

Risk of thromboembolic events and associated healthcare costs in patients with inflammatory bowel disease

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## Supplemental Material

### *Online Resource 1. Codes to identify comorbidities of interest*

<b>Comorbidity</b>	<b>ICD-9</b>	<b>ICD-10</b>
<b>Immune-mediated disease</b>		
Ankylosing spondylitis	720.0	M45
Atopic dermatitis	691.8	L20
Inflammatory bowel disease	555, 556	K50, K51
Multiple sclerosis	340	G35
Psoriasis	696.1, 696.8	L40.0, L40.1, L40.2, L40.3, L40.4, L40.8, L40.9
Psoriatic arthritis	696.0	L40.5
Rheumatoid arthritis	714.0-714.2	M05, M06
Systemic lupus erythematosus	695.4, 710.0	L93, M32
<b>Venous thromboembolism</b>		
Deep venous thromboembolism	451.1, 451.2, 451.81, 451.83, 451.84, 451.89, 451.9, 452, 453.2, 453.3, 453.4, 453.82-453.89, 453.9, 671.3, 671.4	I80.1, I80.2, I80.3, I80.8, I80.9, I81, I82.2x0, I82.3, I82.4, I82.60, I82.62, I82.890, I82.90, I82.A1, I82.B1, I82.C1, O22.3, O87.1
Pulmonary embolism	415.1	I26
<b>Arterial thromboembolism</b>		
Ischemic stroke	433.x1, 434.x1, 436	I63, I64
Myocardial infarction	410	I21, I22
Cancer	140-208, 209.0-209.3, 238.4, 238.6, 238.7, 289.83	C00-C96, D45, D46, D47.3, D47.Z9, D75.81
<b>Cardiovascular diseases</b>		
Atherosclerosis	414.0, 414.3, 414.4, 429.2, 440	I25.1, I25.7, I25.81, I25.83, I25.84, I70
Atrial fibrillation	427.31	I48.0, I48.1, I48.2, I48.91

Heart failure	398.91, 402.01, 402.11, 402.91, 404.01, 404.03, 404.11, 404.13, 404.91, 404.93, 428	I09.81, I11.0, I13.0, I13.2, I50
Hyperlipidemia	272	E78
Hypertension	401-405	I10-I15
Chronic kidney disease	585	N18
Chronic obstructive pulmonary disease	491, 492, 493.2, 496	J41, J42, J43, J44
Diabetes		
Type 1	2501, 2503	E10
Type 2	2500, 2502	E11
Fracture (hip or leg)	820, 821, 823	S72, S82.1, S82.2, S82.3, S82.4, S82.81, S82.82, S82.83, S82.87
Peripheral vascular disease	093.0, 437.3, 440, 441, 443.1-443.9, 447.1, 557.1, 557.9, V43.4	I70, I71, I73.1, I73.8, I73.9, I77.1, I79.0, I79.2, K55.1, K55.8, K55.9, Z95.8, Z95.9
Pregnancy	630-679, V22, V23, V24, V28	O00-O99, Z34, Z36, Z39

ICD-9 (ICD-10), International Classification of Diseases, Ninth (Tenth) Revision

*Online Resource 2. Codes to identify drugs of interest*

<b>Drug</b>	<b>GPI</b>
<b>Non-immune-mediating drugs</b>	
Anticoagulants	83x
Hormone replacement therapies	24x, 26x
Oral contraceptives	2510x, 2599x
Testosterone replacement therapies	2310x
<b>Immune-mediating drugs</b>	
JAK inhibitors	215375x, 666030x
Biologics	
IL inhibitors	
IL-1	6626001000
IL-4	9027302000
IL-6	6650x
IL-17	9025057500, 9025055400, 9025052000
IL-23	9025058500, 9025058010, 9025054200, 5250407000, 9025057000
TNF inhibitors	525050x, 6627x, 6629x
Interferon beta-1a	6240306045
Other biologics	
Abatecept	6640001000
Belimumab	9942201500
Rituximab	2135306000, 2135306010
Natalizumab	6240505000
Vedolizumab	5250308000
Non-biologic immunomodulators	
Methotrexate	2130005000, 2130005010, 6625005000, 6625005010
S1P receptor modulators <sup>1</sup>	624070x
Other non-biologic immunomodulators	
Azathioprine	9940601000

Cyclophosphamide	2110102000
Cyclosporine	9940202000, 9940202030
Hydroxychloroquine	1300002010
Leflunomide	6628005000
Mercaptopurine	2130004000
Mycophenolate mofetil	9940303010, 9940303020
Pimecrolimus	9078406000
Sulfasalazine	5250006000
Tacrolimus	9940408000, 9078407500
NSAIDs	6610x
Glucocorticoids	2210x
5-aminosalicylic-acid derivative agents	5250x

GPI, generic product identifier; IL, interleukin; JAK, Janus kinase; NSAIDs, nonsteroidal anti-inflammatory drugs; S1P, sphingosine 1-phosphate; TNF, tumor necrosis factor.

Note:

[1] The drugs included in S1P receptor modulators were fingolimod hydrochloride and siponimod fumarate.