Plerixafor (Mozobil®) Guidance Algorithm

Evaluation	Guidance
• Patients needing cells for one transplant (minimum 2.5 x10E6 CD34 cells/Kg) - mobilized with G-CSF • Peripheral CD34 checked on day 5 following 4 days of G-CSF.	• If CD34 number is < 10 cells/ul, give G-CSF post-procedure and administer plerixafor that evening. G-CSF will also be given 1 hour pre-collection the following morning.
• Patients needing more than one transplant (minimum 5.0 x10E6 CD34 cells/Kg) mobilized with G-CSF • Peripheral CD34 checked on day 5 following 4 days of G-CSF.	• If CD34 number < 20 cells/ul, give G-CSF post procedure and administer plerixafor that evening. G-CSF will be given 1 hour pre-collection the following morning.
• The first day collected product contains LESS THAN one-half of the desired dose of 2.5 x 10E6 CD34/Kg or 5.0 x 10E6 CD34/Kg.	• Give plerixafor that evening. G-CSF will also be given 1 hour pre-collection the following morning.
• Patients pretreated with lenalidomide (more than 4 cycles). • Patients with delayed count recovery from prior therapy. • Other reasons for high mobilization failure rate.	• Four days of G-CSF, then plerixafor given on the fourth evening. G-CSF will be given 1 hour pre-collection the following morning.

* G-CSF is given at 10 mcg/kg for four days for mobilization; ** Plerixafor is given at 240 mcg/kg per treatment.

Our goal was to reduce the number of collections and mobilization failures to achieve the desired CD34 dose, with optimal use of plerixafor. Options were to use it for all patients or to develop an algorithm of when to add it to the primary mobilization regimen. Plerixafor is not warranted for every patient due to its high cost; hence usage that is fiscally beneficial was developed. This algorithm evaluates factors needed to use plerixafor as described in the table below. All collections performed were 4-6 blood volume procedures.

From Apr. to Sept. 2009, 44 patients (Ages: 30-69; Dx: 22 MM and 22 NHL, HD; Sex: 26 M and 18 F) were considered for plerixafor using this algorithm. Fifteen (Ages: 38-67; Dx: 7 MM and 8 NHL, HD; Sex: 10 male and 5 female) of the 44 patients (34%) were given plerixafor. Of the 15 patients, 5 (33%) were given plerixafor due to low peripheral CD34 counts on day 1; 6 (40%) were given plerixafor due to a collection of less than one-half of the desired collection goal on day 1; and 4 (27%) were given plerixafor up-front. Fourteen of the 15 patients (93%) were able to collect during the first mobilization attempt using this algorithm. The average number of collection days for the plerixafor patients was 2.3 compared to 1.7 for the rest of the patients not given plerixafor. Collectively, the number was 1.91 collection days per patient for time span evaluated. In years 2007-2008, the number of collection days was 2.68 days per patient, 27 of 137 patients (19.7%) required remobilization and 11 of 137 (8%) failed mobilization.

This approach has the potential to reduce the overall cost of PBSC collections by reducing the number of collection days and avoiding remobilization in a significant percentage of patients. Each extra day of collection and each remobilization is an additional $8,000 to $10,000 expense for the patient. Other concerns are the possible need for platelet transfusions with multiple collections and the possible delay in transplant increasing the risk of disease relapse. This algorithmic approach providing for the optimal use of plerixafor needs to be further evaluated with a larger number of patients.

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CONVENTIONAL CHEMOTHERAPY FOLLOWED BY CONSOLIDATION WITH AUTOLOGOUS HEMATOPOIETIC TRANSPLANTATION VS CHEMOTHERAPY ALONE IN HIV+ PATIENTS WITH LARGE B CELL LYMPHOMA (LBCL) IN FIRST COMPLETE REMISSION (CR). A RETROSPECTIVE ANALYSIS ON BEHALF OF THE EBMT LYMPHOMA WORKING PARTY AND THE GESIDA/PETHEMA REGISTRY OF HIV+ PATIENTS WITH NON-HODGKIN'S LYMPHOMA (NHL)

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Little is known about the additional benefit of Autologous Stem Cell Transplantation (ASCT) as consolidation treatment of NHL in 1st CR in HIV+ patients. We herein report a comparative analysis of HIV+ patients with a LBCL treated with chemotherapy (chemo) followed by ASCT and a matched cohort of HIV+ patients treated with chemo alone.

Methodology: Retrospective, registry-based, matched cohort study. ASCT cohort: patients with diffuse large B-cell (DLBC) or plasmablastic NHL treated with ASCT in 1st CR after standard chemo and reported to the EBMT Registry. Chemo cohort: For each patient within the ASCT cohort we selected two controls from the HIV+ patients with NHL GESIDA/PETHEMA registry. Patients in both cohorts were in 1st CR following front-line or rescue (for partially responding patients) chemo and were matched according to histology, IPI and the use of Rituximab. We compared overall survival (OS), disease free survival (DFS) and cumulative incidence (CI) of relapse between both cohorts. These primary outcomes were defined according to the EBMT. OS was computed from diagnosis while DFS and CI of relapse were computed from 3 weeks after the last standard chemo cycle administered (end of chemo).

Results: The ASCT cohort included 10 patients diagnosed between 1999 and 2005. The Chemo cohort included 20 patients, 16 diagnosed between 1999 and 2005. Both cohorts were comparable for the main clinical and patient features (Table 1). The median (range) follow-up (FU) time since the end of chemo for surviving patients was 56 months (mo) (24-106) in the ASCT cohort *vs* 37 mo (8-107.5) in the Chemo cohort; *P*=.28. Five years (yr) OS for the ASCT cohort and the Chemo cohort were 68.5% [CI95%: 39-98] *and* 46.5% [CI95%: 18-75], respectively; *P*=.6. Three yr DFS for the ASCT cohort and the Chemo cohort were 70% [CI95%: 41.5-98.5] *and* 59.5% [CI95%: 29-86]; respectively; *P*=.4. The CI of relapse in the ASCT cohort and the Chemo cohort were 21% [CI95%: 0-47] and 27% [CI95%: 2-51], respectively; *P*=.8

Conclusions: In this retrospective registry-based, matched cohort study of HIV+ patients with large B-cell NHL we found a non-significant effect of ASCT as consolidation treatment in 1st CR patients, in terms of survival and relapse incidence. Nevertheless, due to the observed favorable tendency, future analysis including a higher number of patients and, eventually, randomized clinical studies, should be performed to further clarify these observations.

Table 1. Patients and transplant features

	ASCT cohort	Chemo cohort	
	n = 10	n = 20	
Prior AIDS defining disease	43%	30%	p = NS
Age at lymphoma diagnosis: median (range)	40 (34-60.5)	43.5 (30-56.5)	p = NS
Male sex	7 (70%)	14 (70%)	p = NS
Diffuse large B cell / Plasmablastic	8 (80%) / 2 (20%)	18 (90%) / 2 (10%)	p = NS
IPI at diagnosis (>2)	7 (70%)	14 (70%)	p = NS
Ann Arbor stage at diagnosis (>II)	9 (90%)	16 (80%)	p = NS
Rituximab use	5 (50%)	10 (50%)	p = NS
Number of treatment lines: median (range)	1 (1-2)	1 (1-2)	p = NS
Months from diagnosis to end of chemo: median (range)	5.8 (3.5-11)	4.3 (2.4-7.4)	p = NS