

Additional file 1. Demographic and clinical characteristics of test-negative matched to test-positive subjects by ASST and date of swab, and population controls for CC-POS and CC-NEG designs.

	Test-negative subjects* (for TND and CC-NEG designs)			Controls (for CC-POS and CC-NEG designs)			
	Autoimmune status			Autoimmune status			
	Overall	No	Overall	Overall	No	Yes	
	19251	n= 18522; 96.2%	n= 729; 3.8%	n=154008	n=150626; 97.8%	n=3382; 2.2%	
<b>Gender = Male (%)</b>	7650 (39.7)	7538 (40.7)	112 (15.4)	74542 (48.4)	73904 (49.1)	638 (18.9)	
<b>Age mean (sd)</b>	54.8 (20.6)	54.7 (20.7)	56.6 (16)	45.4 (23.7)	45.2 (23.7)	58.4 (16.2)	
<b>Age class (years) (%)</b>							
	<17	504 (2.6)	503 (2.7)	1 (0.1)	24652 (16)	24630 (16.4)	22 (0.7)
	[18-40]	4081 (21.2)	3987 (21.5)	94 (12.9)	35439 (23)	35022 (23.3)	417 (12.3)
	[40-70]	9645 (50.1)	9180 (49.6)	465 (63.8)	66030 (42.9)	64049 (42.5)	1981 (58.6)
	≥70	5021 (26.1)	4852 (26.2)	169 (23.2)	27887 (18.1)	26925 (17.9)	962 (28.4)
<b>Geographic location (%)</b>							
	Lodi Province (start of the outburst)	2537 (13.2)	2452 (13.2)	85 (11.7)	10050 (6.5)	9800 (6.5)	250 (7.4)
	City of Milan	7057 (36.7)	6825 (36.8)	232 (31.8)	60725 (39.4)	59484 (39.5)	1241 (36.7)
	Milan Province	9657 (50.2)	9245 (49.9)	412 (56.5)	83233 (54)	81342 (54)	1891 (55.9)
<b>Number of Comorbidities (Excluded autoimmune)</b>							
	None			10536 (68.4)	10444 (69.3)	914 (27)	
	1-3	10330 (53.7)	10100 (54.5)	230 (31.6)	41971 (27.3)	39881 (26.5)	2090 (61.8)
	≥4	6740 (35)	6352 (34.3)	388 (53.2)	6674 (4.3)	6296 (4.2)	378 (11.2)
	<b>Comorbidities (%)</b>	2181 (11.3)	2070 (11.2)	111 (15.2)	245 (0.2)	238 (0.2)	7 (0.2)
<b>Transplanted any time = Yes (%)</b>				180 (0.1)	169 (0.1)	11 (0.3)	
	Blood and Hematopoietic organs = Yes (%)	108 (0.6)	106 (0.6)	2 (0.3)	510 (0.3)	502 (0.3)	8 (0.2)
	HIV infection or AIDS = Yes (%)	36 (0.2)	31 (0.2)	5 (0.7)	4153 (0.3)	3468 (0.3)	685 (20.3)
	Tumor in first line treatment = Yes (%)	125 (0.6)	122 (0.7)	3 (0.4)	4182 (2.7)	3077 (2.3)	105 (3.1)
	Tumor in follow-up, 1-5years = Yes (%)	1204 (6.3)	1108 (6)	96 (13.2)	3182 (2.1)	3077 (2)	105 (3.1)
	Tumor in remission after 5 years = Yes (%)	622 (3.2)	593 (3.2)	29 (4)	4141 (2.7)	3951 (2.6)	190 (5.6)
	Type 1 Diabetes = Yes (%)	744 (3.9)	711 (3.8)	33 (4.5)	185 (0.1)	173 (0.1)	12 (0.4)
	Type 2 Diabetes = Yes (%)	45 (0.2)	43 (0.2)	2 (0.3)	7527 (4.9)	7269 (4.8)	258 (7.6)
	Complicated DM Type 1 and 2 = Yes (%)	1400 (7.3)	1341 (7.2)	59 (8.1)	637 (0.4)	616 (0.4)	21 (0.6)
	Hypercholesterolaemia = Yes (%)	313 (1.6)	296 (1.6)	17 (2.3)	8952 (5.8)	8590 (5.7)	362 (10.7)
	Arterial hypertension = Yes (%)	1509 (7.8)	1450 (7.8)	59 (8.1)	28928 (18.8)	27761 (18.4)	1167 (34.5)
	Ischemic heart disease = Yes (%)	5336 (27.7)	5098 (27.5)	238 (32.6)	5654 (3.7)	5468 (3.6)	186 (5.5)
	Valvular heart disease = Yes (%)	1515 (7.9)	1451 (7.8)	64 (8.8)	1394 (0.9)	1347 (0.9)	47 (1.4)
	Cardiomyopathy with arrhythmia = Yes (%)	384 (2)	365 (2)	19 (2.6)	4940 (3.2)	4754 (3.2)	186 (5.5)
	Cardiomyopathy without arrhythmia = Yes (%)	1442 (7.5)	1384 (7.5)	58 (8)	4072 (2.6)	3932 (2.6)	140 (4.1)
	Chronic Hearth failure = Yes (%)	1137 (5.9)	1089 (5.9)	48 (6.6)	2375 (1.5)	2289 (1.5)	86 (2.5)
	Peripheral Artery Disease = Yes (%)	1001 (5.2)	957 (5.2)	44 (6)	1158 (0.8)	1108 (0.7)	50 (1.5)
	Venous diseases = Yes (%)	463 (2.4)	444 (2.4)	19 (2.6)	551 (0.4)	527 (0.3)	24 (0.7)
	Cerebrovascular disease = Yes (%)	170 (0.9)	159 (0.9)	11 (1.5)	1168 (0.8)	1100 (0.7)	68 (2)
	Thyroid diseases = Yes (%)	493 (2.6)	471 (2.5)	22 (3)	5890 (3.8)	3767 (2.5)	2123 (62.8)
	Other endocrine diseases = Yes (%)	1225 (6.4)	789 (4.3)	436 (59.8)	495 (0.3)	458 (0.3)	37 (1.1)
	Other autoimmune diseases= Yes (%)	98 (0.5)	83 (0.4)	15 (2.1)	1540 (1)	107 (0.1)	1433 (42.4)
	Epilepsy = Yes (%)	350 (1.8)	28 (0.2)	322 (44.2)	847 (0.5)	815 (0.5)	32 (0.9)
	Alzheimer and Dementias = Yes (%)	220 (1.1)	214 (1.2)	6 (0.8)	657 (0.4)	640 (0.4)	17 (0.5)
	Parkinson and Parkinsonisms = Yes (%)	311 (1.6)	302 (1.6)	9 (1.2)	486 (0.3)	467 (0.3)	19 (0.6)

<b>Nervous system diseases, others = Yes (%)</b>	163 (0.8)	160 (0.9)	3 (0.4)	519 (0.3)	495 (0.3)	24 (0.7)
<b>Chronic hepatitis and cirrhosis = Yes (%)</b>	124 (0.6)	116 (0.6)	8 (1.1)	1764 (1.1)	1687 (1.1)	77 (2.3)
<b>Digestive system diseases, others = Yes (%)</b>	407 (2.1)	381 (2.1)	26 (3.6)	1350 (0.9)	1272 (0.8)	78 (2.3)
<b>COPD = Yes (%)</b>	259 (1.3)	244 (1.3)	15 (2.1)	1987 (1.3)	1901 (1.3)	86 (2.5)
<b>RF or Oxygen therapy = Yes (%)</b>	631 (3.3)	598 (3.2)	33 (4.5)	160 (0.1)	153 (0.1)	7 (0.2)
<b>Asthma = Yes (%)</b>	89 (0.5)	84 (0.5)	5 (0.7)	2608 (1.7)	2505 (1.7)	103 (3)
<b>CKD = Yes (%)</b>	476 (2.5)	443 (2.4)	33 (4.5)	1209 (0.8)	1166 (0.8)	43 (1.3)
<b>Dialysis dependent CKD = Yes (%)</b>	423 (2.2)	404 (2.2)	19 (2.6)	104 (0.1)	103 (0.1)	1 (0)
<b>Autoimmune disease</b>	254 (1.3)	246 (1.3)	8 (1.1)			
<b>Acquired Autoimmune Hemolytic Anemia</b>						17 (0.5)
<b>Systemic Sclerosis</b>			7 (1)			77 (2.3)
<b>Ankylosing Spondylitis</b>			25 (3.4)			51 (1.5)
<b>Myasthenia Gravis</b>			11 (1.5)			46 (1.4)
<b>Rheumatoid Arthritis</b>			17 (2.3)			578 (17.1)
<b>Psoriatic Arthritis</b>			141 (19.3)			392 (11.6)
<b>Systemic Lupus Erythematosus</b>			73 (10)			109 (3.2)
<b>Sjogren Disease</b>			22 (3)			100 (3)
<b>Hashimoto's Disease</b>			29 (4)			2012 (59.5)

\*Test-negative matched to test-positive subjects by ASST and date of swab.