

Online Supplementary Table S1. Baseline characteristics

Assessment	Patients included in this study N = 184 mean (SD) or n (%)	Initial OASIS population N = 216* mean (SD) or n (%)	Patients with x-ray available at year 12 N = 68 mean (SD) or n (%)
Age [years]	43 (12)	44 (13)	43 (11)
Male gender (%)	129 (70%)	154 (71%)	48 (72%)
HLA-B27 positive (%)	149 (83%)	174 (84%)	55 (82%)
Symptoms duration [years]	20 (12)	20 (12)	21 (11)
Disease duration [years]	11 (9)	11 (9)	11 (8)
ASDAS-CRP	2.6 (1.0)	2.7 (1.1)	2.7 (1.0)
BASDAI [0-10]	3.4 (2.0)	3.4 (2.1)	3.4 (2.1)
CRP [mg/l]	17.4 (23.3)	18.0 (24.4)	17.1 (22.1)
Elevated CRP (%)‡	85 (48%)	101 (48%)	33 (52%)
ESR [mm/h]	14.0 (15.0)	14.6 (15.7)	12.3 (12.9)
Patient's global assessment of disease activity [0-10]	3.7 (2.7)	3.8 (2.8)	3.5 (2.9)
Spinal pain [0-10]	3.5 (2.3)	3.5 (2.4)	3.2 (2.2)
mSASSS [0-72]	10.8 (15.2)	11.6 (16.2)	11.2 (15.7)
mSASSS >0 (%)	140 (81%)	149 (81%)	52 (83%)
NSAIDs (%)	125 (68%)	146 (68%)	45 (67%)
Tumor necrosis factor alpha inhibitors (%)	0 (0%)	0 (0%)	0 (0%)

* Initially, 217 patients were included in OASIS, but clinical data from one patient could not longer be retrieved

ASDAS-CRP, Ankylosing Spondylitis Disease Activity Score (C-reactive protein); BASDAI, Bath Ankylosing Spondylitis Disease Activity Score; CRP, C-reactive protein; ESR - erythrocyte sedimentation rate; mSASSS, modified Stoke Ankylosing Spondylitis Spine Score; NSAIDs - non-steroidal anti-inflammatory drugs

Online Supplementary Table S2. Drug use over follow-up time

Time point (years)	NSAID use (yes vs no) (%)	NSAID score (0-1)*	TNFi use (yes vs no) (%)
0	125 (68%)	0.53	0 (0%)
2	136 (75%)	0.53	0 (0%)
4	121 (82%)	0.58	1 (1%)
6	108 (81%)	0.59	9 (7%)
8	88 (77%)	0.55	21 (18%)
10	71 (72%)	0.50	32 (31%)
12	56 (68%)	0.42	26 (29%)

* NSAID score at baseline (time point = 0) was calculated on basis of the treatment during the first 3 weeks in the OASIS
NSAID - non-steroidal anti-inflammatory drug; TNFi - tumor necrosis factor inhibitor

Online Supplementary Table S3 - Longitudinal relationship between disease activity and radiographic damage - Sensitivity analysis*

Model with ASDAS continuous	Model with ASDAS categorical	Model with BASDAI continuous and CRP	Model with BASDAI categorical and CRP	Model with Patient global and CRP	Model with back pain and CPR	
Variable	Multivariable regression 1 β (95% CI) (N = 177‡)	Multivariable regression 2 β (95% CI) (N = 177‡)	Multivariable regression 3 β (95% CI) (N = 178)	Multivariable regression 4 β (95% CI) (N = 178)	Multivariable regression 5 β (95% CI) (N = 178)	Multivariable regression 6 β (95% CI) (N = 178)
Previous mSASSS (0-72)	1.02 (1.00; 1.04)	1.02 (1.00; 1.04)	1.02 (1.00; 1.04)	1.03 (1.01; 1.05)	1.02 (1.00; 1.04)	1.02 (1.00; 1.04)
ASDAS	0.71 (0.39; 1.02)	§	§	§	§	§
ASDAS disease activity states						
- Moderate vs inactive (≥1.3 and <2.1 vs <1.3)	§	0.49 (-0.62; 1.60)	§	§	§	§
- High vs inactive (≥2.1 and ≤3.5 vs <1.3)	§	0.84 (-0.23; 1.91)	§	§	§	§
- Very high vs inactive (>3.5 vs <1.3)	§	2.25 (1.07; 3.43)	§	§	§	§
BASDAI (0-10)	§	§	0.19 (0.04; 0.35)	§	§	§
BASDAI disease activity states						
- Moderate vs inactive (≥2 and	§	§	§	-0.28 (-1.08; 0.52)	§	§

<4 vs <2)						
- High vs inactive (≥4 and ≤6 vs <2)	§	§	§	0.96 (0.12; 1.80)	§	§
- Very high vs inactive (>6 vs <2)	§	§	§	0.67 (-0.35; 1.68)	§	§
CRP (mg/l)	§	§	0.02 (0.00; 0.04)	0.02 (0.01; 0.04)	0.02 (0.00; 0.04)	0.02 (0.00; 0.04)
ESR (mm/h)	§	§	§	§	§	§
Patient's global assessment (0- 10)	§	§	§	§	0.16 (0.04; 0.28)	§
Pain (0-10)	§	§	§	§	§	0.21 (0.08; 0.35)

*All models are time-lagged (2 years of time lag) and auto-regressive (i.e. adjusted for mSASSS in the 2-years before). β reflect progression in mSASSS units over 2 years. As a means of sensitivity analysis, HLA-B27, NSAID score and TNFi over time were included in the models. The number of patients differs slightly from the number of patients included in the main analysis due to missing information in some of the variables.

§ Not included in the model

¥ One patient had a missing in one of the items of the ASDAS (BASDAI question 3) and therefore ASDAS could not be calculated

ASDAS - Ankylosing Spondylitis Disease Activity Score; BASDAI - Bath Ankylosing Spondylitis Activity Index; CRP - C-reactive protein; CI - confidence interval; mSASSS - modified Stoke Ankylosing Spondylitis Spine Score; ESR - erythrocyte sedimentation rate; DMARDs - disease modifying antirheumatic drugs; NSAIDs - non-steroidal anti-inflammatory drugs; QIC - quasi-likelihood information criterion