

Supplementary Appendix

Progression of radiographic sacroiliitis in axial spondyloarthritis is retarded by the therapeutic use of TNF inhibitors: 12-year data from the SCQM registry

Table S1. Characteristics at inclusion of all patients fulfilling the ASAS classification criteria in SCQM

Parameter	All patients	
	N=3050	
Male sex, N (%)	3050	1796 (58.9)
HLA-B27 positive, N (%)	3050	2362 (77.4)
nr-axSpA, N (%)	1770	470 (26.6)
Age, years	3050	39.0 (11.4)
Symptom duration, years	2988	12.4 (11.1)
BASDAI	2436	4.6 (2.3)
ASDAS	2195	2.9 (1.1)
CRP, mg/l, median (IQR)	2744	5.0 (1.2; 8.0)
BASFI	2451	3.1 (2.5)
BASMI	2753	1.9 (1.9)
Current enthesitis, N (%)	2931	1843 (62.9)
BMI 25-30, %	2830	875 (30.9)
BMI >30, %	2830	435 (15.4)
On NSAID treatment, N (%)	2810	2402 (85.5)
On csDMARD treatment, N (%)	3050	332 (10.9)
On TNFi treatment, N (%)	3050	796 (26.1)
Current smokers, N (%)	2388	855 (35.8)

Except where indicated otherwise, values are the mean (SD). ASDAS = Ankylosing Spondylitis Disease Activity Score; BASDAI = Bath Ankylosing Spondylitis Disease Activity Index; BASFI = Bath Ankylosing Spondylitis Functional Index; BASMI = Bath Ankylosing Spondylitis Metrology Index; BMI = Body Mass Index; CRP = C-reactive protein (CRP) levels; csDMARD = conventional synthetic disease-modifying anti-rheumatic drug; HLA-B27 = human leucocyte antigen B27; mSASSS = modified Stoke Ankylosing Spondylitis Spine Score; nr-axSpA = nonradiographic axial spondyloarthritis (central consensus scoring in database); NSAID = Nonsteroidal anti-inflammatory drug; SSS = Sacroiliitis Sum Score; TNFi = Tumour necrosis factor inhibitor.

Table S2. Sacroiliac joint progression over 2 years as observed by reader 1 and reader 2 and defined as a change of at least 1 grade in at least one SIJ and ignoring a change from 0 to 1.

		Reader 1	
		No progression	Progression
Reader 2	No progression	509	92
	Progression	78	24

Table S3. Sensitivity analysis including an interaction term between treatment with TNFi and treatment with NSAIDs in the multivariable analysis for identification of factors associated with radiographic SIJ progression defined as a change of at least 1 grade in at least one SIJ and ignoring a change from 0 to 1 over 2 years.

Variable	OR	95% CI	P value
Prior TNFi use up to the start of x-ray interval yes/no	0.70	0.04; 11.3	0.80
Baseline sacroiliac damage (0-7) at start of each x-ray interval	1.33	1.01; 1.75	0.04
Female sex	0.27	0.08; 0.97	0.04
Symptom duration	1.06	1.01; 1.11	0.01
Current smoking	2.58	0.76; 8.75	0.13
HLA-B27 negative	0.84	0.17; 4.15	0.83
NSAID use at start of each x-ray interval	1.99	0.18; 21.7	0.57
ASDAS at start of each x-ray interval	1.08	0.61; 1.91	0.78
Interaction TNFi use and NSAID use at start of x-ray interval	0.19	0.01; 4.41	0.30

Analysis in 302 patients and 483 x-ray intervals (22 events). ASDAS = Ankylosing Spondylitis Disease Activity Score; HLA-B27 = human leucocyte antigen B27; NSAID = Nonsteroidal anti-inflammatory drug; SIJ = sacroiliac joint; TNFi = Tumour necrosis factor inhibitor.

Table S4. Impact of an alternative variable choice for prior TNFi use (number of years of TNFi use) on sacroiliac joint radiographic progression defined as a change of at least 1 grade in at least one SIJ and ignoring a change from 0 to 1 over 2 years.

Variable	OR	95% CI	P value
Number of years of TNFi use prior to x-ray interval	0.84	0.66; 1.07	0.15
Baseline sacroiliac damage (0-7) at start of each x-ray interval	1.31	1.00; 1.73	0.05
Female sex	0.30	0.08; 1.17	0.08
Symptom duration	1.06	1.01; 1.10	0.02
Current smoking	2.34	0.73; 7.54	0.15
HLA-B27 negative	0.72	0.15; 3.34	0.67
NSAID use at start of each x-ray interval	1.16	0.32; 4.17	0.83
ASDAS at start of each x-ray interval	1.11	0.67; 1.85	0.67

Analysis in 302 patients and 483 x-ray intervals (22 events). ASDAS = Ankylosing Spondylitis Disease Activity Score; HLA-B27 = human leucocyte antigen B27; NSAID = Nonsteroidal anti-inflammatory drug; SIJ = sacroiliac joint; TNFi = Tumour necrosis factor inhibitor.

Table S5. Impact of TNFi use during the current x-ray interval in a multivariable analysis for identification of factors associated with radiographic SIJ progression defined as a change in the Sacroiliitis Sum Score over 2 years.

Variable	Estimate	95% CI
TNFi use during x-ray interval \geq 1 year (Ref: no TNFi use during interval)	-0.137	-0.237; -0.036
TNFi use during x-ray interval $<$ 1 year (Ref: no TNFi use during interval)	-0.201	-0.342; -0.060
Baseline sacroiliac damage (0-7) at start of each x-ray interval	-0.019	-0.045; 0.006
Female sex	-0.081	-0.170; 0.009
Symptom duration	0.001	-0.004; 0.004
Current smoking	0.085	-0.002; 0.171
HLA-B27 negative	0.073	-0.049; 0.195
NSAID use at start of each x-ray interval	0.021	-0.114; 0.072
ASDAS at start of each x-ray interval	0.033	-0.013; 0.078

Analysis in 302 patients and 483 x-ray intervals (22 events). ASDAS = Ankylosing Spondylitis Disease Activity Score; BASDAI = Bath Ankylosing Spondylitis Disease Activity Index; CRP = C-reactive protein; HLA-B27 = human leucocyte antigen B27; NSAID = Nonsteroidal anti-inflammatory drug; SIJ = sacroiliac joint; TNFi = Tumour necrosis factor inhibitor.

