Real-world outcomes of patients with monomorphic B-cell post-transplant lymphoproliferative disorder treated with frontline chemoimmunotherapy

J. Xiong[1], I. Nizamuddin[1], M.Watkins[1], D. Russler-Germain[1], D. Patel[1], T. Fehniger[1], A. Ghobadi[1], A. Cashen[1], B. Kahl[1], N. Bartlett[1], N. Mehta-Shah[1]

1. Washington University School of Medicine, St. Louis, MO.

SITEMAN CANCER CENTER

WashU Medicine | BJC HealthCare

Introduction

- Monomorphic B-cell post-transplant lymphoproliferative disorder (B-PTLD) has poor outcomes and high treatment-related mortality (TRM)
- Risk-stratified sequential treatment (RSST) approaches can spare some patients (pts) from anthracycline-based therapies
  - PTLD-1 trial: 25% able to achieve a durable response to rituximab alone, with 3-yr progression-free survival (PFS) of 89% and 3-year overall survival (OS) of 91%
  - Outcomes of patients with PTLD in the modern era have not been optimally characterized

Aim

To characterize outcomes of frontline treatment of newly diagnosed monomorphic B-PTLD in the modern era

Methods

Pts treated at Siteman Cancer Center of Washington University in St. Louis from 1/1/2006-12/31/2024 were identified

Demographic, clinical, and treatment data were collected via retrospective review of electronic health records

Statistical analysis

- Univariate analyses using $\chi 2$ test (α=0.05) with binary logistic regression and multivariate analyses using multinomial logistic regression
- Kaplan-Meier method and log-rank test to compare differences in PFS and OS based on subtypes and treatment approach

Results

Table 1. 106 pts with monomorphic B-cell PTLD were identified

Variable	Median (range)	Variable		N (%)
Age	60 (22-86)	Early stage disease		15 (14)
Years since transplant	8 (0-34)	Extranodal disease present		85 (80)
ECOG performance status	1 (0-3)	Allograft involvement		19 (18)
IPI at diagnosis	3 (0-5)	Histology (n, %)		
LDH at diagnosis	289 (143-1625)	DLBCL		99 (93)
Variable	**N (%)**	Subtype	GCB	38 (36)
Sex		Subtype	Non-GCB	47 (44)
Male	66 (62)	Subtype	Unknown/not tested	14 (13)
Female	40 (38)	FISH	*MYC* rearrangement	20 (19)
Transplanted organ		FISH	*MYC* + *BCL2* rearrangements	1 (1)
Kidney	35 (33)	Burkitt lymphoma		4 (4)
Liver	28 (26)	Other		3 (3)
Lung	16 (15)	EBV status by ISH (n, %)		
Heart	13 (12)	Positive		24 (22)
Multiple	9 (9)	Negative		77 (73)
Stem cell	5 (5)	Unknown		5 (5)

Figure 1. Kaplan-Meier curves showing A) PFS in overall population; B) OS in overall population; C) PFS by response to RSST; D) OS by response to RSST

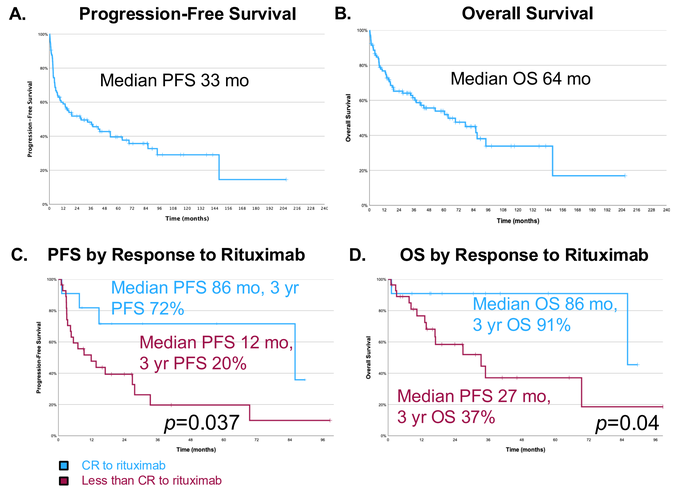


Table 2. Front-line treatment patterns and response rates

Clinical Characteristics/Treatments				Response Rates	
Overall	**N (%)**	**RSST**	**N (%)**	**Therapy**	**ORR (CR)**
Reduction in immunosuppression	93 (88)	Number of patients	39 (37)	Front-line chemotherapy	66 (56)
Systemic therapy	105 (99)	Median doses of rituximab (range)	4 (1-12)	R-CHOP	63 (58)
Front-line chemotherapy	56 (53)	Treatment escalated to chemotherapy	28 (72)	DA-EPOCH-R	75 (58)
R-CHOP	38 (68)	R-CHOP	20 (71)	Other	67 (67)
DA-EPOCH-R	12 (21)	Pola-R-CHP	6 (21)	R-CEOP	100 (50)
Other	3 (5)	DA-EPOCH-R	2 (7)	Pola-R-CHP	NE
R-CEOP	2 (4)			Rituximab monotherapy	45 (27)
Pola-R-CHP	1 (2)				
Rituximab monotherapy	49 (46)	Progression prior to interim PET	7 (18)		

Table 3. Early stage disease and lack of extranodal disease were associated with CR to rituximab induction

Factor	p value	
	UVA	MVA
Male sex	0.97	0.584
White race	0.087	
Non-GCB subtype	0.210	0.999
EBV-positive disease	**0.016**	0.996
Allograft involvement	0.239	0.997
MYC rearrangement	0.511	0.735
Early stage disease	**0.001**	**0.009**
Lack of extranodal disease	**0.005**	**0.024**

- 33 (31%) pts developed relapsed/refractory disease
  - **Elevated LDH at diagnosis (p=0.02) and extranodal disease at diagnosis (p=0.03) predicted relapse**
- 13 (12%) experienced graft failure, and 6 (6%) required repeat organ transplantation
  - Discontinuation of antimetabolites was associated with higher rates of graft failure (p=0.02)
- 51 (48%) pts died, 8 (16%) due to TRM

Conclusions

- Response rates to single-agent rituximab (RSST) in our real-world cohort are consistent with those reported in clinical trials
- Early stage disease and lack of extranodal disease are associated with CR to rituximab induction
- Pts with extranodal disease and elevated LDH are more likely to relapse after initial treatment
- Pts without response to initial rituximab therapy have poor outcomes with OS rates lower than that reported in the literature
- Treatment-related mortality remains high even in the modern era

References

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Contact: Jia Qi Xiong, MD
jiax@wustl.edu