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POSTER ABSTRACTS

731.AUTOLOGOUS TRANSPLANTATION: CLINICAL AND EPIDEMIOLOGICAL

Considering Older Patients As Candidates for Auto Stem Cell Transplants: A Comprehensive Study on Toxicities and Survival Analysis

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Introduction:
High-dose chemotherapy and autologous stem cell transplantation (ASCT) are commonly used for relapsed/refractory (R/R) Hodgkin (HL) and non-Hodgkin lymphoma (NHL). However, concerns about treatment-related mortality (TRM) and toxicity limit its use in older patients (pts). Existing evidence suggests higher rates of complications and inferior overall survival (OS) in older pts, but conflicting findings suggest that outcomes may be influenced by comorbidities rather than age (*Lahoud O, Curr Oncol Rep. 2015).* Our study comparing ASCT outcomes and toxicities in lymphoma pts in younger and older age groups.
Methods:
In this retrospective study, we analyzed lymphoma pts who underwent ASCT at the Princess Margaret Cancer Centre from January 2015 to December 2019. After Institutional Review Board approval, clinical data was collected from institutional databases and patient charts. The hematopoietic cell transplantation comorbidity index (HCT-CI) and Charlson Comorbidity Index (CCI) were retrospectively calculated. Response assessment was done by Lugano 2014 classification. Grade 3-5 nonhematologic toxicities were collected from admission to day 100 using Common Terminology Criteria for Adverse Events version 5. Overall survival (OS) and progression-free survival (PFS) were calculated from date of transplant to death or disease progression. OS and PFS assessed via Kaplan-Meier; log rank tests and Cox regression performed. The patients were divided into two age groups: Group A (<65 years) and Group B (≥65 years).
Results:
There were 334 pts who underwent ASCT. 332 pts were analyzed; 2 pts were lost to follow-up and 16 pts were day 1 transfers, making acute toxicity data unavailable. The median age was 53 (range: 18-71), 17% of pts being aged ≥65. The majority of pts (69%) had NHL (table 1). The Eastern Cooperative Oncology Group (ECOG) performance status was ≤1 for 91%. Group B had a higher proportion of pts with ECOG score =2 (18% vs 7%, $p < 0.001$) and higher CCI (88% vs 27% , $p < 0.001$). NHL and mantle cell lymphoma (MCL) were more prevalent in Group B (93%, 23% vs 68%, 12% respectively, $p < 0.001$). Thirteen percent of NHL pts were transformed disease. Both groups had similar percentage of pts with central nervous system (CNS) lymphoma (~ 5%). Conditioning regimens varied based on lymphoma type: most of the HL/aggressive lymphomas: Etoposide+Melphalan (ML), CNS lymphoma: Thiotepa based regimen, and MCL Cytarabine + ML+/- Total Body Irradiation.
The majority (83%) were treated for R/R disease, while 17% received it as first-line treatment. Prior to transplant, 76% of pts were in CR. Median follow-up was 38 months. Median OS was not reached for Group A, and 73 months for Group B. Five year OS were 82% and 74% respectively ($p = 0.05$). Median PFS was 75.2 months for Group A and 43.0 months for Group B, with 5-year PFS of 54% and 47% respectively ($p = 0.2$). Twenty percent of pts died during follow-up, with only 4% being NRM. From the entire cohort 3% of patients died within 100 days post-transplant, with no difference between groups. Three pts died within 100 days of ASCT with 2 deaths from sepsis (Group A) and 1 death from Respiratory failure (Group B).
Common transplant-related toxicities did not differ significantly between groups (figure 1). Group B had significantly higher rates of Renal (7%vs 18%), Respiratory (16% vs 6%), and Metabolism abnormalities (14% vs 5%) ($p = 0.021$-0.028). Group B

needed more blood product transfusions by 100 days post-transplant: Packed Cells (mean) 1.7 vs 1.1 units (p 0.08), Platelets (mean) 3 vs 1.9 units (p 0.002). Group B had a longer average length of stay 18 days vs. 14 days ($p < 0.001$). About 6% of pts required ICU admission, and 4% were discharged to rehabilitation/long-term care facilities, with no group differences.
Conclusions:
The study concludes that ASCT can be safely performed in appropriately selected elderly pts. TRM rates were not significantly higher in older compared to younger pts with lymphoma. However, older pts did experience higher rates of specific toxicities including renal failure, pulmonary complications, metabolism abnormalities, longer hospital stays, and increased transfusion requirements. In the multivariate analysis, older pts exhibited shorter OS, influenced by lymphoma type and treatment response.
Further research is needed to develop risk stratification and geriatric assessments to improve toxicity prediction in elderly pts undergoing ASCT.

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Table 1: patient and disease characteristics

	Group A age<65 (n=277)	Group B age ≥65 years (n=57)	p value
Male	185 (67%)	30 (53%)	0.06
ECOG			
0	67 (24%)	2 (4%)	<0.001
1	189 (68%)	45 (79%)	
≥2	21 (8%)	10 (18%)	
HCTI			
0	95 (34%)	18 (32%)	0.43
1-2	89 (32%)	17 (30%)	
3-5	44 (16%)	15 (26%)	
>5	6 (2%)	1 (2%)	
Unknown	43 (16%)	6 (11%)	
CCI			
<2	140 (51%)	5 (9%)	<0.001
3	62 (22%)	2 (4%)	
4	46 (17%)	24 (42%)	
≥5	28 (10%)	26 (46%)	
Hodgkin	90 (32%)	4 (7%)	
Non Hodgkin			
• Aggressive NHL (DLBCL, High grade, Gray zone, PTLD, PMB, TCL)	104 (38%)	22 (39%)	<0.001
• Transformed lymphoma	30 (11%)	12 (21%)	
• Primary/Secondary CNS	12 (4%)	3 (5%)	
• Mantle cell lymphoma	34 (12%)	16 (28%)	
• Other	7 (3%)	0 (0%)	
Reason for transplant relapse/refractory	235 (85%)	40 (70%)	0.02
Best response prior the transplant			
CR	204 (74%)	50 (88%)	0.12
PR	70 (25%)	7 (12%)	
SD	2 (0%)	0 (0%)	

DLCBL- Diffuse Large B cell Lymphoma, PML-Primary Mediastinal Lymphoma , TCL- T Cell Lymphoma

CR- complete response, PR-partial response, SD- stable disease

Figure 1