

# Brexucabtagene autoleucel in relapsed or refractory mantle cell lymphoma, intention-to-treat use in the DESCAR-T registry

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	Patient without bridge or holding N=27	Patients with bridge only N=63	Patients with holding then bridge N=62
<b>Sex Male</b>	22 (81.5%)	56 (88.9%)	53 (85.5%)
<b>Age at inclusion (years)</b> Median (min ; max)	70.0 (39 ; 78)	67.0 (40 ; 83)	68.5 (39 ; 79)
<b>Age (TBR) &gt; = 65 years</b>	13 (48.1%)	36 (57.1%)	31 (50.0%)
<b>Age (TBR) &gt; 75 years</b>	5 (18.5%)	6 (9.5%)	8 (12.9%)
<b>ECOG at inclusion</b>			
0-1	20 (80.0%)	52 (89.7%)	53 (89.8%)
>=2	5 (20.0%)	6 (10.3%)	6 (10.2%)
Missing	2	5	3
<b>MIPI risk group at inclusion</b>			
Low risk (< 5.7)	5 (21.7%)	11 (19.0%)	11 (20.0%)
Intermediate risk ([5.7 - 6.2[)	10 (43.5%)	24 (41.4%)	20 (36.4%)
High risk (>= 6.2)	8 (34.8%)	23 (39.7%)	24 (43.6%)
Missing	4	5	7
<b>Ki-67 &gt; = 30% at inclusion</b>			
< 30%	4 (26.7%)	13 (27.7%)	5 (11.1%)
>= 30%	11 (73.3%)	34 (72.3%)	40 (88.9%)
Missing	12	16	17
<b>LDH (TBR) &gt; Normal*</b>			
No	14 (51.9%)	23 (36.5%)	25 (40.3%)
Yes	10 (37.0%)	40 (63.5%)	35 (56.5%)
Missing	3 (11.1%)	0 (0.0%)	2 (3.2%)
<b>Bulky disease (&gt;5cm) at Lymphodepletion*</b>			
No	23 (85.2%)	40 (63.5%)	49 (79.0%)
Yes	3 (11.1%)	21 (33.3%)	12 (19.4%)
Missing	1 (3.7%)	2 (3.2%)	1 (1.6%)
<b>Number or prior lines of therapy**</b> Median (min ; max)	3.0 (2 ; 8)	3.0 (2 ; 9)	3.0 (1 ; 6)
<b>Prior autologous transplant</b>	8 (29.6%)	23 (36.5%)	29 (46.8%)
<b>Previous BTK inhibitor therapy</b>			
IBRUTINIB	25 (92.6%)	61 (96.8%)	54 (87.1%)
ACALABRUTINIB	2 (7.4%)	2 (3.2%)	0 (0.0%)
ZANUBRUTINIB	0 (0.0%)	0 (0.0%)	0 (0.0%)
<b>Bridging therapy</b>	0 (0.0%)	63 (100.0%)	62 (100.0%)
<b>Type of treatment***</b>			
Monoclonal antibody	0	45 (71.4%)	37 (59.7%)
Other immunotherapy	0	0 (0.0%)	0 (0.0%)
Chemotherapy	0	43 (68.3%)	34 (54.8%)
Radiotherapy	0	6 (9.5%)	4 (6.5%)
IMiD	0	5 (7.9%)	5 (8.1%)
Epigenetic modifiers agents	0	0 (0.0%)	0 (0.0%)
Kinase inhibitor	0	12 (19.0%)	24 (38.7%)
Corticosteroids	0	8 (12.7%)	5 (8.1%)
Other anti-cancer therapy	0	14 (22.2%)	21 (33.9%)
<b>Disease status before CAR-T infusion</b>			
Complete Response	0	6 (9.5%)	9 (14.5%)
Partial Response	0	15 (23.8%)	21 (33.9%)
Stable Disease	0	9 (14.3%)	8 (12.9%)
Progressive Disease	0	29 (46.0%)	19 (30.6%)
Not Evaluated	0	4 (6.3%)	4 (6.5%)
Missing	0	0 (0.0%)	1 (1.6%)

\* Patients with missing Data are included in Denominator

\*\* Up to 10 treatment lines may be collected in the register

\*\*\* Several treatments possible

Supplemental Table 1: Main characteristics of patients according to bridging subgroup. TBR: tumor board review, MIPI: mantle cell lymphoma international prognostic index.

Patient	Bridging strategy	Regroupement (Holding + Bridging)	Response after treatment (Bridging)	Started the same day as leukapheresis?
1	Patients with bridge only	RITUXIMAB - CHOP	Progressive Disease	No
2	Patients with holding then bridge	IBRUTINIB	Progressive Disease	No
3	Patients with holding then bridge	IBRUTINIB	Complete Response	No
4	Patients with bridge only	OBINUTUZUMAB - BENDAMUSTINE - BORTEZOMIB	Partial Response	No
5	Patients with bridge only	RADIOTHERAPY	Partial Response	No
6	Patients with bridge only	VENETOCLAX	Progressive Disease	No
7	Patients with holding then bridge	RITUXIMAB - LENALIDOMIDE - IBRUTINIB - DEXAMETHASONE	Not Evaluated	No
8	Patients with holding then bridge	IBRUTINIB	Stable Disease	No
9	Patients with bridge only	RITUXIMAB - BENDAMUSTINE - IBRUTINIB	Progressive Disease	No
10	Patients with bridge only	RITUXIMAB - BENDAMUSTINE	Not Evaluated	No
11	Patients with holding then bridge	VENETOCLAX	Stable Disease	No
12	Patients with bridge only	RITUXIMAB - DHAOX	Not Evaluated	No
13	Patients with holding then bridge	RITUXIMAB - IBRUTINIB - CYTARABINE - METHOTREXATE	Not Evaluated	Yes
14	Patients with bridge only	RADIOTHERAPY	Progressive Disease	Yes
15	Patients with holding then bridge	Corticosteroids	Partial Response	No
16	Patients with holding then bridge	RADIOTHERAPY - LENALIDOMIDE - IBRUTINIB	Stable Disease	No
17	Patients with bridge only	RADIOTHERAPY	Stable Disease	No
18	Patients with bridge only	CHOP - PREDNISONE	Progressive Disease	Yes
19	Patients with bridge only	RITUXIMAB - CHOP	Partial Response	Yes
20	Patient without bridge or holding		.	No
21	Patients with holding then bridge	RITUXIMAB - CHOP - RITUXIMAB - VENETOCLAX	Progressive Disease	No
22	Patients with holding then bridge	RITUXIMAB - CYTARABINE	Partial Response	No
23	Patients with bridge only	RITUXIMAB - BENDAMUSTINE - HOLOXAN-VP16	Not Evaluated	Yes
24	Patient without bridge or holding		.	No
25	Patients with holding then bridge	RITUXIMAB - DHAOX	Complete Response	No
26	Patients with bridge only	RITUXIMAB - CYCLOPHOSPHAMIDE - DOXORUBICINE - VINCRISTINE	Stable Disease	No

		DEXAMETHASONE - BORTEZOMIB - METHOTREXATE		
27	Patient without bridge or holding		.	No
28	Patients with bridge only	RITUXIMAB - BAC	Partial Response	Yes
29	Patient without bridge or holding		.	No
30	Patient without bridge or holding		.	No
31	Patients with bridge only	RITUXIMAB - CHOP	Stable Disease	Yes
32	Patients with holding then bridge	RADIOTHERAPY - IBRUTINIB - VENETOCLAX	Partial Response	No
33	Patients with holding then bridge	RITUXIMAB - DHA - BORTEZOMIB	Partial Response	No
34	Patient without bridge or holding		.	No
35	Patients with bridge only	RITUXIMAB - CYTARABINE - DEXAMETHASONE - RITUXIMAB - IBRUTINIB - VENETOCLAX	Progressive Disease	No
36	Patients with bridge only	RITUXIMAB - CYTARABINE - DEXAMETHASONE	Partial Response	No
37	Patients with bridge only	RITUXIMAB - CHOP	Progressive Disease	No
38	Patients with bridge only	RITUXIMAB - IBRUTINIB	Partial Response	No
39	Patients with holding then bridge	METHOTREXATE - IBRUTINIB - VENETOCLAX	Progressive Disease	No
40	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Progressive Disease	No
41	Patients with holding then bridge	IBRUTINIB	Progressive Disease	No
42	Patients with bridge only	RITUXIMAB - DHAC - IBRUTINIB	Progressive Disease	No
43	Patients with holding then bridge	VENETOCLAX	Progressive Disease	No
44	Patients with holding then bridge	RITUXIMAB - VCAP - OBINUTUZUMAB - BENDAMUSTINE	Partial Response	No
45	Patients with holding then bridge	RITUXIMAB - CYTARABINE - BENDAMUSTINE - OTHER TK INHIBITOR	Progressive Disease	No
46	Patients with holding then bridge	RITUXIMAB - BENDAMUSTINE	Stable Disease	No
47	Patients with holding then bridge	RADIOTHERAPY - DEXAMETHASONE	Partial Response	No
48	Patients with bridge only	RITUXIMAB - BENDAMUSTINE - BVD - BORTEZOMIB	Progressive Disease	No
49	Patients with bridge only	OBINUTUZUMAB - BENDAMUSTINE - BENDAMUSTINE - BORTEZOMIB	Progressive Disease	No
50	Patients with holding then bridge	IBRUTINIB	Partial Response	No
51	Patient without bridge or holding		.	No
52	Patients with holding then bridge	RITUXIMAB - IFOSFAMIDE - ETOPOSIDE	Progressive Disease	No

53	Patients with holding then bridge	OBINUTUZUMAB - LENALIDOMIDE - PREDNISONE	Progressive Disease	Yes
54	Patients with bridge only	IBRUTINIB - VENETOCLAX	Complete Response	No
55	Patients with holding then bridge	RITUXIMAB - DHAOX	Stable Disease	No
56	Patients with holding then bridge	RITUXIMAB - BVD - CYTARABINE - DEXAMETHASONE	Progressive Disease	No
57	Patient without bridge or holding	.	.	No
58	Patients with bridge only	RITUXIMAB - BENDAMUSTINE	Partial Response	No
59	Patients with bridge only	IBRUTINIB	Progressive Disease	Yes
60	Patients with holding then bridge	RITUXIMAB - BVD - GEMOX - LENALIDOMIDE	Partial Response	No
61	Patients with bridge only	IBRUTINIB	Progressive Disease	No
62	Patient without bridge or holding	.	.	No
63	Patients with holding then bridge	RITUXIMAB - DHAOX - IBRUTINIB	Partial Response	No
64	Patients with bridge only	RITUXIMAB - HOLOXAN-VP16	Complete Response	Yes
65	Patients with holding then bridge	RITUXIMAB - CHOP - VIM - IBRUTINIB	Progressive Disease	No
66	Patients with holding then bridge	IBRUTINIB - RITUXIMAB - MINI DHAOX - DHAOX - VENETOCLAX - BENDAMUSTINE	Progressive Disease	No
67	Patients with holding then bridge	IBRUTINIB - RITUXIMAB	Not Evaluated	No
68	Patients with holding then bridge	LENALIDOMIDE - RITUXIMAB - CHOP	Progressive Disease	No
69	Patients with holding then bridge	RITUXIMAB - CHVP - OBINUTUZUMAB - IBRUTINIB - VENETOCLAX	Partial Response	No
70	Patients with bridge only	MINI CHOP - IBRUTINIB	Progressive Disease	No
71	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Partial Response	No
72	Patients with bridge only	RITUXIMAB - CHOP - LENALIDOMIDE	Progressive Disease	No
73	Patients with bridge only	RITUXIMAB - CYTARABINE - DEXAMETHASONE	Partial Response	No
74	Patient without bridge or holding	.	.	No
75	Patient without bridge or holding	.	.	No
76	Patients with bridge only	CAELYX - CEP	Progressive Disease	No
77	Patients with holding then bridge	IBRUTINIB	Partial Response	No
78	Patients with bridge only	IBRUTINIB - VENETOCLAX	Progressive Disease	Yes
79	Patients with bridge only	VENETOCLAX	Progressive Disease	No

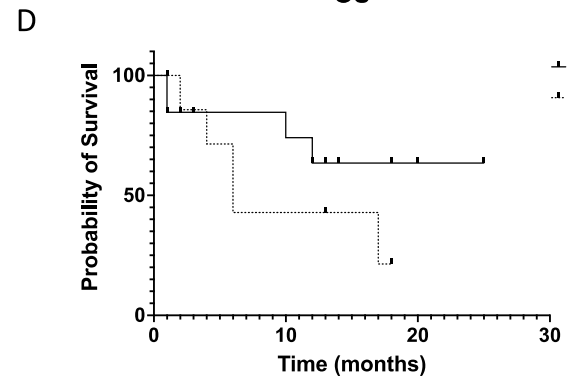
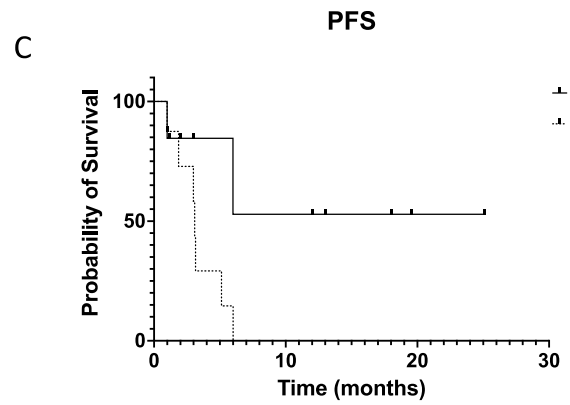
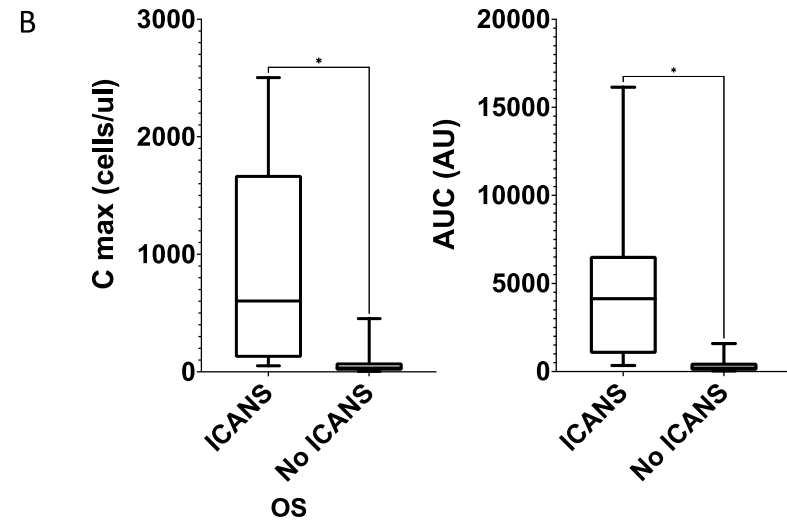
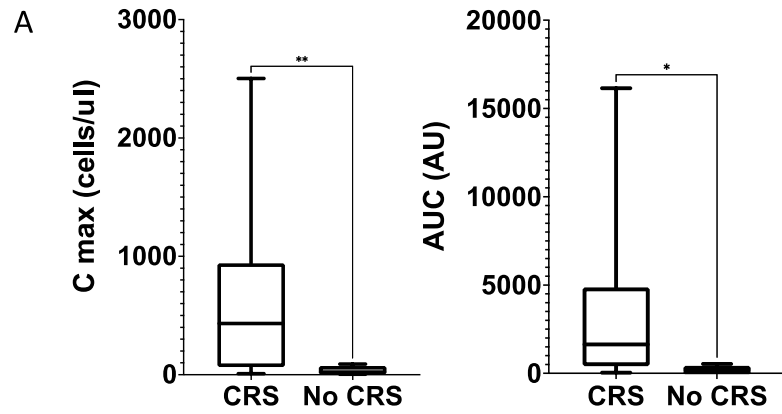
80	Patient without bridge or holding		.	No
81	Patients with holding then bridge	RITUXIMAB - HOLOXAN-VP16 - GVD - LENALIDOMIDE	Progressive Disease	No
82	Patients with bridge only	RITUXIMAB - LENALIDOMIDE	Progressive Disease	No
83	Patients with holding then bridge	RITUXIMAB - DHAC	Partial Response	No
84	Patient without bridge or holding		.	No
85	Patient without bridge or holding		.	No
86	Patients with bridge only	RITUXIMAB - CYTARABINE - LENALIDOMIDE	Progressive Disease	No
87	Patient without bridge or holding		.	No
88	Patients with holding then bridge	RITUXIMAB - CHOP	Progressive Disease	No
89	Patients with bridge only	OBINUTUZUMAB - CYTARABINE	Complete Response	No
90	Patients with holding then bridge	RITUXIMAB - GEMOX	Progressive Disease	No
91	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Stable Disease	No
92	Patients with holding then bridge	RITUXIMAB - IBRUTINIB - BENDAMUSTINE	Progressive Disease	No
93	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Complete Response	No
94	Patient without bridge or holding		.	No
95	Patients with bridge only	IBRUTINIB	Progressive Disease	No
96	Patients with bridge only	BENDAMUSTINE - RITUXIMAB - TEC	Progressive Disease	No
97	Patients with bridge only	RITUXIMAB - TEC	Progressive Disease	No
98	Patient without bridge or holding		.	No
99	Patients with bridge only	RITUXIMAB - CHOP - VENETOCLAX	Complete Response	No
100	Patients with holding then bridge	RITUXIMAB - CAP - BORTEZOMIB	Partial Response	No
101	Patients with bridge only	RITUXIMAB - MINI CHOP	Partial Response	No
102	Patients with holding then bridge	OBINUTUZUMAB - IBRUTINIB - VENETOCLAX	Complete Response	No
103	Patients with holding then bridge	RITUXIMAB - CHOP - IBRUTINIB - PREDNISONE - VENETOCLAX - BVD	Complete Response	No
104	Patients with bridge only	RITUXIMAB	Stable Disease	No
105	Patients with bridge only	RITUXIMAB - DHAOX	Partial Response	No
106	Patients with holding then bridge	RITUXIMAB - CHOP - VENETOCLAX	Stable Disease	No

107	Patients with bridge only	CHOP - LENALIDOMIDE - DEXAMETHASONE	Progressive Disease	No
108	Patients with holding then bridge	IBRUTINIB - CHOP	Progressive Disease	No
109	Patients with holding then bridge	VENETOCLAX	Progressive Disease	No
110	Patients with bridge only	RITUXIMAB - CYTARABINE - DEXAMETHASONE - BORTEZOMIB	Complete Response	No
111	Patients with bridge only	RITUXIMAB - CHOP	Not Evaluated	Yes
112	Patients with bridge only	RADIOTHERAPY	Progressive Disease	No
113	Patient without bridge or holding		.	No
114	Patients with holding then bridge	RITUXIMAB - CYTARABINE - ETOPOSIDE - METHOTREXATE - IBRUTINIB	Progressive Disease	No
115	Patients with bridge only	RITUXIMAB - DHA	Complete Response	No
116	Patients with bridge only	OBINUTUZUMAB - IBRUTINIB - VENETOCLAX	Partial Response	No
117	Patients with holding then bridge	RITUXIMAB - LENALIDOMIDE	Complete Response	No
118	Patients with bridge only	RITUXIMAB - CYTARABINE - MINI CHOP	Partial Response	No
119	Patients with holding then bridge	RITUXIMAB - CHOP - LENALIDOMIDE	Not Evaluated	No
120	Patients with bridge only	RITUXIMAB - CHOP	Progressive Disease	No
121	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Partial Response	No
122	Patients with bridge only	RITUXIMAB - BVD	Progressive Disease	No
123	Patient without bridge or holding		.	No
124	Patients with bridge only	RITUXIMAB - BENDAMUSTINE	Partial Response	Yes
125	Patient without bridge or holding		.	No
126	Patients with bridge only	RADIOTHERAPY	Progressive Disease	No
127	Patients with bridge only	RITUXIMAB - LENALIDOMIDE	Stable Disease	No
128	Patient without bridge or holding		.	No
129	Patient without bridge or holding		.	No
130	Patients with bridge only	IBRUTINIB	Stable Disease	No
131	Patient without bridge or holding		.	No
132	Patients with bridge only	RITUXIMAB - BVD	Stable Disease	No
133	Patients with holding then bridge	RITUXIMAB - IBRUTINIB - CHOP	Partial Response	No

134	Patient without bridge or holding		.	No
135	Patient without bridge or holding		.	No
136	Patients with holding then bridge	RITUXIMAB - DHAOX	Complete Response	No
137	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Progressive Disease	No
138	Patients with holding then bridge	RITUXIMAB - CHOP - VENETOCLAX	Partial Response	No
139	Patient without bridge or holding		.	No
140	Patients with holding then bridge	RITUXIMAB - CHOP - IBRUTINIB	Partial Response	No
141	Patients with holding then bridge	RITUXIMAB - BORTEZOMIB - CAP	Partial Response	No
142	Patients with bridge only	RITUXIMAB - HOLOXAN-VP16	Progressive Disease	No
143	Patients with holding then bridge	IBRUTINIB	Complete Response	No
144	Patients with bridge only	RITUXIMAB - DHA	Partial Response	No
145	Patients with holding then bridge	RITUXIMAB - IBRUTINIB - BVD - METHOTREXATE	Partial Response	No
146	Patients with bridge only	RITUXIMAB - HOLOXAN-VP16	Progressive Disease	Yes
147	Patients with bridge only	RADIOTHERAPY - VENETOCLAX	Progressive Disease	No
148	Patient without bridge or holding		.	No
149	Patients with bridge only	RITUXIMAB - IBRUTINIB	Progressive Disease	No
150	Patients with holding then bridge	OBINUTUZUMAB - RADIOTHERAPY - IBRUTINIB - VENETOCLAX	Progressive Disease	Yes
151	Patients with holding then bridge	IBRUTINIB - VENETOCLAX	Stable Disease	No
152	Patients with bridge only	RITUXIMAB -DHAC	Progressive Disease	No

Supplemental Table 2: Individual type of bridging strategy, response to this procedure (when applicable).





Supplemental Figure 1: CAR-T cell kinetics impact on efficacy and safety, statistical significance ( $p < 0.05$ ) was calculated using an unpaired t-test with Welch's correction as it could not be assumed that standard deviations were equal. A/ Maximal expansion post infusion ( $C_{MAX}$ ) and area under the curve (AUC, representing the exposure from day 0 to day 28) are shown for patients who developed a Cytokine Release Syndrome (CRS), and for those who did not. \* =  $p \leq 0.05$  and \*\* =  $p \leq 0.01$  B/  $C_{MAX}$  and AUC for patients who developed an immune effector cell-associated neurotoxicity syndrome (ICANS), and for those who did not. C/ PFS for patients who received brexu-cel and for whom cellular kinetics parameters were evaluated. High and low CAR-T cell levels are defined with the ad-hoc threshold of 60 cells/ $\mu$ l and/or 500 AU (arbitrary unit) for  $C_{MAX}$  and AUC respectively. These thresholds were chosen because they correctly separate patient profiles with low and high expansions. They are intended to serve as a proof of concept in this real-life setting. D/ OS in the same population.