Supplementary Table 1. Baseline characteristics of patients with and without a cardiac conduction disturbance (CCD) at five-year follow-up, stratified by the median age at baseline (49 years).

	Patients ≤49 years at baseline		**Patients ≥50 years at baseline**	
	CCD (n=5)	**Without CCD (n=85)**	**CCD (n=18)**	**Without CCD (n=64)**
General characteristics				
Male sex	4 (80.0)	46 (54.1)	15 (83.3)	28 (43.8)
Age, years	44 (34, 46)	41 (33, 46)	65 (60, 66)	61 (54, 64)
Current or past smoking	2 (40.0)	33 (38.8)	13 (72.2)	35 (54.7)
Waist circumference, cm (n=170)	100 (76, 119)	83 (76, 92)	103 (98, 109)	90 (83, 98)
BMI, kg/m^2	28.7 (21.8, 34.3)	24.0 (22.6, 26.0)	28.1 (25.5, 29.8)	25.9 (22.8, 28.8)
BMI ≥ 25 kg/m^2	3 (60.0)	31 (36.5)	15 (83.3)	37 (57.8)
AS characteristics				
Symptom duration, years (n=170)	14 (11, 28)	14 (10, 22)	40 (35, 46)	32 (24, 38)
HLA-B27 positive	5 (100.0)	77 (90.6)	17 (94.4)	50 (78.1)
History of peripheral arthritis	3 (60.0)	41 (48.2)	14 (77.8)	42 (65.6)
History of anterior uveitis	4 (80.0)	34 (40.0)	15 (83.3)	35 (54.7)
At least one syndesmophyte	2 (40.0)	26 (30.6)	15 (83.3)	37 (57.8)
mSASSS, score	2 (1, 5)	2 (0, 8)	23 (6, 67)	13 (1, 31)
Tender joint count (max 68)	0 (0, 0)	0 (0, 0)	0 (0, 2)	0 (0, 1)
Swollen joint count (max 66)	0 (0, 0)	0 (0, 0)	0 (0, 0)	0 (0, 0)
ASDAS-CRP, score	1.8 (1.5, 2.6)	2.0 (1.4, 2.8)	3.0 (2.1, 3.5)	1.8 (1.3, 2.6)
ASDAS-CRP ≥2.1, n (%)	1 (20.0)	41 (48.2)	14 (77.8)	26 (40.6)
BASDAI, score (n=170)	2.7 (1.5, 4.4)	3.3 (1.3, 5.5)	4.6 (1.8, 6.8)	2.7 (1.8, 4.8)
BASMI, score	1.6 (1.2, 2.7)	2.4 (1.4, 3.0)	4.3 (3.5, 7.1)	3.6 (2.6, 4.2)
BASFI, score (n=170)	1.3 (0.8, 3.0)	1.4 (0.5, 3.2)	4.4 (2.8, 5.8)	2.3 (1.5, 4.6)
ESR, mm/h	5 (4, 15)	10 (6, 18)	12 (7, 28)	13 (10, 18)
CRP, mg/L	0.5 (0.5, 6)	2 (1, 6.5)	5.5 (2, 14)	2 (1, 5)
Cardiovascular characteristics				
CCD (at baseline)	4 (80.0)	3 (3.5)	11 (61.1)	5 (7.8)
Aortic regurgitation[a]	1 (20.0)	6 (7.1)	5 (27.8)	14 (21.9)
Aortic regurgitation[a], moderate or severe	0 (0.0)	0 (0.0)	3 (16.7)	5 (7.8)
Ischemic heart disease	0 (0.0)	0 (0.0)	3 (16.7)	3 (4.7)
Systolic blood pressure, mmHg	145 (128, 160)	120 (116, 130)	145 (135, 163)	140 (130, 159)
Diastolic blood pressure, mmHg	85 (78, 93)	75 (70, 80)	78 (65, 80)	80 (71, 85)
Reported comorbidity				
Hypertension	2 (40.0)	7 (8.2)	9 (50.0)	29 (45.3)
Diabetes	0 (0.0)	0 (0.0)	0 (0.0)	5 (7.8)
Hyperlipidemia	0 (0.0)	2 (2.4)	4 (22.2)	5 (7.8)
Medications				
Anti-platelets or anti-coagulants	0 (0.0)	0 (0.0)	8 (44.4)	6 (9.4)
- Anti-platelets	0 (0.0)	0 (0.0)	7 (38.9)	5 (7.8)
- Anti-coagulants	0 (0.0)	0 (0.0)	1 (5.6)	1 (1.6)
Anti-hypertensives	1 (20.0)	3 (3.5)	11 (61.1)	22 (34.4)
- ACE inhibitors/ARBs	1 (20.0)	2 (2.4)	6 (33.3)	11 (17.2)
- Beta-blockers	1 (20.0)	0 (0.0)	8 (44.4)	12 (18.8)
Lipid modulators	0 (0.0)	0 (0.0)	3 (16.7)	7 (10.9)
DMARDs	1 (20.0)	30 (35.3)	4 (22.2)	25 (39.1)
- TNF inhibitors	1 (20.0)	18 (21.2)	1 (5.6)	14 (21.9)
- csDMARDs	1 (20.0)	27 (31.8)	4 (22.2)	21 (32.8)
NSAIDs	4 (80.0)	71 (83.5)	14 (77.8)	45 (70.3)
Prednisolone	0 (0.0)	0 (0.0)	2 (11.1)	4 (6.3)

Data are expressed as number (%) or median (Q1, Q3) and presented for 172 patients if not stated otherwise.

[a] Missing data in 13 patients who did not undergo echocardiography.

CCD, cardiac conduction disturbance. BMI, body mass index. mSASSS, modified Stoke Ankylosing Spondylitis Spinal Score. ASDAS-CRP, AS disease activity score-C reactive protein. BASDAI, Bath AS disease activity index. BASMI, Bath AS metrology index. BASFI, Bath AS functional index. CRP, C reactive protein. ACE, angiotensin-converting enzyme. ARBs, angiotensin II receptor blockers. DMARDs, disease-modifying anti-

rheumatic drugs. csDMARDs, conventional synthetic DMARDs, NSAIDs, nonsteroidal anti-inflammatory drugs.

Supplementary Table 2. ECG characteristics at baseline and five-year follow-up in patients with AS, stratified by the median age.

	Patients ≤ 49 years (n=90)				Patients ≥ 50 years (n=82)			
	Baseline	**Follow-up**	**Change**	**p-value**	**Baseline**	**Follow-up**	**Change**	**p-value**
ECG measurements								
Heart rate, beats/min	65 (58, 74)	64 (57, 69)	0 (-6, 3)	0.166	63 (57, 73)	69 (61, 76)	2 (-3, 10)	0.021
PR interval[a], ms	160 (140, 171)	160 (150, 175)	3 (-4, 10)	0.030	170 (150, 180)	174 (155, 193)	4 (-4, 13)	0.013
QRS interval[b], ms	82 (80, 100)	88 (84, 96)	4 (-2, 8)	0.002	86 (80, 98)	86 (80, 96)	0 (-4, 8)	0.236
QTcB[c], ms	401 (385, 416)	402 (389, 418)	2 (-12, 18)	0.278	408 (395, 431)	414 (401, 425)	6 (-9, 17)	0.021
Heart rhythm, n (%)								
Sinus	89 (98.9)	90 (100)	n.a	n.a	78 (95.1)	77 (93.9)	n.a	n.a
- *Bradycardia*	5 (5.6)	7 (7.8)			4 (4.9)	2 (2.4)		
- *Tachycardia*	1 (1.1)	1 (1.1)			1 (1.2)	1 (1.2)		
Atrial fibrillation	0	0			2 (2.4)	2 (2.4)		
Pacemaker rhythm	0	0			1 (1.2)	3 (3.7)		
Other	1 (1.1)	0			1 (1.2)	0		

Data are expressed as median (Q1, Q3) or number (%) and presented for 172 patients if not stated otherwise. Comparison between ECG measurements at baseline and follow-up are calculated by related-samples Wilcoxon signed rank test.

[a] n=169 at start and n=167 at follow-up.

[b] n=171 at start, n=170 at follow-up.

[c] QTcB is the heart rate corrected QT interval according to Bazett; n= 171 at start, n=168 at follow-up.

Supplementary Table 3. Characteristics of the patients with a *developed* or *persistent* cardiac conduction disturbance (CCD) at follow-up in 2014 together with characteristics of the patients with a CCD in 2009 which had *normalized* at the follow-up ECG in 2014.

CCD 2009-2014	Sex	Age	Symptom duration (years)	HLA B27	Heart Rhythm 2009	CCD 2009	BB and anti-arrhythmics 2009	Heart rhythm 2014	CCD 2014	BB and anti-arrythmics 2014
DEVELOPED										
	M	66	41	1	SR	0	BB	SR	AVB I	BB
	M	60	18	1	SR	0	BB, amiodarone	Sinus bradycardia	AVB Ix	BB
	M	72	52	1	Sinus bradycardia	0	BB	PM*	PM	BB
	W	66	37	1	Alternating SR and junctional rhythm	0	BB	PM**	PM	BB, digoxin
	M	59	44	1	SR	0		SR	AVB Ix	
	M	55	35	1	SR	0		SR	AVB Ix	
	W	59	38	1	SR	0		SR	AVB Ix	
	M	33	8	1	SR	0		SR	AVB I	
PERSISTENT										
	M	44	16	1	SR	AVB Ix	BB	SR	AVB Ix	BB
	M	66	11	1	SR	AVB Ix	(BB eye drops)	SR	AVB Ix	(BB eye drops)
	W	67	48	0	SR	AVB Ix	BB	SR	LBBB	
	M	62	37	1	SR	AVB Ix		SR	AVBI	
	M	51	16	1	SR	AVB Ix		SR	AVB Ix	
	M	69	42	1	SR	RBBB		SR	AVB I + RBBB	BB
	M	76	52	1	PM	PM	BB	PM***	PM	BB
	M	61	34	1	SR	AVB I	BB	SR	AVB I	
	M	65	44	1	AF	LAFB	BB	AF	LAFB	
	M	64	36	1	SR	AVB Ix + LAFB		SR	AVB Ix + LAFB	
	M	65	45	1	SR	LAFB		SR	LAFB	
	M	34	14	1	SR	AVB I		SR	AVB Ix	
	W	47	39	1	SR	AVB I		SR	AVB Ix	
	M	44	14	1	SR	LBBB		SR	LBBB	
	M	64	49	1	SR	AVB I		SR	AVB I	
NORMALIZED										
	W	64	44	1	SR	AVB Ix	BB	SR	0	BB
	M	61	37	1	SR	AVB Ix	BB	SR	0	BB
	M	41	22	1	SR	AVB Ix		SR	0	
	W	52	21	1	SR	AVB Ix		SR	0	
	M	48	13	1	SR	AVB Ix		SR	0	
	M	53	13	1	SR	AVB I		SR	0	
	M	31	8	1	SR	LAFB		SR	0	
	W	62	46	1	SR	LAFB		SR	0	

* The indication for pacemaker implantation was an AVB II during an acute inferior myocardial infarction which occurred four years after the baseline investigation. At baseline, the patient had a known ischemic heart disease and a mild aortic regurgitation.
** The indication for pacemaker implantation was a sick sinus syndrome that developed two years after the baseline investigation. At baseline, the patient did not have a known heart disease.
*** The indication for pacemaker implantation was an AVB III several years before the baseline investigation. The patient had in parallel a severe aortic regurgitation.
CCD, cardiac conduction disturbance. BB, beta-blocker. M, man. W, woman. SR, sinus rhythm. AVB I, atrioventricular block first degree. AVB Ix, atrioventricular block first degree extra. AVB II, atrioventricular block second degree. AVB III, atrioventricular block third degree. PM, pacemaker. LBBB, left bundle branch block. RBBB, right bundle branch block. LAFB, left anterior fascicular block. AF, atrial fibrillation.