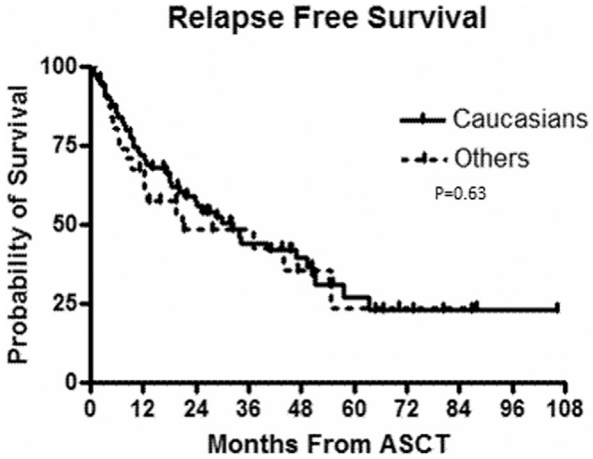

Figure 1.

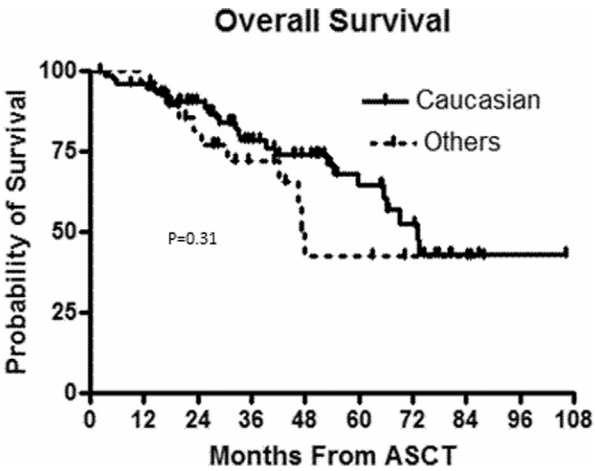

Figure 2.

ASCT disease status and details about post ASCT maintenance therapy. There were no statistically significant differences between the groups in disease status or change in disease status at day 100 post ASCT. Although more patients in the C group received maintenance therapy post ASCT, this difference was not statistically significant. Figures 1 and 2 show the relapse free survival (RFS)and overall survival (OS) of both groups. The median RFS for C and O groups were 32.3 and 20.9 months (p =0.63, log rank), respectively. The median OS of the C and O groups were 73.1 and 47.8 month (p=0.31, log rank), respectively.

Our limited experience suggests that there was no effect of race in the post ASCT outcomes for MM pts with RD. ASCT was safe with acceptable transplant related mortality and good long-term outcomes for MM pts with renal dysfunction.

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Adequate and Predictable Stem Cell (SC) Collection and Low Incidence of Neutropenic Fever (NF) with Cyclophosphamide (C) and G-CSF Mobilization in Multiple Myeloma (MM) : A Single Center Analysis

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Background: G-CSF alone or C with G-CSF are most commonly used for SC mobilization in MM. The use of C can improve the efficacy of mobilization but is associated with increased neutropenia. It remains largely unclear how dose levels of C in mobilization quantitatively influence the CD34 yield and time to collection; as well as how these outcomes were influenced by patient's age. We evaluated the efficacy and neutropenia secondary to C with G-CSF in MM patients undergoing SC transplantation. Subgroup analysis was done comparing patients greater than 70 years and younger.

Methods: We retrospectively reviewed charts of all patients with MM who mobilized using C with G-CSF at UMass Memorial Medical Center from January 2009 to June 2014.

Results: Fifty-six patients were identified from the stem cell transplant database. There were 36 males (64%) and 20 females (36%). Median age was 62 years (range 43 - 79). The median C dose received was 2548 mg/m2 (range 1318 - 4018mg/m2). The median total CD34 collection was 15.07 x 10e6/kg (range 2.71-113). Median time from C infusion to SC collection was 10 days (range 10-16). Number of days required for collection was 1(n=40), 2 (n=14) and 3 (n=2). Three patients received plerixafor prior to day 2 collection. Median days of documented neutropenia was 1 (range 0-6). Only 3 (5.3%) patients were hospitalized for NF requiring intravenous antibiotics. Optimal collection for two transplants (>10x 10e6 CD34/kg) was achieved in 43 (77%) patients.

12 patients (21%) were over age 70 years. In comparison with the younger patient, they were noted to receive lower median dose of C (1988mg/m2 vs. 2714mg/m2, p value

Table 1

C dose (mg/m2)	<2000mg/m^2	2000-3000mg/m^2	>3000mg/m^2	p-value
Median age in years (range)	64.5 (44-79)	62.5 (43-77)	60.5 (48-68)	0.5905
Number of Patients	18	22	16	-
Median C Dose in mg/m2 (range)	1750 (1318-1983)	2584 (2001-2994)	3788 (3033-4018)	0.0001
Median Total CD34/Kg in 10e6 (range)	14.15 (6.89-39.7)	15.72 (2.71- 36.6)	16.10 (5.27 – 113)	0.6717
Days to SC collection (range)	10 (10-14)	10 (10-13)	11 (10-16)	0.0031
Median days of documented neutropenia (range)	1 (0-4)	2 (0-6)	3 (0-6)	0.0003
Number of patients hospitalized for NF	0	1	2	0.2712

0.0326). They were also noted to collect slightly lower CD34 (14.1e6/kg vs. 15.85e6/kg, p value 0.0974). There was no significant difference in days to SC collection or number of days of neutropenia.

Conclusion: Our retrospective analysis showed that duration of neutropenia does increase significantly with increase in C dose, yet with an overall low NF hospitalization rate. Higher C dose usage led to longer time to collection.

There was no significant difference in CD34 yield, neutropenia, or NF hospitalization in patients >70 years. C+ G-CSF is an effective method of mobilization as proven by optimal collection

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Mantle Cell Lymphoma: Outcomes after Hematopoietic Stem Cell Transplantation

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Background: Mantle cell lymphoma (MCL) is a B-cell Non-Hodgkin's lymphoma (NHL) comprising 7% of adult NHL in the US with an incidence of 4-8 cases per million persons per year. Initial therapy of MCL includes a regimen with R-CHOP or Hyper-CVAD. The best data for long term survival includes cytarabine based therapy followed by autologous hematopoietic stem cell transplantation (HSCT). In the refractory/relapsed setting, allogeneic HSCT has been used successfully. Barriers to allogeneic HSCT include lack of donors and potential toxicities. Haploidentical donors broaden the donor pool. To our knowledge, there is no published data on outcomes with haploidentical HSCT in MCL.

Methods: A retrospective chart review examining outcomes in patients with MCL who underwent either autologous or allogeneic peripheral blood HSCT at Thomas Jefferson University Hospital from January 2007 to January 2013.

Results: A total of 12 patients with MCL underwent HSCT between 2007 to 2012. Nine of 12 patients were males. Median age at transplant was 58 years (range 38 - 72). Median time from diagnosis to HSCT was 9.5 months. Five of 12 patients (4 haploidentical & 1 matched unrelated donor) underwent allogeneic HSCT and 7of 12 patients underwent autologous HSCT. In the allogeneic HSCT group, median number of prior therapies was 2. One of 5 patients had residual disease prior to HSCT. Two of 5 patients had a myeloablative regimen; 3 had reduced intensity regimen. There were no relapses or deaths in the allogeneic HSCT group. Median progression free survival (PFS) as well as median overall survival (OS) in this group was 35 months. Major complications in allogeneic HSCT were acute skin GVHD (3/5), CMV reactivation(1/5), HHV6 viremia(1/5), and acute renal failure (1/5) requiring short term dialysis. In the autologous HSCT group, the median number of prior therapies was 1. Two of 7 patients had refractory disease prior to autologous HSCT. Post autologous HSCT 2/7 patients relapsed and 2/7 died. Major complications in this group were DVT (2/7), enterocolitis (2/7), and CHF (1/7). Median PFS and OS were 40 and 47 months respectively. Our patients who underwent autologous HSCT were transplanted earlier (08/2007 - 09/2010) than our patients who underwent allogeneic HSCT (01/2008 - 02/2012), leading to the difference in survival times.

Conclusions: Haploidentical HSCT offers a promising curative treatment for patients with MCL with expected and manageable toxicities. Although a small number of patients, this review of our data provides the background for further study of the use of haploidentical HSCT in this group of patients.

Autologous HSCT for patients with MCL can also provide long term disease survival.

Further follow up of both groups will provide better data regarding long term (>5 year) outcomes.

Therapy for MCL in the future is likely to include newer agents (e.g. ibrutinib) in the front line, but HSCT will remain a viable option.

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Outcome of Patients with Multiple Myeloma with t(4;14) after Autologous Hematopoietic Stem Cell Transplantation

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Background: The cytogenetic abnormality t(4;14)(p16;q32) results in the fusion of immunoglobulin heavy chain (IgH) gene on chromosome 14q32 with the fibroblast growth factor 3 (FGFR3) gene on chromosome 4p16 in patients with multiple myeloma (MM), and is associated with shorter progression-free survival (PFS) and overall survival (OS). Recent studies indicate that treatment with proteasome inhibitors (PI) may overcome the adverse prognostic features. The aim of this study is to assess the outcome of patients with t(4;14) after high-dose chemotherapy and autologous hematopoietic stem cell transplant (Auto-HCT).

Methods: We identified 23 patients with MM who had t(4;14) on conventional cytogenetic or fluorescent in situ hybridization (FISH) studies prior to auto-HCT at our institution between 2008 and 2013. We compared their outcomes to a matched control group (n=92) without t(4;14) prior to HCT who were treated during the same time period. Matching was based on age and response to the last therapy prior to HCT.

Results: Patient characteristics are summarized in Table 1. Median follow-up intervals were 41 months and 23 months in the t(4;14) and control groups, respectively. PFS at 2 years was 18% (95% confidence interval [CI], 6-37) in the t(4;14) and 65% (95% CI, 53-75) in the control group (Fig. 1), ($p<.001$; hazard ratio [HR], 5.2; 95% CI, 3.1-11.0). OS at 2 years was 43% (95% CI, 22-62) in the t(4;14) and 81% (95% CI, 70-89) in the control group (Fig. 2), ($p<.001$; HR, 5.2; 95% CI, 2.4-11.0). On multivariate analysis for PFS, t(4;14) ($p<.004$; HR, 4.6; 95% CI, 2.5-8.4) emerged as the only significant adverse prognostic factor. Relapsed disease at auto-HCT was associated with a trend for lower PFS ($p= .06$; HR, 1.7; 95% CI, 0.97). On multivariate analysis for OS, t(4;14) ($p<.001$; HR, 4.2; 95% CI, 1.9-9.2) and relapsed