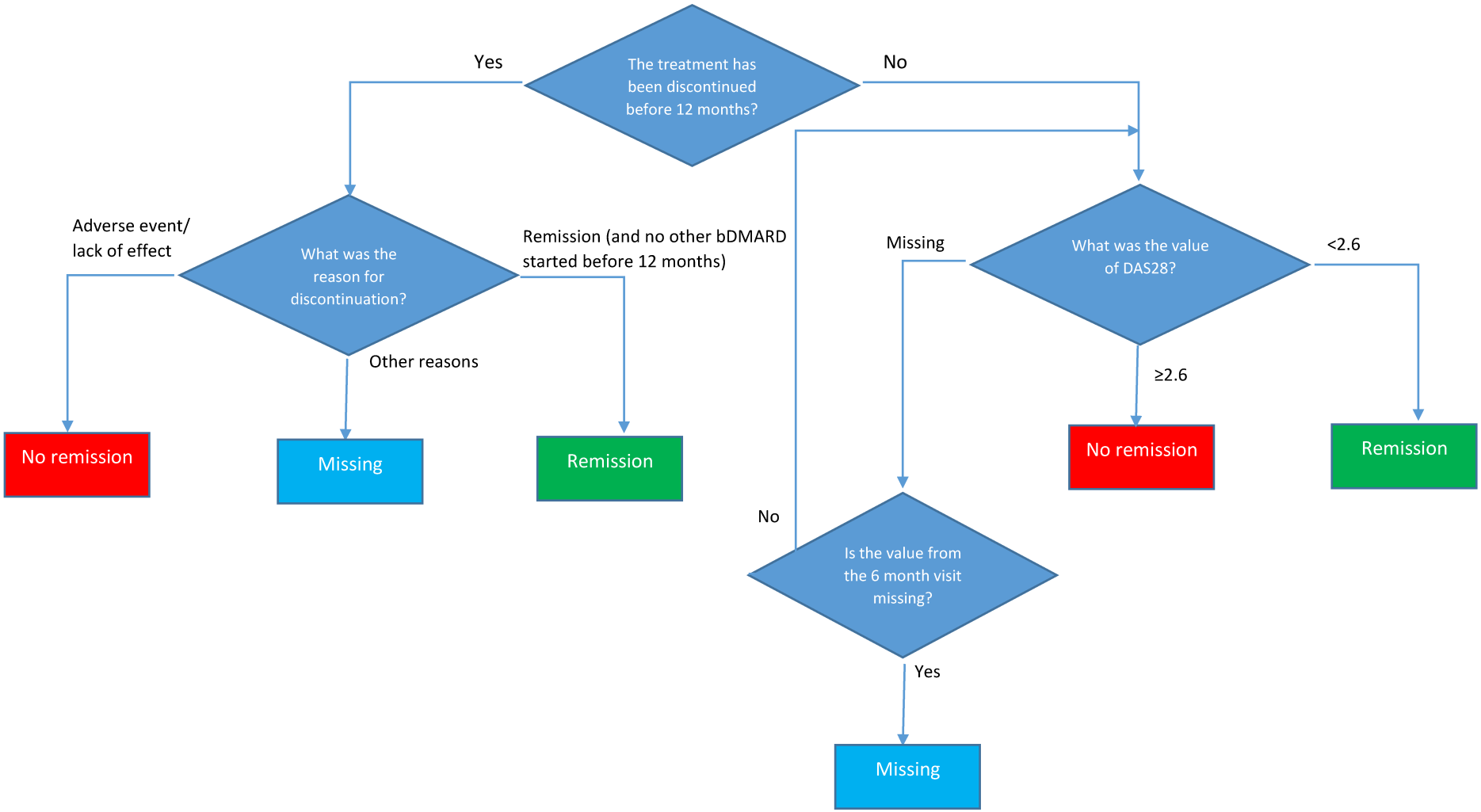
Supplementary figure S1: Hierarchical process for defining clinical remission



Supplementary table S1. Description of ethical approvals in the participating countries.

Country	Ethical approval	Reference
Switzerland	Local ethical review board approval obtained in Geneva in January 2018.	PB_2018-00023-(10-089).
Czech republic	Ethical approval for ATTRA was granted by the Czech Multicentre Research Ethics Committee. No additional ethical approval was required for the current analysis. All subjects provided their written consent for the collection and storage of data before participation.	No. 201611 S300.
Denmark	Not required for registry research	Not applicable
Spain	Ethical approval was granted by the Hospital Clínic of Barcelona Ethics Committee (one of the participating centers) acting as a reference committee. All patients signed informed consent before register inclusion.	Approval code FER-ADA-2015-01. 22/May/2015.
Iceland	Ethical approval was granted by The National Bioethics Committee and the Icelandic Data Protection Authority. No Informed Consent is required for registry research.	Approval number: 18-009 Ref nr.:VSNb2018010004/03.01
Italy	Ethical approval was granted by the IRB of University Hospital of Bari (the promoting centre) acting as a reference committee. All patients signed informed consent before register inclusion.	Approval number: 598-CE 02/05/2011
Norway	Ethical approvals were granted by the Regional Committees for Medical and Health Research Ethics South East. All patients gave their written informed consent.	Approval numbers: 105-00055, 2011/1339/REK sør-øst D and 2017/2041 REK sør-øst A
Portugal	Ethical approval has been granted for the registry and all patients provide informed consent and authorize the use of their personal data for investigation, which must be approved by an ethics committee (no local approval required).	Not applicable
Romania	No ethical approval required.	
Sweden	Ethical approval granted by the ethical review board in Stockholm. No Informed Consent is required for registry research.	dnr 2015/1844-31/2; 2017/2473-32/1
Finland	Ethical approval granted by the coordinating ethical committee of Helsinki and Uusimaa Hospital District	73/13/03/00/14
Slovenia	Ethical approval granted by the National Medical Ethics Committee at the Ministry of Health of the Republic of Slovenia	0120-191/2016/2
Turkey	The study was approved by both Dokuz Eylul University ethical committee and Turkish Medicines and Medical Devices Agency of the Turkish Ministry of Health (#66175679-514.05.01-E.92906). Informed consent was obtained from all participants.	Approval number: 2018/21-02

Supplementary table S2. Baseline characteristics (mean (SD) or percentages) of PsA patients starting their first TNFi monotherapy or in combination with a csDMARD by country, 2006-2017.

TNFi in combination with csDMARD	**Switzerland**	**Czech republic**	**Denmark**	**Spain**	**Iceland**	**Italy**	**Norway**	**Portugal**	**Romania**	**Sweden**	**Finland**	**Slovenia**	**Turkey**
N (%)	929 (65)	616 (80)	1525 (70)	345 (70)	146 (53)	412 (21)	514 (65)	413 (63)	101 (99)	3574 (65)	493 (78)	252 (72)	120 (57)
Age, years	49.7 (12.0)	49.1 (11.4)	47.9 (11.7)	49.0 (11.7)	49.9 (13.1)	48.4 (12.3)	47.8 (12.0)	48.8 (11.4)	52.3 (12.0)	49.5 (12.4)	47.8 (11.4)	49.5 (11.3)	43.2 (12.8)
Sex (male)	48.3%	52.9%	45.2%	49.9%	45.9%	48.8%	50.4%	46.2%	43.6%	51.3%	54.4%	53.6%	35.8%
Disease duration, years	4.8 (6.1)	8.2 (7.3)	5.7 (6.9)	5.8 (5.5)	7.8 (8.3)	5.6 (6.6)	6.5 (7.6)	6.6 (6.3)	5.2 (7.2)	6.1 (7.4)	8.5 (8.4)	8.4 (7.2)	5.2 (5.3)
CRP, mg/L	10.1 (15.2)	23.1 (23.1)	12.2 (18.4)	9.2 (15.3)	12.7 (18.6)	3.7 (12.9)	10.4 (16.7)	19.3 (30.6)	36.9 (37.7)	13.4 (37.7)	12.9 (16.6)	16.4 (23.3)	17.9 (22.3)
Tender joints 28	4.7 (5.3)	10.1 (6.0)	6.5 (6.4)	4.7 (4.6)	5.8 (4.8)	5.5 (6.2)	4.2 (4.7)	7.0 (6.4)	11.9 (7.0)	5.7 (5.5)	3.8 (4.5)	8.6 (5.7)	5.6 (5.4)
Swollen joints 28	3.3 (4.0)	7.4 (4.9)	2.8 (3.4)	2.9 (3.5)	4.3 (3.4)	2.6 (4.4)	2.2 (3.0)	4.5 (4.2)	7.2 (5.4)	3.7 (4.0)	3.6 (3.7)	7.6 (5.0)	2.4 (2.5)
VAS global health, mm	51.3 (27.1)	66.7 (21.1)	65.2 (24.3)	59.6 (21.8)	69.4 (22.8)	58.5 (23.2)	50.8 (23.2)	60.8 (23.2)	83.4 (9.9)	56.2 (23.1)	50.4 (25.7)	70.1 (16.8)	61.0 (23.5)
VAS pain, mm	52.4 (25.8)	62.8 (21.8)	58.4 (23.7)	. (.)	64.9 (20.7)	58.9 (24.2)	46.1 (23.9)	60.1 (24.1)	-	56.9 (22.6)	53.6 (24.9)	66.4 (24.5)	62.7 (23.9)
DAPSA28	23.3 (14.6)	41.6 (16.1)	28.5 (15.6)	. (.)	31.0 (13.0)	25.8 (18.1)	19.1 (12.0)	32.0 (16.1)	-	27.8 (15.1)	25.0 (13.6)	41.3 (17.2)	27.5 (11.9)
DAS28 -CRP	3.7 (1.2)	5.3 (1.0)	4.2 (1.2)	3.9 (1.0)	4.4 (1.0)	3.6 (1.2)	3.6 (1.1)	4.4 (1.2)	5.8 (1.0)	4.1 (1.1)	3.9 (1.1)	5.0 (1.0)	4.2 (1.0)
Adalimumab, %	40	48	34	34	6	40	15	30	47	27	41	54	42
Certolizumab pegol, %	3	5	9	9	0	1	25	1	0	4	2	4	8
Etanercept, %	25	21	22	32	18	36	31	40	18	37	29	23	26
Golimumab, %	18	12	8	14	14	10	17	19	27	9	9	19	13
Infliximab, %	14	14	29	11	62	14	12	11	9	24	20	1	13
TNFi Monotherapy													
N (%)	506 (35)	152 (20)	652 (30)	151 (30)	132 (48)	1557 (79)	279 (35)	243 (37)	<5 (1)	1888 (35)	140 (22)	99 (28)	92 (43)
Age, years	47.6 (12.9)	46.3 (11.1)	47.8 (12.7)	49.5 (11.1)	49.2 (12.5)	50.5 (12.2)	47.9 (12.4)	47.8 (11.5)	-	49.3 (13.2)	48.4 (11.3)	49.3 (12.3)	41.6 (11.5)
Sex (male)	54.7%	52%	45.4%	47%	37.1%	46.8%	48.7%	55.6%	-	45.4%	55%	52.5%	46.7%
Disease duration, years	5.1 (7.3)	8.2 (8.1)	5.1 (6.3)	7.0 (7.0)	6.0 (6.3)	6.4 (7.2)	6.6 (8.1)	6.4 (7.4)	-	6.3 (8.0)	8.5 (8.3)	5.9 (5.8)	4.9 (5.8)
CRP, mg/L	10.0 (12.3)	16.2 (19.4)	11.5 (19.8)	3.9 (7.4)	9.3 (10.5)	3.8 (14.2)	10.5 (12.9)	16.4 (22.2)	-	11.2 (17.4)	12.4 (24.8)	12.4 (18.2)	16.1 (22.8)
Tender joints 28	3.7 (5.0)	9.5 (7.0)	7.0 (7.4)	3.3 (4.7)	5.5 (3.9)	5.2 (6.2)	4.4 (5.6)	6.3 (6.2)	-	5.6 (5.6)	2.4 (2.9)	7.9 (5.8)	4.3 (4.9)
Swollen joints 28	2.5 (3.7)	6.7 (5.8)	2.5 (3.4)	2.0 (2.7)	4.2 (3.2)	2.1 (3.8)	1.8 (3.1)	4.3 (4.5)	-	3.2 (3.9)	3.8 (5.4)	5.7 (5.3)	2.2 (3.1)
VAS global health, mm	56.6 (26.3)	68.9 (16.1)	67.3 (23.7)	59.5 (23.3)	68.1 (21.1)	51.8 (28.7)	53.4 (23.3)	61.7 (25.4)	-	58.8 (23.0)	46.0 (28.1)	68.9 (17.7)	67.8 (17.1)
VAS pain, mm	54.6 (25.0)	59.7 (23.7)	59.1 (22.8)	. (.)	62.2 (21.2)	51.2 (29.3)	46.7 (23.3)	61.7 (24.0)	-	59.4 (22.9)	52.7 (27.8)	64.1 (22.4)	69.8 (18.6)

DAPSA28	21.8 (14.3)	39.3 (22.3)	29.2 (17.2)	. (.)	30.5 (10.9)	21.7 (17.5)	19.6 (14.6)	31.0 (20.0)	-	27.4 (15.3)	22.9 (14.6)	36.6 (18.0)	26.0 (12.3)
DAS28-CRP	3.6 (1.2)	4.9 (1.2)	4.1 (1.3)	3.2 (1.1)	4.3 (0.9)	3.2 (1.3)	3.6 (1.2)	4.3 (1.5)	-	4.0 (1.2)	3.6 (1.1)	4.6 (1.2)	4.0 (1.1)
Adalimumab, %	40	45	44	30	5	35	15	27	-	29	39	53	30
Certolizumab pegol, %	2	5	9	8	1	1	23	1	-	4	3	7	11
Etanercept, %	33	30	28	33	22	46	37	43	-	44	39	19	24
Golimumab, %	14	9	7	16	16	7	18	21	-	9	7	21	21
Infliximab, %	11	11	16	13	56	11	8	9	-	13	12	0	14

Abbreviations:CRP=C-reactive protein, csDMARD=conventional synthetic disease modifying anti-rheumatic drugs, VAS=visual analogue scale, DAPSA28=disease activity index for psoriatic arthritis with 28 joints, DAS28=disease activity score with 28 joints, SD=standard deviation, TNFi=TNF-inhibitors

Supplementary table S3. Percentage missing data per country.

Country	Switzerland	Czech republic	Denmark	Spain	Iceland	Italy	Norway	Portugal	Romania	Sweden	Finland	Slovenia	Turkey	All
Monotherapy baseline missing data														
Age	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sex	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Disease duration	2	1	14	0	15	32	22	18	0	59	30	1	5	32
Tender joints 28	53	10	27	44	27	32	7	66	0	29	66	4	32	32
Swollen joints 28	51	9	27	44	27	32	7	66	0	28	64	4	30	32
VAS pain, mm	58	49	23	100	36	18	57	74	100	30	50	6	29	34
VAS global health, mm	59	2	22	46	30	19	8	62	0	29	51	4	29	28
DAS28-CRP	67	11	34	53	32	40	14	75	0	38	71	4	33	41
DAPSA28	67	50	34	100	38	40	62	77	100	39	71	10	33	46
Data on clinical remission at 12 month*	48	11	13	56	22	52	10	35	0	29	55	3	26	35
Co-medication baseline missing data														
Age	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sex	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Disease duration	1	0	10	0	12	25	25	8	0	59	17	0	3	28
Tender joints 28	42	1	11	34	25	51	7	37	0	17	50	3	33	21
Swollen joints 28	42	1	12	34	25	51	7	37	0	17	48	3	33	21
VAS pain, mm	52	40	11	100	26	24	46	48	100	19	33	1	32	30
VAS global health, mm	53	0	10	37	23	25	4	42	0	18	36	3	32	21
DAS28-CRP	60	2	16	43	26	60	13	48	0	25	57	3	35	29
DAPSA28	60	41	17	100	29	60	54	51	100	25	57	4	35	38
Data on clinical remission at 12 months*	40	8	8	54	10	51	8	20	4	26	51	17	18	25

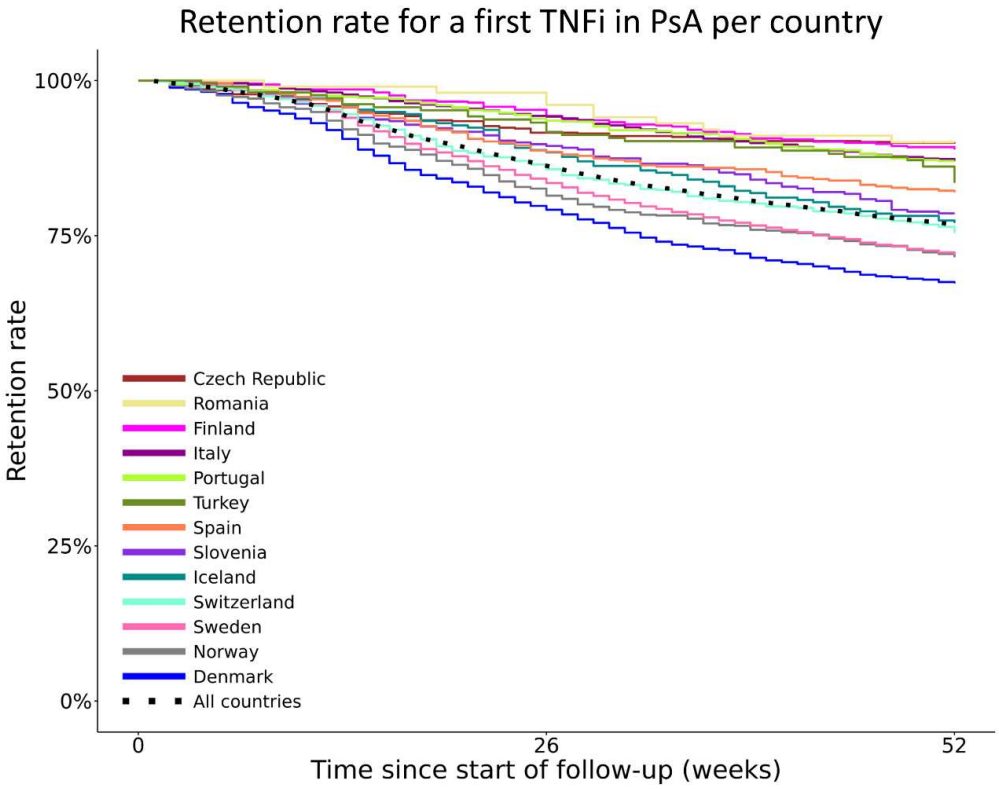
Abbreviations: CRP= C-reactive protein, csDMARD= conventional synthetic disease modifying anti-rheumatic drugs, VAS= visual analogue scale, DAPSA28= disease activity index for psoriatic arthritis with 28 joints, DAS28= disease activity score with 28 joints, SD= standard deviation, TNFi= TNF-inhibitors. * According to the hierarchal definition outlined in supplementary figure S1.

Supplementary table S4. Number of patients included in the country-specific secondary analyses (co-medication with methotrexate vs monotherapy) stratifying by type of TNFi.

Country	**Infliximab**	**Adalimumab**	**Etanercept**
Number of patients included in Cox regression analyses: co-medication/monotherapy			
Czech republic	NA*	225/68	87/45
Finland	NA*	146/54	97/55
Italy	41/169	110/542	106/721
Portugal	NA*	94/66	133/104
Spain	NA*	83/45	81/50
Slovenia	NA*	109/52	NA*
Iceland	84/74	NA*	NA*
Switzerland	87/56	220/203	142/168
Sweden	757/243	783/555	1075/836
Norway	NA*	70/41	147/102
Denmark	357/102	441/289	253/179
Number of patients included in logistic regression analyses: co-medication/monotherapy			
Pooled	1275/503	1790/1279	1603/1431
Czech republic	NA*	209/63	77/37
Finland	NA*	NA*	NA*
Italy	NA*	56/260	59/349
Portugal	NA*	78/37	97/68
Spain	NA*	NA*	NA*
Slovenia	NA*	90/49	NA*
Iceland	NA*	NA*	NA*
Switzerland	NA*	127/112	82/77
Sweden	581/176	592/409	762/556
Norway	NA*	63/36	138/92
Denmark	334/95	396/250	231/154

Legend: NA = not included in the analysis due <30 patients in at least one of the exposure groups.

Supplementary figure S2. Overall TNFi retention regardless of co-medication, stratified by the participating registers.



Supplementary figure S3. Baseline distribution of number of tender and swollen joints and DAS28 in the secondary analyses.