may be warranted to discern if DM pts may benefit from different methods of mobilization or if long term transplant outcomes are impacted.

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Hematopoietic Cell Transplantation (HCT)-Specific Comorbidity Index in Autologous Stem Cell Transplant Indicates People with Advanced Age and Increased Comorbidity Index Should be Hospitalized Through Engraftment

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The hematopoietic cell transplantation specific comorbidity index (HCT-CI) has been proven to be a valuable tool in allogeneic stem cell transplant (ASCT) recipients to predict overall survival. There are few studies that use the HCT-CI for evaluating autologous stem cell transplantation. Our institution performs autologous stem cell transplants in a variety of settings, from completing the whole transplant process inpatient to instituting their preparative regimen through transplant and engraftment in the outpatient setting. We retrospectively reviewed our experience of 250 autologous stem cell transplants who had a diagnosis that included Multiple Myeloma, Non-Hodgkin’s Lymphoma, Hodgkin’s lymphoma, and Testicular Carcinoma that were either treated inpatient for their hospital course or were prepared in the outpatient setting and/or were discharged very early in their transplant course (day-1 or within three days of their autologous transplant). The median age of the inpatient transplant group was 63.5 compared to the outpatient group that was 58, P < 0.006. The average comorbidity index for the inpatient group was 2.086 compared to the outpatient group 1.23, P < 0.001. In conclusion, our institution, using the HCT-CI and age for autologous stem cell transplantation helps to identify those candidates that are more successfully treated in the inpatient setting and the outpatient setting. This study was limited by its retrospective nature, small size and single center experience. Prospective randomized studies are needed to determine whether or not the HCT-CI in autologous stem cell transplantation is truly effective.

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Autologous Hematopoietic Stem Cell Transplant (aHSCT) is a Safe and Reasonable Treatment in Patients with Primary Systemic Amyloidosis (AL amyloidosis)

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Primary Systemic Amyloidosis (AL amyloidosis) is a condition for which high dose Melphalan and Autologous Hematopoietic Stem Cell Transplant (aHSCT) is currently the only effective treatment. Outcomes are impacted by different methods of mobilization or if long term transplant may be warranted to discern if DM pts may benefit from different methods of mobilization or if long term transplant outcomes are impacted. Two large retrospective analyses showed improved overall survival (OS) (70% at 4 yrs and 47% at 5 yrs) of AL amyloid patients undergoing aHSCT compared to control (40% at 4 yrs) with TRM of 13%.

Methods: We retrospectively analyzed the outcomes of 29 newly diagnosed AL amyloidosis patients who underwent aHSCT between 10/1998 and 5/2012. Hematologic responses were evaluated, along with post-transplant survival and TRM. Progression-free survival (PFS) and (OS) were determined using the Kaplan-Meier method.

Results: Of the patients transplanted, 13 were female and 16 were male. Median age at aHSCT was 56 (range 26-71). Eleven (38%) had involvement of at least 2 organs. Median brain natriuretic peptide and troponin available in 20 patients were 109 pm/ml (range 24-502) and 0.02mg/ml (range 0.01-117). Twenty-one patients (72%) received high dose Melphalan 200 mg/m2. Median CD34+ infused stem cells was 5.00 x 10⁶/kg. No patients received filgrastim or other colony stimulating factor. Time to neutrophil and platelet engraftment were 12 and 17 days, respectively. Three months hematologic response was available in 22 patients and showed complete response, partial response, and stable disease in 15 (68%), 2 (10%) and 5 (22%), respectively. The 1, 3, and 5 year PFS were 78%, 68% and 41%, respectively. One, 3, and 5 year OS from diagnosis and from aHSCT were 81, 66, and 66% and 89, 66 and 66% respectively (Table 1). The 100-day and 1 year TRM were 3.4% (1 patient) and 6.9% (2 patients), respectively.

Conclusion: Our results show that autologous HSCT is a reasonable option for patients with newly diagnosed AL amyloidosis. The 100 day and 1 year TRM compares favorably to multiple myeloma patients undergoing autologous HSCT.

Table 1

<table>
<thead>
<tr>
<th>N</th>
<th>Censored 1 yr survival rate (%)</th>
<th>3 yr survival rate (%)</th>
<th>5 yr survival rate (%)</th>
<th>Median (months)</th>
<th>95% CL (months)</th>
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<tbody>
<tr>
<td>PFS</td>
<td>29 18</td>
<td>78</td>
<td>68</td>
<td>41</td>
<td>44.7 (17.3, NA)</td>
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<tr>
<td>OS-HSCT</td>
<td>29 20</td>
<td>81</td>
<td>66</td>
<td>66</td>
<td>112.0 (13.9, NA)</td>
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<tr>
<td>OS-DX</td>
<td>29 20</td>
<td>89</td>
<td>66</td>
<td>66</td>
<td>117.2 (18.7, NA)</td>
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</tbody>
</table>

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Safety and Efficacy From Intravenous Busulfan with PK-Directed Dosed Adjustment and Borzomib Conditioning Regimen in Relapsed Multiple Myeloma Patients Undergoing a Second Autologous Hematopoietic Stem Cell Transplantation

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Delayed engraftment following high-dose chemotherapy and autologous peripheral stem cell transplantation (ASCT) is a rare event. Here, we report two cases of delayed engraftment following autologous peripheral stem cell transplantation (PB SCT) for Multiple Myeloma (MM) associated with early recovery of polyclonal lymphocytes and response to steroids. Both of our patients were 51 years old at time of transplant and women. The preparative regimen consisted of Melphalan 200 mg/m2 prior to stem cell infusion; the stem cell doses were between 2.5 and 2.8 million per kilogram. Per protocol, each received growth factor beginning at day 5 post-transplant. Both patients demonstrated a relative increase in their peripheral blood lymphocyte count without neutrophil recovery by day 15 in one patient and day 25 post-transplant in the other. Peripheral blood for flow cytometry was negative for lymphoproliferative disorder or recurrence of their disease. However, it was noted that their CD4:CD8 ratio was 1.65:1.63 with marked increase in CD8 lymphocytes. This expansion of CD8+ cells has been implicated in autoimmune cytopenias in patients with autoimmune diseases and was thought to be the cause of cytopenias in our patients.

Given the delay in neutrophil recovery, prednisone 1mg/kg was started for concerns that the predominantly CD8 polyclonal lymphocytes were responsible for suppressing hematopoiesis. Within 48-72 hours of starting steroids, the peripheral blood lymphocytes decreased significantly, and both patients demonstrated neutrophil engraftment followed by platelet engraftment in the subsequent two-week period. Delayed engraftment following autologous PB SCT is uncommon. Viral infection is a common etiology, and rarely, lymphoproliferative processes like large granular lymphocytes (LGL) have been reported post autologous PBSCT delayed engraftment in association with a predominantly CD8 polyclonal lymphocyte population. This process was readily reversible with corticosteroid therapy and did not necessitate re-transplantation.

### 148 Evaluating the Effect of High Dose Chemotherapy and Autologous Bone Marrow Transplantation (ASCT) on Hypertension (HTN) in Multiple Myeloma (MM) Patients

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**Background:** A recent study showed that ASCT may reverse kidney failure in one third of multiple myeloma patients, which can lead to improvement in blood pressure. However, there is very limited published data studying the impact of the treatment on blood pressure control.

**Methods:** We conducted a review of electronic medical records of 184 patients with established diagnosis of MM that underwent an ASCT at Karmanos Cancer Institute between January 1st, 2009 and December 31st, 2010. We...