





Blood 142 (2023) 2216-2218

The 65th ASH Annual Meeting Abstracts

POSTER ABSTRACTS

731.AUTOLOGOUS TRANSPLANTATION: CLINICAL AND EPIDEMIOLOGICAL

Autologous Stem Cell Transplant in Fit Patients with Late Relapsed Diffuse Large B-Cell Lymphoma That Responded to Salvage Chemotherapy

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Background: The new standard of care for fit patients with refractory or early relapse of diffuse large B-cell lymphoma (DLBCL) is chimeric antigen receptor T-cell (CAR-T) therapy. However, for patients with a relapse \geq 12 months after completing frontline therapy, salvage chemotherapy followed by high-dose chemotherapy and autologous stem cell transplant (ASCT) remains the standard of care. There is a need to characterize such patients and their survival in view of the recent shift in treatment paradigm.

Methods: Patients with DLBCL that relapsed \geq 12 months after R-CHOP or R-CHOP-like frontline therapy who underwent salvage therapy and ASCT at Mayo Clinic or University of Iowa between 07/2000 and 4/2020 were identified from institutional lymphoma and transplant databases. Clinical characteristics, treatment information, and outcome data were abstracted. Progression-free survival (PFS) and overall survival (OS) from the time of ASCT were analyzed using Kaplan-Meier method and Cox proportional hazards models. Statistical analyses were performed in JMP v15.

Results: A total of 158 patients with late relapsed DLBCL who underwent salvage chemotherapy and ASCT were identified. Baseline characteristics at relapse/ASCT are shown in Table 1. Median time from frontline therapy completion to 1st relapse was 26.4 months (range 12.0-152.4). Median age at relapse was 63 years (range 19-77), and 96 (61%) patients were male. A minority (3; 3%) had ECOG PS \geq 2. 43 (52%) patients had an elevated serum LDH level, 70 (65%) had advanced stage disease, and 12 (11%) had >1 extranodal involvement.

Median line of salvage therapy was 1 (range 1-3), and 17 (11%) patients required >1 line of salvage therapy. Best response before ASCT was complete response (CR) in 97 (61%) and partial response (PR) in 61 (39%). Median age at ASCT was 64 years (range 19-78). Median follow-up after ASCT was 91.5 months (95% CI 74.0-103.3). Median PFS and OS were 54.5 (95% CI 31.9-77.8) and 99.8 (95% CI 60.3-144.5) months, respectively. The 2-year PFS and OS rates were 64% (95% CI 56-71) and 81% (95% CI 74-87), respectively. No statistically significant difference in PFS was seen based on age at ASCT, sex, serum LDH, stage, or extranodal site involvement of >1 at relapse (Table 2). However, patients who required > 1 line of salvage therapy, compared to those requiring 1 line of salvage therapy, had significantly inferior PFS (median 6.1 vs 61.8 months, P < 0.0001) and OS (17.8 vs 111.7 months, P < 0.0004). There was no statistically significant difference in survival in patients who achieved CR vs PR prior to ASCT, with a median PFS of 61.8 vs 37.8 months (P=0.21) and a median OS of 111.7 vs 78.3 months (P=0.62). Patients who achieved CR after 1 line of salvage therapy had the most favorable PFS and OS, with a median PFS of 65.6 vs 45.4 vs 6.1 vs 7.6 months (P=0.0004) and a median OS of 133.0 vs 88.9 vs 24.2 vs 17.6 months (P=0.004) in patients achieving CR after 1 line of salvage therapy vs PR after 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy vs PR after > 1 line of salvage therapy v

In multivariate Cox regression models adjusted for age at ASCT and sex, patients requiring > 1 line of salvage therapy, compared to those who required 1 line of salvage therapy, had significantly inferior PFS with a hazard ratio (HR) of 3.25 (95% CI 1.82-5.78, P < 0.0001) and OS with a HR of 3.50 (95% CI 1.86-6.60, P=0.0001). However, there remained no significant

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difference in survival based on response status (CR vs PR) with a HR for PFS 0.78 (95% CI 0.52-1.17, *P*=0.23) and OS 0.93 (95% CI 0.58-1.47, *P*=0.74).

Conclusions: Survival after ASCT was excellent in patients with late relapsed DLBCL achieving CR after 1 line of salvage chemotherapy. Favorable survival outcomes were seen in patients who achieved PR after 1 line of salvage therapy. These data support the current clinical practice of ASCT consolidation in these patients. However, post-ASCT survival was poor in patients who required more than 1 line of salvage chemotherapy, despite achieving a satisfactory response to subsequent lines of salvage therapy. Alternative treatment strategies such as CAR-T therapy should be considered in such patients.

Disclosures Wang: Eli Lilly: Membership on an entity's Board of Directors or advisory committees, Research Funding; Innocare: Consultancy, Membership on an entity's Board of Directors or advisory committees, Research Funding; Incyte: Membership on an entity's Board of Directors or advisory committees, Research Funding; BeiGene: Membership on an entity's Board of Directors or advisory committees; TG Therapeutics: Membership on an entity's Board of Directors or advisory committees; Janssen: Membership on an entity's Board of Directors or advisory committees; Kite: Honoraria, Membership on an entity's Board of Directors or advisory committees; Genmab: Research Funding; Morphosys: Research Funding; Genentech: Research Funding; Novartis: Research Funding; LOXO Oncology: Membership on an entity's Board of Directors or advisory committees, Research Funding; Astra Zeneca: Membership on an entity's Board of Directors or advisory committees; AbbVie: Consultancy. Habermann: sorrento: Research Funding; Genentech: Research Funding; BMS: Research Funding. Paludo: Biofourmis: Research Funding; Karyopharm: Research Funding; AbbVie: Consultancy. Ansell: ADC Therapeutics: Other: Contracted Research; Affirmed: Other: Contracted Research; Bristol-Myers Squibb: Other: Contracted Research; Pfizer, Inc: Other: Contracted Research; Regeneron Pharmaceuticals Inc: Other: Contracted Research; Seagen Inc: Other: Contracted Research; Takeda Pharmaceuticals USA Inc: Other: Contracted Research. Nowakowski: Debiopharm: Consultancy; F Hoffmann-La Roche Limited: Consultancy; Kite Pharma: Consultancy; Bristol-Myers Squibb: Consultancy, Membership on an entity's Board of Directors or advisory committees, Research Funding; Abbvie: Consultancy; Selvita Inc: Consultancy; TG Therapeutics: Consultancy; Celgene Corporation: Consultancy; ADC Therapeutics: Consultancy; Blueprint Medicines: Consultancy; Karyopharm Therapeutics: Consultancy, Membership on an entity's Board of Directors or advisory committees; Genentech: Consultancy; MEI Pharma: Consultancy; Incyte: Consultancy; Bantam Pharmaceutical LLC: Consultancy; Seagen: Consultancy; Ryvu Therapeutics: Consultancy, Membership on an entity's Board of Directors or advisory committees; Kymera Therapeutics: Consultancy; Fate Therapeutics: Consultancy, Membership on an entity's Board of Directors or advisory committees; Curis: Consultancy; Zai Lab Limited: Consultancy; MorphoSys: Consultancy, Membership on an entity's Board of Directors or advisory committees, Research Funding. Faroog: MorphoSys: Consultancy; Kite, a Gilead Company: Honoraria; Caribou: Consultancy, Honoraria; Regeneron: Research Funding.

Summary	Number
Age at ASCT, median (range)	64 (19-78)
≤60	52 (33%)
>60	106 (67%)
Sex, male	96 (61%)
ECOG PS, ≥ 2	3 (3%)
LDH, elevated	43 (52%)
Stage, III-IV	70 (65%)
Extranodal involvement, >1	12 (11%)
First line salvage regimen	
Platinum or high dose cytarabine containing chemotherapy*	131 (83%)
Other strategies†	27 (17%)
Lines of salvage therapy, median (range)	1 (1-3)
1	141 (89%)
>1	17 (11%)
Response before ASCT	
CR	97 (61%)
PR	61 (39%)
Conditioning regimen	
BEAM	143 (91%)
Other regimens‡	15 (9%)
*(R-) ICE; (R-) DHAP; RGDP; and (R-) ESHAP	
High dose methotrexate; hyper-CVAD; RCHOP; dose adjusted EPC	OCH-R; BR; R-GVP;
and Vanderbilt Regimen	
BCNU plus thiotepa; BVAC; bendamustine plus EAM; and CBV	
Abbreviations: ASCT, autologous stem cell transplant; ECOG PS, Ea	stern Cooperative
Oncology Group performance status; LDH, lactate dehydrogenase; C	CR, complete response

Table 1. Baseline variables at relapse,	treatment pattern,	and response to	therapy of
study patients (n=158)	anna bhaile chuir chuir chuir - com chuir chuir		

Table 2. Univariate analyses of variables

PR, partial response

	Median PFS in months	P value	Median OS in months	P value		
Age at ASCT	(95% CI)	0.11	(95% CI)	0.000		
Age al ASCT	11E E (40 0 144 E)	0.11	101 E (11E E 101 E)	0.009		
200	115.5 (40.0-144.5)		61.9 (50.4.00.9)			
200	37.0 (25.7-01.4)	0.24	01.0 (50.4-99.0)	0.60		
Sex Male	61 4 (20 0 117 1)	0.34	111 7 (61 0 101 5)	0.69		
Famala	01.4 (29.0-117.1)		77.9 (40.5 ND)			
Female	40.0 (25.7-72.6)	0.07	//.8 (49.5-NR)	0.000		
LDH at relapse	C4 4 (07 0 ND)	0.27		0.008		
Normal	61.4 (27.3-NR)		NR (80.2-NR)			
Elevated	50.4 (18.2-133.0)	0.05	60.3 (31.9-NR)			
Stage at relapse	1017 (50 110)	0.05	100 0 (00 0 150 5)	0.94		
1-11	124.7 (50.4-NR)		126.2 (60.3-150.5)			
III-IV	45.3 (18.2-133.0)		88.9 (52.0-NR)			
Extranodal sites at relapse		0.76		0.47		
≤1	61.4 (37.5-124.7)		111.7 (61.8-150.5)			
>1	59.3 (2.5-153.0)		77.8 (17.3-NR)			
Lines of salvage therapy		< 0.0001		0.0004		
1	61.8 (40.0-111.7)		111.7 (66.3-150.5)			
>1	6.1 (1.9-19.8)		17.8 (2.3-NR)			
Response before ASCT		0.21		0.62		
CR	61.8 (32.1-117.7)		111.7 (57.0-181.5)			
PR	37.8 (13.0-77.8)		78.3 (51.5-150.5)			
Lines of salvage therapy and		0.0004		0.004		
response status						
CR after 1 line of salvage	65.6 (52.0-128.5)		133.0 (59.3-181.5)			
PR after 1 line of salvage therapy	45.4 (13.1-78.3)		88.9 (57.1-NR)			
CR after >1 line of salvage therapy	6.1 (1.4-45.3)		24.2 (1.8-NR)			
PR after >1 line of salvage therapy	7.6 (1.2-NR)		17.6 (1.9-NR)			
Abbreviations: PES progression-free survival: OS overall survival: ASCT autologous stem cell						
transplant: I DH lactate dehydrogenase: CR complete response: PR partial response: NR not						
reached						

Figure 1

https://doi.org/10.1182/blood-2023-185002