S1. Available baseline data for PsA patients stratified by registry for the first TNFi treatment.

Country	All	Czech Republic	Denmark	Finland	Iceland	Italy	Norway	Portugal	Romania	Slovenia	Spain	Sweden	Switzerland	Turkey
n	Pooled (n=13369)	ATTRA (n=718)	DANBIO (n=2090)	ROBFIN (n=234)	ICEBIO (n=306)	GISEA (n=1591)	NOR-DMARD (n=717)	Reuma.pt (n=675)	RRBR (n=86)	Biorx.si (n=367)	BIOBADASER (n=445)	SRQ (n=5225)	SCQM (n=628)	TURKBIO (n=287)
Demography, diagnosis and lifestyle														
Age at treatment start	13369 (100%)	718 (100%)	2090 (100%)	234 (100%)	306 (100%)	1591 (100%)	717 (100%)	675 (100%)	86 (100%)	367 (100%)	445 (100%)	5225 (100%)	628 (100%)	287 (100%)
Age at diagnosis	10331 (77%)	716 (100%)	1875 (90%)	234 (100%)	251 (82%)	1406 (88%)	473 (66%)	580 (86%)	86 (100%)	367 (100%)	445 (100%)	3002 (57%)	614 (98%)	282 (98%)
Time since diagnosis	10331 (77%)	716 (100%)	1875 (90%)	234 (100%)	251 (82%)	1406 (88%)	473 (66%)	580 (86%)	86 (100%)	367 (100%)	445 (100%)	3002 (57%)	614 (98%)	282 (98%)
Men	13369 (100%)	718 (100%)	2090 (100%)	234 (100%)	306 (100%)	1591 (100%)	717 (100%)	675 (100%)	86 (100%)	367 (100%)	445 (100%)	5225 (100%)	628 (100%)	287 (100%)
BMI	4809 (36%)	606 (84%)	1050 (50%)	209 (89%)	72 (24%)	1166 (73%)	0 (0%)	171 (25%)	86 (100%)	367 (100%)	367 (82%)	0 (0%)	568 (90%)	147 (51%)
Smoking status	10944 (82%)	569 (79%)	2038 (98%)	114 (49%)	169 (55%)	810 (51%)	602 (84%)	456 (68%)	86 (100%)	367 (100%)	418 (94%)	4526 (87%)	520 (83%)	269 (94%)
CASPAR	2694 (20%)	707 (98%)	297 (14%)	0 (0%)	50 (16%)	74 (5%)	0 (0%)	512 (76%)	86 (100%)	367 (100%)	0 (0%)	0 (0%)	578 (92%)	23 (8%)
Clinical measures														
Swollen joint count (28)	9435 (71%)	717 (100%)	1524 (73%)	183 (78%)	90 (29%)	1092 (69%)	662 (92%)	429 (64%)	16 (19%)	364 (99%)	309 (69%)	3448 (66%)	429 (68%)	172 (60%)
Swollen joint count (66)	5557 (42%)	710 (99%)	496 (24%)	172 (74%)	36 (12%)	1193 (75%)	0 (0%)	442 (65%)	16 (19%)	0 (0%)	0 (0%)	2066 (40%)	408 (65%)	18 (6%)
Tender joint count (28)	9447 (71%)	716 (100%)	1534 (73%)	180 (77%)	90 (29%)	1104 (69%)	662 (92%)	429 (64%)	16 (19%)	364 (99%)	309 (69%)	3441 (66%)	430 (68%)	172 (60%)
Tender joint count (68)	5673 (42%)	710 (99%)	557 (27%)	170 (73%)	35 (11%)	1238 (78%)	0 (0%)	451 (67%)	16 (19%)	0 (0%)	0 (0%)	2068 (40%)	410 (65%)	18 (6%)
CRP	8272 (62%)	709 (99%)	1611 (77%)	194 (83%)	90 (29%)	0 (0%)	654 (91%)	451 (67%)	16 (19%)	367 (100%)	0 (0%)	3598 (69%)	407 (65%)	175 (61%)
ESR	7741 (58%)	701 (98%)	0 (0%)	187 (80%)	0 (0%)	1321 (83%)	574 (80%)	458 (68%)	16 (19%)	367 (100%)	361 (81%)	3361 (64%)	395 (63%)	0 (0%)
Physician global score	6050 (45%)	716 (100%)	1411 (68%)	174 (74%)	86 (28%)	1147 (72%)	555 (77%)	373 (55%)	15 (17%)	351 (96%)	0 (0%)	626 (12%)	426 (68%)	170 (59%)
DAPSA28	6878 (51%)	530 (74%)	1413 (68%)	156 (67%)	82 (27%)	0 (0%)	601 (84%)	322 (48%)	16 (19%)	338 (92%)	0 (0%)	2978 (57%)	274 (44%)	168 (59%)
DAPSA	3846 (27%)	526 (73%)	438 (21%)	154 (66%)	31 (10%)	0 (0%)	0 (0%)	302 (45%)	16 (19%)	0 (0%)	0 (0%)	1791 (34%)	271 (43%)	17 (6%)
DAS28-CRP	7144 (53%)	708 (99%)	1424 (68%)	156 (67%)	85 (28%)	0 (0%)	607 (85%)	350 (52%)	16 (19%)	350 (95%)	0 (0%)	3004 (57%)	276 (44%)	168 (59%)
Treatment														
Name of 1st TNFi drug	13369 (100%)	718 (100%)	2090 (100%)	234 (100%)	306 (100%)	1591 (100%)	717 (100%)	675 (100%)	86 (100%)	367 (100%)	445 (100%)	5225 (100%)	628 (100%)	287 (100%)
1st TNFi start year*	13369 (100%)	718 (100%)	2090 (100%)	234 (100%)	306 (100%)	1591 (100%)	717 (100%)	675 (100%)	86 (100%)	367 (100%)	445 (100%)	5225 (100%)	628 (100%)	287 (100%)

Concomitant csDMARD**	11574 (100%)	588 (100%)	1311 (100%)	234 (100%)	129 (100%)	1591 (100%)	529 (100%)	463 (100%)	86 (100%)	285 (100%)	392 (100%)	5225 (100%)	628 (100%)	113 (100%)
Patient reported outcomes														
Patient pain score	9000 (67%)	537 (75%)	1645 (79%)	218 (93%)	87 (28%)	1204 (76%)	680 (95%)	343 (51%)	16 (19%)	354 (96%)	0 (0%)	3401 (65%)	341 (54%)	174 (61%)
Patient fatigue score	5285 (40%)	537 (75%)	1574 (75%)	0 (0%)	87 (28%)	0 (0%)	599 (84%)	0 (0%)	0 (0%)	0 (0%)	0 (0%)	2291 (44%)	23 (4%)	174 (61%)
Patient global score	9577 (72%)	717 (100%)	1654 (79%)	208 (89%)	90 (29%)	1215 (76%)	676 (94%)	414 (61%)	16 (19%)	350 (95%)	300 (67%)	3427 (66%)	336 (54%)	174 (61%)
HAQ	8484 (63%)	709 (99%)	1561 (75%)	186 (79%)	87 (28%)	876 (55%)	681 (95%)	298 (44%)	3 (3%)	354 (96%)	0 (0%)	3203 (61%)	354 (56%)	172 (60%)
Comorbidities and conditions associated with PsA														
Psoriasis	2287 (17%)	0 (0%)	378 (18%)	234 (100%)	0 (0%)	0 (0%)	0 (0%)	511 (76%)	86 (100%)	367 (100%)	24 (5%)	0 (0%)	597 (95%)	90 (31%)
Uveitis	2227 (17%)	0 (0%)	0 (0%)	234 (100%)	0 (0%)	0 (0%)	0 (0%)	511 (76%)	86 (100%)	367 (100%)	445 (100%)	0 (0%)	584 (93%)	0 (0%)
Inflammatory bowel disease	1874 (14%)	0 (0%)	24 (1%)	234 (100%)	0 (0%)	92 (6%)	0 (0%)	511 (76%)	86 (100%)	367 (100%)	0 (0%)	0 (0%)	559 (89%)	1 (0%)
Cardiovascular disease	3391 (25%)	718 (100%)	41 (2%)	234 (100%)	0 (0%)	123 (8%)	473 (66%)	511 (76%)	86 (100%)	367 (100%)	386 (87%)	0 (0%)	449 (71%)	3 (1%)
Diabetes	3422 (26%)	718 (100%)	34 (2%)	234 (100%)	0 (0%)	119 (7%)	473 (66%)	511 (76%)	86 (100%)	367 (100%)	395 (89%)	0 (0%)	471 (75%)	14 (5%)
Kidney disease	3172 (24%)	718 (100%)	0 (0%)	234 (100%)	0 (0%)	49 (3%)	473 (66%)	511 (76%)	86 (100%)	367 (100%)	444 (100%)	0 (0%)	290 (46%)	0 (0%)

BMI: Body Mass Index; CASPAR: ClASsification criteria for Psoriatic ARthritis; CRP: C-reactive protein; ESR: erythrocyte sedimentation rate; DAPSA28: Disease Activity index for PSoriatic Arthritis in 28 joints; DAS28-CRP: disease activity score in 28 joints based on CRP; csDMARD: conventional synthetic Disease Modifying Anti-Rheumatic Drug; TNFi: Tumor Necrosis Factor Inhibitor; HAQ: Health Assessment Questionnaire.
*2009 was chosen as the first three biological DMARDs (adalimumab, etanercept and infliximab) from that year were all well-established treatment options across the European countries. 2015 was chosen as secukinumab was approved as the first non-TNFi biological DMARD treatment option that year; **patients with no registration of concomitant use of csDMARDs were considered as not using such drugs, all data are thus considered available.

S2. Baseline characteristics of patients with vs. without data on DAPSA28 remission and DAPSA28 moderate response, respectively, at 6 months.

	DAPSA28 remission		DAPSA28 moderate response	
	With available data	Without available data	With available data	Without available data
	n=6954	n=4379	n=5275	n=6058
Demography, diagnosis and lifestyle				
Age at treatment start, years	49 (40-58)	49 (40-58)	49 (40-58)	49 (40-58)
Age at diagnosis, years	42 (33-52)	42 (33-52)	43 (33-52)	42 (33-52)
Time since diagnosis, years	3 (1-9)	3 (1-8)	3 (1-9)	3 (1-8)
Men, n (%)	3374 (49%)	2051 (47%)	2528 (48%)	2897 (48%)
BMI, kg/m^2	27.4 (24.2-30.9)	27.3 (24.4-30.7)	27.3 (24.2-30.9)	27.4 (24.4-30.9)
Current smokers, n (%)	1052 (17%)	648 (19%)	836 (17%)	864 (18%)
Clinical measures				
Swollen joint count (28)	2 (0-5)	2 (0-5)	2 (0-5)	2 (0-5)
Swollen joint count (66)	4 (1-8)	4 (1-7)	4 (1-8)	4 (1-7)
Tender joint count (28)	4 (2-9)	4 (1-9)	4 (2-9)	4 (1-8)
Tender joint count (68)	8 (4-14)	7 (3-12)	8 (4-14)	6 (3-12)
CRP, mg/l	6 (3-15)	6 (2-13)	6 (3-15)	6 (2-13)
ESR, mm/hr	16 (7-29)	14 (7-28)	16 (7-29)	15 (7-28)
Physician global score (mm)	40 (22-60)	40 (25-60)	40 (22-60)	40 (25-60)
DAPSA28, units	26 (17-38)	24 (16-36)	26 (17-38)	23 (16-35)
DAPSA68, units	26 (19-36)	23 (16-32)	26 (19-36)	23 (16-32)
DAS28, units	4.2 (3.4-5.0)	4.1 (3.2-4.9)	4.2 (3.4-5.0)	4.1 (3.2-4.9)
Treatment				
1st TNFi drug, n (%)				
Infliximab	1272 (18%)	826 (19%)	928 (18%)	1170 (19%)
Etanercept	2282 (33%)	1545 (35%)	1666 (32%)	2161 (36%)
Adalimumab	1903 (27%)	1338 (31%)	1487 (28%)	1754 (29%)
Certolizumab	575 (8%)	206 (5%)	475 (9%)	306 (5%)
Golimumab	922 (13%)	464 (11%)	719 (14%)	667 (11%)
1st TNFi start*, year, n (%)				
2009-2014	3734 (54%)	2458 (56%)	2966 (56%)	3226 (53%)
2015-2018	3220 (46%)	1921 (44%)	2309 (44%)	2832 (47%)
Concomitant csDMARD	4345 (62%)	2248 (51%)	3515 (67%)	3078 (51%)
Patient reported outcomes				
Patient pain score (mm)	62 (43-76)	60 (40-75)	62 (43-76)	60 (40-75)
Patient fatigue score (mm)	65 (42-80)	65 (40-80)	66 (42-80)	64 (39-79)
Patient global score (mm)	65 (47-80)	62 (43-80)	65 (47-80)	62 (42-79)
HAQ (units)	0.9 (0.5-1.4)	0.9 (0.5-1.4)	0.9 (0.5-1.4)	0.9 (0.5-1.4)

Data are as observed, median (IQR) or percentage. Percentages are calculated based on the no of patients with available data, except for csDMARDs where the imputed values are presented.

CASPAR: ClASsification criteria for Psoriatic ARthritis; BMI: Body Mass Index; CRP: C-reactive protein; ESR: erythrocyte sedimentation rate; DAPSA28: Disease Activity index for PSoriatic Arthritis in 28 joints; DAS28: disease activity score in 28 joints based on CRP; TNFi: Tumor Necrosis Factor Inhibitor; csDMARD: conventional synthetic Disease Modifying Anti-Rheumatic Drug; HAQ: Health Assessment Questionnaire.

*2009 was chosen as the first three biological DMARDs (adalimumab, etanercept and infliximab) from that year were all well-established treatment options across the European countries. 2015 was chosen as secukinumab was approved as the first non-TNFi biological DMARD treatment option that year.

S3. Final multivariate models for predicting DAPSA28 remission at 6 months stratified by registry for the first TNFi treatment for registries with EPV per available independent variables ≥10.

	Denmark		**Norway**		**Sweden**	
	DANBIO		**NOR-DMARD**		**SRQ**	
Patients with DAPSA28 remission, n (%)	344 (23%)		163 (30%)		748 (24%)	
	Odds ratio (85% Confidence Interval)					
Age at treatment start, years	0.97	(0.96 - 0.98)	0.95	(0.93 - 0.96)	0.97	(0.97 - 0.98)
Men	2.51	(2.04 - 3.11)	2.10	(1.51 - 2.94)	1.58	(1.38 - 1.82)
Time since diagnosis, years	1.02	(1.01 - 1.04)	1.03	(1.00 - 1.05)	1.02	(1.01 - 1.03)
BMI, kg/m^2	0.97	(0.95 - 1.00)	NA	NA	NA	NA
Current smokers	0.62	(0.48 - 0.79)				
Concomitant csDMARD						
1^{st} TNFi start, year (2015-2018)*	1.23	(1.00 - 1.51)				
CRP>10 mg/l**	1.66	(1.30 - 2.12)			1.39	(1.18 - 1.64)
Patient pain score, mm	0.99	(0.99 - 1.00)	0.97	(0.96 - 0.98)		
Patient fatigue score, mm	0.98	(0.98 - 0.99)	0.98	(0.98 - 0.99)	0.99	(0.98 - 0.99)
Physician global score, mm					1.00	(0.99 - 1.00)
HAQ, units	0.60	(0.46 - 0.77)			0.60	(0.51 - 0.72)
Swollen joint count (28)			1.10	(1.01 - 1.20)	1.03	(1.00 - 1.06)
Tender joint count (28)	0.97	(0.95 - 0.99)	0.89	(0.83 - 0.95)	0.92	(0.90 - 0.95)

Baseline variables that are selected as predictors in all registries are highlighted in bold. Results are only presented for registries with events-per-variable (EPV)≥10 (per available independent variables). 85% CI corresponds to the significance level of 0.157.
BMI: Body Mass Index; CRP: C-reactive protein; DAPSA28: Disease Activity index for PSoriatic Arthritis in 28 joints; TNFi: Tumor Necrosis Factor Inhibitor; csDMARD: conventional synthetic disease Modifying Anti-Rheumatic Drug; HAQ: Health Assessment Questionnaire.
*2009 was chosen as the first three biological DMARDs (adalimumab, etanercept and infliximab) from that year were all well-established treatment options across the European countries. 2015 was chosen as secukinumab was approved as the first non-TNFi biological DMARD treatment option that year; **the CRP cut-off was decided based on the various detection limits used across registries.

S4. Final multivariate models for predicting DAPSA28 moderate response at 6 months stratified by registry for the first TNFi treatment for registries with EPV per available independent variables ≥10.

	Czech Republic		**Denmark**		**Norway**		**Sweden**	
	ATTRA		**DANBIO**		**NOR-DMARD**		**SRQ**	
Patients with DAPSA28 moderate response, n (%)	265 (57%)		317 (27%)		143 (30%)		711 (32%)	
	Odds Ratio (85% Confidence Interval)							
Age at treatment start, years	0.98	(0.97 - 0.99)	0.98	(0.97 - 0.99)	0.96	(0.95 - 0.97)	0.98	(0.97 - 0.98)
Men			2.70	(2.18 - 3.35)	1.82	(1.32 - 2.53)	1.78	(1.54 - 2.05)
Time since diagnosis, years	1.03	(1.01 - 1.05)	1.03	(1.02 - 1.05)			1.02	(1.01 - 1.03)
BMI, kg/m^2	0.96	(0.94 - 0.99)	0.96	(0.94 - 0.99)	NA	NA	NA	NA
Current smokers			0.54	(0.42 - 0.70)			0.70	(0.54 - 0.89)
Concomitant csDMARD							1.17	(1.01 - 1.35)
1st TNFi start, year (2015-2018)*	1.74	(1.27 - 2.40)						
CRP>10 mg/l**	2.37	(1.74 - 3.24)	2.45	(1.95 - 3.09)	2.32	(1.65 - 3.27)	1.80	(1.55 - 2.09)
Patient pain score, mm			1.01	(1.00 - 1.01)			1.01	(1.00 - 1.01)
Patient fatigue score, mm			0.99	(0.98 - 0.99)	0.99	(0.98 - 1.00)	0.99	(0.98 - 0.99)
Physician global score, mm	0.99	(0.98 - 0.99)						
HAQ, units	0.49	(0.36 - 0.66)	0.68	(0.54 - 0.85)	0.51	(0.33 - 0.79)	0.66	(0.56 - 0.78)
Swollen joint count (28)	1.13	(1.09 - 1.17)	1.08	(1.03 - 1.12)	1.21	(1.14 - 1.29)	1.07	(1.05 - 1.10)
Tender joint count (28)			1.03	(1.01 - 1.06)				

Baseline variables that are selected as predictors in all registries are highlighted in bold. Results are only presented for registries with events per variable (EPV)≥10 (per available independent variables). 85% CI corresponds to the significance level of 0.157.

BMI: Body Mass Index; CRP: C-reactive protein; DAPSA28: Disease Activity index for PSoriatic Arthritis in 28 joints; TNFi: Tumor Necrosis Factor Inhibitor; csDMARD: conventional synthetic disease Modifying Anti-Rheumatic Drug; HAQ: Health Assessment Questionnaire.

*2009 was chosen as the first three biological DMARDs (adalimumab, etanercept and infliximab) from that year were all well-established treatment options across the European countries. 2015 was chosen as secukinumab was approved as the first non-TNFi biological DMARD treatment option that year; **the CRP cut-off was decided based on the various detection limits used across registries.

S5. Final multivariate models for predicting 12-month drug retention stratified by registry for the first TNFi treatment for registries with EPV per available independent variables ≥10.

Country	**Czech Republic**	**Denmark**	**Italy**	**Norway**	**Portugal**	**Slovenia**	**Spain**	**Sweden**	**Switzerland**
Registry	**ATTRA**	**DANBIO**	**GISEA**	**NOR-DMARD**	**Reuma.pt**	**Biorx.si**	**BIOBADASER**	**SRQ**	**SCQM**
Patients with 12-month drug retention, n (%)	504 (70%)	1225 (59%)	861 (54%)	389 (54%)	512 (76%)	231 (63%)	281 (63%)	3468 (66%)	387 (62%)
	Odds Ratio (85% Confidence Interval)								
Age at treatment start, years			0.99 (0.98 - 1.00)	0.99 (0.98 - 1.00)		0.98 (0.96 - 0.99)	0.98 (0.96 - 0.99)	0.99 (0.99 - 0.99)	
Men	1.28 (1.00 - 1.65)	1.71 (1.49 - 1.97)		1.80 (1.43 - 2.28)	1.82 (1.38 - 2.41)	1.57 (1.13 - 2.18)	1.44 (1.06 - 1.94)	1.65 (1.51 - 1.81)	1.70 (1.32 - 2.18)
Time since diagnosis, years	1.02 (1.01 - 1.04)	1.02 (1.01 - 1.03)	0.98 (0.97 - 1.00)		1.05 (1.02 - 1.08)	1.05 (1.02 - 1.08)	1.06 (1.03 - 1.09)	1.02 (1.01 - 1.03)	1.05 (1.03 - 1.07)
BMI, kg/m^2			1.02 (1.00 - 1.04)	NA		0.95 (0.92 - 0.99)		NA	
Current smokers					0.70 (0.47 - 1.04)			0.75 (0.65 - 0.86)	
Concomitant csDMARD	1.60 (1.17 - 2.19)	1.19 (1.04 - 1.37)		2.00 (1.54 - 2.61)	1.34 (1.00 - 1.78)		1.93 (1.39 - 2.69)		1.35 (1.05 - 1.73)
1st TNFi start, year (2015-2018)*	0.27 (0.21 - 0.36)	0.61 (0.53 - 0.70)	0.75 (0.63 - 0.90)	0.49 (0.38 - 0.62)	0.50 (0.38 - 0.66)	0.50 (0.36 - 0.70)	0.34 (0.22 - 0.50)		0.47 (0.36 - 0.62)
CRP>10 mg/l**		1.26 (1.07 - 1.49)	NA	1.40 (1.06 - 1.85)	1.42 (1.02 - 1.98)		NA	1.29 (1.15 - 1.45)	
Patient pain score, mm				0.99 (0.98 - 0.99)	0.99 (0.99 - 1.00)		NA	1.00 (0.99 - 1.00)	
Patient fatigue score, mm		0.99 (0.99 - 0.99)	NA	1.01 (1.00 - 1.01)	NA	NA	NA	0.99 (0.99 - 1.00)	
Physician global score, mm	1.01 (1.00 - 1.01)						NA		
HAQ, units							NA		
Swollen joint count (28)	1.06 (1.02 - 1.10)		0.94 (0.91 - 0.96)					1.02 (1.00 - 1.04)	
Tender joint count (28)	0.93 (0.90 - 0.96)	0.97 (0.95 - 0.98)						0.97 (0.96 - 0.98)	0.97 (0.94 - 0.99)

Results are only presented for registries with events-per-variable (EPV)≥10 (per available independent variables). 85% CI corresponds to the significance level of 0.157.
BMI: Body Mass Index; CRP: C-reactive protein; DAPSA28: Disease Activity index for PSoriatic Arthritis in 28 joints; TNFi: Tumor Necrosis Factor Inhibitor; csDMARD: conventional synthetic Disease Modifying Anti-Rheumatic Drug; HAQ: Health Assessment Questionnaire.
*2009 was chosen as the first three biological DMARDs (adalimumab, etanercept and infliximab) from that year were all well-established treatment options across the European countries. 2015 was chosen as secukinumab was approved as the first non-TNFi biological DMARD treatment option that year; **the CRP cut-off was decided based on the various detection limits used across registries.

S6. Summary of predictors stratified according to the proportion of patients achieving DAPSA28 remission, DAPSA28 moderate response and 12-month drug retention for the first TNFi treatment.

	DAPSA28 remission			DAPSA28 moderate response			12-month drug retention		
	Low	**Medium**	**High**	**Low**	**Medium**	**High**	**Low**	**Medium**	**High**
Number of patients	2022	3251	1681	1288	2677	1222	4398	7492	1479
Registries in the stratum (in alphabetical order by country)	DANBIO, RRBR, Biorx.si, SCQM	ICEBIO, SRQ	ATTRA, ROBFIN, NOR-DMARD, Reuma.pt, Turkbio	DANBIO, SCQM	NOR-DMARD, SRQ	ATTRA, ROBFIN, Reuma.pt, Biorx.si, Turkbio	DANBIO, GISEA, NOR-DMARD	ROBFIN, ICEBO Biorx.si, BIOBADASER, SRQ, SCQM, Turkbio,	ATTRA, Reuma.pt, RRBR
Patients achieving the outcome, n (%)	449 (22)	793 (24)	481 (29)	334 (26)	854 (32)	591 (48)	2475 (56)	4907 (66)	1079 (73)
EPV	26.4	52.9	26.7	22.3	61	32.8	120.2	129.2	25
Age at treatment start, years	-	-	-	-	-	-	-	-	
Men	+	+	+	+	+	+	+	+	+
Time since diagnosis, years	+	+	+	+	+	+		+	+
BMI, kg/m^2	-	-	-	-	NA	-			
Current smokers	-	-		-	-	-	-	-	
Concomitant csDMARD	+				+		+		+
1st TNFi start, year (2015-2018)*	+					+	-	-	-
CRP>10 mg/l**	+	+	+	+	+	+	+	+	+
Patient pain score, mm	-	-	-		+	+	-	-	
Patient fatigue score, mm	-	-	-	-	-	-		-	-
Physician global score, mm	+	-	-			-			+
HAQ, units	-	-	-	-	-	-	-		
Swollen joint count (28)		+	+	+	+	+		+	
Tender joint count (28)	-	-	-	+		+	-	-	-
Sum of independent predictors***	14	13	12	11	11	14	10	11	9
Total number of available IVs****	15	15	15	15	14	15	15	15	15

Cut offs for "low", "medium" and "high": DAPSA28 remission: <24%, 24-26%, >26%; DAPSA28 moderate response: <30%, 30-38%, >38% and 12-month drug retention: <60%, 60-70%, >70%.
EPV: Events-per-variable considering all independent variables (IVs); BMI: Body Mass Index; DAPSA28: Disease Activity index for PSoriatic Arthritis in 28 joints; csDMARD: conventional synthetic Disease Modifying Anti-Rheumatic Drug; CRP: C-reactive protein; HAQ: Health Assessment Questionnaire; TNFi: Tumor Necrosis Factor Inhibitor; NA: variable not delivered by the registry.
*2009 was chosen as the first three bDMARDs (adalimumab, etanercept and infliximab) were then well-established treatment options across the European countries. 2015 was chosen as secukinumab was approved as the first non-TNFi bDMARD treatment option that year; **the CRP cut-off was decided based on the various detection limits used across registries; ***sum of predictors selected per cohort (registry is forced into all models); ****number of independent variables after excluding NA variables (registry is forced into all models).

S7. Univariate and final multivariate analyses for predicting DAPSA remission and DAPSA moderate response at 6 months and 12-month drug retention on the first TNFi in pooled data (derivation cohorts) for registries with EPV ≥1.

	Prediction of DAPSA remission (n=1869)				**Prediction of DAPSA moderate response (n=1272)**				**Prediction of 12-month drug retention (n=6642)**			
Patients achieving the outcome, n (%)	456 (24%)				415 (33%)				4170 (63%)			
	Univariate		Multivariate		Univariate		Multivariate		Univariate		Multivariate	
	OR (95% CI)				OR (95% CI)				OR (95% CI)			
Age at treatment start, years	0.98	(0.97-0.99)			0.98	(0.97 - 0.99)	0.98	(0.97 - 0.99)	0.99	(0.99 - 1.00)	0.99	(0.99 - 1.00)
Men	2.78	(2.23-3.49)	2.10	(1.63-2.70)	3.00	(2.35 - 3.83)	2.30	(1.74 - 3.05)	1.66	(1.50 - 1.84)	1.48	(1.33 - 1.64)
Time since diagnosis, years	1.02	(1.00-1.04)			1.03	(1.01 - 1.05)	1.03	(1.01 - 1.05)	1.02	(1.01 - 1.03)		
BMI, kg/m^2	0.96	(0.93-0.98)	0.97	(0.94-1.00)	0.98	(0.95 - 1.00)	0.97	(0.94 - 1.01)	1.00	(0.98 - 1.01)		
Current smokers	0.56	(0.39-0.78)	0.71	(0.48-1.04)	0.71	(0.49 - 1.00)			0.73	(0.63 - 0.84)	0.77	(0.66 - 0.89)
Concomitant csDMARD	1.10	(0.89-1.37)			1.80	(1.39 - 2.34)	1.40	(1.04 - 1.89)	1.11	(1.00 - 1.22)		
1st TNFi start, year (2015-2018)*	1.08	(0.88 - 1.34)			1.55	(1.22 - 1.96)	1.40	(1.06 - 1.86)	0.73	(0.66 - 0.81)	0.66	(0.59 - 0.74)
CRP>10 mg/l**	1.43	(1.13 - 1.82)	1.43	(1.08 - 1.88)	2.20	(1.72 - 2.81)	1.54	(1.15 - 2.05)	1.21	(1.07 - 1.38)	1.21	(1.04 - 1.39)
Patient pain score, mm	0.98	(0.97 - 0.98)			0.99	(0.98 - 0.99)			0.99	(0.99 - 0.99)	0.99	(0.99 - 1.00)
Patient fatigue score, mm	0.98	(0.98 - 0.99)	0.99	(0.99 - 1.00)	0.98	(0.98 - 0.99)	0.99	(0.98 - 0.99)	0.99	(0.99 - 0.99)	1.00	(0.99 - 1.00)
Physician global score, mm	0.99	(0.98 - 0.99)	0.99	(0.98 - 0.99)	1.01	(1.00 - 1.01)			1.00	(1.00 - 1.00)		
HAQ, units	0.35	(0.27 - 0.43)	0.57	(0.42 - 0.76)	0.68	(0.55 - 0.84)	0.72	(0.53 - 0.97)	0.79	(0.72 - 0.88)		
Swollen joint count (66)	0.99	(0.97 - 1.02)	1.05	(1.01 - 1.09)	1.10	(1.08 - 1.14)	1.09	(1.06 - 1.13)	1.01	(1.00 - 1.02)	1.02	(1.00 - 1.03)
Tender joint count (68)	0.95	(0.93 - 0.97)	0.96	(0.94 - 0.99)	1.01	(1.00 - 1.02)			0.99	(0.98 - 0.99)	0.99	(0.98 - 1.00)

Age at treatment start, years (41-49)* **			0.67	(0.48 - 0.91)								
Age at treatment start, years (50-58)			0.51	(0.36 - 0.72)								
Age at treatment start, years (59-86)			0.47	(0.33 - 0.67)								
Time since diagnosis, years (2-3)* **			1.21	(0.82 - 1.78)							1.09	(0.93 - 1.28)
Time since diagnosis, years (4-8)			1.49	(1.04 - 2.14)							1.27	(1.10 - 1.48)
Time since diagnosis, years (9-56)			1.98	(1.39 - 2.83)							1.40	(1.20 - 1.64)
AUROC (95% CI) ****			0.75 (0.72 - 0.78)				0.76 (0.73 - 0.79)				0.64 (0.62 - 0.65)	

Baseline variables that are common predictors across all outcomes are highlighted in bold. Registries with EPV ≥1 in derivation cohort, considering all independent variables, were included in all models (RRBR was excluded from all analyses, ICEBIO and Turkbio were excluded from DAPSA remission and response analyses, and SCQM was excluded from DAPSA response analyses).

DAPSA: Disease Activity index for PSoriatic Arthritis in 66/68 joints; TNFi: Tumor Necrosis Factor Inhibitor; OR: odds ratio; 95CI: 95% confidence interval. BMI: Body Mass Index; csDMARD: conventional synthetic Disease Modifying Anti-Rheumatic Drug; CRP: C-reactive protein; HAQ: Health Assessment Questionnaire; AUROC: Area under the Receiver Operating Curve.

*TNFi initiation since January 1st 2009 was chosen as the start of data collection, as the first three bDMARDs (adalimumab, etanercept and infliximab) were then well-established treatment options across the European countries. 2015 was chosen as the separator between the time periods, as secukinumab was approved as the first non-TNFi bDMARD treatment option that year; **the CRP cut-off was decided based on the various detection limits used across registries; ***continuous independent variables were categorized if linearity assumption was violated ; ****AUROC was calculated in derivation cohort.