

TITLE:

Effective bridging therapy can improve CD19 CAR-T outcomes while maintaining safety in patients with large B-cell lymphoma.

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SUP. METHODS

a. Patients

Data was collected retrospectively from electronic medical records for consecutive patients with r/r LBCL submitted to the UK National CAR Clinical Panel (NCCP) for approval of treatment with licenced CD19CAR-T at commissioned CAR-T centres (Newcastle Hospitals NHS Foundation Trust; King's College Hospital London; University College London Hospital; Manchester Royal Infirmary, The Christie NHS Foundation Trust (Manchester), Leeds Teaching Hospitals NHS Trust; University Hospital of Wales (Cardiff); University Hospitals Bristol NHS Trust; Royal Marsden Hospital; Cambridge University Hospitals NHS Foundation Trust). An additional 12 patients approved by the NCCP equivalent Scottish CAR-T centre (NHS Greater Glasgow and Clyde) using similar eligibility criteria were included. Eligibility for CAR-T on the National Health Service (NHS) CAR programme for LBCL requires for patients to be ≥ 18 years, to have failed ≥ 2 lines of therapy, have adequate organ function and an ECOG performance status of 0-1 (0-2 at the point of lymphodepletion (LD)). Patients' eligibility for CAR-T was assessed at the treating CAR-T centre and centrally reviewed by the National CAR-T Clinical Panel (NCCP). All histological diagnoses have been reviewed by a dedicated haematopathologist. The choice of CAR-T product was at the discretion of the treating centre. LD comprising cyclophosphamide and fludarabine was delivered as per SmPC and local guidelines.

b. Disease and toxicity assessment

Cytokine release syndrome (CRS) and Immune effector cell-associated neurotoxicity syndrome (ICANS) grading was performed as per ASTCT consensus guidelines²⁵. Treatment response was assessed locally by positron emission tomography (PET-CT) pre-bridging, pre-LD and again at months 1, 3, 6, 9 and 12 post-CAR-T according to Lugano classification^{26,27}.

SUP TABLES:

Sup. Table 1: Chemotherapy bridging details.

Regimens Used	CT N=212		CMT N=16	
	N	Number of cycles Median (IQR) Range	N	Number of cycles Median (IQR) Range
HDT-Gem	35	1 (1-1) 1-4	2	1 and 3
<i>(R)-GDP</i>	15		2	
<i>(R)-GemOx</i>	13		0	
<i>R-GemP</i>	4		0	
<i>R-GVD</i>	1		0	
<i>Gem/pred</i>	1		0	
<i>Gem</i>	1		0	
HDT-Ifos	28	1 (1-1) 1-4	3	1,1,1
<i>(R)-IVE</i>	17		3	
<i>(R)-ICE</i>	7		0	
<i>(R)-IGEVI</i>	2		0	
<i>R-IVAC</i>	1		0	
<i>Modified DECC and IVE</i>	1		0	
HDT-Other	21	1 (1-1) 1-2	2	1 and 1
<i>(R)-CHOP</i>	5		0	
<i>(R)-DHAP</i>	4		0	
<i>Mini-BEAM</i>	3		0	
<i>(R)-ESHAP</i>	2		0	
<i>MATRIX</i>	2		0	
<i>(R)-HDMTX/R-MTX</i>	0		2	
<i>(R)-CVP</i>	1		0	
<i>Mini-LEAM</i>	1		0	
<i>HD-MTX + Cytarabine</i>	1		0	
<i>Methypred/Etoposide/Epirubicin</i>	1		0	
<i>R-cytarabine-Pred</i>	1		0	
Low Dose	51	1 (1-1) 1-3	2	1 and 3
<i>DECC</i>	20		1	
<i>(R)-Bendamustine</i>	6		1	
<i>PEP-C</i>	6		0	
<i>PMiTceBo</i>	4		0	
<i>CCEP</i>	3		0	
<i>Oral Etoposide+ Pred</i>	3		0	
<i>(R)-lenalidomide</i>	3		0	
<i>Cyclo-dex</i>	2		0	
<i>Rituximab</i>	2		0	
<i>RPCE2BO</i>	1		0	
<i>Vinblastine & Dex</i>	1		0	
RBP	77	1 (1-2) 1-7	7	1 (1-2) 1-3
<i>RBP</i>	70		7	
<i>RP</i>	6		0	

Sup. Table 2: Demographics for all infused patients at submission.

	No bridging N=40	Bridging therapy				p-value none vs RT	p-value none vs CT	p-value steroids vs none	p-value steroids vs RT	p-value steroids vs CT	p-value CT vs RT
		Steroids N=29	RT N=54	CT N=166	CMT N=11						
Age	62.0(57 – 67.5)	57.0(50 – 63)	57.0(49 – 65)	59.0(49 – 67)	59.0(32 – 66)	0.030	0.12	0.047	>0.99	0.57	0.38
Sex, N (%)											
Male	24 (60.0)	17 (58.6)	33 (61.1)	105 (63.3)	6 (54.5)	>0.99	0.72	>0.99	>0.99	0.68	0.87
Female	16 (40.0)	12 (41.4)	21 (38.9)	61 (36.7)	5 (45.5)						
Disease type, N (%)											
De novo DLBCL	26 (65.0)	19 (65.5)	34 (63.0)	115 (69.3)	6 (54.5)	0.82	0.90	0.40	0.55	0.30	0.54
PMBL	3 (7.5)	0	4 (7.4)	10 (6.0)	2 (18.2)						
tFL	8 (20.0)	9 (31.0)	14 (25.9)	30 (18.1)	3 (27.3)						
t-Other	3 (7.5)	1 (3.4)	2 (3.7)	11 (6.6)	0						
DHL/THL, N (%)											
No	24 (77.4)	18 (69.2)	33 (67.3)	101 (70.6)	5 (62.5)	0.45	0.63	0.74	0.87	0.89	0.87
Yes	2 (6.5)	3 (11.5)	8 (16.3)	20 (14.0)	0						
DE/TE	5 (16.1)	5 (19.2)	8 (16.3)	22 (15.4)	3 (37.5)						
Missing/unknown	9	3	5	23	3						
Stage, N (%)											
Stage 1-2	12 (31.6)	6 (20.7)	16 (30.2)	28 (17.0)	2 (18.2)	>0.99	0.068	0.41	0.44	0.60	0.049
Stage 3-4	26 (68.4)	23 (79.3)	37 (69.8)	137 (83.0)	9 (81.8)						
Missing/unknown	2	0	1	1	0						
ECOG, N (%)											
0	27 (67.5)	17 (58.6)	29 (53.7)	71 (42.8)	3 (27.3)	0.21	0.008	0.46	0.82	0.16	0.21
1	13 (32.5)	12 (41.4)	25 (46.3)	95 (57.2)	8 (72.7)						
Bulk>7.5cm, N (%)											
No	33 (82.5)	24 (82.8)	34 (63.0)	120 (72.3)	8 (72.7)	0.42	0.23	>0.99	0.080	0.36	0.23
Yes	7 (17.5)	5 (17.2)	20 (37.0)	46 (27.7)	3 (27.3)						
Missing/unknown	33 (82.5)	24 (82.8)	34 (63.0)	120 (72.3)	8 (72.7)						
No. of extra nodal sites, N (%)											
None	21 (52.5)	11 (39.3)	22 (40.7)	53 (31.9)	2 (18.2)	0.23*	0.007*	0.15*	0.60*	0.64*	0.13
1-2	18 (45.0)	13 (46.4)	29 (53.7)	93 (56.0)	6 (54.5)						
3+	1 (2.5)	4 (14.3)	3 (5.6)	20 (12.0)	3 (27.3)						
Missing/unknown	0	1	0	0	0						
LDH, N (%)											
<ULN	12 (30.8)	9 (31.0)	15 (30.6)	32 (20.0)	0	0.36*	0.013*	0.758	0.61*	0.080*	0.19
>ULN	24 (61.5)	16 (55.2)	23 (46.9)	85 (53.1)	8 (80.0)						
>2ULN	3 (7.7)	4 (13.8)	11 (22.4)	43 (26.9)	2 (20.0)						
Missing/unknown	1	0	5	6	1						
IPI , N (%)											
0-2	23 (63.9)	17 (58.6)	27 (55.1)	75 (46.9)	7 (63.6)	0.51	0.096	0.80	0.82	0.31	0.33
3+	13 (36.1)	12 (41.4)	22 (44.9)	85 (53.1)	4 (36.4)						

	No bridging N=40	Bridging therapy				p-value none vs RT	p-value none vs CT	p-value steroids vs none	p-value steroids vs RT	p-value steroids vs CT	p-value CT vs RT
		Steroids N=29	RT N=54	CT N=166	CMT N=11						
Missing/unknown	4	0	5	6	0						
Fit for SCT?, N (%)											
No	7 (17.5)	6 (20.7)	5 (9.3)	32 (19.3)	3 (27.3)	0.35	>0.99	0.76	0.18	0.80	0.097
Yes	33 (82.5)	23 (79.3)	49 (90.7)	134 (80.7)	8 (72.7)						
HCT-CI score, N (%)											
<3	38 (95.0)	25 (86.2)	51 (96.2)	151 (92.1)	9 (81.8)	>0.99	0.74	0.23	0.18	0.29	0.53
≥3	2 (5.0)	4 (13.8)	2 (3.8)	13 (7.9)	2 (18.2)						
Missing/unknown	0	0	1	2	0						
Life expectancy <3 months if no response to BT, N (%)											
No	39 (97.5)	19 (67.9)	39 (72.2)	103 (62.0)	10 (90.9)	0.002	<0.001	0.001	0.80	0.67	0.19
Yes	1 (2.5)	9 (32.1)	15 (27.8)	63 (38.0)	1 (9.1)						
Missing/unknown	0	1	0	0	0						
>2 previous lines, N (%)											
No	24 (60.0)	14 (48.3)	39 (72.2)	100 (60.2)	9 (81.8)	0.27	>0.99	0.46	0.054	0.31	0.14
Yes	16 (40.0)	15 (51.7)	15 (27.8)	66 (39.8)	2 (18.2)						
Previous transplant, N (%)											
No	34 (85.0)	25 (86.2)	45 (83.3)	138 (83.1)	8 (72.7)	0.55	0.84	>0.99	0.39	0.60	0.86
Auto	5 (12.5)	3 (10.3)	9 (16.7)	25 (15.1)	3 (27.3)						
Allo	1 (2.5)	1 (3.4)	0	3 (1.8)	0						
Refractory, N (%)											
No	18 (46.2)	16 (55.2)	29 (54.7)	93 (58.9)	4 (40.0)	0.53	0.21	0.62	>0.99	0.84	0.63
Yes	21 (53.8)	13 (44.8)	24 (45.3)	65 (41.1)	6 (60.0)						
Missing/unknown	1	0	1	8	1						
Response to last line, N (%)											
CMR/PR	15 (37.5)	12 (41.4)	12 (22.2)	38 (22.9)	5 (45.5)	0.11	0.070	0.81	0.080	0.063	>0.99
SD/PD	25 (62.5)	17 (58.6)	42 (77.8)	128 (77.1)	6 (54.5)						

Sup. Table 3: Demographics for all leukapheresed patients at submission by bridging chemotherapy. P-values are chi squared or Fisher's exact test (discrete variables) or Wilcoxon Mann-Whitney (continuous). Key: BT= etc. Note: one missing chemo regimen (i.e. N=228 not 229 as above)

	Low Dose N=51	High dose N=84	RBP N=77	p-value low vs high	p-value low vs RBP	p-value high vs RBP
Age	65.0(52 - 70)	56.0(47 - 63.5)	63.0(53 - 70)	0.0016	0.75	0.0036
Sex, N (%)						
Male	33 (64.7)	60 (71.4)	41 (53.2)	0.41	0.20	0.017
Female	18 (35.3)	24 (28.6)	36 (46.8)			
Disease type, N (%)						
De novo DLBCL	30 (58.8)	60 (71.4)	57 (74.0)	0.30	0.095	0.21
PMBL	5 (9.8)	5 (6.0)	1 (1.3)			
tFL	11 (21.6)	16 (19.0)	12 (15.6)			
t-Other	5 (9.8)	3 (3.6)	7 (9.1)			
DHL/THL, N (%)						
No	30 (66.7)	46 (61.3)	52 (80.0)	0.12	0.22	0.026
Yes	3 (6.7)	15 (20.0)	4 (6.2)			
DE/TE	12 (26.7)	14 (18.7)	9 (13.8)			
Missing/unknown	6	9	12			
Stage, N (%)						
Stage 1-2	11 (21.6)	7 (8.3)	15 (19.7)	0.029	0.80	0.037
Stage 3-4	40 (78.4)	77 (91.7)	61 (80.3)			
Missing/unknown	0	0	1			
ECOG, N (%)						
0	22 (43.1)	30 (35.7)	28 (36.4)	0.47	0.46	>0.99
1	29 (56.9)	54 (64.3)	49 (63.6)			
Bulk>7.5cm, N (%)						
No	35 (68.6)	57 (67.9)	57 (74.0)	>0.99	0.55	0.49
Yes	16 (31.4)	27 (32.1)	20 (26.0)			
Missing/unknown	0	0	0			
No. Extra nodal sites, N (%)						
None	14 (27.5)	21 (25.0)	24 (31.2)	0.86	0.78	0.58
1-2	34 (66.7)	52 (61.9)	42 (54.5)			
3+	3 (5.9)	11 (13.1)	11 (14.3)			
LDH, N (%)						
<ULN	8 (16.3)	13 (16.5)	19 (25.3)	0.10	0.66	0.036
>ULN	31 (63.3)	35 (44.3)	38 (50.7)			
>2ULN	10 (20.4)	31 (39.2)	18 (24.0)			
Missing/unknown	2	5	2			
IPI, N (%)						
0-2	19 (39.6)	43 (51.2)	31 (42.5)	0.20	0.75	0.28
3+	29 (60.4)	41 (48.8)	42 (57.5)			
Missing/unknown	3	0	4			
Fit for SCT?, N (%)						
No	9 (17.6)	12 (14.3)	22 (28.6)	0.63	0.21	0.033
Yes	42 (82.4)	72 (85.7)	55 (71.4)			
HCT-CI score						
<3	49 (98.0)	80 (95.2)	64 (84.2)	0.65	0.015	0.032
3+	1 (2.0)	4 (4.8)	12 (15.8)			
Missing/unknown	1	0	1			
Life expectancy <3 months if no response BT, N (%)						
No	9 (17.6)	12 (14.3)	22 (28.6)	<0.001	0.13	0.018
Yes	42 (82.4)	72 (85.7)	55 (71.4)			
> 2 previous lines, N (%)						
No	22 (43.1)	54 (64.3)	46 (59.7)	0.020	0.073	0.63
Yes	29 (56.9)	30 (35.7)	31 (40.3)			
Previous transplant, N (%)						

	Low Dose N=51	High dose N=84	RBP N=77	p-value low vs high	p-value low vs RBP	p-value high vs RBP
No	42 (82.4)	67 (79.8)	63 (81.8)	0.40	>0.99	0.52
Auto	9 (17.6)	13 (15.5)	13 (16.9)			
Allo	0	4 (4.8)	1 (1.3)			
Refractory, N (%)						
No	31 (62.0)	45 (56.3)	40 (55.6)	0.59	0.58	>0.99
Yes	19 (38.0)	35 (43.8)	32 (44.4)			
Missing/unknown	1	4	5			
Response to last line, N (%)						
CMR/PR	10 (19.6)	22 (26.2)	18 (23.4)	0.41	0.67	0.72
SD/PD	41 (80.4)	62 (73.8)	59 (76.6)			

Sup. Table 4: Bridging chemotherapy and selected patient demographics by time period: 2018/2019 vs 2019/2020. p-values are Fisher's exact tests. Demographics - P-values are Wilcoxon Mann Whitney (continuous variables), Chi-squared (*trend) or Fisher's exact (discrete).

Bridging type	Time period		p-value
	Dec 2018-Dec 2019	Dec 2019-Dec 2020	
Bridging type			
None	32 (15.2)	17 (10.4)	<0.001
Steroids alone	32 (15.2)	3 (1.8)	
RT	31 (14.7)	31 (19.9)	
Systemic	108 (51.2)	105 (64.0)	
CMT	8 (3.8)	8 (4.9)	
Systemic type (inc. CMT)			
HDT-Gem	28 (24.4)	9 (8.0)	<0.001
HDT-Ifos	24 (20.9)	7 (6.2)	
HDT-Other	40 (34.8)	13 (11.5)	
Low dose	16 (13.9)	7 (6.2)	
RBP	7 (6.1)	77 (68.1)	
Systemic type (inc CMT, ex RBP)			
HDT-Gem	28 (25.9)	9 (25.0)	0.92
HDT-Ifos	24 (22.2)	7 (19.4)	
HDT-Other	40 (37.0)	13 (36.1)	
Low dose	16 (14.8)	7 (19.4)	
Demographics			
Age	58.0(49 – 66)	62.5(53 – 69)	0.011
IPI, N (%)			
0-2	116 (57.1)	63 (41.4)	0.003
3+	87 (42.9)	89 (58.6)	
Missing/unknown	8	12	
Fit for SCT?, N (%)			
No	33 (15.6)	39 (23.8)	0.047
Yes	178 (84.4)	125 (76.2)	
Refractory, N (%)			
No	127 (61.4)	78 (50.3)	0.036
Yes	80 (38.6)	77 (49.7)	
Missing/unknown	4	9	

Sup. Table 5: Toxicity from CAR-T by CT type. ¹Patients with PD are excluded, ²Infection details: Low dose; Covid (N=1), sepsis (N=2), High dose: sepsis (N=1), Fungal chest infection (N=1), RBP: Covid (N=4), Necrotizing fasciitis (N=1), Sepsis (N=1) Covid-19, steroids; RSV pneumonia, RT; Sepsis (NOS), Systemic; Covid-19 (N=5), Fungal chest infection/HLH (N=1), Necrotizing fasciitis(N=1), sepsis (NOS) (N=3), fungal sepsis (N=1) Notes: one ITU level missing (CT bridging).

	Low Dose N=42	High Dose N=58	RBP N=66	p-value
CAR-T toxicities				
CRS (grade 3+), N(%)	4 (9.5)	2 (3.5)	5 (7.6)	0.45
ICANS (grade 3+), N(%)	8 (19.1)	10 (17.2)	8 (12.1)	0.59
Grade 3+ Neutropenia (1 month) ¹	14 (51.9)	31 (77.5)	19 (40.4)	0.002
Grade 3+ Neutropenia (3 months) ¹	3 (17.7)	3 (15.0)	7 (23.3)	0.80
Grade 3+ Thrombocytopenia (1 month) ¹	15 (55.6)	30 (73.2)	20 (41.7)	0.012
Grade 3+ Thrombocytopenia (3 months) ¹	4 (23.5)	6 (30.0)	5 (16.7)	0.53
Toxicity therapies				
Steroids given, N(%)	16 (38.1)	22 (37.9)	23 (34.9)	0.94
Tocilizumab used, N(%)	28 (66.7)	39 (67.2)	47 (71.2)	0.85
ITU required, N(%)	15 (35.7)	16 (27.6)	15 (22.7)	0.35
Observation only	5 (11.9)	6 (10.5)	4 (6.1)	
Inotropes	5 (11.9)	5 (8.8)	6 (9.1)	
Organ support/Intubation	5 (11.9)	4 (7.0)	5 (7.6)	
Cumulative incidence of NRM at 1 year	7.4% (2.4 – 21.2)	9.33% (3.9 – 21.2)	11.6% (5.2 – 25.8)	
NRM events	4	5	6	0.97
Infection ²	3	2	6	
Cardiac	0	0	0	
Haematemesis	0	0	0	
Second malignancy	0	1	0	
HLH	0	1	0	
Bowel perforation	1	1	0	

Sup. Table 6: Toxicity according to BT response.

	No response N=115	PR N=83	CR N=21	p-value
CAR-T toxicities				
CRS (grade 3+), N(%)	12 (10.4)	5 (6.0)	1 (4.8)	0.58
ICANS (grade 3+), N(%)	25 (21.7)	5 (6.0)	2 (9.5)	0.005
Grade 3+ Neutropenia (1 month) ¹	43/80 (53.8)	27/66 (40.9)	8/18 (44.4)	0.29
Grade 3+ Neutropenia (3 months) ¹	7/40 (17.5)	4/46 (8.7)	7/14 (50.0)	0.004
Grade 3+ Thrombocytopenia (1 month) ¹	43/79 (54.4)	33/63 (52.4)	7/18 (38.9)	0.52
Grade 3+ Thrombocytopenia (3 months) ¹	9/40 (22.5)	7/46 (15.2)	4/14 (28.6)	0.46
Toxicity therapies				
Steroids given, N(%)	52 (45.2)	23 (27.7)	9 (42.9)	0.037
Tocilizumab used, N(%)	84 (73.0)	56 (67.5)	13 (61.9)	0.49
ITU required, N(%)	38 (33.0)	19 (22.9)	3 (14.3)	0.12
Observation only	7 (6.1)	11 (13.3)	0	
Inotropes	17 (14.9)	6 (7.2)	1 (4.8)	
Organ support/Intubation	13 (11.4)	2 (2.4)	2 (9.5)	

Sup. Table 7. CAR-T response in the non-responders to BT, by product. *Excluding not done.

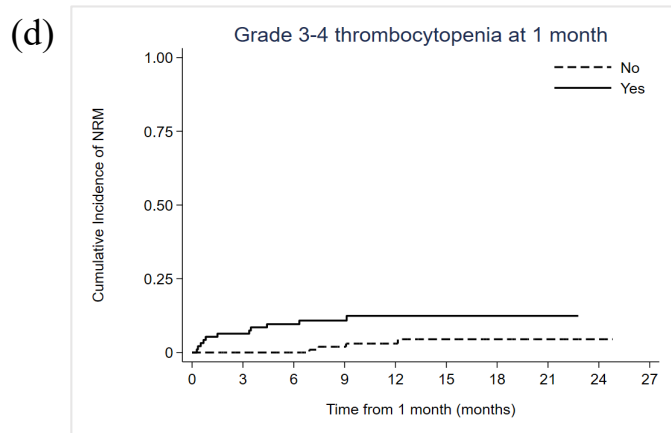
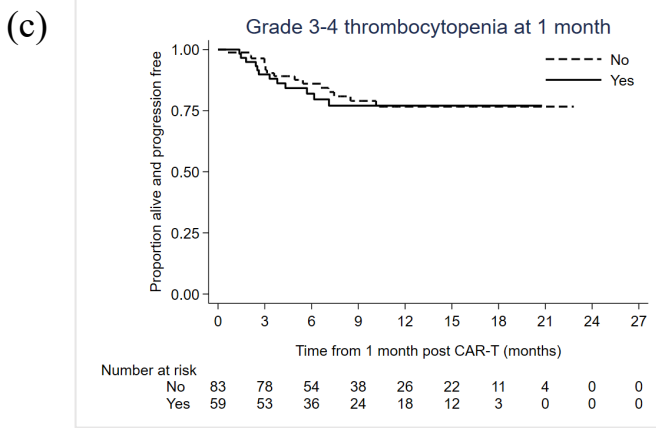
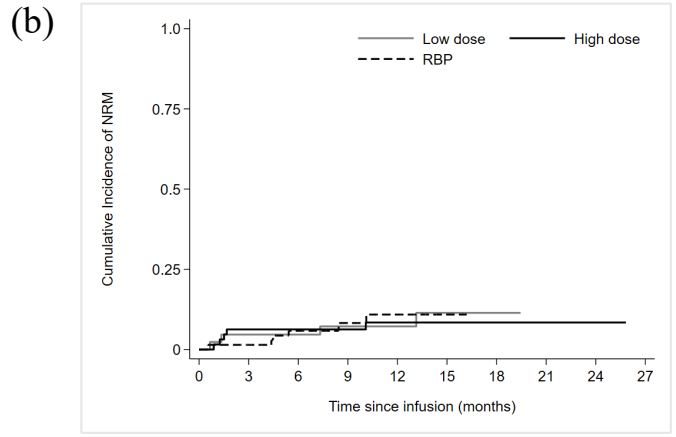
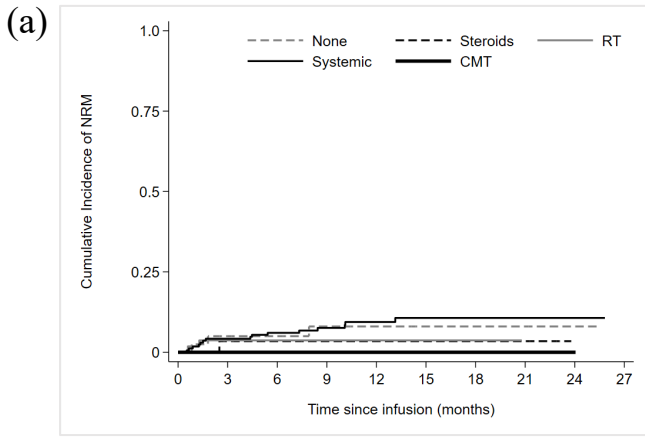
PET response	Axi-cel N=92	Tisa-cel N=23	
1 month			
CR	35 (40.7)	4 (17.4)	
PR	31 (36.1)	6 (26.1)	
SD	3 (3.5)	0	
PD	14 (16.3)	13 (56.5)	
Patient died	3 (3.5)	0	
Not done		0	
ORR	66 (71.7)	10 (43.5)	p=0.010
ORR*	66 (76.7)	10 (43.5)	P=0.002
3 months			
CR	36 (39.1)	2 (8.7)	
PR	7 (7.6)	0	
PD	41 (44.6)	21 (91.3)	
Patient died	8 (8.7)	0	
ORR	43 (46.7)	2 (8.7)	p=0.001
	Axi-cel N=88	Tisagen N=21	
6 months			
CR	30 (37.5)	1 (4.8%)	
PR	4 (4.6)	0	
PD	44 (50.0)	20 (95.2)	
Patient died	10 (11.4)	0	
ORR	34 (38.6)	1 (4.8)	p=0.003

Sup. Table 8: Baseline characteristics of the infused non-responders by product. We reviewed outcomes for all patients who were bridged, with deaths/non-infusion due to PD included as non-responders. We excluded the RT cohort from this analysis as they represent a highly selected group, often with limited stage disease and response may be localised.

	All infused patients N=115	Axi-cel N=92	Tisagen N=23	p-value
Age	56.0(22 - 78)	56.0(22 - 78)	58.0(30 - 76)	0.088
Sex, N (%)				
Male	74 (64.3)	59 (64.1)	15 (65.2)	0.92
Female	41 (35.7)	33 (35.9)	8 (34.8)	
ECOG, N (%)				
0	49 (42.6)	40 (43.5)	9 (39.1)	0.71
1	66 (57.4)	52 (56.5)	14 (60.9)	
Stage, N (%)				
Stage 1-2	16 (14.0)	14 (15.4)	2 (8.7)	0.52*
Stage 3-4	98 (86.0)	77 (84.6)	21 (91.3)	
Missing/unknown	1	1	0	
Bulk>7.5cm, N (%)				
No	77 (67.0)	58 (63.0)	19 (82.6)	0.074
Yes	38 (33.0)	34 (37.0)	4 (17.4)	
No. of extra nodal site, N (%)				
0	33 (28.7)	26 (28.3)	7 (30.4)	0.92**
1	73 (63.5)	59 (64.1)	14 (60.9)	
2	9 (7.8)	7 (7.6)	2 (8.7)	
IPI, N (%)				
0-2	56 (51.4)	47 (54.0)	9 (40.9)	0.27
3+	53 (48.6)	40 (46.0)	13 (59.1)	
Missing/unknown	6	5	1	
Histological subtype, N (%)				
De novo DLBCL	79 (68.7)	60 (65.2)	19 (82.6)	0.29*
PMBL	10 (8.7)	10 (10.9)	0	
tFL	21 (18.3)	18 (19.6)	3 (13.0)	
t-Other	5 (4.3)	4 (4.3)	1 (4.3)	
DHL/THL, N (%)				
No	71 (71.0)	58 (71.6)	13 (68.4)	0.85*
Yes	17 (17.0)	14 (17.3)	3 (15.8)	
DHE/THE	12 (12.0)	9 (11.1)	3 (15.8)	
Missing/unknown	15	11	4	
LDH, N (%)				
<ULN	23 (21.1)	19 (21.8)	4 (18.2)	0.92*
>ULN	52 (47.7)	40 (46.0)	12 (54.5)	
>2ULN	34 (31.2)	28 (32.2)	6 (27.3)	
Missing/unknown	6	5	1	
Life expectancy <3 months if no response to BT, N (%)				
No	65 (56.5)	54 (58.7)	11 (47.8)	0.35
Yes	50 (43.5)	38 (41.3)	12 (52.2)	
Fit for SCT?, N (%)				
No	15 (13.0)	9 (9.8)	6 (26.1)	0.076*
Yes	100 (87.0)	83 (90.2)	17 (73.9)	
3 or more lines, N (%)				
No	75 (65.2)	60 (65.2)	15 (65.2)	>0.99
Yes	40 (34.8)	32 (34.8)	8 (34.8)	
Previous transplant, N (%)				
No	102 (88.7)	81 (88.0)	21 (91.3)	>0.99*
Auto	12 (10.4)	10 (10.9)	2 (8.7)	
Allo	1 (0.9)	1 (1.1)	0	
Response to last line, N (%)				
CMR/PR	20 (17.4)	17 (18.5)	3 (13.0)	0.76*
SD/PD	95 (82.6)	75 (81.5)	20 (87.0)	
No previous response, N (%)				
Previous response	69 (62.2)	53 (58.9)	16 (76.2)	0.14
Refractory	42 (37.8)	37 (41.1)	5 (23.8)	
Missing/unknown	4	2	2	
Duration of response for last line (CMR only)	7.0(3 - 23)	8.0(3 - 23)	3.5(3 - 4)	0.11
Pre-infusion factors				
ECOG, N (%)				

	All infused patients N=115	Axi-cel N=92	Tisagen N=23	p-value
0-1	103 (89.6)	80 (87.0)	23 (100.0)	0.12*
2	12 (10.4)	12 (13.0)	0	
LDH grouped, N (%)				
<ULN	24 (24.2)	21 (26.6)	3 (15.0)	0.68
>ULN	43 (43.4)	32 (40.5)	11 (55.0)	
>2ULN	32 (32.3)	26 (32.9)	6 (30.0)	
Missing/unknown	16	13	3	
Low platelets, N (%)				
No	106 (92.2)	83 (90.2)	23 (100.0)	0.20*
Yes	9 (7.8)	9 (9.8)	0	
Low lymphocytes, N (%)				
No	56 (49.6)	40 (44.4)	16 (69.6)	0.032
Yes	57 (50.4)	50 (55.6)	7 (30.4)	
Missing/unknown	2	2	0	
Bridging response, N (%)				
SD	18 (15.7)	14 (15.2)	4 (17.4)	0.76*
PD	97 (84.3)	78 (84.8)	19 (82.6)	

Supplementary Figure 1



Sup. Figure 1a: NRM by bridging modality

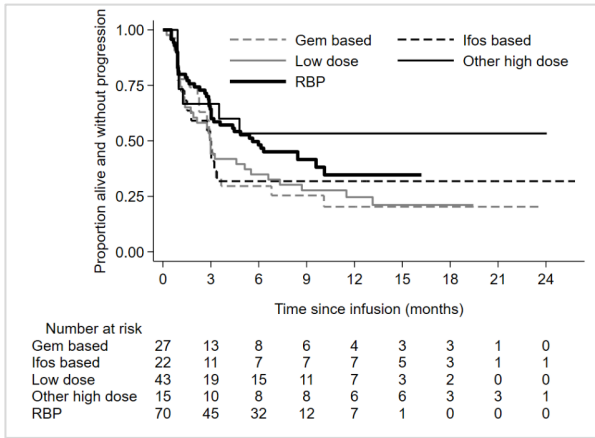
Sup. Figure 1b: NRM by chemotherapy bridging modality

Sup. Figure 1c: Grade 3-4 thrombocytopenia at 1 month and PFS/relapse

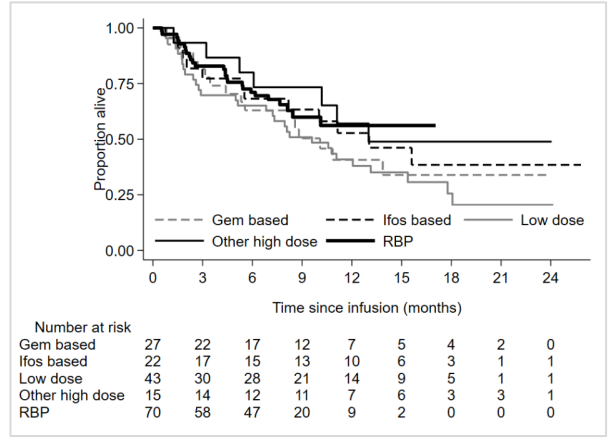
Sup. Figure 1d: Grade 3-4 thrombocytopenia at 1 month and NRM

Supplementary Figure 2

(a)



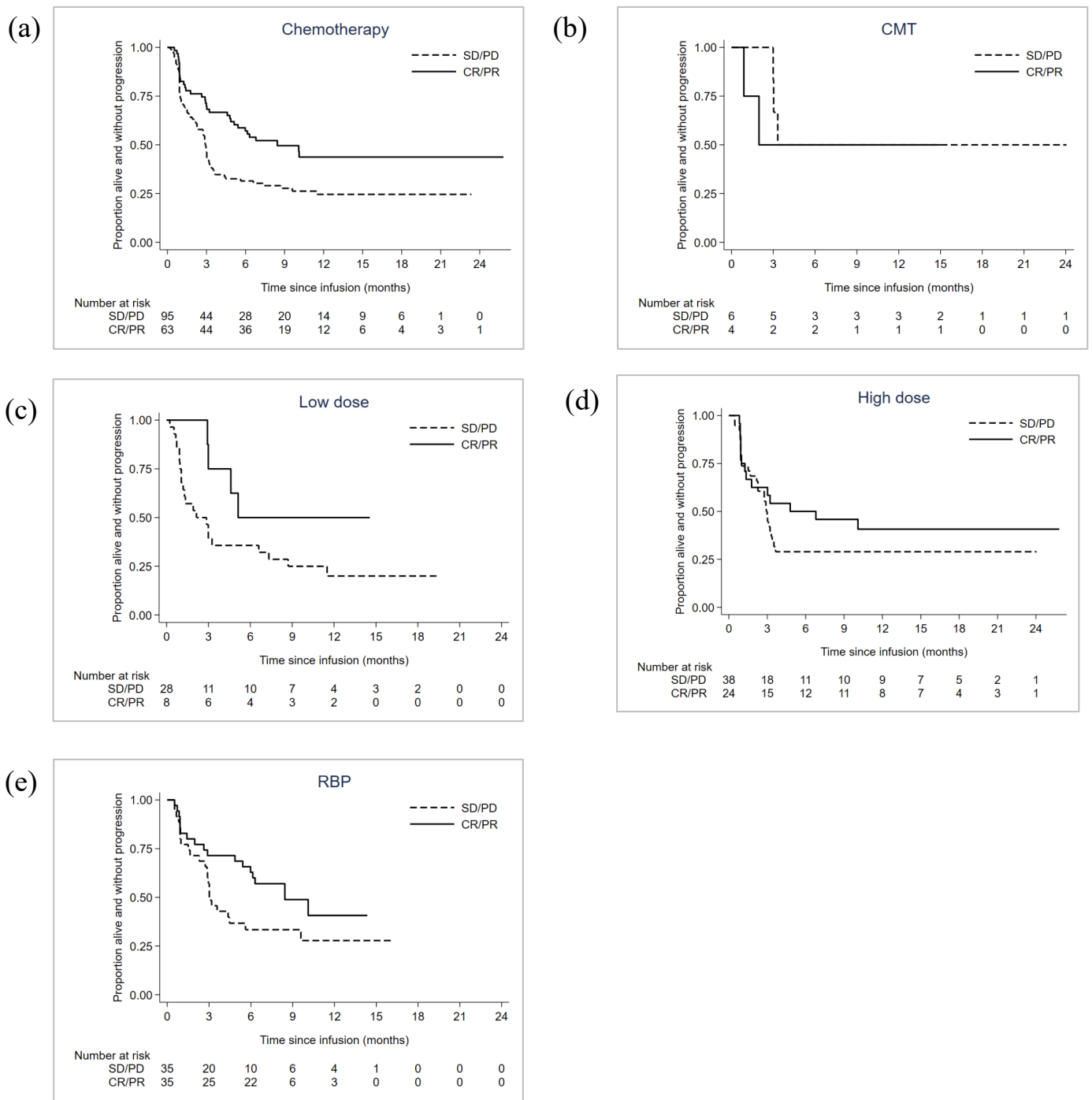
(b)



Sup. Figure 2a: 1-year PFS rates by chemotherapy type: HDT-Gem: 20.3% (7.3 – 37.8); HDT-Ifos: 31.8% (14.2 – 51.1); HDT-Other: 53.3% (12.8 – 38.5); LDT: 24.6 (12.8 – 38.5); RBP: 34.7% (21.4 – 48.3).

Sup. Figure 2b: 1-year OS by chemotherapy type: HDT-Gem: 40.7% (21.4 – 59.2); HDT-Ifos: 52.8% (29.8 – 71.3); HDT-Other: 57.0% (27.7 – 78.2); LDT: 40.9% (26.1 – 55.2); RBP: 56.2% (41.0 – 68.8)

Supplementary Figure 3



Sup. Figure 3a: CT Responder vs non-responder: HR 0.54 (0.35 – 0.81), p=0.003. 1-year rates: Responder: 43.7% (30.0 – 56.7); Non-Responder: 24.6% (16.1 – 34.0)

Sup. Figure 3b: CMT Responder vs non-responder: HR 1.37 (0.23 – 8.23), p=0.73. 1-year rates: Responder: 50.0% (5.8 – 84.5); Non-Responder: 50.0% (11.1 – 80.4)

Sup. Figure 3c: LDT Responder vs non-responder: HR 0.41 (0.14 – 1.19), p=0.10; 1-year rates: Responder: 50.0% (15.2 – 77.5); Non-Responder: 20.0% (7.4 – 37.0)

Sup. Figure 3d: HDT Responder vs non-responder: HR 0.69 (0.36 – 1.32), p=0.26. 1-year rates: Responder: 40.7% (21.1 – 59.5); Non-Responder: 29.0% (15.7 – 43.6)

Sup. Figure 3e: RBP Responder vs non-responder: HR 0.53 (0.31 – 1.07), p=0.083. 1-year rates: Responder: 40.7% (19.1 – 61.4); Non-Responder: 27.8% (13.0 – 44.8). Note: very few patients in follow-up at 1 year (as RBP used mostly in the second year: 6-month rates will be more reliable – can be provided).