

1 **Supplement table 1.** Development over time

	2020 (N=23) N (%)	2021 (N=18) N (%)	2022 (N=23) N (%)
Sex			
Male	16 (69.6)	7 (38.9)	15 (65.2)
Female	7 (30.4)	11 (61.1)	8 (34.8)
Age, Median (IQR)	55.0 (40.0-64.0)	48.5 (30.5-63.5)	64.0 (54.0-70.0)
Diagnosis			
Diffuse Large B-cell lymphoma	20 (87.0)	13 (72.2)	16 (69.6)
High grade B-cell lymphoma with MYC and BCL2/BCL6	0 (0)	1 (5.6)	1 (4.3)
Primary mediastinal B-cell lymphoma	2 (8.7)	2 (11.1)	0 (0.0)
Transformed follicular lymphoma	0 (0)	0 (0.0)	2 (8.7)
Mantle cell lymphoma	0 (0)	0 (0.0)	2 (8.7)
Follicular lymphoma	0 (0)	1 (5.6)	2 (8.7)
B-ALL	1 (4.3)	1 (5.6)	0 (0.0)
Number of previous lines of therapy, median (IQR)	3 (3-4)	3 (3-4)	3 (3-5)
Previous auto HSCT	6 (26.1)	5 (27.8)	5 (21.7)
Time since auto HSCT, days median (IQR)	721 (472-1554)	571 (433-1278)	1051 (893-2070)
CAR T-cell product			
Axicabtagene ciloleucel	11 (47.8)	10 (55.6)	11(47.8)
Lisocabtagene maraleucel	0 (0)	0 (0.0)	1 (4.3)
Tisagenlecleucel	12 (52.2)	7 (38.9)	8 (34.8)
Other	0 (0)	0 (0.0)	2 (8.7)
Unknown	0 (0.0)	1 (5.6)	1 (4.3)
CAR T-cell therapy conditioning			
Fludarabine/cyclophosphamide	22 (95.7)	17 (94.4)	22 (95.7)
Bendamustine	1 (4.3)	0 (0.0)	0 (0.0)
Other	0 (0.0)	0 (0.0)	0 (0.0)
Unknown	0 (0.0)	1 (5.6)	1 (4.3)
Time since CAR T-cell infusion, days median (IQR)	158 (37.0-313)	247 (87.5-473.75)	339 (107-655)
Variant of SARS-CoV-2 infection			
Wildtype	5 (21.7)	2 (11.1)	0 (0.0)
Alpha mutation	0 (0)	3 (16.7)	0 (0.0)
Delta mutation	0 (0)	3 (16.7)	1 (4.3)
Omicron mutation	0 (0)	1 (5.6)	17 (73.9)

	2020 (N=23) N (%)	2021 (N=18) N (%)	2022 (N=23) N (%)
Unknown	18 (78.3)	9 (50.0)	5 (21.7)
Number of vaccinations			
0	23 (100.0)	9 (50.0)	4 (17.4)
1	0 (0)	1 (5.6)	2 (8.7)
2	0 (0)	8 (44.4)	10 (43.5)
3	0 (0)	0 (0.0)	3 (13.0)
4	0 (0)	0 (0.0)	4 (17.4)
Comorbidities*			
Not present	10 (43.5)	11 (61.1)	9 (39.1)
1 comorbidity	6 (26.1)	5 (27.8)	10 (43.5)
2 comorbidities	2 (8.7)	2 (11.1)	3 (13.0)
≥ 3 comorbidities	5 (21.7)	0 (0.0)	1 (4.3)
Leukocyte count (cells/mm³) at COVID-19 diagnosis, median (IQR)	2420 (945-4930)	2400 (1800-3787)	2600 (1900-3900)
Lymphocyte count (cells/mm³) at COVID-19 diagnosis, median (IQR)	385 (135-1067)	385 (267-1119)	520 (270-700)
Neutrophil count (cells/mm³) at COVID-19 diagnosis, median (IQR)	1100 (200-3700)	1450 (620-2100)	1950 (1000-2620)
Severity of infection			
At home	3 (13.0)	6 (33.3)	5 (21.7)
Admitted to the hospital	20 (87.0)	12 (66.7)	18 (78.3)
Duration of hospitalization, days median (IQR)	27.5 (19.5-50.25)	16.0 (6.0-40.0)	7.5 (5.5-31.0)
Admitted to the ICU	11 (47.8)	5 (27.8)	2 (8.7)
Duration of ICU admittance, days median (IQR)	9.0 (5-26)	14.0 (3.5-37)	45.0 (N/A)
Treatment with monoclonal antibodies	0 (0)	56 (27.8)	9 (39.1)
Treatment with convalescent plasma	8 (34.8)	3 (16.7)	5 (21.7)
Treatment with viral replication inhibitor	9 (39.1)	4 (22.2)	5 (21.7)
Treatment with steroids	10 (43.5)	9 (50.0)	11 (47.8)
Treatment with tocilizumab	2 (8.7)	1 (5.6)	3 (13.0)
Outcome			
Alive	12 (52.2)	13 (72.2)	18 (78.3)
Dead	11 (47.8)	5 (27.8)	5 (21.7)
Cause of death			
COVID-19 or contributed by COVID-19	10 (43.5)	4 (22.2)	3 (13.0)
Hematological malignancy	1 (4.3)	1 (5.6)	2 (8.7)

2 Abbreviations: ALL, acute lymphoid leukemia; auto HSCT, autologous hematopoietic stem-cell transplantation; CAR T, chimeric antigen receptor T cell
3 therapy; COVID-19, coronavirus disease 2019; ICU, intensive care unit; IQR, interquartile range; SARS-CoV-2, severe acute respiratory syndrome coronavirus
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6 * one or more comorbidities present (chronic cardiomyopathy, chronic pulmonary disease, diabetes, liver disease, obesity, renal impairment, smoker)

7 **Supplement table 2.** Univariable Cox regression analysis

		Univariable 95% CI		
	P value	HR	Lower limit	Upper limit
Sex Male Female	0.886	1.077	0.391	2.965
Age	0.020	1.055	1.009	1.104
Number of previous lines of therapy before CAR T-cell therapy >2 >3	0.077	1.408	0.964	2.058
Previous auto HSCT	0.406	0.587	0.167	2.062
CAR T-cell construct	0.503	1.121	0.802	1.569
Time since CAR T-cell infusion	0.309	0.999	0.997	1.001
Year of COVID-19	0.269	0.704	0.377	1.312
Variant of SARS-CoV-2 infection Wildtype/Alpha/Delta mutation Omicron mutation	- 0.040	- 0.110	- 0.014	- 0.900
Vaccination before COVID-19	0.288	1.339	0.782	2.292
Comorbidities* No Yes	- 0.532	- 1.371	- 0.509	- 3.639
Neutrophil count at COVID-19	0.618	1.000	1.000	1.000
Lymphocyte count at COVID-19 diagnosis	0.522	1.000	0.999	1.001
Treatment with monoclonal antibodies	0.184	0.033	0.000	5.034
Treatment with convalescent plasma	0.532	0.696	0.224	2.167
Treatment with viral replication inhibitor	0.859	0.908	0.315	2.619
Treatment with steroids	0.737	1.185	0.441	3.184
Treatment with tocilizumab	0.104	2.842	0.805	10.025

8 Abbreviations: auto HSCT, autologous hematopoietic stem-cell transplantation; CAR T, chimeric
9 antigen receptor T cell therapy; CI, confidence interval; COVID-19, coronavirus disease 2019; HR,
10 hazard ratio; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2
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12 **Supplement table 3: Pairwise cox regression analysis**

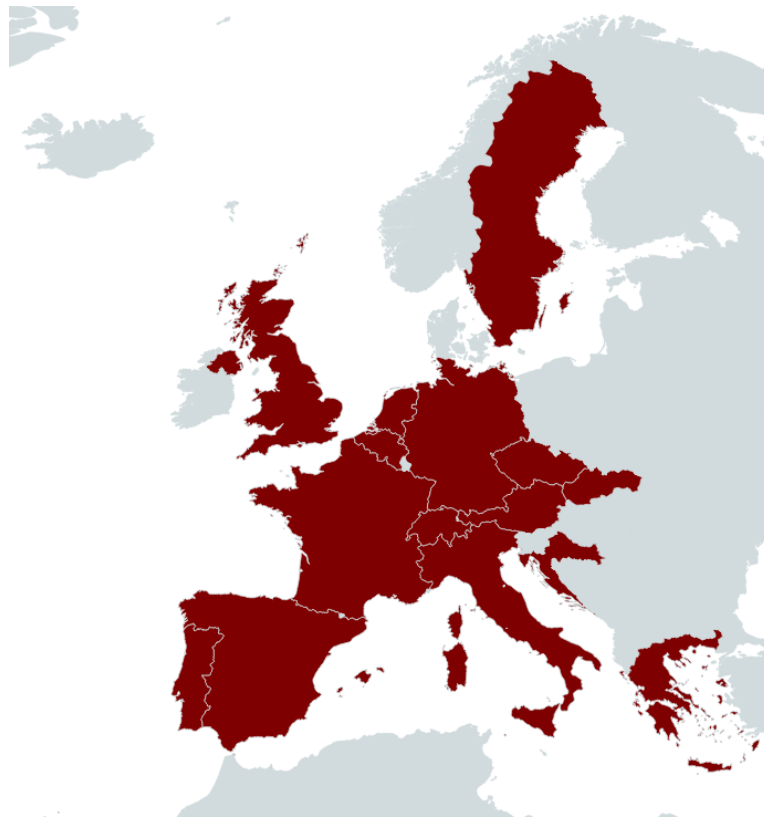
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		95% CI		
	P value	HR	Lower limit	Upper limit
Pairwise analysis 1				
Vaccination	0.884	1.084	0.368	3.191
MoAb	0.114	0.181	0.022	1.503
Pairwise analysis 2				
Vaccination	0.761	0.786	0.166	3.721
Year of COVID-19	0.754	0.873	0.374	2.040
Pairwise analysis 3				
MoAb	0.113	0.113	0.022	1.498
Year of COVID-19	0.890	0.890	0.581	1.869
Pairwise analysis 4				
MoAb	0.112	0.195	0.026	1.464
Age	0.008	1.056	1.015	1.098
Pairwise analysis 5				
Vaccination	0.261	0.556	0.200	1.547
Age	0.006	1.058	1.017	1.101

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15 **Supplement figure 1. EPICOVIDEHA contribution**

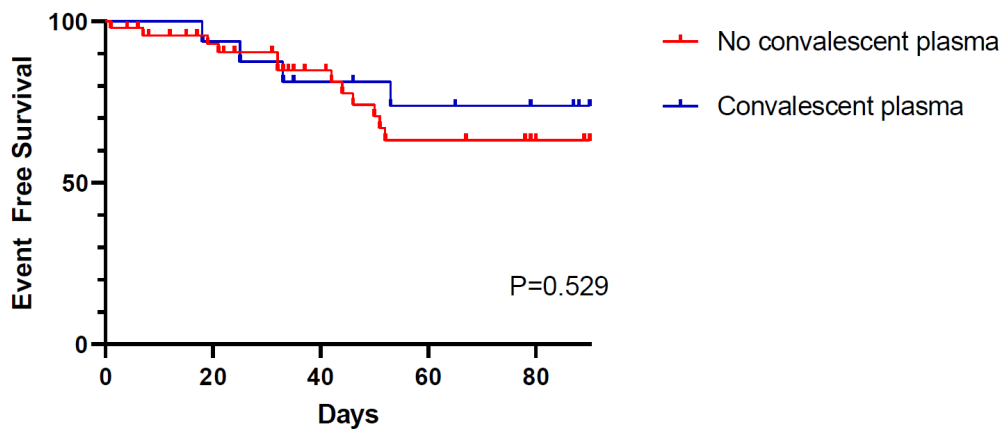
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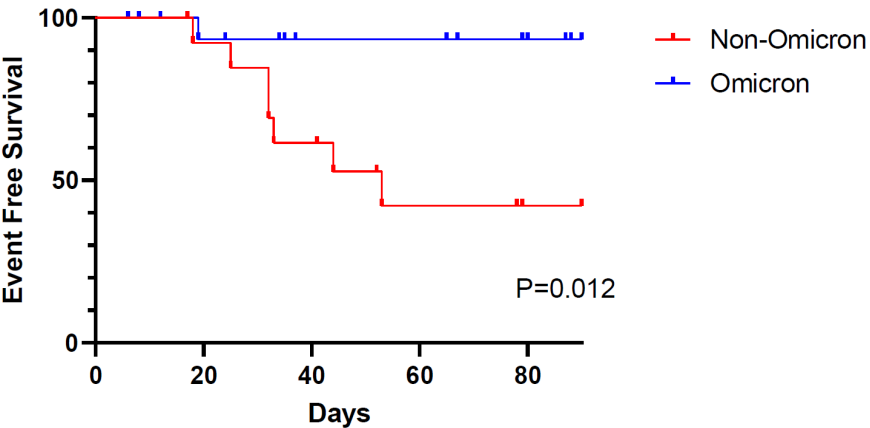
18 Spain (n=20), France (n=13), Italy (n=9), Netherlands (n=6), Belgium (n=3), Croatia, Czech Republic,
19 and Germany (n=2, each), and Austria, Greece, Portugal, Slovakia, Sweden, Switzerland, and United
20 Kingdom (n=1, each)

21 **Supplement figure 2.** Event Free Survival with and without convalescent plasma treatment



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Supplement figure 3. Event Free survival Omicron vs other variants (Wildtype, Alpha, Delta)



Supplement figure 4: Event free survival first vaccination before and after CAR T-cell therapy

