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Table S1: Case definition of incident Psoriasis/Psoriatic arthritis with associated ICD-10 diagnosis codes.

	ICD-10 code
<i>Inclusion</i>	
Psoriasis	L40.X except L405xx
Psoriatic arthritis	L405, M07.0-M07.3
<i>Exclusion</i>	
Rheumatoid arthritis, GOUT arthropathy	M05, M06, M10, M140, M315, M353,
Arthritis mutilans	M071
Juvenile arthritis	M082
Systemic sclerosis	M34
Subacute cutaneous lupus erythematosus	L93, M32
Crohn's disease, ulcerative colitis including joint manifestation of IBD.	M074, M075, M076, K50, K51
Ankylosing spondylitis	M072, M45

Table S2: Pharmacological treatment of PsO/PsA.

Class	International non-proprietary name	ATC code or treatment code	Categorization
Phototherapy			
	psoralen (P) and long-wave ultraviolet radiation (UVA)	code:DQ014, DQ011, DQ010, DQ009	
Pharmacological treatment			
Systemic	Methotrexate	L04AX03	Methotrexate
	Etanercept	L04AB01	Biologics
	Adalimumab	L04AB04	
	Infliximab	L04AB02	
	Certolizumab pegol	L04AB05	
	Ixekizumab	L04AC13	
	Sekukinumab	L04AC10	
	Brodalumab	L04AC12	
	Ustekinumab	L04AC05	
	Guselkumab	L04AC16	
	Risankizumab	L04AC18	
	Abatacept	L04AA24	
	Ciclosporin	L04AD01	Other systemics
	Acitretin	D05BB02	
	Leflunomid	L04AA13	
	Dimethylfumarat	L04AX07	
	Apremilast	L04AA32	
	Tofacitinib	L04AA29	
	Salazopyrin	A07EC01	
Topical	Betamethasone	D07AC01	Topical Corticosteroids
	Mometasone	D07AC13	
	Clobetasol propionate	D07AD01	
	hydrocortisone	D07AA02	
	triamcinolone	D07AB09	
	Calcipotriol	D05AX02	
	betamethasone + calcipotriol	D05AX52	
	Tacrolimus	D11AH01	Topical calcineurin inhibitors
	Pimekrolimus	D11AH02	

Table S3. Definitions and categorizations of covariates.

Variable	Categorization	ICD 10 codes
<i>Demographic</i>		
Sex	Man; woman	
Age category, years	<18; 18-44; 45-64; 65+	
<i>Laboratory variables (closest to the index date in the past 12 months)</i>		
eGFR (mL/min/1.73 m ²)	Continuous	
eGFR category (mL/min/1.73 m ²)	<60 / >60 / <30	
C-reactive protein (mg/dL)	<1; 1-3; 3-<10; >=10	
Haemoglobin level g/dL	<10; >= 10	
Aspartate aminotransferase (AST) (IU/L)	Normal (<100); mild elevation (100-249); Moderate elevation (250-2000); severe (>2000)	
Alanine aminotransferase (AST) (IU/L)	Normal (<100); mild elevation (100-249); Moderate elevation (250-2000); severe (>2000)	
<i>Psoriasis type</i>		
	PsO; PsA	PsO : L40.X except L405xx; PsA : L405, M07.0-M07.3
<i>Care settings</i>		
	Dermatology or Rheumatology/ Others	As per Swedish National Board of Health and Welfare classification codes for hospitals and clinics
<i>Comorbidities</i>		
Diabetes Mellitus	Yes/No	E10 – E14
Hypertension	Yes/No	I10 – I15
Myocardial Infarction	Yes/No	I21, I22, I252
Heart failure	Yes/No	I50, I110, I113, I971, K761, P290

Peripheral vascular disease	Yes/No	I70-71, I731, I738, I739, I771, I790, I792, K551, K558, K559, Z958, Z959
Cerebrovascular disease	Yes/No	G45-46, H340, I60-69
Atrial fibrillation	Yes/No	I48
Chronic obstructive pulmonary disease	Yes/No	J40 – J47
Liver disease	Yes/No	K76
<i>Medications (closest to the index date in the past 180 days)</i>		
RASi	Yes/No	C09A, C09B, C09C, C09D
Diuretic	Yes/No	C03
Beta-blocker	Yes/No	C07
Lipid-lowering	Yes/No	C10AA
Anti-diabetics	Yes/No	A10
Systemic glucocorticoids	Yes/No	H02
NSAIDs	Yes/No	M01A

Table S4: Baseline characteristics of patients included in Persistence, re-initiation, switching, and enrichment of systemic treatments analysis, by class of treatment.

	Biologics, N = 609	Methotrexate, N = 4,079	other systemic DMARDs, N = 1,621	Combination treatment, N = 36	Overall, N = 6,345
Age in year; mean [SD]	45.5 [15.4]	50.8 [16.8]	52.6 [16.2]	51.2 [16.8]	50.8 [16.6]
Age categories					
<18 years	29(4.8%)	131(3.2%)	26(1.6%)	3(8.3%)	189(3.0%)
18-44 years	250(41%)	1,273(31%)	457(28%)	6(17%)	1,986(31%)
45-64 years	264(43%)	1,751(43%)	728(45%)	18(50%)	2,761(44%)
65+ years	66(11%)	924(23%)	410(25%)	9(25%)	1,409(22%)
Sex					
Male	313(51%)	2,045(50%)	897(55%)	17(47%)	3,272(52%)
Female	296(49%)	2,034(50%)	724(45%)	19(53%)	3,073(48%)
Index treatment					
acitretin	0(0%)	0(0%)	896(55%)	0(0%)	896(14%)
acitretin+methotrexate	0(0%)	0(0%)	0(0%)	2(5.6%)	2(<0.1%)
adalimumab	181(30%)	0(0%)	0(0%)	0(0%)	181(2.9%)
adalimumab+methotrexate	0(0%)	0(0%)	0(0%)	7(19%)	7(0.1%)
apremilast	0(0%)	0(0%)	184(11%)	0(0%)	184(2.9%)
apremilast+methotrexate	0(0%)	0(0%)	0(0%)	2(5.6%)	2(<0.1%)
certolizumab pegol	7(1.1%)	0(0%)	0(0%)	0(0%)	7(0.1%)

	Biologics, N = 609	Methotrexate, N = 4,079	other systemic DMARDs, N = 1,621	Combination treatment, N = 36	Overall, N = 6,345
ciclosporin	0(0%)	0(0%)	71(4.4%)	0(0%)	71(1.1%)
ciclosporin+methotrexate	0(0%)	0(0%)	0(0%)	4(11%)	4(<0.1%)
dimethyl fumarate	0(0%)	0(0%)	11(0.7%)	0(0%)	11(0.2%)
etanercept	321(53%)	0(0%)	0(0%)	0(0%)	321(5.1%)
etanercept+methotrexate	0(0%)	0(0%)	0(0%)	5(14%)	5(<0.1%)
etanercept+sulfasalazine	0(0%)	0(0%)	0(0%)	2(5.6%)	2(<0.1%)
infliximab	18(3.0%)	0(0%)	0(0%)	0(0%)	18(0.3%)
infliximab+methotrexate	0(0%)	0(0%)	0(0%)	1(2.8%)	1(<0.1%)
ixekizumab	1(0.2%)	0(0%)	0(0%)	0(0%)	1(<0.1%)
leflunomide	0(0%)	0(0%)	26(1.6%)	0(0%)	26(0.4%)
methotrexate	0(0%)	4,079(100%)	0(0%)	0(0%)	4,079(64%)
methotrexate+sulfasalazine	0(0%)	0(0%)	0(0%)	12(33%)	12(0.2%)
secukinumab	33(5.4%)	0(0%)	0(0%)	0(0%)	33(0.5%)
sulfasalazine	0(0%)	0(0%)	432(27%)	0(0%)	432(6.8%)
tofacitinib	0(0%)	0(0%)	1(<0.1%)	0(0%)	1(<0.1%)
ustekinumab	48(7.9%)	0(0%)	0(0%)	0(0%)	48(0.8%)
ustekinumab+methotrexate	0(0%)	0(0%)	0(0%)	1(2.8%)	1(<0.1%)
eGFR ml/min/1.73m²; mean [SD]	97.6 [21.4]	94.0 [20.2]	92.7 [20.2]	92.4 [21.7]	94.0 [20.3]
missing	57(9.4%)	186(4.6%)	161(9.9%)	2(5.6%)	406(6.4%)

	Biologics, N = 609	Methotrexate, N = 4,079	other systemic DMARDs, N = 1,621	Combination treatment, N = 36	Overall, N = 6,345
eGFR categories					
>=60 ml/min/1.73m ²	536(88%)	3,720(91%)	1,385(85%)	33(92%)	5,674(89%)
30-59 ml/min/1.73m ²	12(2.0%)	166(4.1%)	65(4.0%)	1(2.8%)	244(3.8%)
<30 ml/min/1.73m ²	4(0.7%)	7(0.2%)	10(0.6%)	0(0%)	21(0.3%)
missing	57(9.4%)	186(4.6%)	161(9.9%)	2(5.6%)	406(6.4%)
Psoriasis type					
PsA+PsO	223(37%)	932(23%)	291(18%)	26(72%)	1,472(23%)
PsO	386(63%)	3,147(77%)	1,330(82%)	10(28%)	4,873(77%)
Comorbid conditions					
Hypertension	113(19%)	1,000(25%)	439(27%)	7(19%)	1,559(25%)
Diabetes Mellitus	37(6.1%)	362(8.9%)	151(9.3%)	1(2.8%)	551(8.7%)
MI	8(1.3%)	95(2.3%)	32(2.0%)	1(2.8%)	136(2.1%)
PAD	8(1.3%)	70(1.7%)	40(2.5%)	0(0%)	118(1.9%)
Cerebrovascular disease	9(1.5%)	103(2.5%)	49(3.0%)	1(2.8%)	162(2.6%)
Heart Failure	4(0.7%)	80(2.0%)	42(2.6%)	0(0%)	126(2.0%)
Atrial fibrillation	14(2.3%)	107(2.6%)	58(3.6%)	0(0%)	179(2.8%)
Liver disease	21(3.4%)	34(0.8%)	34(2.1%)	1(2.8%)	90(1.4%)
Relevant treatments for PsO/PSA					
Prevalent users	406(67%)	2,887(71%)	1,186(73%)	28(78%)	4,507(71%)

	Biologics, N = 609	Methotrexate, N = 4,079	other systemic DMARDs, N = 1,621	Combination treatment, N = 36	Overall, N = 6,345
Topical corticosteroids	278(46%)	2,334(57%)	1,059(65%)	11(31%)	3,682(58%)
Topical calcineurin inhibitors	24(3.9%)	164(4.0%)	68(4.2%)	2(5.6%)	258(4.1%)
Biologics	194(32%)	36(0.9%)	11(0.7%)	7(19%)	248(3.9%)
Methotrexate	66(11%)	1,144(28%)	45(2.8%)	20(56%)	1,275(20%)
Other systemic treatments	71(12%)	456(11%)	604(37%)	11(31%)	1,142(18%)
Sulfasalazine	12(2.0%)	28(0.7%)	96(5.9%)	9(25%)	145(2.3%)
Alitretinoin	3(0.5%)	21(0.5%)	342(21%)	1(2.8%)	367(5.8%)
Leflunomide	1(0.2%)	0(0%)	5(0.3%)	1(2.8%)	7(0.1%)
Tofacitinib	0(0%)	0(0%)	0(0%)	0(0%)	0(0%)
Apremilast	0(0%)	1(<0.1%)	34(2.1%)	2(5.6%)	37(0.6%)
Dimethyl fumarate	0(0%)	0(0%)	1(<0.1%)	0(0%)	1(<0.1%)
Ciclosporin	1(0.2%)	4(<0.1%)	21(1.3%)	1(2.8%)	27(0.4%)
Other ongoing medications					
RASi	97(16%)	755(19%)	312(19%)	10(28%)	1,174(19%)
Diuretic	25(4.1%)	297(7.3%)	142(8.8%)	5(14%)	469(7.4%)
Beta-blocker	51(8.4%)	489(12%)	237(15%)	3(8.3%)	780(12%)
Lipid-lowering	45(7.4%)	438(11%)	216(13%)	3(8.3%)	702(11%)
Anti-diabetics	29(4.8%)	269(6.6%)	111(6.8%)	0(0%)	409(6.4%)
Systemic glucocorticoids	108(18%)	650(16%)	214(13%)	16(44%)	988(16%)

	Biologics, N = 609	Methotrexate, N = 4,079	other systemic DMARDs, N = 1,621	Combination treatment, N = 36	Overall, N = 6,345
NSAIDs	239(39%)	1,583(39%)	488(30%)	18(50%)	2,328(37%)
C-reactive protein					
<1 mg/dL	58(9.5%)	300(7.4%)	120(7.4%)	3(8.3%)	481(7.6%)
1_<3 mg/dL	251(41%)	1,360(33%)	492(30%)	20(56%)	2,123(33%)
>=3-<10 mg/dL	162(27%)	1,104(27%)	422(26%)	6(17%)	1,694(27%)
≥10 mg/dL	76(12%)	788(19%)	358(22%)	6(17%)	1,228(19%)
missing	62(10%)	527(13%)	229(14%)	1(2.8%)	819(13%)
Hemoglobin					
<10 g/dL	6(1.0%)	89(2.2%)	49(3.0%)	3(8.3%)	147(2.3%)
>=10 g/dL	584(96%)	3,891(95%)	1,511(93%)	32(89%)	6,018(95%)
missing	19(3.1%)	99(2.4%)	61(3.8%)	1(2.8%)	180(2.8%)
AST level (IU/L)					
Normal level (<100 IU/L)	470(77%)	3,583(88%)	1,424(88%)	29(81%)	5,506(87%)
Mild elevation (100-249 IU/L)	6(1.0%)	41(1.0%)	16(1.0%)	0(0%)	63(1.0%)
Moderate elevation (250-2000 IU/L)	1(0.2%)	6(0.1%)	4(0.2%)	0(0%)	11(0.2%)
Large elevation (>2000 IU/L)	0(0%)	4(<0.1%)	4(0.2%)	0(0%)	8(0.1%)
missing	132(22%)	445(11%)	173(11%)	7(19%)	757(12%)
ALT level (IU/L)					
Normal level (<100 IU/L)	583(96%)	3,941(97%)	1,550(96%)	33(92%)	6,107(96%)

	Biologics, N = 609	Methotrexate, N = 4,079	other systemic DMARDs, N = 1,621	Combination treatment, N = 36	Overall, N = 6,345
Mild elevation (100-249 IU/L)	5(0.8%)	53(1.3%)	19(1.2%)	2(5.6%)	79(1.2%)
Moderate elevation (250-2000 IU/L)	2(0.3%)	8(0.2%)	2(0.1%)	0(0%)	12(0.2%)
severe elevation (>2000 IU/L)	1(0.2%)	3(<0.1%)	4(0.2%)	0(0%)	8(0.1%)
Missing	18(3.0%)	74(1.8%)	46(2.8%)	1(2.8%)	139(2.2%)

PsO: psoriasis; PsA: psoriatic arthritis; RASi: Renin-angiotensin system inhibitors; NSAIDs: non-steroidal anti-inflammatory drugs; AST: aspartate aminotransferase; ALT: alanine aminotransferase

Table S5. Baseline characteristics of incident users of Biologics or methotrexate among newly diagnosed PsO/PsA patients.

	Biologics N = 596	Methotrexat N = 4,311	Overall, N = 4,907
Age in year; mean [SD]	45.0 [15.8]	50.0 [16.6]	49.4 [16.6]
Age categories			
<18	30(5.0%)	126(2.9%)	156(3.2%)
18-44	255(43%)	1,453(34%)	1,708(35%)
45-64	242(41%)	1,818(42%)	2,060(42%)
65+	69(12%)	914(21%)	983(20%)
Sex			
Men	327(55%)	2,243(52%)	2,570(52%)
Women	269(45%)	2,068(48%)	2,337(48%)
eGFR ml/min/1.73m ² ; mean [SD]	98.0 [22.9]	94.6 [19.9]	95.0 [20.3]
missing	70	237	307
eGFR categories			
>=60 ml/min/1.73m ²	513(86%)	3,900(90%)	4,413(90%)
30-59 ml/min/1.73m ²	7(1.2%)	166(3.9%)	173(3.5%)
<30 ml/min/1.73m ²	6(1.0%)	8(0.2%)	14(0.3%)
missing	70(12%)	237(5.5%)	307(6.3%)
Psoriasis type			
PsO with PsA	143(24%)	701(16%)	844(17%)
PsO	453(76%)	3,610(84%)	4,063(83%)
Prescriber specialty			

	Biologics N = 596	Methotrexat e, N = 4,311	Overall, N = 4,907
Derma	231(39%)	1,946(45%)	2,177(44%)
Rheumatology	138(23%)	712(17%)	850(17%)
Other	227(38%)	1,653(38%)	1,880(38%)
Comorbidities			
Hypertension	130(22%)	1,030(24%)	1,160(24%)
Diabetes Mellitus	51(8.6%)	360(8.4%)	411(8.4%)
MI	13(2.2%)	91(2.1%)	104(2.1%)
PAD	5(0.8%)	73(1.7%)	78(1.6%)
Cerebrovascular disease	11(1.8%)	99(2.3%)	110(2.2%)
Heart Failure	11(1.8%)	83(1.9%)	94(1.9%)
Atrial fibrillation	15(2.5%)	107(2.5%)	122(2.5%)
Relevant treatment of PsO/PSA			
Topical corticosteroids	308(52%)	2,591(60%)	2,899(59%)
Topical calcineurin inhibitors	27(4.5%)	182(4.2%)	209(4.3%)
Other systemic treatments	135(4.1%)	3,256(6.7%)	3,391(6.6%)
Sulfasalazine	36(6.0%)	134(3.1%)	170(3.5%)
Alitretinoin	32(5.4%)	191(4.4%)	223(4.5%)
Leflunomide	2(0.3%)	3(<0.1%)	5(0.1%)
Apremilast	30(5.0%)	27(0.6%)	57(1.2%)
Dimethyl fumarate	1(0.2%)	3(<0.1%)	4(<0.1%)
Ciclosporin	7(1.2%)	16(0.4%)	23(0.5%)
Other medications			
RAASi	107(18%)	765(18%)	872(18%)
Diuretic	29(4.9%)	284(6.6%)	313(6.4%)
Beta-blocker	59(9.9%)	470(11%)	529(11%)

	Biologics N = 596	Methotrexate N = 4,311	Overall, N = 4,907
Lipid-lowering	44(7.4%)	455(11%)	499(10%)
Anti-diabetics	35(5.9%)	264(6.1%)	299(6.1%)
Systemic glucocorticoids	78(13%)	523(12%)	601(12%)
NSAIDs	240(40%)	1,492(35%)	1,732(35%)
C-reactive protein (mg/dL) categories			
<1	114(19%)	546(13%)	660(13%)
≥1-<3	114(19%)	630(15%)	744(15%)
≥3-<10	103(17%)	750(17%)	853(17%)
≥10	48(8.1%)	398(9.2%)	446(9.1%)
missing	217(36%)	1,987(46%)	2,204(45%)
Hemoglobin level g/dL			
<10	5(0.8%)	18(0.4%)	23(0.5%)
≥10	495(83%)	3,766(87%)	4,261(87%)
missing	96(16%)	527(12%)	623(13%)
AST level (IU/L)			
Normal (<100)	345(58%)	3,030(70%)	3,375(69%)
Mild (100-249)	0(0%)	0(0%)	0(0%)
Moderate (250-2000)	0(0%)	0(0%)	0(0%)
missing	251(42%)	1,281(30%)	1,532(31%)
ALT level (IU/L)			
Normal (<100)	521(87%)	4,018(93%)	4,539(93%)
Mild (100-249)	0(0%)	0(0%)	0(0%)
missing	75(13%)	293(6.8%)	368(7.5%)

PsO: psoriasis; PsA: psoriatic arthritis; RASi: Renin-angiotensin system inhibitors; NSAIDs: non-steroidal anti-inflammatory drugs; AST: aspartate aminotransferase; ALT: alanine aminotransferase