

1 **Supplementary data**2 **Supplementary table S1 ICD-10 and International Classification of Primary Care (ICPC) diagnoses**

<b>Comorbidities</b>			
	<b>Data source</b>	<b>ICD-10</b>	<b>ICPC</b>
<b>Diabetes</b>	NPR and KUHR	E10-E14	T89, T90
<b>Chronic obstructive pulmonary disease and asthma</b>	NPR and KUHR	J40-J47	R95, R96
<b>Serious infection</b>			
<b>Infection site</b>	<b>Data source</b>	<b>ICD-10</b>	
<b>Respiratory tract</b>	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	
<b>Central nervous system</b>		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	
<b>Genitourinary</b>		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	
<b>Skin/soft tissue</b>		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	
<b>Bone/joint</b>		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	
<b>Sepsis</b>		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	
<b>Gastrointestinal/intraabdominal</b>		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	
<b>Other</b>		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
<b>Age</b>				
<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
<b>Gender</b>				
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
<b>DAS28-CRP remission (&lt; 2.6) at 3 months</b>				
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
<b>Prednisolone comedication baseline</b>				
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
<b>Methotrexate comedication baseline</b>				
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
<b>Subgroups of MTX and prednisolone use</b>				
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
<b>TNFi monotherapy</b>				
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	<b>Age in years, mean (SD)</b>	51.4 (13)	50.9 (13)	0.40
	<b>Disease, n (%)</b>	RA: 266 (48) PsA: 286 (52)	RA: 1512 (58) PsA: 1105 (42)	<0.001
	<b>Female gender, n (%)</b>	390 (67)	1768 (68)	0.81
	<b>DAS28-CRP, mean (SD) *</b>	3.6 (1.3)	3.8 (1.3)	0.003
	<b>MHAQ*, median (IQR)</b>	0.6 (0.3, 1.0)	0.6 (0.3, 1.0)	0.02
	<b>Prednisolone, n (%)*</b>	160 (31)	888 (35)	0.14
	<b>Smoking, n (%)*</b>	78 (21)	399 (19)	0.11
	<b>5 years historic data, n (%)</b>	409 (74)	1098 (42)	<0.001
DAS28-CRP	<b>Age in years</b>	51.3 (13.4)	51.0 (13.2)	0.61
	<b>Disease, n (%)</b>	RA: 228 (53.3) PsA: 200 (46.7)	RA: 1550 (56.6) PsA: 1191 (43.5)	0.20
	<b>Female gender, n (%)</b>	297 (69.4)	1841 (67.2)	0.36
	<b>Disease duration</b>	4.9 (1.6, 13.0)	6.2 (2.1, 13.5)	0.04
	<b>MHAQ*</b>	0.6 (0.3, 0.9)	0.6 (0.3, 1.0)	0.42
	<b>Prednisolone*</b>	107 (30)	941 (35)	0.10
	<b>Smoking*</b>	53 (19)	424 (19)	0.87
	<b>5 years historic data</b>	248 (58)	1259 (46)	<0.001
MHAQ	<b>Age in years</b>	51.8 (13.2)	51.0 (13.3)	0.52
	<b>Disease, n (%)</b>	RA: 58 (54.7) PsA: 48 (45.3)	RA: 1720 (56.0) PsA: 1343 (43.9)	0.77
	<b>Female gender, n (%)</b>	76 (71.7)	2062 (67)	0.34
	<b>Disease duration</b>	5.3 (1.3, 11.3)	6.1 (2.0, 13.4)	0.47
	<b>DAS28-CRP*</b>	3.6 (1.3)	3.8 (1.3)	0.26
	<b>Prednisolone*</b>	25 (37)	1023 (34)	0.63
	<b>Smoking*</b>	12 (23)	465 (19)	0.59
	<b>5 years historic data</b>	65 (61)	1442 (47)	0.004
Prednisolone	<b>Age in years</b>	50.9 (13.2)	51.0 (13.3)	0.97
	<b>Disease, n (%)</b>	RA: 50 (55) PsA: 41 (45)	RA: 1728 (56) PsA: 1350 (44)	0.82
	<b>Female gender, n (%)</b>	65 (71)	2073 (67)	0.41
	<b>Disease duration</b>	5.0 (1.2, 14.9)	6.1 (2.0, 13.3)	0.60
	<b>DAS28-CRP*</b>	3.3 (1.2)	3.8 (1.3)	0.08
	<b>MHAQ*</b>	0.3 (0.0, 0.7)	0.6 (0.3, 1.0)	<0.001
	<b>Smoking*</b>	6 (19.4)	471 (19.4)	0.98
	<b>5 years historic data</b>	66 (73)	1441 (47)	<0.001
Smoking	<b>Age in years</b>	51.7 (13.3)	50.8 (13.3)	0.13
	<b>Disease, n (%)</b>	RA: 409 (58)	RA: 1369 (56)	0.25

		PsA: 296 (42)	PsA: 1095 (44)		
	<b>Female gender, n (%)</b>	494 (70)	1644 (67)	0.09	
	<b>Disease duration</b>	5.7 (2.0, 12.9)	6.2 (2.0, 13.6)	0.40	
	<b>DAS28-CRP*</b>	3.7 (1.3)	3.8 (1.3)	0.23	
	<b>MHAQ*</b>	0.5 (0.2, 1.0)	0.6 (0.3, 1.0)	0.34	
	<b>Prednisolone*</b>	433 (21)	1597 (79)	0.48	
	<b>5 years historic data</b>	526 (75)	981 (40)	<0.001	
5 years historic data	<b>Age in years</b>	50.5 (13.3)	51.6 (13.2)	0.02	
	<b>Disease, n (%)</b>	RA: 995 (60) PsA: 667 (40)	RA: 783 (52) PsA: 724 (48)	<0.001	
	<b>Female gender, n (%)</b>	1130 (68)	1008 (67)	0.51	
	<b>Disease duration</b>	6.7 (2.2, 14.1)	5.6 (1.9, 12.3)	0.02	
	<b>DAS28-CRP*</b>	3.9 (1.3)	3.6 (1.3)	<0.001	
	<b>MHAQ*</b>	0.6 (0.3, 1.0)	0.5 (0.3, 0.9)	0.02	
	<b>Prednisolone*</b>	651 (40)	397 (28)	<0.001	
	<b>Smoking*</b>	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**

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