

Additional file 1

Table S1. Pre-specified cases adjudicated by a blinded third reader [1]

Case Description
<ul style="list-style-type: none">• Cases read by one reader but considered unreadable by the second reader• Cases in which readers' change scores differed in opposite directions (i.e., one positive, one negative) by ≥ 3 and ≥ 5 points for SPARCC sacroiliac joint and spinal scores, respectively• Cases in which readers' change scores differed in the same direction (i.e., both positive or both negative) by ≥ 5 and ≥ 9 points for SPARCC sacroiliac joint and spinal scores, respectively*
<p>* The MRI pre and post sets were read by the adjudicator and the average of the adjudicator's score and the closest original score was used for analysis. Cutoffs for differences in SPARCC sacroiliac joint and spinal scores were determined by estimates of minimally important change [2] SPARCC Spondyloarthritis Research Consortium of Canada</p>

Table S2. SPARCC SSS for lesions, according to SIJ BME

Structural lesion	SIJ BME	<i>N</i>	Mean (SD)	Median (Q1, Q3)	ANOVA <i>P</i> value	Wilcoxon-Mann-Whitney <i>P</i> value
Erosion	≥ 2	128	2.58 (3.45)	1.0 (0, 4.0)	<0.001	<0.001
	<2	55	0.61 (1.69)	0 (0, 0.5)		
Backfill	≥ 2	128	0.99 (2.37)	0 (0, 0.5)	0.004	<0.001
	<2	55	0.05 (0.17)	0 (0, 0)		
Fat metaplasia	≥ 2	128	0.50 (1.62)	0 (0, 0)	0.07	0.01
	<2	55	0.10 (0.57)	0 (0, 0)		
Ankylosis	≥ 2	128	0.11 (0.82)	0 (0, 0)	0.60	0.76
	<2	55	0.20 (1.42)	0 (0, 0)		

ANOVA analysis of variance; *BME* bone marrow edema; *SIJ* sacroiliac joint; *SPARCC* Spondyloarthritis Research Consortium of Canada; *SSS* sacroiliac joint structural score

Table S3. Univariate analysis of relationship between spinal inflammation and select patient characteristics at baseline, including structural lesions

Baseline characteristic	Subgroup	N	23-DVU* spinal score		
			Mean (SE)	Median (Q1, Q3)	P value [†]
Gender	Female	73	2.4 (0.4)	1.0 (0, 2.5)	0.03
	Male	110	5.8 (0.9)	2.1 (0, 7.0)	
Ankylosis	0	179	4.4 (0.6)	1.5 (0, 5.5)	0.59
	>0	4	9.0 (6.7)	3.8 (0.5, 17.5)	
Erosion	0	119	3.2 (0.4)	1.5 (0, 4.0)	0.07
	>0	64	6.8 (1.5)	2.0 (0.3, 7.3)	
Any lesion	0	107	3.2 (0.5)	1.5 (0, 4.0)	0.11
	>0	76	6.3 (1.3)	2.0 (0.3, 7.3)	
Backfill	0	157	3.7 (0.5)	1.5 (0, 5.0)	0.25
	>0	26	8.8 (3.0)	2.3 (0.5, 12.0)	
Fat metaplasia	0	168	4.4 (0.6)	1.5 (0, 5.0)	0.36
	>0	15	5.5 (1.9)	3.0 (0.5, 8.0)	
SPARCC SIJ	<2	55	2.5 (0.5)	1.0 (0, 3.5)	0.02
BME	≥2	128	5.3 (0.8)	2.0 (0.3, 6.5)	

*Range, 0–414

[†]From Wilcoxon-Mann-Whitney test

DVU discovertebral units; SIJ sacroiliac joint; SPARCC Spondyloarthritis Research Consortium of Canada

Table S4. Proportion of patients with SPARCC SSS lesions >0, according to 2 different definitions

Structural lesion	At least 1 reader >0	Both readers >0
	<i>N</i> =185	<i>N</i> =185
	<i>n</i> (%)	<i>n</i> (%)
Any lesion	98 (53.0)	77 (41.6)
Erosion	91 (49.2)	65 (35.1)
Backfill	44 (23.8)	26 (14.1)
Fat metaplasia	24 (13.0)	15 (8.1)
Ankylosis	8 (4.3)	4 (2.2)

SPARCC Spondyloarthritis Research Consortium of Canada; SSS sacroiliac joint structural score

Table S5. Inter-observer intra-class correlation coefficients for structural lesions

Structural lesion	ICC
Fat metaplasia	0.875
Erosion	0.847
Backfill	0.776
Ankylosis	0.976

ICC intra-class correlation coefficients

References

1. Dougados M, van der Heijde D, Sieper J, Braun J, Maksymowych WP, Citera G et al. Symptomatic Efficacy of Etanercept and Its Effects on Objective Signs of Inflammation in Early Nonradiographic Axial Spondyloarthritis: A Multicenter, Randomized, Double-Blind, Placebo-Controlled Trial. *Arthritis Rheum.* 2014;66:2091-102.
2. Maksymowych WP, Lambert RG, Brown LS, Pangan AL. Defining the Minimally Important Change for the SpondyloArthritis Research Consortium of Canada Spine and Sacroiliac Joint Magnetic Resonance Imaging Indices for Ankylosing Spondylitis. *J Rheumatol.* 2012;39:1666-74.