

1 **Supplementary data**2 **Supplementary table S1 ICD-10 and International Classification of Primary Care (ICPC) diagnoses**
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Comorbidities			
	Data source	ICD-10	ICPC
Diabetes	NPR and KUHR	E10-E14	T89, T90
Chronic obstructive pulmonary disease and asthma	NPR and KUHR	J40-J47	R95, R96
Serious infection			
Infection site	Data source	ICD-10	
Respiratory tract	NPR and NCDR	J00, J010, J011, J012, J013, J014, J018, J019, J020, J028, J029, J030, J038, J039, J040, J041, J042, J050, J051, J060, J068, J069, J09, J100, J101, J108, J110, J111, J118, J120, J121, J122, J123, J128, J129, J13-J160, J168, J170, J171, J172, J173, J178, J180, J181, J182, J188, J189, J200-J211, J218, J22, J440, J690, J387, J80, J850, J851, J852, J853, J86, J860, J869, A310, A15, A151, A152, A153, A154, A155, A156, A157, A158, A159, A160, A161, A162, A163, A164, A165, A167, A168, A169, A170, A171, A178, A179, A180, A181, A182, A183, A184, A185, A186, A187, A188, A310, A370, A371, A378, A379, B371, B440, B441, B442, B447, B448, B449, B450, B460, J90	
Central nervous system		G000, G001, G002, G003, G008, G009, G01, G020, G021, G028, G038, G039, G041, G040, G042, G049, G048, G050, G051, G052, G060, G061, G062, G07, G08, G374, A812, A840, A841, A849, A85, A86, A87, A878, A879, A89, A390, A321	
Genitourinary		N10, N110, N111, N118, N119, N12, N136, N151, N159, N160, N300, N301, N308, N309, N33, N330, N340, N370, N390, N412, N413, N418, N419, N510, N511, N512, N518	
Skin/soft tissue		A46, H050, K610, K611, K612, K613, K614, L00, L010, L011, L020, L021, L022, L023, L024, L028, L029, L030, L031, L032, L033, L038, L039, L040, L041, L042, L043, L048, L049, L050, L05, L080,	

		L088, L089, L303, M600, N481, N482, N499, N61, N726, N751, A46	
Bone/joint		M000, M001, M002, M008, M009, M010, M011, M012, M013, M014, M015, M016, M018, M462, M463, M465, M600, M630, M631, M632, M650, M651, M680, M710, M711, M726, M728, M86, M860, M861, M862, M863, M864, M865, M866, M868, M869, K102	
Sepsis		A327, A400, A401, A402, A403, A408, A409, A410, A411, A412, A413, A414, A415, A418, A419, A420, A421, A422, A427, A428, A429, A430, A431, A438, A439, A440, A441, A448, A449, A480, A481, A482, A483, A484, A488, A490, A491, A492, A493, A498, A499, R572, R65, R650, R651, A391, A392, A393, A394, A395, A398, A399	
Gastrointestinal/intraabdominal		K352, K353, K358, K37, K570, K572, K574, K578, K630, K650, K659, K670, K671, K672, K673, K678, K750, K770, K800, K803, K804, K810, K818, K819, K830, K850, K858, K859, K870, K871, K930, A000, A001, A009, A010, A011, A012, A013, A014, A020, A021, A022, A028, A029, A030, A031, A032, A033, A038, A039, A040, A041, A042, A043, A044, A045, A046, A047, A048, A049, A05, A050, A051, A052, A053, A054, A058, A059, A060, A061, A062, A063, A064, A065, A066, A067, A068, A069, A070, A071, A072, A073, A078, A079, A080, A081, A082, A083, A084, A085, A090, A099, B971	
Other		I301, I320, I321, I330, I400, I410, I411, I412, H000, H030, H031, H038, H191, H192, H162, H163, H168, H169, H440, H700, H600, H601, H610, H620, H621, H622, H623, H624, H660, H664, H669, H670, H671, H750, K041, K044, K046, K047, K052, K112, K113, K122, K149, N700, N709, N730, N732, N733, 735, N738, N740, N741, N742, N743, N744, N748, N751, N764, N450, N459, J36, J390, J391, A190, A191, A192, A198, A199, A200, A201-A203, A207, A208, A209, A210, A211, A212, A213, A217, A218, A219, A220, A221, A222, A227, A228, A229, A230, A231, A232, A233, A238, A239, A240, A241, A242, A243, A244, A250, A251, A259, A260, A267, A268, A269, A270, A278, A279, A280, A281, A282, A288, A289, A300, A301, A302, A303, A304, A305, A308, A309, A311, A318, A319, A320, A328, A329, A34, A35, A360, A361, A362, A363, A368, A369, A38, A500, A501, A502, A503, A504, A505, A506, A507, A509, A510, A511, A512, A513, A514, A515, A519, A520, A521, A522, A523, A527, A528, A529, A530, A539, A540, A541, A542, A543, A544, A545, A546, A548, A549, A55, A560, A561, A562, A563, A564, A568, A57, A58, A590, A598, A599, A600, A601, A609, A630, A638, A64, A65, A660, A661, A662, A663, A664, A665, A666, A667, A668, A669, A670, A671, A672, A673, A679, A680, A681, A689, A690, A691, A692, A698, A699, A70, A710, A711, A719, A740, A748, A749, A750, A751, A752, A753, A759, A770, A771, A772, A773, A778, A779, A78, A790, A791, A798, A799, A800, A801, A802, A803, A804, A809,	

		<p>A810, A811, A812, A818, A819, A820, A821, A829, A830, A831, A832, A833, A834, A835, A836, A838, A839, A848, A850, A851, A852, A858, A86, A870, A871, A872, A878, A879, A880, A881, A888, A89, A920, A921, A922, A923, A924, A925, A928, A929, A930, A931, A932, A938, A94, A950, A951, A959, A960, A961, A962, A968, A969, A970, A971, A972, A979, A980, A981, A982, A983, A984, A985, A988, A99, B150, B159, B160, B161, B162, B169, B170, B171, B172, B178, B179, B000, B001-B009, B010-B012, B018, B019, B020-B023, B027, B028, B029, B03, B04, B050, B051, B052, B054, B058, B059, B060, B068, B069, B07, B080, B081, B082, B083, B084, B085, B088, B09, B180, B181, B182, B188, B189, B190, B199, B200-B209, B210-B213, B217, B218, B219, B220-B222, B227, B230, B231, B232, B238, B24, B250, B251, B252, B258, B259, B260, B261, B262, B263, B268, B269, B270, B271, B278, B279, B300-B303, B308, B309, B330, B331, B332, B333, B334, B338, B340, B341, B342, B343, B344, B348, B349, B350, B351, B352, B353, B354, B355, B356, B358, B359, B360, B361, B362, B363, B368, B369, B370, B371, B372, B373, B374, B375, B376, B377, B378, B379, B380, B381, B382, B383, B384, B387, B388, B389, B390, B391, B392, B393, B394, B395, B399, B400, B401, B402, B403, B407, B408, B409, B410, B417-B419, B420, B421, B427, B428, B429, B430, B431, B432, B438, B439, B451, B452, B453, B457, B458, B459, B461, B462, B463, B464, B465, B468, B469, B470, B471, B479, B480, B481, B482, B483, B484, B485, B487, B488, B49, B500, B508, B509, B510, B518, B519, B520, B528, B529, B530, B531, B538, B54, B550, B551, B552, B559, B560, B561, B569, B570, B571, B572, B573, B573, B575, B580, B581, B582, B583, B588, B589, B600, B601, B602, B608, B64, B650, B651, B652, B653, B658, B659, B660, B661, B662, B663, B664, B665, B668, B669, B670, B671, B672, B673, B674, B675, B676, B677, B678, B679, B680, B681, B689, B690, B691, B698, B699, B700, B701, B710, B711, B718, B719, B72, B73, B740, B741, B742, B743, B744, B748, B749, B75, B760, B761, B768, B769, B770, B778, B779, B780, B781, B787, B789, B79, B80, B810, B811, B812, B813, B814, B818, B820, B829, B830, B831, B832, B833, B834, B838, B839, B850, B851, B852, B853, B854, B86, B870, B871, B872, B873, B874, B878, B879, B880, B881, B882, B883, B888, B889, B89, B900, B901, B902, B908, B909, B91, B92, B940, B941, B942, B948, B949, B950, B951, B952, B953, B954, B955, B956, B957, B958, B960, B961, B962, B963, B964, B965, B966, B967, B968, B970, B971, B972, B973, B974, B975, B976, B2977, B978, B980, B981, B99, T802, T814, T826, T827, T835, T836, T845, T846, T847, T857, T880, Z2230, D733, E060, E321, E350</p>	
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1 **Supplementary table S2 IRs and HRs of serious infection in subgroups**

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Dichotomized variables	RA IR (95 % CI)	PsA IR (95 % CI)	PsA vs RA HR (95 % CI)	P-value
Age				
<50	2.62 (1.72, 3.97)	1.12 (0.67, 1.99)	0.39 (0.19, 0.81)	0.012
>= 50	4.73 (3.78, 5.94)	2.88 (1.93, 4.30)	0.70 (0.44, 1.12)	0.140
Gender				
Female	3.92 (2.67, 5.75)	1.78 (1.11, 2.87)	0.57 (0.34, 0.93)	0.026
Male	4.03 (3.19, 5.09)	1.99 (1.28, 3.08)	0.69 (0.36, 1.33)	0.268
DAS28-CRP remission (< 2.6) at 3 months				
Yes	2.77 (1.98, 3.88)	1.04 (0.59, 1.83)	0.50 (0.24, 1.00)	0.050
No	5.26 (4.11, 6.73)	3.10 (2.10, 4.60)	0.66 (0.41, 1.06)	0.086
Prednisolone comedication baseline				
Yes	6.25 (4.89, 7.99)	2.71 (1.46, 5.04)	0.51 (0.26, 1.00)	0.051
No	2.35 (1.67, 3.31)	1.70 (1.12, 2.47)	0.88 (0.52, 1.51)	0.653
Methotrexate comedication baseline				
Yes	3.68 (2.92, 4.64)	2.07 (1.41, 3.05)	0.70 (0.44, 1.11)	0.132
No	5.25 (3.57, 7.71)	1.56 (0.86, 2.81)	0.41 (0.19, 0.86)	0.018
Subgroups of MTX and prednisolone use				
Both prednisolone and MTX	4.96 (3.79, 6.49)	2.33 (1.33, 4.11)	0.63 (0.33, 1.20)	0.159
Prednisolone, not MTX	6.50 (4.10, 10.32)	2.24 (0.84, 5.97)	0.47 (0.15, 1.46)	0.192
MTX, not prednisolone	2.15 (1.40, 3.37)	1.82 (1.08, 3.07)	0.90 (0.44, 1.86)	0.778
TNFi monotherapy				
Yes	3.44 (1.29, 9.16)	0.92 (0.35, 2.46)	0.31 (0.07, 1.39)	0.126
No	4.03 (3.29, 4.94)	2.16 (1.54, 3.04)	0.69 (0.46, 1.04)	0.078

HRs adjusted for age and gender and performed on cases with no missingness for variables included in this model. n = 2170

HR; hazard ratio, DAS28; disease activity score for 28 joints, CRP; C-reactive protein, MHAQ; Modified Health Assessment Questionnaire, IQR; inter quartile range

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1 **Supplementary table S3 Comparison of cases with missing data with cases**
 2 **who had complete data**

Missing variable		Missing	Not missing	p-value
Disease duration	Age in years, mean (SD)	51.4 (13)	50.9 (13)	0.40
	Disease, n (%)	RA: 266 (48) PsA: 286 (52)	RA: 1512 (58) PsA: 1105 (42)	<0.001
	Female gender, n (%)	390 (67)	1768 (68)	0.81
	DAS28-CRP, mean (SD) *	3.6 (1.3)	3.8 (1.3)	0.003
	MHAQ*, median (IQR)	0.6 (0.3, 1.0)	0.6 (0.3, 1.0)	0.02
	Prednisolone, n (%)*	160 (31)	888 (35)	0.14
	Smoking, n (%)*	78 (21)	399 (19)	0.11
	5 years historic data, n (%)	409 (74)	1098 (42)	<0.001
DAS28-CRP	Age in years	51.3 (13.4)	51.0 (13.2)	0.61
	Disease, n (%)	RA: 228 (53.3) PsA: 200 (46.7)	RA: 1550 (56.6) PsA: 1191 (43.5)	0.20
	Female gender, n (%)	297 (69.4)	1841 (67.2)	0.36
	Disease duration	4.9 (1.6, 13.0)	6.2 (2.1, 13.5)	0.04
	MHAQ*	0.6 (0.3, 0.9)	0.6 (0.3, 1.0)	0.42
	Prednisolone*	107 (30)	941 (35)	0.10
	Smoking*	53 (19)	424 (19)	0.87
	5 years historic data	248 (58)	1259 (46)	<0.001
MHAQ	Age in years	51.8 (13.2)	51.0 (13.3)	0.52
	Disease, n (%)	RA: 58 (54.7) PsA: 48 (45.3)	RA: 1720 (56.0) PsA: 1343 (43.9)	0.77
	Female gender, n (%)	76 (71.7)	2062 (67)	0.34
	Disease duration	5.3 (1.3, 11.3)	6.1 (2.0, 13.4)	0.47
	DAS28-CRP*	3.6 (1.3)	3.8 (1.3)	0.26
	Prednisolone*	25 (37)	1023 (34)	0.63
	Smoking*	12 (23)	465 (19)	0.59
	5 years historic data	65 (61)	1442 (47)	0.004
Prednisolone	Age in years	50.9 (13.2)	51.0 (13.3)	0.97
	Disease, n (%)	RA: 50 (55) PsA: 41 (45)	RA: 1728 (56) PsA: 1350 (44)	0.82
	Female gender, n (%)	65 (71)	2073 (67)	0.41
	Disease duration	5.0 (1.2, 14.9)	6.1 (2.0, 13.3)	0.60
	DAS28-CRP*	3.3 (1.2)	3.8 (1.3)	0.08
	MHAQ*	0.3 (0.0, 0.7)	0.6 (0.3, 1.0)	<0.001
	Smoking*	6 (19.4)	471 (19.4)	0.98
	5 years historic data	66 (73)	1441 (47)	<0.001
Smoking	Age in years	51.7 (13.3)	50.8 (13.3)	0.13
	Disease, n (%)	RA: 409 (58)	RA: 1369 (56)	0.25

		PsA: 296 (42)	PsA: 1095 (44)		
	Female gender, n (%)	494 (70)	1644 (67)	0.09	
	Disease duration	5.7 (2.0, 12.9)	6.2 (2.0, 13.6)	0.40	
	DAS28-CRP*	3.7 (1.3)	3.8 (1.3)	0.23	
	MHAQ*	0.5 (0.2, 1.0)	0.6 (0.3, 1.0)	0.34	
	Prednisolone*	433 (21)	1597 (79)	0.48	
	5 years historic data	526 (75)	981 (40)	<0.001	
5 years historic data	Age in years	50.5 (13.3)	51.6 (13.2)	0.02	
	Disease, n (%)	RA: 995 (60) PsA: 667 (40)	RA: 783 (52) PsA: 724 (48)	<0.001	
	Female gender, n (%)	1130 (68)	1008 (67)	0.51	
	Disease duration	6.7 (2.2, 14.1)	5.6 (1.9, 12.3)	0.02	
	DAS28-CRP*	3.9 (1.3)	3.6 (1.3)	<0.001	
	MHAQ*	0.6 (0.3, 1.0)	0.5 (0.3, 0.9)	0.02	
	Prednisolone*	651 (40)	397 (28)	<0.001	
	Smoking*	311 (21)	166 (17)	<0.001	
	* DAS28-CRP, MHAQ, prednisolone use and current smoking at baseline HR; hazard ratio, DAS28; disease activity score for 28 joints, CRP; C-reactive protein, MHAQ; Modified Health Assessment Questionnaire, IQR; inter quartile range				

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2 **Supplementary figure S1 HRs with CIs of serious infection in cohorts with and**
3 **without missingness for key variables**

4 Footnote: DAS28; disease activity score for 28 joints, MHAQ; Modified Health Assessment
5 Questionnaire

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2 **Supplementary table S4 Cox regression of serious infection in patients with**
 3 **PsA vs RA, adjusted for disease activity measurements**

	Number	HR (95 % CI)	p-value
Model A Adjusted for age and gender			
PsA vs RA	2328	0.63 (0.43, 0.93)	0.019
Model B Adjusted for age, gender, DAS28-CRP, MHAQ, physician global assessment, patient global assessment			
PsA vs RA	2328	0.65 (0.44, 0.96)	0.031
Model B1 Adjusted for age, gender, DAS28-CRP			
PsA vs RA	2328	0.67 (0.46, 0.97)	0.036
Model B2 Adjusted for age, gender, MHAQ			
PsA vs RA	2328	0.60 (0.41, 0.87)	0.008
Model B3 Adjusted for age, gender, CRP			
PsA vs RA	2328	0.65 (0.44, 0.95)	0.025
Model B4 Adjusted for age, gender, physician global assessment			
PsA vs RA	2328	0.63 (0.43, 0.93)	0.019
Model B5 Adjusted for age, gender, patient global assessment			
PsA vs RA	2328	0.61 (0.41, 0.89)	0.011

HR; hazard ratio, DAS28; disease activity score for 28 joints, MHAQ; Modified Health Assessment Questionnaire, CRP; C-reactive protein

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