median age of the cohort was 30 years with 3 patients aged ≥60 years.

**Results:** At a median follow up of 4.2 years, overall survival (OS) since transplant for the entire cohort was 100%. Median ANC500 and PLT20K was 17 and 15 days, respectively. Acute GVHD grade 1-2 developed in 3 (38%) recipients. None of the patients developed grade 3-4 acute GVHD. Chronic GVHD limited to skin was seen in 3 (38%) patients and 1 patient developed extensive chronic GVHD. There was no primary graft failure when PB was the graft source. One patient who received a BM graft without ATG from a MRD developed secondary graft failure, but had successful engraftment after a second HCT using PBSC from the same MRD.

**Conclusion:** Our preliminary data demonstrates low toxicity and favorable outcome in patients undergoing HCT for SAA when PB is the graft source. FB2 conditioning and Thymoglobulin for prevention of GVHD are utilized.