

**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%