

Supplementary Table 1. Inclusion and exclusion criteria for rheumatoid arthritis and list of comorbidities

Category	Subcategory	Disease	ICD-10 code (RID code)
Rheumatoid arthritis	Inclusion	Rheumatoid arthritis	M05 (V223)
	Exclusion	Systemic lupus erythematosus	M32
	Exclusion	Mixed connective tissue diseases	M351
	Exclusion	Sjögren's syndrome	M350
	Exclusion	Inflammatory myositis	M331, M332
	Exclusion	Interstitial lung diseases	J84
	Exclusion	Solid organ transplantation	Z940, Z941, Z942, Z943, Z944, and Z948
	Exclusion	Cancer	C00-97 and cancer registration codes (V027, V193, and V194)
	Exclusion	HIV infection	B20-24, R75, Z21
	Exclusion	Dialysis	National Health Insurance Payment codes (O701x, O702x, O703x, O704x, O705x, O706x, O707x, and O708x)
Comorbidities		Hypertension	I10-13, I15
		Dyslipidemia	E78
		Diabetes mellitus	E10-14
		Carotid stenosis	I652
		Asthma	J45-46
		Chronic obstructive pulmonary disease	J44
		Chronic kidney disease	N18-19
		Congestive heart failure	I50
		Atrial fibrillation	I48

ICD-10: International Classification of Disease 10th revision, RID: Rare Intractable Disease, HIV: human immunodeficiency virus.

Supplementary Table 2. Operational definitions of acute myocardial infarction

Criteria	Code or definition
Diagnosis	Acute myocardial infarction (I21)
Procedure code related to acute myocardial infarction	Coronary angiography (HA670), aortocoronary venous bypass graft angiography (HA680, HA681, HA682), percutaneous transluminal coronary angioplasty (M6551, M6552, M6553), percutaneous transcatheter placement of intracoronary stent (M6561, M6562, M6563, M6564, M6565), percutaneous transluminal coronary atherectomy (M6571, M6572), mechanical thrombectomy (M6633, M6638), percutaneous thrombus removal (M6634), vascular bypass operation (O1641, O1642, O1647, OA641, OA642, OA647)
Type of visit	Claims related to admission

Supplementary Table 3. A subgroup analysis of the risk of acute myocardial infarction according to the use of each anti-rheumatic agents

	Case (n=484)	Control (n=1,924)	Matched OR (95% CI)	Adjusted OR* (95% CI)
Hydroxychloroquine				
Non-exposure	257 (53.1)	818 (42.5)	1	1
Past short-term exposure	29 (6.0)	192 (10.0)	0.474 (0.313~0.717)	0.450 (0.281~0.722)
Past long-term exposure	58 (12.0)	306 (15.9)	0.583 (0.422~0.806)	0.611 (0.423~0.884)
Current short-term exposure	25 (5.2)	89 (4.6)	0.981 (0.594~1.621)	1.018 (0.574~1.806)
Current long-term exposure	115 (23.8)	519 (27.0)	0.701 (0.547~0.899)	0.748 (0.560~1.001)
Methotrexate				
Non-exposure	97 (20.0)	388 (20.2)	1	1
Past short-term exposure	23 (4.8)	128 (6.7)	0.691 (0.417~1.146)	0.775 (0.441~1.362)
Past long-term exposure	58 (12.0)	303 (15.7)	0.740 (0.507~1.080)	0.839 (0.551~1.278)
Current short-term exposure	34 (7.0)	112 (5.8)	1.386 (0.799~2.403)	1.239 (0.671~2.286)
Current long-term exposure	272 (56.2)	993 (51.6)	1.087 (0.825~1.433)	0.999 (0.732~1.363)
Leflunomide				
Non-exposure	221 (45.7)	1,109 (57.6)	1	1
Past short-term exposure	13 (2.7)	125 (6.5)	0.530 (0.294~0.957)	0.646 (0.337~1.237)
Past long-term exposure	59 (12.2)	198 (10.3)	1.551 (1.105~2.177)	1.566 (1.049~2.338)
Current short-term exposure	18 (3.7)	65 (3.4)	1.227 (0.693~2.172)	0.975 (0.503~1.891)
Current long-term exposure	173 (35.7)	427 (22.2)	2.135 (1.683~2.710)	1.736 (1.312~2.298)
Sulfasalazine				
Non-exposure	373 (77.1)	1,387 (72.1)	1	1
Past short-term exposure	29 (6.0)	149 (7.7)	0.732 (0.486~1.103)	0.774 (0.491~1.219)
Past long-term exposure	28 (5.8)	125 (6.5)	0.839 (0.548~1.284)	1.015 (0.628~1.640)
Current short-term exposure	7 (1.4)	43 (2.2)	0.593 (0.259~1.354)	0.447 (0.173~1.154)
Current long-term exposure	47 (9.7)	220 (11.4)	0.798 (0.568~1.122)	0.841 (0.574~1.232)
Tacrolimus				
Non-exposure	407 (84.1)	1,658 (86.2)	1	1
Past short-term exposure	20 (4.1)	84 (4.4)	0.992 (0.595~1.656)	0.998 (0.554~1.797)
Past long-term exposure	10 (2.1)	43 (2.2)	0.979 (0.489~1.960)	1.083 (0.504~2.328)
Current short-term exposure	7 (1.4)	43 (2.2)	0.658 (0.293~1.478)	0.561 (0.225~1.396)
Current long-term exposure	40 (8.3)	96 (5.0)	1.759 (1.182~2.616)	1.781 (1.143~2.773)
Glucocorticoids				
Non-exposure	4 (0.8)	102 (5.3)	1	1
Past short-term exposure	112 (23.1)	593 (30.8)	6.156 (2.164~17.516)	7.065 (2.341~21.318)
Past long-term exposure	171 (35.3)	718 (37.3)	8.712 (3.012~25.201)	9.115 (2.964~28.035)
Current short-term exposure	14 (2.9)	62 (3.2)	5.282 (1.596~17.487)	4.694 (1.315~16.751)
Current long-term exposure	183 (37.8)	449 (23.3)	14.503 (5.037~41.762)	12.704 (4.146~38.926)
Anti-TNF- α agents				
Non-exposure	453 (93.6)	1,772 (92.1)	1	1
Past short-term exposure	10 (2.1)	37 (1.9)	1.058 (0.521~2.148)	0.839 (0.338~2.084)
Past long-term exposure	5 (1.0)	34 (1.8)	0.572 (0.223~1.465)	0.401 (0.127~1.269)
Current short-term exposure	3 (0.6)	29 (1.5)	0.412 (0.126~1.354)	0.424 (0.121~1.482)
Current long-term exposure	13 (2.7)	52 (2.7)	0.977 (0.526~1.813)	0.938 (0.467~1.884)

Supplementary Table 3. Continued

	Case (n=484)	Control (n=1,924)	Matched OR (95% CI)	Adjusted OR* (95% CI)
Abatacept				
Non-exposure	481 (99.4)	1,906 (99.1)	1	1
Past short-term exposure	1 (0.2)	5 (0.3)	0.785 (0.085~7.284)	0.684 (0.058~8.097)
Past long-term exposure	0 (0.0)	2 (0.1)	NA	NA
Current short-term exposure	1 (0.2)	1 (0.1)	4.000 (0.250~63.950)	5.387 (0.243~119.264)
Current long-term exposure	1 (0.2)	10 (0.5)	0.400 (0.051~3.125)	0.235 (0.024~2.335)
Tocilizumab				
Non-exposure	478 (98.8)	1,902 (98.9)	1	1
Past short-term exposure	3 (0.6)	4 (0.2)	2.843 (0.635~12.733)	2.622 (0.401~17.155)
Past long-term exposure	0 (0.0)	2 (0.1)	NA	NA
Current short-term exposure	2 (0.4)	3 (0.2)	2.422 (0.403~14.547)	2.497 (0.304~20.539)
Current long-term exposure	1 (0.2)	13 (0.7)	0.319 (0.041~2.492)	0.304 (0.027~3.390)
Janus kinase inhibitors				
Non-exposure	481 (99.4)	1,916 (99.6)	1	1
Past short-term exposure	0 (0.0)	1 (0.1)	NA	NA
Past long-term exposure	1 (0.2)	1 (0.1)	4.000 (0.250~63.950)	5.396 (0.254~114.500)
Current short-term exposure	2 (0.4)	2 (0.1)	4.000 (0.563~28.396)	1.790 (0.183~17.514)
Current long-term exposure	0 (0.0)	4 (0.2)	NA	NA

Values are presented as number (%). CI: confidential interval, NA: not available, OR: odds ratio, TNF- α : tumor necrosis factor-alpha.

*Adjusted for hypertension, dyslipidemia, diabetes mellitus, carotid stenosis, asthma, chronic obstructive pulmonary disease, chronic kidney disease, congestive heart failure, atrial fibrillation, Charlson comorbidity index (0, 1~2, 3~4, >5), use of non-steroidal anti-inflammatory drugs, low dose aspirin, statins, antihypertensive agents, and other anti-rheumatic agents.