

Supplementary data legends

Table S1. Diagnostic codes and drug codes used in this study.

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Diagnoses		
Underlying diseases^a		
Hypertension		I10, I11, I12, I13, I15
Dyslipidemia		E78
Chronic lung diseases		J40, J41, J42, J43, J44, J45, J46, J47, J60, J61, J62, J63, J64, J65, J66, J67, I278, I279, J684, J701, J703
Diabetes		E10, E11, E12, E13, E14
Solid tumor		C0, C1, C2, C3, C4, C5, C6, C7, C80, C97
Ischemic heart disease		I20, I21, I22, I23, I24, I25
Heart failure		I50, I43, I099, I110, I130, I132, I255, I420, I425, I426, I427, I428, I429
Chronic kidney disease		N03, N04, N18, N19, N25, N26, Z49, Z94, I120, I131, Z992
Liver cirrhosis		K72, I850, I859, I864, I980, I983, K703, K704, K711, K715, K743, K744, K745, K746, K754, K762, K765, K766, K767
Depression		F34, F322, F323, F332, F333
Inflammatory bowel disease		K50, K51
Hematologic malignancy		C81, C82, C83, C84, C85, C86, C87, C88, C89, C90, C91, C92, C93, C94, C95, C96
Solid organ transplantation		Z940, Z941, Z942, Z943, Z944, Z948
Rheumatic diseases		
Systemic lupus erythematosus		M05, M06
Rheumatoid arthritis		L93, M32
Spondyloarthritis		M45
Medications^b		
Main exposure	hydroxychloroquine	171701ATB, 171702ATB, 171704ATB, 171705ATB, 171703ATB
Immunosuppressants		
	Biologics	
	abatacept	512201BIJ, 512230BIJ
	adalimumab	488401BIJ, 488430BIJ, 488431BIJ, 488433BIJ
	anakinra	517801BIJ
	etanercept	455801BIJ, 455802BIJ, 455803BIJ, 455830BIJ, 455831BIJ
	golimumab	621201BIJ, 621202BIJ, 621203BIJ, 621230BIJ, 621231BIJ, 621232BIJ
	infliximab	383501BIJ
	leflunomide	
	rituximab	422601BIJ, 422602BIJ, 422603BIJ, 422630BIJ, 422631BIJ, 422632BIJ
	tocilizumab	520401BIJ, 520402BIJ, 520403BIJ, 520404BIJ, 520430BIJ, 520431BIJ, 520432BIJ, 520433BIJ
	tofacitinib	627201ATB, 627202ATB
	baricitinib	667901ATB, 667902ATB
	Corticosteroids	
	prednisolone	217001ATB, 217003ASY, 217004ASY, 217030ASY, 217034ASY, 217035ASY, 217302BIJ
	methylprednisolone	193302ATB, 193305ATB, 193501BIJ, 193502BIJ, 193530BIJ, 193531BIJ, 193601BIJ, 193602BIJ, 193603BIJ, 193604BIJ
	hydrocortisone	170901ATB, 170905ATB, 170906ATB, 171201BIJ, 171202BIJ

dexamethasone	141901ATB, 141903ATB, 141904ATB, 142001BIJ, 142030BIJ, 142201BIJ, 142202BIJ, 142230BIJ, 142232BIJ, 142233BIJ
triamcinolone	243201ATB, 243202ATB, 243203ATB, 243301BIJ, 243303BIJ, 243305BIJ, 243335BIJ, 243336BIJ, 243337BIJ
deflazacort	140801ATB
Other immunosuppressants	
methotrexate	192101ATB, 192107ATB, 192102BIJ, 192103BIJ, 192104BIJ, 192105BIJ, 192107BIJ, 192108BIJ, 192109BIJ, 192110BIJ, 192111BIJ, 192132BIJ, 192134BIJ, 192136BIJ, 192138BIJ, 192139BIJ, 192140BIJ, 192141BIJ, 192142BIJ, 192143BIJ, 192144BIJ
leflunomide	434601ATB, 434602ATB
ciclosporin (cyclosporin A)	139201ACS, 139201ACS, 139204ACS, 139202BIJ, 139230BIJ, 194701ACS, 194701ALQ, 194702ACS, 194730ALQ, 194731ALQ
cyclophosphamide	139001ATB, 139003BIJ, 139004BIJ, 139005BIJ
tacrolimus	234201ACH, 234201ACH, 234201ATB, 234202BIJ, 234203ACH, 234203ATB, 234204ACH, 234204ATB, 234205ACR, 234206ACR, 234207ACR, 234208ATB, 234230BIJ
sirolimus	485501ATB, 485502ATB, 485503ATB
azathioprine	112401ATB, 112402ATB
sulfasalazine	232801ATE
mycophenolate	197801ACH, 197802ATB, 197804ASS, 197830ASS, 451401ATE, 451402ATE
mofetil	
everolimus	485601ATB, 485602ATB, 485603ATB, 485604ATB, 485605ATB, 485606ATB, 485607ATB
bucillamine	348201ATB
mizoribine	196601ATB, 196602ATB
Outcome^c	
Laboratory confirmed COVID-19	RAW.co19_t200_trans_dn WHERE CONFIRM IN ('Y');
Death	RAW.co19_t200_trans_dn WHERE DEATH IN ('Y');

^a Based on the International Classification of Disease, 10th Revision codes.

^b Based on World Health Organization-Anatomical Therapeutic Chemical classification codes.

^c The diagnosis of COVID-19 and outcome of death identified by SAS codes which were validated by linkage with the registry of laboratory-confirmed COVID-19 patients from the Korea Disease Control and Prevention (KCDC).