

Supplement Table 1: Patient characteristics in UV, DV, TV, QT

	unvaccinated (reference)		Double-vaccinated		Triple-vaccinated		Quadruple-vaccinated	
	n	%	n	%	n	%	n	%
	923		551		803		37	
Age (years, median, range)	55 (18-93)		55 (20-93)		56 (16-93)		61 (32-87)	
Female	603	65.3	356	64.6	576	71.7	24	64.9
Body-mass-index (median, range)	26.5 (16-53)		26.7 (17-55)		25.8 (16-53)		25.4 (17-39)	<sup>s</sup>
1. Vaccine								
- Moderna			29	5.3	56	7.0	0	0
- Biontech/Pfizer			426	77.3	573	71.4	31	83.8
- AstraZeneca			56	10.2	139	17.3	5	13.5
- Janssen/J& J.			17	3.1	4	0.5	0	0
- Nuvaxovid			1	0.2	5	0.6	0	0
- unknown			22	4.0	26	3.2	1	2.7
2. Vaccine								
- Moderna			40	7.3	66	8.2	0	0
- Biontech/Pfizer			459	83.3	644	80.2	35	94.6
- AstraZeneca			36	6.5	60	7.5	1	2.7
- Janssen/J& J.			1	0.2	0	0	0	0
- Nuvaxovid			1	0.2	7	0.9	0	0
- unknown			14	2.5	26	3.2	1	2.7
3. Vaccine								
- Moderna					201	25.0	3	8.1
- Biontech/Pfizer					573	71.4	31	83.8
- AstraZeneca					3	0.4	1	2.7
- Janssen/J& J.					2	0.2	1	2.7
- Nuvaxovid					0	0	0	0
- unknown					24	3.0	1	2.7
4. Vaccine								
- Moderna							14	36.8
- Biontech/Pfizer							22	59.5
- AstraZeneca							0	0
- Janssen/J& J.							0	0
- Nuvaxovid							0	0
- unknown							1	2.7
Time between SARS-CoV-2 infection and last vaccination (days, median, range)			151 (14-347)		88 (14-270)		35 (14-179)	
<b>IRD (multiple selection possible)</b>								
Rheumatoid arthritis	393	42.6	240	43.6	331	41.2	14	37.8
Spondyloarthritis	278	30.2	161	29.4	252	31.4	11	29.7
Connective tissue diseases	132	14.3	74	13.4	116	14.2	9	24.3
Other Vasculitis	60	6.5	28	5.1	45	5.6	2	5.4
ANCA-associated Vasculitis	25	2.7	19	3.4	20	2.5	1	2.7
Other type of IRD	93	10.1	51	9.3	74	9.2	3	8.1
<b>Immunomodulation (multiple selection possible)</b>								
Glucocorticoids	247	26.8	134	24.3	194	24.2	8	21.6
Prednisolone ≤ 5 mg/day	169		83		121		7	
Prednisolone 6-9 mg/day	10		5		7		/	
Prednisolone ≥ 10 mg/day	33		18		26		0	
Methotrexate, leflunomide, sulfasalazine	461	49.9	258	46.8	366	45.6	17	45.9
Azathioprine	22	2.4	16	2.9	28	3.5	1	2.8
Tumor-necrosis-inhibitors (adalimumab, certolizumab, infliximab, golimumab)	192	20.8	125	22.7	197	24.5	10	27.0
Other cytokine-inhibitors (IL-6/IL-1/IL12/23/IL17 inhibition)	81	8.8	68	12.3	79	9.8	6	16.2
Janus kinase inhibitors (baricitinib, tofacitinib, upadacitinib, filgotinib)	70	7.6	51	9.3	71	8.8	4	10.8
Immunosuppressives (cyclosporine, mycophenolate, cyclophosphamide)	28	3.0	14	2.5	20	2.5	6	16.2
Abatacept	10	1.1	8	1.5	10	1.2	1	2.7
Rituximab	28	3.0	24	4.4	35	4.4	1	2.7
Belimumab	8	0.9	7	1.3	7	0.9	0	0
Immunoglobulines	3	0.3	1	0.2	7	0.9	0	0
Apremilast	4	0.4	2	0.4	3	0.4	0	0
Other immunomodulators	51	5.5	18	3.3	29	3.6	3	8.1
No immunomodulation	100	10.8	44	8.0	57	7.1	2	5.4
<b>Disease activity</b>								
No/low	780	84.5	478	86.8	710	88.4	35	94.6
Moderate/high	129	14.0	65	11.8	78	9.7	2	5.4
<b>Comorbidities (multiple selections possible)</b>								
Arterial hypertension	287	31.1	172	31.2	229	28.5	12	32.4
Other relevant comorbidities	168	18.2	110	20.0	130	16.2	9	24.3
Heart failure/arrhythmia	93	10.1	67	12.2	68	8.5	6	16.2
Diabetes mellitus	83	9.0	50	9.1	47	5.9	2	5.4
Osteoporosis	52	5.6	35	6.4	74	9.2	3	8.1
Chronic renal failure	47	5.1	29	5.3	48	6.0	6	16.2
Cancer/history of cancer	26	2.8	19	3.4	22	2.7	1	2.7
Chronic obstructive lung diseases	22	2.4	12	2.2	24	3.0	0	0
Interstitial lung diseases	23	2.5	12	2.2	18	2.2	4	10.8
Bronchial asthma	39	4.2	27	4.9	42	5.2	1	2.7
Pregnancy	9	1.0	4	0.7	2	0.2	0	0
Pulmonary hypertension	7	0.8	2	0.4	2	0.2	2	5.4
Liver cirrhosis	4	0.4	1	0.2	3	0.4	0	0
Absence of relevant comorbidities	350	37.9	250	45.4	371	46.2	9	24.3
<b>COVID-19 associated complications</b>								
Hospitalisation	142	15.4	44	8.0	22	2.7	1	2.7
Invasive ventilation	25	2.7	11	2.0	1	0.1	0	0
Relevant complications (e.g. concomitant infection, thromboembolic events)	57	6.2	23	4.2	6	0.7	0	0
COVID-19 related death	18	2.0	10	1.8	5	0.6	0	0