diagnosis to initiation of second-line therapy was 60 days (interquartile range [IQR]: 33–121). 75% of patients with SR cGVHD used ≥4 lines of therapy over the period of follow-up. SR cGVHD patients had significantly more office visits, outpatient consultations, emergency room visits, and inpatient admissions within both 360 and 720 days post-HSCT than patients with no GVHD (all P < 0.001). In the first and second year post-HSCT, patients with SR cGVHD had a median 118 (year 1) and 58 (year 2) doctor/outpatient visits (no-GVHD: 1 and 0) (Figure 1). Median total 360- and 720-day post-HSCT all-cause costs and components of costs were all higher for patients with SR cGVHD vs those without GVHD (P < 0.001, Figure 2).

**Conclusion:** Most patients with SR cGVHD received multiple lines of therapy and additionally used significantly more outpatient and inpatient resource through 2 years post-HSCT than those without GVHD. Improved prevention as well as early and effective treatment of cGVHD may substantially reduce their costs of care.

**Figure 2.** Median Total All-Cause Costs During 1 and 2 Years Post-HSCT Among Patients With SR cGVHD vs No GVHD.

---

**347**

*Higher Pre-Transplant IL-2 Levels Correlate with Higher Incidence of Acute Graft-Versus-Host Disease*

**Rima M Saliba PhD,** Amin M. Alousi MD, Borje S. Andersson MD, PhD, Julianne Chen BS, Rohitesh S. Mehta MD MPH MS, Jeffrey J Mouldrem M.D., Richard E. Champlin MD, Uday R. Popat MD. Stem Cell Transplantation and Cellular Therapy, The University of Texas MD Anderson Cancer Center, Houston, TX

**Introduction:** The role of T-cell helper 1 cytokines, including TNF-α and IL-6, in the pathophysiology of acute graft-versus-host disease (aGVHD) is well established. Emerging data have also implicated IL-2, a marker of activated T-cells, in the GVHD reaction. We hypothesized that pre-transplant IL-2 levels may correlate with the incidence of aGVHD. We tested our hypothesis in a cohort of 16 patients who received allogeneic stem cell transplantation (SCT) following fludarabine/busulfan based conditioning regimen and tacrolimus/methotrexate GVHD prophylaxis at our institution between 7/2012 and 1/2013.

**Methods:** TNF-α, IL-6, and IL-2 plasma levels were measured by ELISA day -13 (pre-SCT), day of SCT, days +7 and +14.

**Results:** Median age of patients was 61 years (range 47-70). The majority (62%) were treated for AML/MDS, and 81% had active disease at transplant. Median comorbidity index score was 3 (range 0-6). Donors were HLA-matched related (44%) or unrelated (56%), and peripheral blood was the stem cell source for all related donors and for 50% of unrelated donors. A quarter of the donor/recipient pairs were sex-mismatched (female donor to male recipient). The majority of donors (69%) were CMV seronegative, while 75% of recipients were CMV seropositive. Of 16 patients, 6 were diagnosed with grade II-IV aGVHD at a median of 28 days (range 18-83). Median follow-up was 24 months (range 3-64) in grade II-IV aGVHD-free patients. IL-2 levels (µg/mL) pre-SCT correlated with day of SCT, day +7, and day+14 levels. Median IL-2 was 0 (undetectable) pre-SCT (range 0-3.2) and on day of SCT (range 0-4.9). Patients with detectable (>0) IL-2 levels pre-SCT (n=5, median IL-2: 1.2, range 0.3-3.2) or on day of SCT (n=6, median IL-2: 2.6, range 0.2-4.9) were at high-risk of developing grade II-IV aGVHD. The incidence of grade II-IV aGVHD was 75% in patients (n=8) with detectable IL-2 levels pre-SCT and/or on the day of SCT (Figure). In contrast, none of the patients (n=8) who had undetectable IL-2 levels at both time points developed grade II-IV aGVHD (p=0.002). TNF-α and IL-6 levels (evaluated at the median) pre-SCT or on day of SCT were not associated with the incidence of grade II-IV aGVHD. Detectable pre-SCT IL2 were not correlated with ALC (K/µL) (median: 0.65 vs 0.87, p=0.6), but were correlated with longer duration since the last chemotherapy treatment (median 101 vs 47, p=0.02). Recipient age, disease status at SCT, CMV status, comorbidity index, and sex-mismatch did not correlate with pre-SCT IL-2 levels or with the incidence of grade II-IV aGVHD.

**Conclusion:** Our data suggest that elevated IL-2 before transplant may be associated with increased risk of aGVHD. Validation of these findings in larger datasets is warranted, as they may identify patients for trials of alternative GVHD prophylaxis.

---

**REFERENCE**


**348**

*HLA-α*0101 Allele Is Associated with Increased Risk of Cutaneous Acute Graft-Versus-Host Disease after Allogeneic Hematopoietic Stem Cell Transplantation*

**Maira Fonseca MD,** Ann A. Jakubowski MD, PhD, Sean M. Devlin PhD, James W. Young MD, FACP, Samira Fatemi.