count (<150K/ul) was the only significant predictor when the analysis was restricted to NHL patients mobilized with chemotherapy (odds ratio 8.9, $p < 0.001$). Conclusions: A significant proportion (18%) of patients with NHL fails to mobilize stem cells. Use of filgrastrim without chemotherapy was associated with high failure rate, but this needs to be confirmed in a larger comparative study. For patients who were mobilized with chemotherapy, low platelet count is the most significant predictive factor.

Univariate Analysis in Patients with NHL

	N	N Failed	% Fail	OR[1]	95% CI[2]	p
Platelet Count						
<150 K	34	14	41			
≥150 K	107	12	11	0.2	0.1–0.4	<0.001
Cellularity						
<30%	44	13	30	2.7	1.1–6.5	0.02
≥30%	97	13	13			
Regimen						
Ifos/VP16	96	12	13			
G-CSF alone	13	8	62	11.2	3.1–40	<0.001
Cyclophosphamide	14	3	21	1.9	0.5–7.8	0.4
Other	18	3	17	1.4	0.3–5.6	0.6

[1]Odds Ratio.
[2]Confidence Interval.

97

POSITRON EMISSION TOMOGRAPHY IDENTIFIES A DIFFERENTIAL PATTERN OF BONE MARROW FDG UPTAKE IN "POOR" AND "GOOD" PERIPHERAL STEM CELL MOBILIZERS

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The use of prophylactic G-CSF is associated to the increase of bone marrow (BM) fluorodeoxyglucose (FdG) uptake as detected by Positron Emission Tomography (PET). In contrast, no data is available as to changes in BM FdG-uptake during peripheral blood stem cell (PBSC) mobilization. This study was aimed at investigating patterns of BM FdG uptake during mobilization as quantified by Standardized Uptake Value (SUV) determinations. We also evaluated whether PET scanning may turn of value for identifying *good* and *poor* mobilizers. To our knowledge this is the first PET-based study in this setting. *Methods* Seventeen patients(pts)(M/F = 10/7), median age 51 yrs (r 28–65), with relapsed lymphoma (NHL/HD = 13/4) without BM involvement, were accrued after informed consent. Baseline PET was obtained at relapse, before salvage therapy and any CSF administration. After salvage regimes pts were mobilized by VRL/CTX or ARA-C; G-CSF (10 μg/kg/d) was given from day +6 through apheresis. PET scans were obtained on day +9 or +10 (after nadir with a WBC > 1000/μl). SUVmax and average (avg) were measured (whole lumbar spine and bilateral iliac regions) and compared to SUV of the same BM regions at baseline PET. The aim was to calculate a BM specific Δ-SUV (mobilizing *vs* steady-state Δ-SUV) for each single patient. *Results* Twelve pts mobilized PBSC (median CD34 peak 39.99/μl, r 23.28–280.58/μl; median CD34 in the harvest 3.3×10^6/Kg, r 2.1–12.5) while 5 pts were *poor* mobilizers (median CD34 peak 10.9/μl, r 7.5–14.1/μl). In the group of *good* mobilizers, apheresis was performed at CD34 peak (day +11,+14), with a median of 1 apheresis/pt (r 1–2). Unexpectedly, effective mobilization was associated with a low BM uptake of FdG: median BM Δ-SUVmax and Δ-SUVavg of 2.0 (r 1.0–3.8) and 2.3 (r 0.9–3.9), respectively. In contrast, *poor* mobilizers displayed a median Δ-SUVmax and Δ-SUVavg of 4.7 (r 2.4–12.8) and 5.9 (r 4.1–14.2), respectively.

Conclusions: While FdG-BM uptake usually increases upon CSF administration, our results suggest that PBSC mobilization may be associated with a more complex metabolic pattern of BM as detected by PET. We documented that, 48 to 72 hrs before CD34 peak, *poor* mobilizers display a higher FdG-BM uptake (Δ-SUV > 3) as compared to *good* mobilizers (Δ-SUV < 3). These preliminary results indicate that BM PET may represent a new tool for early identification of *poor* mobilizers allowing a timely modification of the mobilization strategy to possibly rescue the procedure.

98

RADIO-IMMUNOTHERAPY FOR LOW GRADE NON-HODGKIN'S LYMPHOMA MAY IMPAIR THE ABILITY TO MOBILIZE AUTOLOGOUS PERIPHERAL BLOOD STEM CELLS

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High dose chemotherapy and autologous stem cell transplantation (ASCT) is a proven effective treatment modality for patients with relapsed non-Hodgkin's lymphoma. Radioimmunotherapy (RIT) with ^{90}Y-ibritumomab tiuxetan has been shown to be useful in patients with relapsed NHL, but is now being used in the upfront setting for patients with low grade NHL, as some protocols now offer abbreviated chemotherapy courses followed by RIT. As patients relapse high dose therapy and ASCT become a valuable option but the effect of RIT on the stem cell collection becomes an important issue. We report four patients with follicular NHL who relapsed within 6–8 months after RIT were treated with salvage chemotherapy then mobilized with Cyclophosphamide and G-CSF. Two patients were heavily pre-treated for multiple relapses, but two had only one relapse following upfront RIT. Only 2/4 patients mobilized successfully, but with low yield. One of the patients developed secondary leukemia, 6 months after ASCT. Surprisingly, the mobilization failure patients were young, not heavily treated (had 6–7 cycles of chemotherapy including the upfront and salvage therapy), no exposure to external beam radiotherapy, but had heavy tumor burden at initial presentation. Our results suggest that mobilization failure following RIT is much higher that would have been predicted. Caution should be exercised when offering RIT to patients with bulky disease low grade lymphoma as part of the upfront therapy, as rapid relapses may not be salvageable with high dose therapy, given the high rate of mobilization failure even in patients who are not heavily treated. The long term safety of RIT and myelodysplasia in such patients is also an important concern, given the short interval of tAML in our patient.

99

PREDICTORS OF OUTCOME OF MANTLE CELL LYMPHOMA IN PATIENTS WITH PROGRESSIVE DISEASE FOLLOWING AUTOLOGOUS STEM CELL TRANSPLANTATION (ASCT)

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Introduction: Mantle Cell Lymphoma (MCL) is a subgroup of malignant lymphomas that is considered incurable with conventional therapy. While ASCT has improved progression free survival (PFS), relapse remains a major issue. For patients (pts) who relapse after ASCT, there is little information on the predictors of outcome and optimal treatment strategy. We reviewed pts with progressive disease following ASCT in an attempt to identify predictors of subsequent outcome. **Method:** We retrospectively reviewed our computerized database and charts of pts undergoing ASCT from May 1987 - Jul 2006. Of 47 pts, 21 relapsed after ASCT; 20 had adequate data on subsequent therapy and were analyzed for factors influencing progression free survival (PFS) and overall survival (OS) using Kaplan-Meier and Cox-Proportional Hazards analyses. **Results:** Pt characteristics: At relapse post-ASCT, median age was: 56 years (range 40–69). Stage 3 or 4: 16. High LDH: 8. Disease status of ASCT: CR1/PR1 = 9, >CR1/PR1 = 11. IPI scores: low (n = 9), low-intermediate (n = 8), high-intermediate (n = 2) and high (n = 1). FLIPI scores: low (n = 10), intermediate (n = 4) and high (n = 6). Seven had bone marrow involvement, 3 had involvement of peripheral blood and 5 had splenomegaly. Eighteen pts received subsequent treatment: R-FCM: 4, Rituximab: 1, Radiation