

Supplementary Table 1: List of immunosuppressive medications

Adalimumab
 Azathioprine
 Everolimus
 Infliximab
 IVIG
 Jakafi
 Leflunomide
 Methotrexate
 Methylprednisolone
 Mycophenolate
 Prednisone
 Rituximab
 Sirolimus
 Tacrolimus
 Tocilizumab
 Vedolizumab

Supplementary Table 2: Outpatient immunosuppressive claims in the 14 days prior to hospitalization

	Number of outpatient prescriptions	% of all outpatient immunosuppressive prescriptions
Adalimumab	1	0.1%
Azathioprine	2	0.3%
Everolimus	9	1.2%
Infliximab	14	1.8%
IVIG	4	0.5%
Jakafi	2	0.3%
Leflunomide	0	0.0%
Methotrexate	9	1.2%
Methylprednisolone	289	37.1%
Mycophenolate	3	0.4%
Prednisone	416	53.3%
Rituximab	9	1.2%
Sirolimus	13	1.7%
Tacrolimus	4	0.5%
Tocilizumab	1	0.1%
Vedolizumab	4	0.5%
Total	780	

Supplementary Table 3: ICI length of treatment by decile of life

Decade of age	n	Mean ICI Length (Days)	SD ICI Length (Days)
0	1	24	NA
10	8	243.50	290.05
20	102	201.96	273.36
30	300	191.70	253.91
40	786	197.79	269.46
50	2476	173.01	234.43
60	4579	156.95	213.18
70	4008	161.38	215.76
80	1903	149.74	199.55
90	215	145.29	197.66

Spearman coefficient: $r=-0.05$

$p < 0.001$

Supplementary Table 4: Combination ICI treatment by decile of life

Decade of age	n	Patients receiving combination ICI therapy	% patients receiving combination ICI therapy
0	1	0	0.0%
10	8	0	0.0%
20	102	16	15.7%
30	300	45	15.0%
40	786	94	12.0%
50	2476	255	10.3%
60	4579	354	7.7%
70	4008	241	6.0%
80	1903	55	2.9%
90	215	3	1.4%