Supplementals

Supplementals

S1. Patient characteristics at baseline

	Overall population (N=957)
Age	
Median (range) – yr	63 (18-82)
≥65 yr – no. (%)	412 (43.1)
≥70 yr – no. (%)	241 (25.2)
Male sex – no. (%)	586 (61.2)
ECOG PS - no. (%)	
0-1	772 (80.7)
≥ 2	120 (12.5)
Histology	
DLBCL – no. (%)	687 (71.8)
PMBL – no. (%)	43 (4.5)
HGBL – no. (%)	29 (3.0)
tFL – no. (%)	137 (14.3)
Other* – no. (%)	61 (6.4)
aaIPI - no. (%)	
0	68 (7.1)
1	292 (30.5)
2	446 (46.6)
3	52 (5.4)
Elevated LDH at lymphodepletion – no. (%)	471 (49.2)
Hypogammaglobulinemia < 5 g/L at lymphodepletion – no. (%)	342 (35.7)
Prior treatments	
Number of prior lines – median (range)	2 (1-10)
ASCT – no. (%)	199 (20.8)
Allo-SCT – no. (%)	15 (1.6)
Bridging therapy administered – no. (%)	
Yes	768 (80.3)
CAR-T product	
Axi-cel – no. (%)	598 (62.4)
Tisacel – no. (%)	359 (37.6)

*Other: 30 transformed marginal zone lymphomas, 20 Richter syndromes, 7 grey zone lymphomas, 2 primary central nervous system lymphomas, 2 post-transplantation lymphoproliferative disorders.

The abbreviation ECOG PS denotes Eastern Cooperative Oncology Group performance status; DLBCL: diffuse large B-cell lymphoma; PMBL: primary mediastinal B-cell lymphoma; HGBL: high-grade B-cell lymphoma; tFL: transformed follicular lymphoma; aaIPI: age-adjusted international prognostic index; LDH: lactate dehydrogenase; ASCT: autologous stem cell transplantation; Allo-SCT: allogenic stem cell transplantation; Axi-cel: axicabtagene ciloleucel; Tisacel: tisagenlecleucel.

S2.

A.

No. of Subjects	Event	Censored	Median Survival (95%CL)
957	49.3 % (472)	50.7 % (485)	6 (4.7 ; 8.5)

B.

No. of Subjects	Event	Censored	Median Survival (95%CL)
957	35.1 % (336)	64.9 % (621)	21 (17.6 ; 32.4)
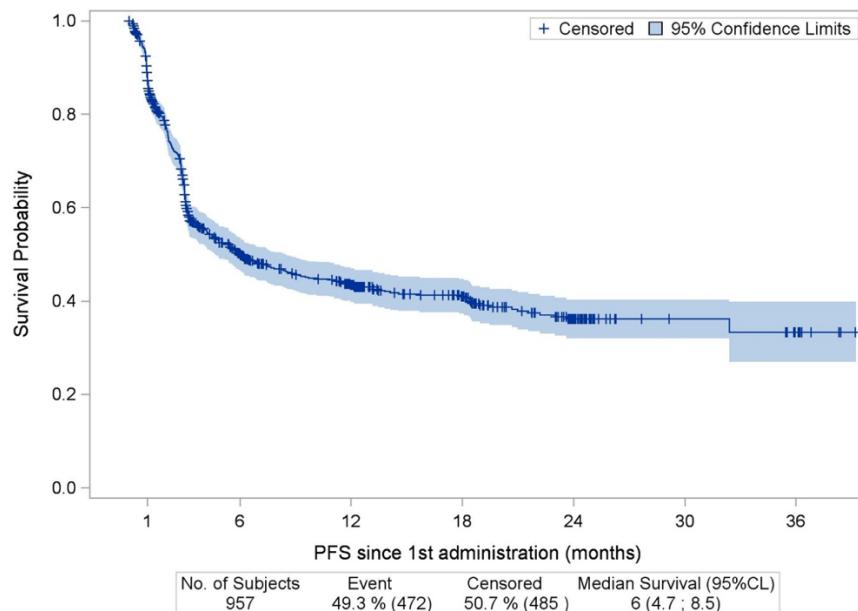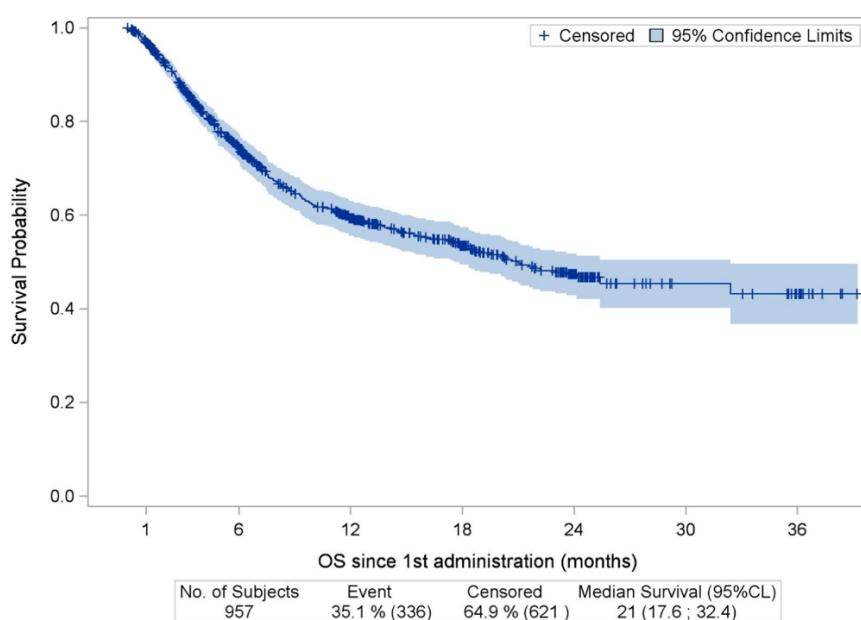
S2: Survival of the entire cohort of patients treated with commercial axi-cel or tisacel from the French DESCAR-T registry

A. PFS from CAR-T infusion (N=957). B. OS from CAR-T infusion (N=957).

The abbreviation PFS denotes progression free survival; OS: overall survival; axi-cel: axicabtagene ciloleucel; tisacel: tisagenlecleucel.

S3. Risk factors for early NRM - univariate analysis

Risk factors for early NRM were identified by comparing the characteristics of early NRM population with patients alive at day 28 post-CAR T-cell infusion.

Patients characteristics

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
Sex							Fisher Exact
Male	4	(44.4%)	546	(61.3%)	550	(61.1%)	P = 0.322
Female	5	(55.6%)	345	(38.7%)	350	(38.9%)	
Age at first infusion							Wilcoxon
N	9		891		900		P = 0.020
Missing	0		0		0		
Mean (SD)	66.89 (14.538)		60.08 (12.632)		60.14 (12.662)		
Median	73.00		63.00		63.00		
Q1; Q3	66.0 ; 75.0		54.0 ; 70.0		54.0 ; 70.0		
Min; Max	30.0 ; 76.0		18.0 ; 82.0		18.0 ; 82.0		
BMI							Wilcoxon
N	9		882		891		P = 0.040
Missing	0		9		9		
Mean (SD)	22.0 (3.50)		29.2 (40.73)		29.1 (40.53)		
Median	22.5		24.4		24.4		
Q1; Q3	19 ; 24		22 ; 28		22 ; 28		
Min; Max	18 ; 27		5 ; 569		5 ; 569		
Pathological diagnosis at registration							
DLBCL	6	(66.7%)	656	(73.6%)	662	(73.6%)	
DLBCL, NOS	6	(66.7%)	636	(71.4%)	642	(71.3%)	
DLBCL post PCNSL	0	(0.0%)	3	(0.3%)	3	(0.3%)	
DLBCL, leg type	0	(0.0%)	5	(0.6%)	5	(0.6%)	
T-cell/histiocyte-rich LBCL	0	(0.0%)	12	(1.3%)	12	(1.3%)	
PMBL	0	(0.0%)	42	(4.7%)	42	(4.7%)	
HGBL	0	(0.0%)	27	(3.0%)	27	(3.0%)	
Transformed FL	1	(11.1%)	134	(15.0%)	135	(15.0%)	
Other	2	(22.2%)	32	(3.6%)	34	(3.8%)	
Transformed MZL	0	(0.0%)	23	(2.6%)	23	(2.6%)	
Transformed Richter LLC	2	(22.2%)	8	(0.9%)	10	(1.1%)	
Transformed Richter Hodgkin	0	(0.0%)	0	(0.0%)	0	(0.0%)	
Other	0	(0.0%)	0	(0.0%)	0	(0.0%)	

* Living patients at D28

Comorbidity

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
Solid tumour							Fisher Exact
No	9	(100.0%)	769	(88.1%)	778	(88.2%)	P = 0.609
Yes	0	(0.0%)	104	(11.9%)	104	(11.8%)	
(-)	0		18		18		
Inflammatory bowel disease							Fisher Exact
No	9	(100.0%)	867	(99.2%)	876	(99.2%)	P = 1.000
Yes	0	(0.0%)	7	(0.8%)	7	(0.8%)	
(-)	0		17		17		
Rheumatologic							Fisher Exact
No	9	(100.0%)	852	(97.5%)	861	(97.5%)	P = 1.000
Yes	0	(0.0%)	22	(2.5%)	22	(2.5%)	
(-)	0		17		17		
Infection							Fisher Exact
No	9	(100.0%)	848	(97.4%)	857	(97.4%)	P = 1.000
Yes	0	(0.0%)	23	(2.6%)	23	(2.6%)	
(-)	0		20		20		
Diabetes							Fisher Exact
No	9	(100.0%)	791	(90.4%)	800	(90.5%)	P = 1.000
Yes	0	(0.0%)	84	(9.6%)	84	(9.5%)	
(-)	0		16		16		
Renal							Fisher Exact
No	8	(88.9%)	856	(97.8%)	864	(97.7%)	P = 0.187
Yes	1	(11.1%)	19	(2.2%)	20	(2.3%)	
(-)	0		16		16		
Hepatic							Fisher Exact
No	9	(100.0%)	862	(98.9%)	871	(98.9%)	P = 1.000
Yes	0	(0.0%)	10	(1.1%)	10	(1.1%)	
(-)	0		19		19		
Arrhythmia							Fisher Exact
No	8	(88.9%)	835	(95.9%)	843	(95.8%)	P = 0.322
Yes	1	(11.1%)	36	(4.1%)	37	(4.2%)	
(-)	0		20		20		
Cardiac							Fisher Exact
No	8	(88.9%)	809	(92.6%)	817	(92.5%)	P = 0.505
Yes	1	(11.1%)	65	(7.4%)	66	(7.5%)	
(-)	0		17		17		
Cerebrovascular disease							Fisher Exact
No	7	(77.8%)	834	(95.5%)	841	(95.4%)	P = 0.062
Yes	2	(22.2%)	39	(4.5%)	41	(4.6%)	
(-)	0		18		18		
Heart valve disease							Fisher Exact
No	9	(100.0%)	862	(99.0%)	871	(99.0%)	P = 1.000
Yes	0	(0.0%)	9	(1.0%)	9	(1.0%)	
(-)	0		20		20		
Pulmonary							Fisher Exact
No	8	(88.9%)	819	(94.1%)	827	(94.1%)	P = 0.424
Yes	1	(11.1%)	41	(4.7%)	42	(4.8%)	
Not Evaluated	0	(0.0%)	10	(1.1%)	10	(1.1%)	
(-)	0		21		21		
Obesity							Fisher Exact
No	9	(100.0%)	838	(96.1%)	847	(96.1%)	P = 1.000
Yes	0	(0.0%)	33	(3.8%)	33	(3.7%)	
Not Evaluated	0	(0.0%)	1	(0.1%)	1	(0.1%)	
(-)	0		19		19		
Peptic ulcer							Fisher Exact
No	9	(100.0%)	864	(99.4%)	873	(99.4%)	P = 1.000
Yes	0	(0.0%)	5	(0.6%)	5	(0.6%)	
(-)	0		22		22		

Prior therapy

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
Primary refractory disease							Fisher Exact P = 1.000
No	5	(55.6%)	481	(54.0%)	486	(54.0%)	
Yes	4	(44.4%)	410	(46.0%)	414	(46.0%)	
Duration between first line end and second line start (months)							Wilcoxon P = 0.941
N	9		832		841		
Missing	0		59		59		
Mean (SD)	11.97 (22.019)		16.21 (35.315)		16.16 (35.194)		
Median	2.33		3.32		3.32		
Q1; Q3	1.1 ; 8.8		1.0 ; 12.8		1.0 ; 12.6		
Min; Max	0.7 ; 69.0		0.0 ; 327.1		0.0 ; 327.1		
Number of prior lines							Wilcoxon P = 0.953
N	9		890		899		
Missing	0		1		1		
Mean (SD)	2.8 (1.09)		2.8 (1.26)		2.8 (1.26)		
Median	2.0		2.0		2.0		
Q1; Q3	2 ; 3		2 ; 3		2 ; 3		
Min; Max	2 ; 5		1 ; 10		1 ; 10		
Prior ASCT							Fisher Exact P = 0.218
No	9	(100.0%)	696	(78.2%)	705	(78.4%)	
Yes	0	(0.0%)	194	(21.8%)	194	(21.6%)	
(-)	0		1		1		
Prior allo-SCT							Fisher Exact P = 1.000
No	9	(100.0%)	876	(98.4%)	885	(98.4%)	
Yes	0	(0.0%)	14	(1.6%)	14	(1.6%)	
(-)	0		1		1		

* Living patients at D28

At time of multidisciplinary

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
ECOG							Cochran-Mantel-Haenszel Row Mean Score P = 0.260
0	2	(22.2%)	349	(39.3%)	351	(39.1%)	
1	4	(44.4%)	409	(46.0%)	413	(46.0%)	
2	1	(11.1%)	70	(7.9%)	71	(7.9%)	
3	0	(0.0%)	12	(1.3%)	12	(1.3%)	
NE	2	(22.2%)	49	(5.5%)	51	(5.7%)	
(-)	0		2		2		
Elevated LDH							Fisher Exact P = 0.176
No	1	(11.1%)	305	(34.6%)	306	(34.3%)	
Yes	8	(88.9%)	577	(65.4%)	585	(65.7%)	
(-)	0		9		9		
aaIPI							Cochran-Mantel-Haenszel Row Mean Score P = 0.487
0	0	(0.0%)	60	(7.4%)	60	(7.4%)	
1	1	(16.7%)	285	(35.2%)	286	(35.1%)	
2	4	(66.7%)	416	(51.4%)	420	(51.5%)	
3	1	(16.7%)	48	(5.9%)	49	(6.0%)	
(-)	3		82		85		
Leucocytes (G/L)							Wilcoxon P = -
N	0		0		0		
Missing	9		891		900		
Mean (SD)	. (.)		. (.)		. (.)		
Median	.		.		.		
Q1; Q3	. ; .		. ; .		. ; .		
Min; Max	. ; .		. ; .		. ; .		
LDH (IU/L)							Wilcoxon P = -
N	0		0		0		
Missing	9		891		900		

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
Mean (SD)	. (.)	. (.)	. (.)	
Median	.	.	.	
Q1; Q3	. ; .	. ; .	. ; .	
Min; Max	. ; .	. ; .	. ; .	

* Living patients at D28

At bridging

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
Response to bridging							Cochran-Mantel-Haenszel Row Mean Score P = 0.217
Complete Response	0	(0.0%)	69	(9.3%)	69	(9.2%)	
Partial Response	0	(0.0%)	174	(23.4%)	174	(23.1%)	
Stable Disease	1	(11.1%)	89	(11.9%)	90	(11.9%)	
Progressive Disease	8	(88.9%)	381	(51.1%)	389	(51.6%)	
Not Evaluated	0	(0.0%)	32	(4.3%)	32	(4.2%)	
(-)	0		146		146		

* Living patients at D28

At leukapherisis

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
Hemoglobin (g/dL)				Wilcoxon P = 0.199
N	8	863	871	
Missing	1	28	29	
Mean (SD)	10.54 (2.209)	11.38 (5.324)	11.37 (5.304)	
Median	10.05	11.00	11.00	
Q1; Q3	9.8 ; 10.8	9.9 ; 12.2	9.9 ; 12.2	
Min; Max	7.6 ; 15.4	0.7 ; 112.0	0.7 ; 112.0	
Leukocytes (WBC) (G/L)				Wilcoxon P = 0.422
N	8	863	871	
Missing	1	28	29	
Mean (SD)	5.874 (2.1229)	6.408 (17.9649)	6.403 (17.8832)	
Median	6.195	5.000	5.000	
Q1; Q3	4.50 ; 7.60	3.50 ; 7.00	3.56 ; 7.00	
Min; Max	2.00 ; 8.40	0.40 ; 519.00	0.40 ; 519.00	
Neutrophils (ANC/AGC) (G/L)				Wilcoxon P = 0.663
N	8	849	857	
Missing	1	42	43	
Mean (SD)	3.703 (1.9064)	4.236 (6.0329)	4.231 (6.0074)	
Median	4.250	3.200	3.200	
Q1; Q3	2.50 ; 4.86	2.10 ; 5.00	2.10 ; 5.00	
Min; Max	0.20 ; 6.20	0.00 ; 121.00	0.00 ; 121.00	
Lymphocytes (ALC) (G/L)				Wilcoxon P = 0.797
N	8	844	852	
Missing	1	47	48	
Mean (SD)	0.854 (0.6354)	0.895 (0.7801)	0.895 (0.7786)	
Median	0.615	0.700	0.700	
Q1; Q3	0.50 ; 0.95	0.50 ; 1.10	0.50 ; 1.10	
Min; Max	0.40 ; 2.30	0.03 ; 13.40	0.03 ; 13.40	
Lymphocytes B (units/µL)				Wilcoxon P = -
N	0	217	217	
Missing	9	674	683	
Mean (SD)	. (.)	32.268 (176.4196)	32.268 (176.4196)	
Median	.	0.000	0.000	
Q1; Q3	. ; .	0.00 ; 0.00	0.00 ; 0.00	
Min; Max	. ; .	0.00 ; 2063.00	0.00 ; 2063.00	
Platelets (G/L)				Wilcoxon P = 0.652
N	8	858	866	
Missing	1	33	34	
Mean (SD)	165.9 (83.59)	199.6 (135.41)	199.3 (135.03)	
Median	182.0	183.5	183.5	
Q1; Q3	92 ; 239	121 ; 247	121 ; 247	
Min; Max	45 ; 258	2 ; 1576	2 ; 1576	
AST (SGOT) (IU/L)				Wilcoxon P = 0.680
N	7	714	721	
Missing	2	177	179	
Mean (SD)	28.0 (10.65)	27.9 (18.89)	27.9 (18.83)	
Median	30.0	24.0	24.0	
Q1; Q3	17 ; 37	19 ; 31	19 ; 31	
Min; Max	17 ; 44	5 ; 277	5 ; 277	
ALT (SGPT) (IU/L)				Wilcoxon P = 0.350
N	7	717	724	
Missing	2	174	176	
Mean (SD)	20.4 (11.86)	26.9 (22.06)	26.8 (21.99)	
Median	18.0	22.0	22.0	
Q1; Q3	10 ; 33	15 ; 31	15 ; 31	
Min; Max	9 ; 39	4 ; 316	4 ; 316	

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
LDH (IU/L)				Wilcoxon P = 0.513
N	4	637	641	
Missing	5	254	259	
Mean (SD)	373.3 (168.25)	364.5 (266.18)	364.5 (265.60)	
Median	423.5	282.0	282.0	
Q1; Q3	257 ; 490	218 ; 412	218 ; 413	
Min; Max	135 ; 511	9 ; 2378	9 ; 2378	
Serum creatinine (µmol/L)				Wilcoxon P = 0.161
N	6	744	750	
Missing	3	147	150	
Mean (SD)	66.8 (30.29)	76.4 (29.85)	76.3 (29.85)	
Median	58.0	71.0	71.0	
Q1; Q3	52 ; 69	60 ; 86	60 ; 86	
Min; Max	39 ; 125	9 ; 377	9 ; 377	
Creatinine clearance (mL/min)				Wilcoxon P = 0.553
N	6	731	737	
Missing	3	160	163	
Mean (SD)	91.2 (22.03)	88.3 (24.54)	88.4 (24.50)	
Median	96.5	90.0	90.0	
Q1; Q3	83 ; 107	74 ; 100	74 ; 100	
Min; Max	52 ; 112	5 ; 210	5 ; 210	
C Reactive protein (mg/L)				Wilcoxon P = 0.328
N	6	611	617	
Missing	3	280	283	
Mean (SD)	30.3 (26.48)	27.2 (43.38)	27.3 (43.23)	
Median	29.0	8.0	8.0	
Q1; Q3	4 ; 46	3 ; 32	3 ; 32	
Min; Max	3 ; 71	0 ; 289	0 ; 289	
Ferritine (µg/L)				Wilcoxon P = 0.200
N	1	314	315	
Missing	8	577	585	
Mean (SD)	1804.0 (.)	1079.9 (2903.39)	1082.2 (2899.05)	
Median	1804.0	559.5	560.0	
Q1; Q3	1804 ; 1804	238 ; 1106	238 ; 1114	
Min; Max	1804 ; 1804	14 ; 44934	14 ; 44934	
Fibrinogen (g/L)				Wilcoxon P = 0.100
N	3	442	445	
Missing	6	449	455	
Mean (SD)	3.233 (1.1930)	4.620 (1.5771)	4.611 (1.5779)	
Median	2.700	4.300	4.300	
Q1; Q3	2.40 ; 4.60	3.50 ; 5.50	3.50 ; 5.40	
Min; Max	2.40 ; 4.60	0.83 ; 10.00	0.83 ; 10.00	
Gamma-GT (IU/L)				Wilcoxon P = 0.385
N	7	670	677	
Missing	2	221	223	
Mean (SD)	74.7 (125.80)	67.1 (85.77)	67.2 (86.15)	
Median	31.0	38.0	38.0	
Q1; Q3	21 ; 42	24 ; 74	24 ; 74	
Min; Max	9 ; 359	4 ; 912	4 ; 912	
Total bilirubin (µmol/L)				Wilcoxon P = 0.183
N	7	665	672	
Missing	2	226	228	
Mean (SD)	8.6 (4.79)	7.0 (6.48)	7.0 (6.46)	
Median	10.0	6.0	6.0	
Q1; Q3	5 ; 12	4 ; 8	4 ; 8	
Min; Max	1 ; 15	0 ; 123	0 ; 123	

At lymphodepletion

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
Bulk > 5cm							Fisher Exact P = 0.443
No	5	(62.5%)	649	(73.6%)	654	(73.5%)	
Yes	3	(37.5%)	233	(26.4%)	236	(26.5%)	
(-)	1		9		10		
ECOG							Cochran-Mantel-Haenszel Row Mean Score P = 0.002
Normal activities	2	(22.2%)	310	(35.4%)	312	(35.3%)	
Ambulatory able to carry out work	2	(22.2%)	400	(45.7%)	402	(45.4%)	
Ambulatory unable to carry out work	4	(44.4%)	69	(7.9%)	73	(8.2%)	
Confined to chair more than 50% of waking hours	1	(11.1%)	26	(3.0%)	27	(3.1%)	
Totally confined to chair	0	(0.0%)	6	(0.7%)	6	(0.7%)	
Not Evaluated	0	(0.0%)	65	(7.4%)	65	(7.3%)	
(-)	0		15		15		
ECOG **							Fisher Exact P = 0.003
0-1	4	(44.4%)	732	(87.5%)	736	(87.0%)	
>=2	5	(55.6%)	105	(12.5%)	110	(13.0%)	
(-)	0		54		54		
Duration between last drug administration and lymphodepletion							Wilcoxon P = 0.191
N	9		817		826		
Missing	0		74		74		
Mean (SD)	22.0 (15.41)		48.5 (107.76)		48.2 (107.22)		
Median	24.0		27.0		27.0		
Q1; Q3	13 ; 26		18 ; 37		18 ; 37		
Min; Max	1 ; 52		1 ; 1498		1 ; 1498		
Hypogammaglobulinemia							Fisher Exact P = 0.054
No	0	(0.0%)	350	(51.9%)	350	(51.6%)	
Yes	4	(100.0%)	324	(48.1%)	328	(48.4%)	
(-)	5		217		222		
Hemoglobin (g/dL)							Wilcoxon P = 0.020
N	8		868		876		
Missing	1		23		24		
Mean (SD)	9.100 (1.9049)		11.248 (8.0007)		11.228 (7.9685)		
Median	9.100		10.450		10.400		
Q1; Q3	8.00 ; 9.75		9.40 ; 11.60		9.40 ; 11.60		
Min; Max	6.30 ; 12.80		2.45 ; 98.00		2.45 ; 98.00		
Leukocytes (WBC) (G/L)							Wilcoxon P = 0.142
N	8		866		874		
Missing	1		25		26		
Mean (SD)	23.580 (48.1001)		5.220 (12.5546)		5.388 (13.3336)		
Median	5.800		4.100		4.120		
Q1; Q3	3.57 ; 12.95		3.00 ; 5.71		3.00 ; 5.80		
Min; Max	2.00 ; 142.00		0.75 ; 363.00		0.75 ; 363.00		
Neutrophils (ANC/AGC) (G/L)							Wilcoxon P = 0.204
N	8		809		817		
Missing	1		82		83		
Mean (SD)	5.515 (5.3528)		3.607 (10.8563)		3.625 (10.8160)		
Median	4.210		2.700		2.700		
Q1; Q3	1.95 ; 6.80		1.70 ; 4.00		1.70 ; 4.08		
Min; Max	0.80 ; 17.40		0.00 ; 303.00		0.00 ; 303.00		
Lymphocytes (ALC) (G/L)							Wilcoxon P = 0.193
N	8		790		798		
Missing	1		101		102		
Mean (SD)	17.415 (47.1094)		0.763 (1.5785)		0.930 (4.9713)		
Median	0.860		0.600		0.600		
Q1; Q3	0.45 ; 1.30		0.30 ; 0.90		0.30 ; 0.90		
Min; Max	0.10 ; 134.00		0.00 ; 38.00		0.00 ; 134.00		

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
Lymphocytes B (units/μL)				Wilcoxon P = -
N	0	210	210	
Missing	9	681	690	
Mean (SD)	. (.)	3.749 (49.5653)	3.749 (49.5653)	
Median	.	0.000	0.000	
Q1; Q3	. ; .	0.00 ; 0.00	0.00 ; 0.00	
Min; Max	. ; .	0.00 ; 717.00	0.00 ; 717.00	
Platelets (G/L)				Wilcoxon P = 0.639
N	8	867	875	
Missing	1	24	25	
Mean (SD)	170.8 (105.23)	191.4 (99.00)	191.2 (99.01)	
Median	161.0	181.0	181.0	
Q1; Q3	99 ; 232	125 ; 240	125 ; 240	
Min; Max	32 ; 352	10 ; 678	10 ; 678	
Platelets > 50GL **				Fisher Exact P = 0.081
No	4 (57.1%)	211 (25.9%)	215 (26.2%)	
Yes	3 (42.9%)	603 (74.1%)	606 (73.8%)	
(-)	2	77	79	
AST (SGOT) (IU/L)				Wilcoxon P = 0.012
N	5	836	841	
Missing	4	55	59	
Mean (SD)	196.0 (264.29)	27.1 (26.90)	28.1 (34.94)	
Median	68.0	22.0	22.0	
Q1; Q3	35 ; 210	17 ; 29	17 ; 29	
Min; Max	18 ; 649	3 ; 451	3 ; 649	
ALT (SGPT) (IU/L)				Wilcoxon P = 0.776
N	5	840	845	
Missing	4	51	55	
Mean (SD)	71.6 (124.45)	27.3 (32.54)	27.5 (33.73)	
Median	18.0	20.0	20.0	
Q1; Q3	13 ; 24	14 ; 29	14 ; 29	
Min; Max	9 ; 294	0 ; 419	0 ; 419	
LDH (IU/L)				Wilcoxon P = 0.019
N	7	784	791	
Missing	2	107	109	
Mean (SD)	1252.0 (2135.98)	371.9 (1120.08)	379.7 (1133.54)	
Median	408.0	250.0	250.0	
Q1; Q3	242 ; 930	194 ; 361	195 ; 364	
Min; Max	238 ; 6066	46 ; 30600	46 ; 30600	
LDH (IU/L) **				Fisher Exact P = 0.116
Normal	1 (11.1%)	375 (44.2%)	376 (43.8%)	
> Upper limit	8 (88.9%)	440 (51.8%)	448 (52.2%)	
Not done	0 (0.0%)	34 (4.0%)	34 (4.0%)	
(-)	0	42	42	
Serum creatinine (μmol/L)				Wilcoxon P = 0.361
N	8	856	864	
Missing	1	35	36	
Mean (SD)	67.9 (26.04)	75.1 (31.51)	75.1 (31.46)	
Median	59.0	70.0	70.0	
Q1; Q3	48 ; 90	57 ; 84	57 ; 84	
Min; Max	40 ; 109	26 ; 516	26 ; 516	
Creatinine clearance (mL/min)				Wilcoxon P = 0.452
N	7	827	834	
Missing	2	64	66	
Mean (SD)	95.6 (27.17)	89.1 (24.57)	89.2 (24.58)	
Median	92.0	90.0	90.0	
Q1; Q3	64 ; 124	76 ; 100	76 ; 100	
Min; Max	61 ; 131	10 ; 225	10 ; 225	

	NRM < D28	Comparative group*	Total	Test: Probability
	N=9	N=891	N=900	
C Reactive protein (mg/L)				Wilcoxon
N	7	780	787	P = 0.116
Missing	2	111	113	
Mean (SD)	47.6 (56.68)	23.5 (40.04)	23.7 (40.23)	
Median	29.0	7.0	7.0	
Q1; Q3	5 ; 114	3 ; 26	3 ; 27	
Min; Max	4 ; 142	0 ; 327	0 ; 327	
C Reactive protein (mg/L) **				Fisher Exact
<= 30 mg/L	4 (50.0%)	666 (75.9%)	670 (75.6%)	P = 0.061
> 30 mg/L	3 (37.5%)	191 (21.8%)	194 (21.9%)	
Not done	1 (12.5%)	21 (2.4%)	22 (2.5%)	
(-)	1	13	14	
Ferritine (µg/L)				Wilcoxon
N	5	628	633	P = 0.021
Missing	4	263	267	
Mean (SD)	7732.0 (9697.22)	883.3 (1553.11)	937.4 (1832.05)	
Median	1837.0	479.5	481.0	
Q1; Q3	986 ; 13342	201 ; 937	204 ; 952	
Min; Max	300 ; 22195	5 ; 16403	5 ; 22195	
Ferritine (µg/L) **				Fisher Exact
Normal	1 (12.5%)	227 (27.0%)	228 (26.8%)	P = 0.068
> Upper limit	4 (50.0%)	529 (62.8%)	533 (62.7%)	
Not done	3 (37.5%)	86 (10.2%)	89 (10.5%)	
(-)	1	49	50	
Fibrinogen (g/L)				Wilcoxon
N	6	528	534	P = 0.166
Missing	3	363	366	
Mean (SD)	3.500 (1.8210)	4.182 (1.3558)	4.174 (1.3616)	
Median	3.300	4.000	3.950	
Q1; Q3	2.10 ; 3.80	3.20 ; 5.00	3.20 ; 5.00	
Min; Max	1.70 ; 6.80	0.80 ; 10.00	0.80 ; 10.00	
Gamma-GT (IU/L)				Wilcoxon
N	5	782	787	P = 0.111
Missing	4	109	113	
Mean (SD)	91.4 (68.78)	64.9 (92.65)	65.0 (92.51)	
Median	59.0	36.0	36.0	
Q1; Q3	35 ; 142	22 ; 67	23 ; 67	
Min; Max	35 ; 186	3 ; 983	3 ; 983	
Total bilirubin (µmol/L)				Wilcoxon
N	5	821	826	P = 0.035
Missing	4	70	74	
Mean (SD)	12.6 (7.83)	7.4 (16.32)	7.5 (16.28)	
Median	10.0	6.0	6.0	
Q1; Q3	7 ; 17	4 ; 8	4 ; 8	
Min; Max	5 ; 24	0 ; 446	0 ; 446	
CAR-HEMATOTOX				Fisher Exact
Low	2 (22.2%)	522 (58.7%)	524 (58.3%)	P = 0.039
High	7 (77.8%)	368 (41.3%)	375 (41.7%)	
(-)	0	1	1	
EASIX score				Wilcoxon
N	7	773	780	P = 0.141
Missing	2	118	120	
Mean (SD)	135.6 (277.32)	70.1 (1408.75)	70.7 (1402.63)	
Median	19.6	10.9	10.9	
Q1; Q3	6 ; 118	7 ; 19	6 ; 19	
Min; Max	4 ; 758	1 ; 39168	1 ; 39168	

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
Simplified EASIX score				Wilcoxon P = 0.107
N	7	782	789	
Missing	2	109	111	
Mean (SD)	31.7 (70.04)	6.7 (109.58)	6.9 (109.29)	
Median	2.2	1.5	1.5	
Q1; Q3	1 ; 23	1 ; 3	1 ; 3	
Min; Max	1 ; 190	0 ; 3060	0 ; 3060	
Modified EASIX score				Wilcoxon P = 0.202
N	6	715	721	
Missing	3	176	179	
Mean (SD)	145.5 (248.11)	14.4 (149.62)	15.5 (150.89)	
Median	3.3	1.2	1.2	
Q1; Q3	1 ; 259	0 ; 5	0 ; 5	
Min; Max	0 ; 607	0 ; 3909	0 ; 3909	
EASIX-F score				Cochran-Mantel-Haenszel Row Mean Score P = 0.495
High risk	2 (40.0%)	147 (26.4%)	149 (26.6%)	
Low risk	3 (60.0%)	409 (73.6%)	412 (73.4%)	
(-)	4	335	339	
EASIX-FC score				Cochran-Mantel-Haenszel Row Mean Score P = -
Low risk	3 (100.0%)	335 (100.0%)	338 (100.0%)	
(-)	6	556	562	

At infusion

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
CAR-T product							Fisher Exact P = 0.313
Tisagenlecleucel-KYMRIAH	5	(55.6%)	337	(37.9%)	342	(38.0%)	
Axicabtagene ciloleucel-YESCARTA	4	(44.4%)	553	(62.1%)	557	(62.0%)	
(-)	0		1		1		
ECOG							Cochran-Mantel-Haenszel Row Mean Score P = 0.441
Normal activities	3	(33.3%)	262	(30.6%)	265	(30.6%)	
Ambulatory able to carry out work	2	(22.2%)	372	(43.4%)	374	(43.2%)	
Ambulatory unable to carry out work	2	(22.2%)	82	(9.6%)	84	(9.7%)	
Confined to chair more than 50% of waking hours	1	(11.1%)	23	(2.7%)	24	(2.8%)	
Totally confined to chair	0	(0.0%)	8	(0.9%)	8	(0.9%)	
Not Evaluated	1	(11.1%)	110	(12.8%)	111	(12.8%)	
(-)	0		34		34		
Hemoglobin (g/dL)							Wilcoxon P = 0.059
N	9		881		890		
Missing	0		10		10		
Mean (SD)	8.98 (1.039)		10.54 (7.360)		10.52 (7.325)		
Median	8.90		9.70		9.70		
Q1; Q3	8.2 ; 9.4		8.8 ; 10.9		8.7 ; 10.9		
Min; Max	7.8 ; 11.0		2.6 ; 100.0		2.6 ; 100.0		
Leukocytes (WBC) (G/L)							Wilcoxon P = 0.470
N	9		880		889		
Missing	0		11		11		
Mean (SD)	1.851 (1.6869)		2.308 (4.4095)		2.303 (4.3903)		
Median	1.500		1.805		1.800		
Q1; Q3	0.24 ; 2.90		1.01 ; 2.90		1.00 ; 2.90		
Min; Max	0.01 ; 4.50		0.00 ; 124.00		0.00 ; 124.00		
Neutrophils (ANC/AGC) (G/L)							Wilcoxon P = 0.710
N	8		824		832		
Missing	1		67		68		
Mean (SD)	2.491 (2.6288)		1.925 (2.0926)		1.930 (2.0972)		
Median	1.600		1.505		1.505		
Q1; Q3	0.62 ; 3.80		0.89 ; 2.60		0.89 ; 2.60		
Min; Max	0.00 ; 7.90		0.00 ; 41.40		0.00 ; 41.40		
Lymphocytes (ALC) (G/L)							Wilcoxon P = 0.055
N	8		804		812		
Missing	1		87		88		
Mean (SD)	0.7800 (1.09899)		0.2294 (1.64995)		0.2348 (1.64586)		
Median	0.2000		0.0200		0.0200		
Q1; Q3	0.020 ; 1.450		0.000 ; 0.100		0.000 ; 0.100		
Min; Max	0.000 ; 2.900		0.000 ; 32.400		0.000 ; 32.400		
Lymphocytes B (units/µL)							Wilcoxon P = -
N	0		270		270		
Missing	9		621		630		
Mean (SD)	. (.)		0.024 (0.2113)		0.024 (0.2113)		
Median	.		0.000		0.000		
Q1; Q3	. ; .		0.00 ; 0.00		0.00 ; 0.00		
Min; Max	. ; .		0.00 ; 3.00		0.00 ; 3.00		

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
Platelets (G/L)				Wilcoxon P = 0.035
N	9	881	890	
Missing	0	10	10	
Mean (SD)	94.8 (67.29)	157.0 (85.64)	156.3 (85.67)	
Median	90.0	148.0	147.0	
Q1; Q3	36 ; 154	99 ; 202	98 ; 201	
Min; Max	7 ; 173	0 ; 668	0 ; 668	
Hemoglobin (g/dL)				Wilcoxon P = 0.059
N	9	881	890	
Missing	0	10	10	
Mean (SD)	8.98 (1.039)	10.54 (7.360)	10.52 (7.325)	
Median	8.90	9.70	9.70	
Q1; Q3	8.2 ; 9.4	8.8 ; 10.9	8.7 ; 10.9	
Min; Max	7.8 ; 11.0	2.6 ; 100.0	2.6 ; 100.0	
Leukocytes (WBC) (G/L)				Wilcoxon P = 0.470
N	9	880	889	
Missing	0	11	11	
Mean (SD)	1.851 (1.6869)	2.308 (4.4095)	2.303 (4.3903)	
Median	1.500	1.805	1.800	
Q1; Q3	0.24 ; 2.90	1.01 ; 2.90	1.00 ; 2.90	
Min; Max	0.01 ; 4.50	0.00 ; 124.00	0.00 ; 124.00	
Neutrophils (ANC/AGC) (G/L)				Wilcoxon P = 0.710
N	8	824	832	
Missing	1	67	68	
Mean (SD)	2.491 (2.6288)	1.925 (2.0926)	1.930 (2.0972)	
Median	1.600	1.505	1.505	
Q1; Q3	0.62 ; 3.80	0.89 ; 2.60	0.89 ; 2.60	
Min; Max	0.00 ; 7.90	0.00 ; 41.40	0.00 ; 41.40	
Lymphocytes (ALC) (G/L)				Wilcoxon P = 0.055
N	8	804	812	
Missing	1	87	88	
Mean (SD)	0.7800 (1.09899)	0.2294 (1.64995)	0.2348 (1.64586)	
Median	0.2000	0.0200	0.0200	
Q1; Q3	0.020 ; 1.450	0.000 ; 0.100	0.000 ; 0.100	
Min; Max	0.000 ; 2.900	0.000 ; 32.400	0.000 ; 32.400	
Lymphocytes B (units/µL)				Wilcoxon P = -
N	0	270	270	
Missing	9	621	630	
Mean (SD)	. (.)	0.024 (0.2113)	0.024 (0.2113)	
Median	.	0.000	0.000	
Q1; Q3	. ; .	0.00 ; 0.00	0.00 ; 0.00	
Min; Max	. ; .	0.00 ; 3.00	0.00 ; 3.00	
Platelets (G/L)				Wilcoxon P = 0.035
N	9	881	890	
Missing	0	10	10	
Mean (SD)	94.8 (67.29)	157.0 (85.64)	156.3 (85.67)	
Median	90.0	148.0	147.0	
Q1; Q3	36 ; 154	99 ; 202	98 ; 201	
Min; Max	7 ; 173	0 ; 668	0 ; 668	
AST (SGOT) (IU/L)				Wilcoxon P = 0.056
N	9	877	886	
Missing	0	14	14	
Mean (SD)	45.8 (34.39)	24.8 (16.07)	25.0 (16.46)	
Median	39.0	21.0	21.0	
Q1; Q3	24 ; 65	16 ; 28	16 ; 28	
Min; Max	8 ; 102	5 ; 205	5 ; 205	

	NRM < D28 N=9	Comparative group* N=891	Total N=900	Test: Probability
ALT (SGPT) (IU/L)				Wilcoxon P = 0.690
N	9	877	886	
Missing	0	14	14	
Mean (SD)	39.8 (53.27)	23.2 (24.63)	23.4 (25.08)	
Median	14.0	17.0	17.0	
Q1; Q3	13 ; 25	12 ; 25	12 ; 25	
Min; Max	5 ; 146	0 ; 302	0 ; 302	
LDH (IU/L)				Wilcoxon P = 0.021
N	9	841	850	
Missing	0	50	50	
Mean (SD)	608.2 (748.56)	329.6 (797.83)	332.6 (797.42)	
Median	354.0	221.0	221.0	
Q1; Q3	265 ; 527	178 ; 312	178 ; 313	
Min; Max	164 ; 2560	60 ; 21801	60 ; 21801	
Serum creatinine (µmol/L)				Wilcoxon P = 0.572
N	9	882	891	
Missing	0	9	9	
Mean (SD)	62.3 (23.05)	68.1 (36.66)	68.0 (36.54)	
Median	55.0	62.0	62.0	
Q1; Q3	53 ; 87	51 ; 76	51 ; 76	
Min; Max	30 ; 97	24 ; 765	24 ; 765	
Creatinine clearance (mL/min)				Wilcoxon P = 0.991
N	8	856	864	
Missing	1	35	36	
Mean (SD)	94.1 (23.39)	98.1 (35.21)	98.1 (35.11)	
Median	97.0	94.0	94.0	
Q1; Q3	80 ; 106	86 ; 108	86 ; 108	
Min; Max	56 ; 132	6 ; 753	6 ; 753	
C Reactive protein (mg/L)				Wilcoxon P = 0.087
N	7	866	873	
Missing	2	25	27	
Mean (SD)	41.51 (25.324)	32.66 (51.266)	32.73 (51.109)	
Median	49.00	12.00	12.00	
Q1; Q3	17.0 ; 52.0	5.0 ; 37.0	5.0 ; 38.0	
Min; Max	3.6 ; 81.0	0.0 ; 391.0	0.0 ; 391.0	
Ferritine (µg/L)				Wilcoxon P = 0.002
N	6	828	834	
Missing	3	63	66	
Mean (SD)	77504.66667 (159025.757725)	1326.66159 (2559.042775)	1874.70480 (14134.908668)	
Median	6686.00000	687.50000	689.00000	
Q1; Q3	2397.0000 ; 48614.0000	327.0000 ; 1308.5000	329.0000 ; 1327.0000	
Min; Max	645.0000 ; 400000.0000	1.7998 ; 37191.0000	1.7998 ; 400000.0000	
Fibrinogen (g/L)				Wilcoxon P = 0.144
N	7	722	729	
Missing	2	169	171	
Mean (SD)	3.433 (2.2358)	4.239 (1.4702)	4.232 (1.4792)	
Median	2.600	4.000	4.000	
Q1; Q3	1.80 ; 6.43	3.30 ; 5.00	3.30 ; 5.00	
Min; Max	0.80 ; 6.50	0.50 ; 10.00	0.50 ; 10.00	
Gamma-GT (IU/L)				Wilcoxon P = 0.173
N	9	827	836	
Missing	0	64	64	
Mean (SD)	125.6 (169.08)	68.9 (88.68)	69.5 (89.93)	
Median	57.0	39.0	39.0	
Q1; Q3	33 ; 73	24 ; 77	24 ; 77	
Min; Max	19 ; 527	5 ; 887	5 ; 887	

* Living patients at D28

	NRM < D28 N=9		Comparative group* N=891		Total N=900		Test: Probability
Total bilirubin (µmol/L)							Wilcoxon P = 0.001
N	9		873		882		
Missing	0		18		18		
Mean (SD)	16.11 (7.236)		9.12 (7.709)		9.19 (7.732)		
Median	15.00		8.00		8.00		
Q1; Q3	11.0 ; 23.0		6.0 ; 11.0		6.0 ; 11.0		
Min; Max	5.0 ; 26.0		0.0 ; 153.0		0.0 ; 153.0		
EASIX score							Wilcoxon P = 0.005
N	9		837		846		
Missing	0		54		54		
Mean (SD)	70.2 (64.57)		38.6 (498.27)		38.9 (495.66)		
Median	45.4		10.4		10.4		
Q1; Q3	25 ; 129		7 ; 19		7 ; 19		
Min; Max	6 ; 170		1 ; 14352		1 ; 14352		
Simplified EASIX score							Wilcoxon P = 0.002
N	9		838		847		
Missing	0		53		53		
Mean (SD)	13.7 (17.16)		4.4 (32.82)		4.5 (32.70)		
Median	4.7		1.6		1.6		
Q1; Q3	4 ; 15		1 ; 3		1 ; 3		
Min; Max	1 ; 53		0 ; 908		0 ; 908		
Modified EASIX score							Wilcoxon P = 0.018
N	7		826		833		
Missing	2		65		67		
Mean (SD)	84.6 (153.17)		51.3 (740.18)		51.6 (737.18)		
Median	24.3		2.1		2.1		
Q1; Q3	2 ; 74		1 ; 8		1 ; 9		
Min; Max	1 ; 427		0 ; 19803		0 ; 19803		
EASIX-F score							Cochran-Mantel-Haenszel Row Mean Score P = 0.188
High risk	3	(60.0%)	254	(32.3%)	257	(32.5%)	
Low risk	2	(40.0%)	532	(67.7%)	534	(67.5%)	
(-)	4		105		109		
EASIX-FC score							Cochran-Mantel-Haenszel Row Mean Score P = -
Low risk	2	(100.0%)	400	(100.0%)	402	(100.0%)	
(-)	7		491		498		

* Living patients at D28

S4. Risk factors for overall NRM - univariate analysis

Risk factors for overall NRM were identified by comparing the characteristics of overall NRM population with patients alive at 1 year following CAR T-cell infusion.

Patients characteristics

	NRM N=48		Comparative group* N=191		Total N=239		Test: Probability
Sex							Fisher Exact P = 0.332
Male	29	(60.4%)	98	(51.3%)	127	(53.1%)	
Female	19	(39.6%)	93	(48.7%)	112	(46.9%)	
Age at first infusion							Wilcoxon P = 0.003
N	48		191		239		
Missing	0		0		0		
Mean (SD)	65.85 (9.906)		59.79 (13.111)		61.00 (12.749)		
Median	67.00		63.00		64.00		
Q1; Q3	61.5 ; 73.5		52.0 ; 70.0		54.0 ; 71.0		
Min; Max	30.0 ; 79.0		23.0 ; 80.0		23.0 ; 80.0		
BMI							Wilcoxon P = 0.108
N	47		189		236		
Missing	1		2		3		
Mean (SD)	26.5 (5.92)		29.3 (44.75)		28.7 (40.13)		
Median	26.0		24.2		24.3		
Q1; Q3	22 ; 29		22 ; 27		22 ; 28		
Min; Max	18 ; 47		15 ; 569		15 ; 569		
Pathological diagnosis at registration							
DLBCL	30	(62.5%)	139	(72.8%)	169	(70.7%)	
DLBCL, NOS	30	(62.5%)	134	(70.2%)	164	(68.6%)	
DLBCL post PCNSL	0	(0.0%)	1	(0.5%)	1	(0.4%)	
DLBCL, leg type	0	(0.0%)	0	(0.0%)	0	(0.0%)	
T-cell/histiocyte-rich LBCL	0	(0.0%)	4	(2.1%)	4	(1.7%)	
PMBL	2	(4.2%)	11	(5.8%)	13	(5.4%)	
HGBL	0	(0.0%)	2	(1.0%)	2	(0.8%)	
Transformed FL	12	(25.0%)	37	(19.4%)	49	(20.5%)	
Other	4	(8.3%)	2	(1.0%)	6	(2.5%)	
Transformed MZL	2	(4.2%)	1	(0.5%)	3	(1.3%)	
Transformed Richter LLC	2	(4.2%)	1	(0.5%)	3	(1.3%)	
Transformed Richter Hodgkin	0	(0.0%)	0	(0.0%)	0	(0.0%)	
Other	0	(0.0%)	0	(0.0%)	0	(0.0%)	

* Living patients without progression at 1 year

At comorbidity

	NRM N=48		Comparative group* N=191		Total N=239		Test: Probability
Solid tumour							Fisher Exact P = 0.444
No	40	(85.1%)	168	(89.4%)	208	(88.5%)	
Yes	7	(14.9%)	20	(10.6%)	27	(11.5%)	
(-)	1		3		4		
Inflammatory bowel disease							Fisher Exact P = 0.359
No	46	(97.9%)	188	(99.5%)	234	(99.2%)	
Yes	1	(2.1%)	1	(0.5%)	2	(0.8%)	
(-)	1		2		3		
Rheumatologic							Fisher Exact P = 1.000
No	46	(97.9%)	183	(97.3%)	229	(97.4%)	
Yes	1	(2.1%)	5	(2.7%)	6	(2.6%)	
(-)	1		3		4		
Infection							Fisher Exact P = 0.145
No	44	(93.6%)	184	(97.9%)	228	(97.0%)	
Yes	3	(6.4%)	4	(2.1%)	7	(3.0%)	
(-)	1		3		4		
Diabetes							Fisher Exact P = 0.025
No	36	(76.6%)	169	(89.9%)	205	(87.2%)	
Yes	11	(23.4%)	19	(10.1%)	30	(12.8%)	

	NRM N=48		Comparative group* N=191		Total N=239		Test: Probability
(-)	1		3		4		
Renal							Fisher Exact
No	45	(93.8%)	185	(98.4%)	230	(97.5%)	P = 0.100
Yes	3	(6.3%)	3	(1.6%)	6	(2.5%)	
(-)	0		3		3		
Hepatic							Fisher Exact
No	47	(100.0%)	188	(100.0%)	235	(100.0%)	P = -
(-)	1		3		4		
Arrhythmia							Fisher Exact
No	45	(95.7%)	183	(96.8%)	228	(96.6%)	P = 0.661
Yes	2	(4.3%)	6	(3.2%)	8	(3.4%)	
(-)	1		2		3		
Cardiac							Fisher Exact
No	41	(87.2%)	177	(94.1%)	218	(92.8%)	P = 0.117
Yes	6	(12.8%)	11	(5.9%)	17	(7.2%)	
(-)	1		3		4		
Cerebrovascular disease							Fisher Exact
No	42	(89.4%)	178	(94.7%)	220	(93.6%)	P = 0.189
Yes	5	(10.6%)	10	(5.3%)	15	(6.4%)	
(-)	1		3		4		
Heart valve disease							Fisher Exact
No	47	(100.0%)	185	(98.4%)	232	(98.7%)	P = 1.000
Yes	0	(0.0%)	3	(1.6%)	3	(1.3%)	
(-)	1		3		4		
Pulmonary							Fisher Exact
No	42	(89.4%)	181	(96.3%)	223	(94.9%)	P = 0.095
Yes	4	(8.5%)	6	(3.2%)	10	(4.3%)	
Not Evaluated	1	(2.1%)	1	(0.5%)	2	(0.9%)	
(-)	1		3		4		
Obesity							Fisher Exact
No	42	(89.4%)	178	(94.7%)	220	(93.6%)	P = 0.189
Yes	5	(10.6%)	10	(5.3%)	15	(6.4%)	
(-)	1		3		4		
Peptic ulcer							Fisher Exact
No	46	(100.0%)	188	(100.0%)	234	(100.0%)	P = -
(-)	2		3		5		

* Living patients without progression at 1 year

Prior therapy

	NRM N=48		Comparative group* N=191		Total N=239		Test: Probability
Primary refractory disease							Fisher Exact P = 0.746
No	25	(52.1%)	106	(55.5%)	131	(54.8%)	
Yes	23	(47.9%)	85	(44.5%)	108	(45.2%)	
Duration between first line end and second line start (months)							Wilcoxon P = 0.471
N	43		174		217		
Missing	5		17		22		
Mean (SD)	14.80 (26.136)		19.66 (41.486)		18.70 (38.924)		
Median	4.53		4.17		4.24		
Q1; Q3	1.0 ; 12.5		1.3 ; 14.5		1.2 ; 14.0		
Min; Max	0.0 ; 105.9		0.0 ; 270.7		0.0 ; 270.7		
Number of prior lines							Wilcoxon P = 0.530
N	48		191		239		
Missing	0		0		0		
Mean (SD)	3.0 (1.30)		2.9 (1.22)		3.0 (1.23)		
Median	3.0		3.0		3.0		
Q1; Q3	2 ; 4		2 ; 3		2 ; 3		
Min; Max	2 ; 9		2 ; 7		2 ; 9		
Prior ASCT							Fisher Exact P = 0.858
No	34	(70.8%)	138	(72.3%)	172	(72.0%)	
Yes	14	(29.2%)	53	(27.7%)	67	(28.0%)	
Prior allo-SCT							Fisher Exact P = 1.000
No	47	(97.9%)	185	(96.9%)	232	(97.1%)	
Yes	1	(2.1%)	6	(3.1%)	7	(2.9%)	

* Living patients without progression at 1 year

At time of multidisciplinary

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
ECOG				Cochran-Mantel-Haenszel Row Mean Score P = 0.344
0	15 (31.3%)	84 (44.2%)	99 (41.6%)	
1	24 (50.0%)	86 (45.3%)	110 (46.2%)	
2	5 (10.4%)	10 (5.3%)	15 (6.3%)	
3	0 (0.0%)	1 (0.5%)	1 (0.4%)	
NE	4 (8.3%)	9 (4.7%)	13 (5.5%)	
(-)	0	1	1	
Elevated LDH				Fisher Exact P = 0.183
No	14 (29.2%)	77 (40.7%)	91 (38.4%)	
Yes	34 (70.8%)	112 (59.3%)	146 (61.6%)	
(-)	0	2	2	
aaIPI				Cochran-Mantel-Haenszel Row Mean Score P = 0.024
0	2 (4.8%)	24 (13.7%)	26 (12.0%)	
1	13 (31.0%)	74 (42.3%)	87 (40.1%)	
2	23 (54.8%)	73 (41.7%)	96 (44.2%)	
3	4 (9.5%)	4 (2.3%)	8 (3.7%)	
(-)	6	16	22	
Leucocytes (G/L)				Wilcoxon P = -
N	0	0	0	
Missing	48	191	239	
Mean (SD)	. (.)	. (.)	. (.)	
Median	.	.	.	
Q1; Q3	. ; .	. ; .	. ; .	
Min; Max	. ; .	. ; .	. ; .	
LDH (IU/L)				Wilcoxon P = -
N	0	0	0	
Missing	48	191	239	
Mean (SD)	. (.)	. (.)	. (.)	
Median	.	.	.	
Q1; Q3	. ; .	. ; .	. ; .	
Min; Max	. ; .	. ; .	. ; .	

At bridging

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
Response to bridging				Cochran-Mantel-Haenszel Row Mean Score P = 0.569
Complete Response	3 (7.0%)	19 (13.1%)	22 (11.7%)	
Partial Response	9 (20.9%)	39 (26.9%)	48 (25.5%)	
Stable Disease	7 (16.3%)	22 (15.2%)	29 (15.4%)	
Progressive Disease	21 (48.8%)	60 (41.4%)	81 (43.1%)	
Not Evaluated	3 (7.0%)	5 (3.4%)	8 (4.3%)	
(-)	5	46	51	

At leukapherisis

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
Hemoglobin (g/dL)				Wilcoxon P = 0.143
N	47	188	235	
Missing	1	3	4	
Mean (SD)	10.86 (1.695)	11.68 (6.396)	11.51 (5.776)	
Median	10.70	11.20	11.10	
Q1; Q3	10.0 ; 11.9	10.1 ; 12.4	10.0 ; 12.3	
Min; Max	7.5 ; 15.4	6.4 ; 96.0	6.4 ; 96.0	
Leukocytes (WBC) (G/L)				Wilcoxon P = 0.028
N	47	188	235	
Missing	1	3	4	
Mean (SD)	7.577 (10.4160)	5.292 (2.7485)	5.749 (5.3107)	
Median	6.300	4.800	5.000	
Q1; Q3	3.90 ; 7.90	3.50 ; 6.75	3.50 ; 7.00	
Min; Max	1.80 ; 75.15	0.60 ; 23.20	0.60 ; 75.15	
Neutrophils (ANC/AGC) (G/L)				Wilcoxon P = 0.013
N	47	186	233	
Missing	1	5	6	
Mean (SD)	5.311 (7.6331)	3.801 (5.1083)	4.106 (5.7209)	
Median	4.280	3.100	3.270	
Q1; Q3	2.40 ; 5.30	2.00 ; 4.40	2.10 ; 4.80	
Min; Max	0.20 ; 54.10	0.02 ; 66.20	0.02 ; 66.20	
Lymphocytes (ALC) (G/L)				Wilcoxon P = 0.243
N	47	184	231	
Missing	1	7	8	
Mean (SD)	0.848 (0.5916)	0.960 (0.7079)	0.937 (0.6861)	
Median	0.600	0.800	0.700	
Q1; Q3	0.50 ; 1.10	0.50 ; 1.30	0.50 ; 1.30	
Min; Max	0.20 ; 3.01	0.10 ; 5.00	0.10 ; 5.00	
Lymphocytes B (units/µL)				Wilcoxon P = 0.428
N	2	53	55	
Missing	46	138	184	
Mean (SD)	0.000 (0.0000)	30.662 (123.1163)	29.547 (120.9537)	
Median	0.000	0.000	0.000	
Q1; Q3	0.00 ; 0.00	0.00 ; 0.04	0.00 ; 0.04	
Min; Max	0.00 ; 0.00	0.00 ; 651.00	0.00 ; 651.00	
Platelets (G/L)				Wilcoxon P = 0.481
N	46	188	234	
Missing	2	3	5	
Mean (SD)	182.7 (92.72)	204.5 (138.54)	200.2 (130.92)	
Median	167.0	192.0	188.0	
Q1; Q3	123 ; 250	126 ; 240	124 ; 241	
Min; Max	22 ; 529	24 ; 1171	22 ; 1171	
AST (SGOT) (IU/L)				Wilcoxon P = 0.345
N	40	157	197	
Missing	8	34	42	
Mean (SD)	24.7 (12.18)	27.3 (18.15)	26.8 (17.11)	
Median	23.0	24.0	24.0	
Q1; Q3	17 ; 31	18 ; 31	18 ; 31	
Min; Max	10 ; 71	5 ; 189	5 ; 189	
ALT (SGPT) (IU/L)				Wilcoxon P = 0.077
N	40	157	197	
Missing	8	34	42	
Mean (SD)	21.4 (11.07)	26.4 (16.83)	25.4 (15.93)	
Median	18.0	23.0	23.0	
Q1; Q3	14 ; 28	16 ; 31	16 ; 30	
Min; Max	6 ; 61	4 ; 134	4 ; 134	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
LDH (IU/L)				Wilcoxon P = 0.768
N	31	138	169	
Missing	17	53	70	
Mean (SD)	363.8 (286.84)	344.7 (238.25)	348.2 (247.06)	
Median	262.0	268.5	267.0	
Q1; Q3	185 ; 469	214 ; 389	212 ; 404	
Min; Max	115 ; 1590	122 ; 1949	115 ; 1949	
Serum creatinine (μmol/L)				Wilcoxon P = 0.798
N	39	164	203	
Missing	9	27	36	
Mean (SD)	80.4 (32.47)	74.9 (21.19)	76.0 (23.78)	
Median	74.0	71.0	71.0	
Q1; Q3	59 ; 88	62 ; 86	61 ; 87	
Min; Max	39 ; 179	35 ; 171	35 ; 179	
Creatinine clearance (mL/min)				Wilcoxon P = 0.777
N	38	161	199	
Missing	10	30	40	
Mean (SD)	84.3 (25.01)	87.3 (24.91)	86.7 (24.90)	
Median	89.0	90.0	90.0	
Q1; Q3	69 ; 100	73 ; 98	72 ; 98	
Min; Max	33 ; 134	5 ; 189	5 ; 189	
C Reactive protein (mg/L)				Wilcoxon P = <0.001
N	34	132	166	
Missing	14	59	73	
Mean (SD)	35.1 (40.50)	20.6 (41.31)	23.5 (41.45)	
Median	17.5	6.0	6.3	
Q1; Q3	6 ; 61	3 ; 14	3 ; 19	
Min; Max	3 ; 174	0 ; 287	0 ; 287	
Ferritine (μg/L)				Wilcoxon P = 0.557
N	12	78	90	
Missing	36	113	149	
Mean (SD)	594.0 (533.39)	875.1 (993.20)	837.6 (947.55)	
Median	421.0	493.0	475.5	
Q1; Q3	219 ; 758	238 ; 1026	238 ; 1009	
Min; Max	92 ; 1804	16 ; 4366	16 ; 4366	
Fibrinogen (g/L)				Wilcoxon P = 0.043
N	22	89	111	
Missing	26	102	128	
Mean (SD)	5.023 (1.7934)	4.318 (1.2966)	4.458 (1.4278)	
Median	4.700	4.100	4.300	
Q1; Q3	4.10 ; 5.90	3.50 ; 4.70	3.50 ; 5.10	
Min; Max	2.20 ; 10.00	0.83 ; 9.00	0.83 ; 10.00	
Gamma-GT (IU/L)				Wilcoxon P = 0.885
N	37	148	185	
Missing	11	43	54	
Mean (SD)	81.4 (121.66)	65.1 (89.68)	68.4 (96.77)	
Median	35.0	34.5	35.0	
Q1; Q3	22 ; 90	23 ; 67	23 ; 69	
Min; Max	9 ; 657	6 ; 779	6 ; 779	
Total bilirubin (μmol/L)				Wilcoxon P = 0.107
N	39	152	191	
Missing	9	39	48	
Mean (SD)	5.8 (3.04)	7.0 (4.78)	6.8 (4.50)	
Median	5.0	6.0	6.0	
Q1; Q3	3 ; 7	4 ; 8	4 ; 8	
Min; Max	1 ; 15	2 ; 37	1 ; 37	

At lymphodepletion

	NRM N=48		Comparative group* N=191		Total N=239		Test: Probability
Bulk > 5cm							Fisher Exact P = 0.051
No	31	(66.0%)	153	(80.1%)	184	(77.3%)	
Yes	16	(34.0%)	38	(19.9%)	54	(22.7%)	
(-)	1		0		1		
ECOG							Cochran-Mantel-Haenszel Row Mean Score P = <0.001
Normal activities	10	(21.3%)	94	(49.5%)	104	(43.9%)	
Ambulatory able to carry out work	23	(48.9%)	76	(40.0%)	99	(41.8%)	
Ambulatory unable to carry out work	8	(17.0%)	5	(2.6%)	13	(5.5%)	
Confined to chair more than 50% of waking hours	1	(2.1%)	3	(1.6%)	4	(1.7%)	
Totally confined to chair	0	(0.0%)	1	(0.5%)	1	(0.4%)	
Not Evaluated	5	(10.6%)	11	(5.8%)	16	(6.8%)	
(-)	1		1		2		
ECOG **							Fisher Exact P = <0.001
0-1	34	(77.3%)	176	(95.1%)	210	(91.7%)	
>=2	10	(22.7%)	9	(4.9%)	19	(8.3%)	
(-)	4		6		10		
Duration between last drug administration and lymphodepletion							Wilcoxon P = 0.183
N		39		175		214	
Missing		9		16		25	
Mean (SD)		34.0 (31.40)		63.2 (141.93)		57.9 (129.46)	
Median		25.0		28.0		28.0	
Q1; Q3		19 ; 31		19 ; 56		19 ; 51	
Min; Max		1 ; 168		1 ; 1498		1 ; 1498	
Hypogammaglobulinemia							Fisher Exact P = 0.556
No	14	(45.2%)	78	(52.0%)	92	(50.8%)	
Yes	17	(54.8%)	72	(48.0%)	89	(49.2%)	
(-)	17		41		58		
Hemoglobin (g/dL)							Wilcoxon P = 0.002
N		45		189		234	
Missing		3		2		5	
Mean (SD)		10.04 (1.839)		12.07 (10.185)		11.68 (9.219)	
Median		9.60		10.70		10.50	
Q1; Q3		8.8 ; 11.6		9.9 ; 11.9		9.5 ; 11.9	
Min; Max		6.3 ; 13.6		7.2 ; 98.0		6.3 ; 98.0	
Leukocytes (WBC) (G/L)							Wilcoxon P = 0.081
N		45		188		233	
Missing		3		3		6	
Mean (SD)		8.723 (20.7708)		4.232 (1.8121)		5.099 (9.3609)	
Median		4.340		4.100		4.100	
Q1; Q3		3.00 ; 6.50		3.00 ; 5.15		3.00 ; 5.20	
Min; Max		1.40 ; 142.00		1.30 ; 12.50		1.30 ; 142.00	
Neutrophils (ANC/AGC) (G/L)							Wilcoxon P = 0.483
N		43		178		221	
Missing		5		13		18	
Mean (SD)		3.670 (3.9129)		2.693 (1.5781)		2.883 (2.2531)	
Median		2.900		2.515		2.590	
Q1; Q3		1.50 ; 3.90		1.70 ; 3.40		1.60 ; 3.60	
Min; Max		0.00 ; 19.60		0.00 ; 10.20		0.00 ; 19.60	
Lymphocytes (ALC) (G/L)							Wilcoxon P = 0.744
N		43		172		215	
Missing		5		19		24	
Mean (SD)		3.764 (20.3405)		0.910 (2.8863)		1.481 (9.4429)	
Median		0.600		0.600		0.600	
Q1; Q3		0.20 ; 1.00		0.40 ; 0.90		0.40 ; 0.90	
Min; Max		0.00 ; 134.00		0.00 ; 38.00		0.00 ; 134.00	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
Lymphocytes B (units/µL)				Wilcoxon P = 0.806
N	6	53	59	
Missing	42	138	180	
Mean (SD)	0.02 (0.041)	0.95 (6.451)	0.86 (6.115)	
Median	0.00	0.00	0.00	
Q1; Q3	0.0 ; 0.0	0.0 ; 0.0	0.0 ; 0.0	
Min; Max	0.0 ; 0.1	0.0 ; 47.0	0.0 ; 47.0	
Platelets (G/L)				Wilcoxon P = 0.034
N	45	189	234	
Missing	3	2	5	
Mean (SD)	161.2 (96.02)	188.1 (82.95)	183.0 (86.06)	
Median	156.0	185.0	182.0	
Q1; Q3	91 ; 215	137 ; 234	133 ; 230	
Min; Max	25 ; 397	17 ; 599	17 ; 599	
Platelets > 50GL **				Fisher Exact P = 0.094
No	17 (37.8%)	43 (24.9%)	60 (27.5%)	
Yes	28 (62.2%)	130 (75.1%)	158 (72.5%)	
(-)	3	18	21	
AST (SGOT) (IU/L)				Wilcoxon P = 0.584
N	40	186	226	
Missing	8	5	13	
Mean (SD)	45.1 (103.05)	24.9 (14.87)	28.5 (45.63)	
Median	23.0	22.0	22.0	
Q1; Q3	16 ; 30	17 ; 28	17 ; 28	
Min; Max	8 ; 649	9 ; 139	8 ; 649	
ALT (SGPT) (IU/L)				Wilcoxon P = 0.952
N	41	186	227	
Missing	7	5	12	
Mean (SD)	29.3 (43.95)	25.1 (21.63)	25.9 (26.97)	
Median	21.0	20.5	21.0	
Q1; Q3	13 ; 30	15 ; 29	15 ; 29	
Min; Max	6 ; 294	6 ; 227	6 ; 294	
LDH (IU/L)				Wilcoxon P = 0.432
N	40	177	217	
Missing	8	14	22	
Mean (SD)	496.6 (935.11)	307.2 (227.89)	342.1 (453.45)	
Median	241.5	242.0	242.0	
Q1; Q3	186 ; 511	195 ; 340	195 ; 348	
Min; Max	127 ; 6066	75 ; 1876	75 ; 6066	
LDH (IU/L) **				Fisher Exact P = 0.362
Normal	20 (43.5%)	101 (54.3%)	121 (52.2%)	
> Upper limit	25 (54.3%)	81 (43.5%)	106 (45.7%)	
Not done	1 (2.2%)	4 (2.2%)	5 (2.2%)	
(-)	2	5	7	
Serum creatinine (µmol/L)				Wilcoxon P = 0.685
N	43	187	230	
Missing	5	4	9	
Mean (SD)	78.4 (31.67)	73.6 (21.49)	74.5 (23.72)	
Median	77.0	71.0	71.0	
Q1; Q3	53 ; 91	58 ; 83	57 ; 88	
Min; Max	35 ; 160	35 ; 150	35 ; 160	
Creatinine clearance (mL/min)				Wilcoxon P = 0.730
N	39	182	221	
Missing	9	9	18	
Mean (SD)	86.3 (28.55)	88.3 (25.10)	87.9 (25.69)	
Median	90.0	89.0	89.0	
Q1; Q3	70 ; 100	74 ; 98	73 ; 100	
Min; Max	31 ; 164	38 ; 219	31 ; 219	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
C Reactive protein (mg/L)				Wilcoxon P = <0.001
N	39	171	210	
Missing	9	20	29	
Mean (SD)	37.3 (53.20)	14.9 (34.21)	19.1 (39.28)	
Median	17.0	5.0	6.0	
Q1 ; Q3	5 ; 36	2 ; 13	2 ; 17	
Min; Max	2 ; 236	0 ; 299	0 ; 299	
C Reactive protein (mg/L) **				Fisher Exact P = 0.012
<= 30 mg/L	31 (67.4%)	163 (85.8%)	194 (82.2%)	
> 30 mg/L	13 (28.3%)	22 (11.6%)	35 (14.8%)	
Not done	2 (4.3%)	5 (2.6%)	7 (3.0%)	
(-)	2	1	3	
Ferritine (µg/L)				Wilcoxon P = 0.002
N	31	150	181	
Missing	17	41	58	
Mean (SD)	2036.5 (4430.83)	644.3 (828.84)	882.7 (2029.12)	
Median	732.0	393.0	461.0	
Q1; Q3	399 ; 1418	180 ; 811	208 ; 860	
Min; Max	53 ; 22195	5 ; 5789	5 ; 22195	
Ferritine (µg/L) **				Fisher Exact P = <0.001
Normal	6 (13.3%)	64 (34.6%)	70 (30.4%)	
> Upper limit	29 (64.4%)	110 (59.5%)	139 (60.4%)	
Not done	10 (22.2%)	11 (5.9%)	21 (9.1%)	
(-)	3	6	9	
Fibrinogen (g/L)				Wilcoxon P = 0.477
N	24	110	134	
Missing	24	81	105	
Mean (SD)	4.131 (1.6777)	3.827 (1.1819)	3.881 (1.2827)	
Median	3.750	3.700	3.700	
Q1; Q3	3.15 ; 4.70	2.90 ; 4.50	3.00 ; 4.50	
Min; Max	1.70 ; 10.00	1.40 ; 9.00	1.40 ; 10.00	
Gamma-GT (IU/L)				Wilcoxon P = 0.017
N	35	174	209	
Missing	13	17	30	
Mean (SD)	103.2 (149.08)	59.3 (106.42)	66.7 (115.42)	
Median	50.0	30.0	33.0	
Q1; Q3	30 ; 110	20 ; 63	21 ; 66	
Min; Max	13 ; 658	4 ; 983	4 ; 983	
Total bilirubin (µmol/L)				Wilcoxon P = 0.623
N	40	181	221	
Missing	8	10	18	
Mean (SD)	6.5 (4.33)	7.1 (5.77)	7.0 (5.53)	
Median	5.0	6.0	6.0	
Q1; Q3	4 ; 7	4 ; 8	4 ; 8	
Min; Max	2 ; 24	1 ; 59	1 ; 59	
CAR-HEMATOTOX				Fisher Exact P = <0.001
Low	20 (41.7%)	136 (71.2%)	156 (65.3%)	
High	28 (58.3%)	55 (28.8%)	83 (34.7%)	
EASIX score				Wilcoxon P = <0.001
N	40	174	214	
Missing	8	17	25	
Mean (SD)	44.6 (118.93)	17.4 (29.91)	22.5 (58.56)	
Median	17.1	10.0	10.8	
Q1; Q3	9 ; 32	6 ; 16	7 ; 19	
Min; Max	4 ; 758	2 ; 255	2 ; 758	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
Simplified EASIX score				Wilcoxon P = 0.004
N	40	176	216	
Missing	8	15	23	
Mean (SD)	8.7 (29.90)	2.4 (4.55)	3.6 (13.60)	
Median	2.2	1.4	1.5	
Q1; Q3	1 ; 4	1 ; 2	1 ; 2	
Min; Max	1 ; 190	0 ; 45	0 ; 190	
Modified EASIX score				Wilcoxon P = <0.001
N	36	162	198	
Missing	12	29	41	
Mean (SD)	40.3 (111.71)	5.3 (21.33)	11.7 (52.65)	
Median	5.0	0.8	0.9	
Q1; Q3	1 ; 16	0 ; 3	0 ; 4	
Min; Max	0 ; 607	0 ; 215	0 ; 607	
EASIX-F score				Cochran-Mantel-Haenszel
High risk	12 (41.4%)	23 (17.2%)	35 (21.5%)	Row Mean Score
Low risk	17 (58.6%)	111 (82.8%)	128 (78.5%)	P = 0.004
(-)	19	57	76	
EASIX-FC score				Cochran-Mantel-Haenszel
Low risk	15 (100.0%)	93 (100.0%)	108 (100.0%)	Row Mean Score
(-)	33	98	131	P = -

At infusion

	NRM N=48		Comparative group* N=191		Total N=239		Test: Probability
CAR-T product							Fisher Exact P = 0.287
Tisagenlecleucel-KYMRIAH	17	(35.4%)	52	(27.2%)	69	(28.9%)	
Axicabtagene ciloleucel-YESCARTA	31	(64.6%)	139	(72.8%)	170	(71.1%)	
ECOG							Cochran-Mantel-Haenszel Row Mean Score P = 0.115
Normal activities	12	(27.9%)	86	(45.7%)	98	(42.4%)	
Ambulatory able to carry out work	17	(39.5%)	72	(38.3%)	89	(38.5%)	
Ambulatory unable to carry out work	6	(14.0%)	10	(5.3%)	16	(6.9%)	
Confined to chair more than 50% of waking hours	1	(2.3%)	3	(1.6%)	4	(1.7%)	
Totally confined to chair	1	(2.3%)	1	(0.5%)	2	(0.9%)	
Not Evaluated	6	(14.0%)	16	(8.5%)	22	(9.5%)	
(-)	5		3		8		
Hemoglobin (g/dL)							Wilcoxon P = 0.002
N	47		191		238		
Missing	1		0		1		
Mean (SD)	9.50 (1.378)		11.18 (8.175)		10.85 (7.376)		
Median	9.30		10.00		9.90		
Q1; Q3	8.3 ; 10.3		9.2 ; 11.1		9.0 ; 11.0		
Min; Max	7.7 ; 12.6		7.4 ; 78.0		7.4 ; 78.0		
Leukocytes (WBC) (G/L)							Wilcoxon P = 0.055
N	47		191		238		
Missing	1		0		1		
Mean (SD)	1.781 (1.2582)		2.140 (1.2728)		2.069 (1.2753)		
Median	1.400		1.900		1.900		
Q1; Q3	0.80 ; 2.30		1.26 ; 2.71		1.20 ; 2.70		
Min; Max	0.01 ; 4.80		0.00 ; 6.80		0.00 ; 6.80		
Neutrophils (ANC/AGC) (G/L)							Wilcoxon P = 0.093
N	45		185		230		
Missing	3		6		9		
Mean (SD)	1.599 (1.5368)		1.788 (1.2205)		1.751 (1.2870)		
Median	1.200		1.610		1.515		
Q1; Q3	0.70 ; 2.10		0.90 ; 2.40		0.90 ; 2.40		
Min; Max	0.00 ; 7.90		0.00 ; 6.60		0.00 ; 7.90		
Lymphocytes (ALC) (G/L)							Wilcoxon P = 0.683
N	44		177		221		
Missing	4		14		18		
Mean (SD)	0.9384 (4.88331)		0.1686 (0.46125)		0.3218 (2.21948)		
Median	0.0150		0.0400		0.0400		
Q1; Q3	0.000 ; 0.100		0.000 ; 0.100		0.000 ; 0.100		
Min; Max	0.000 ; 32.400		0.000 ; 3.800		0.000 ; 32.400		
Lymphocytes B (units/µL)							Wilcoxon P = 0.689
N	6		64		70		
Missing	42		127		169		
Mean (SD)	0.000 (0.0000)		0.007 (0.0502)		0.006 (0.0480)		
Median	0.000		0.000		0.000		
Q1; Q3	0.00 ; 0.00		0.00 ; 0.00		0.00 ; 0.00		
Min; Max	0.00 ; 0.00		0.00 ; 0.40		0.00 ; 0.40		
Platelets (G/L)							Wilcoxon P = 0.007
N	47		191		238		
Missing	1		0		1		
Mean (SD)	123.6 (73.36)		157.6 (75.87)		150.9 (76.44)		
Median	117.0		153.0		148.0		
Q1; Q3	71 ; 177		107 ; 196		100 ; 193		
Min; Max	7 ; 345		18 ; 638		7 ; 638		
	N=48		N=191		N=239		
Hemoglobin (g/dL)							

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
N	47	191	238	
Missing	1	0	1	
Mean (SD)	9.50 (1.378)	11.18 (8.175)	10.85 (7.376)	Wilcoxon
Median	9.30	10.00	9.90	P = 0.002
Q1; Q3	8.3 ; 10.3	9.2 ; 11.1	9.0 ; 11.0	
Min; Max	7.7 ; 12.6	7.4 ; 78.0	7.4 ; 78.0	
Leukocytes (WBC) (G/L)				Wilcoxon
N	47	191	238	P = 0.055
Missing	1	0	1	
Mean (SD)	1.781 (1.2582)	2.140 (1.2728)	2.069 (1.2753)	
Median	1.400	1.900	1.900	
Q1; Q3	0.80 ; 2.30	1.26 ; 2.71	1.20 ; 2.70	
Min; Max	0.01 ; 4.80	0.00 ; 6.80	0.00 ; 6.80	
Neutrophils (ANC/AGC) (G/L)				Wilcoxon
N	45	185	230	P = 0.093
Missing	3	6	9	
Mean (SD)	1.599 (1.5368)	1.788 (1.2205)	1.751 (1.2870)	
Median	1.200	1.610	1.515	
Q1; Q3	0.70 ; 2.10	0.90 ; 2.40	0.90 ; 2.40	
Min; Max	0.00 ; 7.90	0.00 ; 6.60	0.00 ; 7.90	
Lymphocytes (ALC) (G/L)				Wilcoxon
N	44	177	221	P = 0.683
Missing	4	14	18	
Mean (SD)	0.9384 (4.88331)	0.1686 (0.46125)	0.3218 (2.21948)	
Median	0.0150	0.0400	0.0400	
Q1; Q3	0.000 ; 0.100	0.000 ; 0.100	0.000 ; 0.100	
Min; Max	0.000 ; 32.400	0.000 ; 3.800	0.000 ; 32.400	
Lymphocytes B (units/μL)				Wilcoxon
N	6	64	70	P = 0.689
Missing	42	127	169	
Mean (SD)	0.000 (0.0000)	0.007 (0.0502)	0.006 (0.0480)	
Median	0.000	0.000	0.000	
Q1; Q3	0.00 ; 0.00	0.00 ; 0.00	0.00 ; 0.00	
Min; Max	0.00 ; 0.00	0.00 ; 0.40	0.00 ; 0.40	
Platelets (G/L)				Wilcoxon
N	47	191	238	P = 0.007
Missing	1	0	1	
Mean (SD)	123.6 (73.36)	157.6 (75.87)	150.9 (76.44)	
Median	117.0	153.0	148.0	
Q1; Q3	71 ; 177	107 ; 196	100 ; 193	
Min; Max	7 ; 345	18 ; 638	7 ; 638	
AST (SGOT) (IU/L)				Wilcoxon
N	45	190	235	P = 0.568
Missing	3	1	4	
Mean (SD)	27.3 (20.14)	24.1 (18.31)	24.7 (18.67)	
Median	22.0	20.5	21.0	
Q1; Q3	15 ; 28	16 ; 25	16 ; 26	
Min; Max	8 ; 102	8 ; 205	8 ; 205	
ALT (SGPT) (IU/L)				Wilcoxon
N	45	190	235	P = 0.835
Missing	3	1	4	
Mean (SD)	24.1 (26.01)	21.8 (21.91)	22.3 (22.71)	
Median	16.0	17.0	17.0	
Q1; Q3	12 ; 26	13 ; 25	12 ; 25	
Min; Max	5 ; 146	6 ; 263	5 ; 263	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
LDH (IU/L)				Wilcoxon
N	44	187	231	P = 0.329
Missing	4	4	8	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
Mean (SD)	359.8 (399.33)	273.8 (252.47)	290.2 (287.23)	
Median	215.0	213.0	213.0	
Q1; Q3	175 ; 387	178 ; 294	177 ; 306	
Min; Max	97 ; 2560	94 ; 2317	94 ; 2560	
Serum creatinine (µmol/L)				Wilcoxon P = 0.680
N	47	191	238	
Missing	1	0	1	
Mean (SD)	72.0 (32.08)	66.7 (20.63)	67.8 (23.35)	
Median	67.0	63.0	63.0	
Q1; Q3	50 ; 87	50 ; 78	50 ; 79	
Min; Max	30 ; 176	35 ; 151	30 ; 176	
Creatinine clearance (mL/min)				Wilcoxon P = 0.719
N	43	188	231	
Missing	5	3	8	
Mean (SD)	94.0 (33.98)	96.1 (27.37)	95.7 (28.65)	
Median	92.0	90.0	90.0	
Q1; Q3	78 ; 102	82 ; 107	81 ; 107	
Min; Max	33 ; 235	30 ; 201	30 ; 235	
C Reactive protein (mg/L)				Wilcoxon P = 0.001
N	43	187	230	
Missing	5	4	9	
Mean (SD)	42.06 (55.049)	21.30 (37.618)	25.18 (42.083)	
Median	21.00	8.00	9.50	
Q1; Q3	5.0 ; 50.0	4.0 ; 23.0	4.0 ; 27.0	
Min; Max	2.0 ; 302.0	0.0 ; 299.0	0.0 ; 302.0	
Ferritine (µg/L)				Wilcoxon P = <0.001
N	41	189	230	
Missing	7	2	9	
Mean (SD)	12325.71 (62517.572)	1037.43 (2286.931)	3049.68 (26565.750)	
Median	897.00	539.00	610.00	
Q1; Q3	582.0 ; 2397.0	263.0 ; 1028.0	292.0 ; 1090.0	
Min; Max	114.0 ; 400000.0	32.0 ; 27809.0	32.0 ; 400000.0	
Fibrinogen (g/L)				Wilcoxon P = 0.667
N	38	147	185	
Missing	10	44	54	
Mean (SD)	3.893 (1.5628)	3.937 (1.1197)	3.928 (1.2191)	
Median	4.100	3.700	3.800	
Q1; Q3	3.00 ; 4.70	3.20 ; 4.60	3.20 ; 4.60	
Min; Max	0.80 ; 7.20	1.70 ; 8.00	0.80 ; 8.00	
Gamma-GT (IU/L)				Wilcoxon P = 0.025
N	42	176	218	
Missing	6	15	21	
Mean (SD)	105.9 (145.79)	51.3 (57.20)	61.8 (84.38)	
Median	51.0	30.0	33.0	
Q1; Q3	26 ; 81	22 ; 58	22 ; 63	
Min; Max	11 ; 579	5 ; 420	5 ; 579	
Total bilirubin (µmol/L)				Wilcoxon P = 0.939
N	45	190	235	
Missing	3	1	4	
Mean (SD)	9.20 (5.492)	9.21 (8.488)	9.21 (7.991)	
Median	7.00	8.00	7.00	
Q1; Q3	6.0 ; 12.0	6.0 ; 11.0	6.0 ; 11.0	
Min; Max	3.0 ; 26.0	2.0 ; 109.0	2.0 ; 109.0	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
EASIX score				Wilcoxon P = <0.001
N	44	187	231	
Missing	4	4	8	
Mean (SD)	35.0 (46.46)	17.1 (28.45)	20.5 (33.28)	
Median	16.9	9.5	10.4	

	NRM N=48	Comparative group* N=191	Total N=239	Test: Probability
Q1 ; Q3	8 ; 38	6 ; 17	7 ; 21	
Min ; Max	3 ; 208	1 ; 277	1 ; 277	
Simplified EASIX score				Wilcoxon P = 0.001
N	44	187	231	
Missing	4	4	8	
Mean (SD)	5.9 (9.39)	2.6 (4.83)	3.2 (6.08)	
Median	2.4	1.5	1.6	
Q1 ; Q3	1 ; 5	1 ; 2	1 ; 3	
Min ; Max	1 ; 53	0 ; 46	0 ; 53	
Modified EASIX score				Wilcoxon P = <0.001
N	41	183	224	
Missing	7	8	15	
Mean (SD)	36.4 (84.36)	11.0 (51.04)	15.6 (59.16)	
Median	5.0	1.4	1.7	
Q1 ; Q3	1 ; 24	0 ; 4	1 ; 5	
Min ; Max	0 ; 427	0 ; 507	0 ; 507	
EASIX-F score				Cochran-Mantel-Haenszel Row Mean Score P = <0.001
High risk	19 (50.0%)	40 (22.1%)	59 (26.9%)	
Low risk	19 (50.0%)	141 (77.9%)	160 (73.1%)	
(-)	10	10	20	
EASIX-FC score				Cochran-Mantel-Haenszel Row Mean Score P = -
Low risk	13 (100.0%)	113 (100.0%)	126 (100.0%)	
(-)	35	78	113	

S5. Risk factors for overall NRM of infectious cause – univariate analysis – p32

Risk factors for overall NRM of infectious cause were identified by comparing the characteristics of overall NRM population with patients alive at 1 year following CAR T-cell infusion.

The abbreviation NRM denotes non-relapse mortality; ECOG PS: Eastern Cooperative Oncology Group performance status; LDH: lactate dehydrogenase; Axi-cel: axicabtagene ciloleucel; Tisacel: tisagenlecleucel.

		All NRM of infectious cause N=27	Comparative group N= 191	p value
Patient characteristics	Age - Median	67	63	0.020
	Diabetes - no. (%)	9 (34.6)	19 (10.1)	0.002
At lymphodepletion	ECOG PS - no. (%) 0-1 ≥ 2	20 (76.9) 6 (23.1)	176 (95.1) 9 (4.9)	0.005
	Hemoglobin (g/dL) - Median	9.7	10.7	0.045
	Platelets (G/L) - Median	173	188	0.243
	C reactive protein (mg/L) - Median	14	5	0.002
	Ferritin (µg/L) - Median	766	393	0.064
	Hypogammaglobulinemia – no. (%)	13 (65)	72 (48)	0.233
	CAR-HEMATOTOX - no. (%) Low High	13 (48.1) 14 (51.9)	136 (71.2) 69 (31.7)	0.025
	EASIX score - Median	13	10	0.072
At infusion	CAR-T product - no. (%) Axi-cel Tisacel	18 (66.7) 9 (33.3)	139 (72.8) 52 (27.2)	0.499
	Hemoglobin (g/dL) - Median	9.8	10.0	0.052
	Platelets (G/L) - Median	132	153	0.100
	C reactive protein (mg/L) - Median	19	8	0.016
	LDH (IU/L) - Median	198	213	0.893
	Ferritin (µg/L) - Median	821	539	0.047
Post-infusion	CRS ≥ grade 3 - no. (%)	5 (18.5)	10 (5.2)	0.025
	ICANS ≥ grade 3 - no. (%)	6 (22.2)	20 (10.5)	0.106
	Grade 4 neutropenia at month 1 – no. (%)	3 (15.8)	19 (10.5)	0.446
	Grade 4 thrombocytopenia at month 1 – no. (%)	4 (17.4)	23 (12.3)	0.509
	Hemoglobin (g/dL) at month 1 - Median	9.8	10.8	0.027
	Grade 4 neutropenia at month 3 – no. (%)	2 (11.8)	5 (2.7)	0.112
	Grade 4 thrombocytopenia at month 3 – no. (%)	2 (12.5)	4 (2.2)	0.075
	Hemoglobin (g/dL) at month 3 - Median	11.1	11.6	0.168
	Grade 4 neutropenia at month 6 – no. (%)	0 (0)	5 (2.9)	1.000
	Grade 4 thrombocytopenia at month 6 – no. (%)	0 (0)	3 (1.8)	1.000
	Hemoglobin (g/dL) at month 6 - Median	11.8	12.30	0.497
	Grade 4 neutropenia at month 12 – no. (%)	0 (0)	3 (1.8)	1.000
	Hemoglobin (g/dL) at month 12 - Median	12.9	12.9	1.000