

Characteristic		Number n=140 (%)
Gender	Male	75 (53.6)
Age	Years (median(IQR))	52.35 (38.9-63.)
Ethnicity	Caucasian	70 (50.0)
	Afro-Caribbean	12 (8.6)
	South Asian	39 (27.9)
	Multi-racial	7 (5.0)
	Other	12 (8.6)
Diagnosis	AAV/anti-GBM	51 (36.4)
	MCD/FSGS	30 (21.4)
	MN	31 (22.1)
	SLE	22 (15.7)
	Other	6 (4.2)
Comorbidities	Diabetes	20 (14.3)
	Asthma/COPD	28 (20.0)
	Previous malignancy	7 (5.0)
Immunotherapy	Previous Rituximab	115 (82.1)
	Tacrolimus	23 (16.4)
	Azathioprine	13 (9.3)
	MMF	23 (16.4)
	Methotrexate	3 (2.1)
	Prednisolone	59 (42.1)
	Belimumab	5 (3.6)
	No current IS	9 (6.4)
	Previous CYP	66 (4.7)
Vaccine	AZ/ChAdOx1	36 (25.7)
	Pfizer/ BNT162b2	104 (74.3)

Table S1. Characteristics of patient cohort

AAV- ANCA associated vasculitis, GBM- Glomerular basement membrane, FSGS- Focal segmental glomerulosclerosis, MN- Membranous nephropathy, MCD- Minimal change disease, C3GN- C3 glomerulopathy, IgG4RD- IgG4 related disease, CYP-Cyclophosphamide, IS- Immunosuppression

		HC First dose n=70	IS First dose n=119	IS First dose matched (serology) n=88	IS First dose matched (cellular responses) n=36
Gender	Male	29 (41.4)	62 (52.1)	48 (54.5)	20 (55.6)
	Female	41 (58.6)	57 (47.9)	40 (45.5)	16 (44.4)
Age (years)		41.4 (33.0-55.0)	53.56 (39.3-63.2)	46.2 (36.0-57.6)	46.6 (38.9-58.3)
Vaccine	AZ/ChAdOx1	12 (17.1)	34 (28.6)	25 (28.4)	15 (41.7)
	Pfizer/ BNT162b2	58 (82.9)	85 (71.4)	63 (71.6)	21 (58.3)

		HC Second dose n=54	IS Second dose n=91	IS Second dose matched (serology) n=49	IS Second dose matched (cellular responses) n=19
Gender	Male	22 (40.7)	42 (46.2)	26 (53.1)	11 (57.9)
	Female	32 (59.2)	49 (53.8)	23 (46.9)	8 (42.1)
Age (years)		42.8 (36.7-52.2)	54.3 (40.0- 64.0)	46.6 (35.1-57.6)	51.6 (36.0-59.6)
Vaccine	AZ/ChAdOx1	0	22 (24.2)	0	0
	Pfizer/ BNT162b2	54 (100)	69 (75.8)	49 (100)	19 (100)

Table S2A. Characteristics of healthy control cohort, IS cohort and matched cohorts for assessment of 1st dose responses

Characteristic		First Dose				Second Dose			
		n=	No response n=32 (%)	Response n=18	p=	n=	No response n=4	Response n=42	p=
Gender	Male	31	21 (67.7)	10 (32.3)		27	2 (7.4)	25 (92.6)	
	Female	19	11 (57.9)	8 (42.1)		19	2 (10.5)	17 (89.5)	
Age	Years (IQR)		53.4 (42.7-64.1)	53.9 (40.0-60.4)			67.5 (61.9-69.8)	54.7 (41.4-63.8)	0.03
Ethnicity	White	28	19 (67.9)	9 (32.1)		24	3 (12.5)	21 (87.5)	
	Black	1	1 (100)	0		2	0	2 (100)	
	South Asian	19	11 (57.9)	8 (42.1)		18	1 (5.6)	17 (94.4)	
	Multi-racial	2	1 (50.0)	1 (50.0)		1	0	1 (100)	
	Other	0	0	0		1	0	1 (100)	
Diagnosis	AAV/anti-GBM	24	13 (54.2)	11 (45.8)		19	1 (5.3)	18 (94.7)	
	MCD/FSGS	15	11 (73.3)	4 (26.7)		15	2 (13.3)	13 (86.7)	
	MN	10	7 (70.0)	3 (30.0)		9	1 (11.1)	8 (88.9)	
	SLE	0	0	0		2	0	2 (100)	
	Other	1	1 (100)	0		1	0	1 (100)	
Comorbidities	Diabetes	10	7 (70.0)	3 (30.0)		8	2 (25.0)	6 (75.0)	
	Asthma/COPD	10	6 (60.0)	4 (40.0)		11	0	11 (100)	
	Previous malignancy	0	0	0		0	0	0	
Immunotherapy	Rituximab	44	28 (63.6)	16 (36.4)	0.04	41	4 (9.8)	37 (91.2)	
	Last 6 months	32	21 (65.6)	11 (34.4)		28	3 (10.7)	25 (89.3)	
	Tacrolimus	11	10 (90.1)	1 (9.1)		12	0	12 (100)	
	Azathioprine	4	2 (50.0)	2 (50.0)		3	0	3 (100)	
	MMF	5	3 (60.0)	2 (40.0)		4	0	4 (100)	
	Methotrexate	0	0	0		1	0	1 (100)	
	Prednisolone	17	14 (82.4)	3 (17.6)		14	1 (7.1)	13 (92.9)	
	≥10mg	5	3 (60.0)	2 (40.0)		3	1 (33.3)	2 (66.7)	
	Belimumab	0	0	0		0	0	0	
	No IS	1	1 (100)	0		1	0	1 (100)	
CYP	25	14 (56.0)	11 (44.0)	20	1 (5.0)	19 (95.0)			
Vaccine	AZ/ChAdOx1	22	12 (54.5)	10 (45.5)		17	1 (5.9)	16 (94.1)	

	Pfizer/ BNT162b2	28	20 (71.4)	8 (28.6)		29	3 (10.3)	26 (89.7)	
Clinical parameter	B cell depletion	33	23 (69.7)	10 (30.3)		30	3 (10.0)	27 (90.0)	
	Hypogammaglobulinaemia	13	10 (76.9)	3 (13.1)		9	3 (33.3)	6 (66.7)	

Table S3. Patient characteristics by combined immunological response in those with no evidence of previous natural infection