

SUPPLEMENTARY MATERIALS**Supplementary Table S1.** Intervals and values of the measured observation data in clinical practice.

	No. of intervals	Mean (SD), day	Median (IQR), day
CRP	7196	193.74 (169.77)	181.00 (133.00, 206.00)
ESR	7070	197.61 (168.56)	182.00 (142.00, 208.00)
ASDAS	1641	270.11 (224.72)	189.00 (175.00, 224.00)
mSASSS	1349	826.30 (328.49)	749.00 (677.00, 880.00)

SD, standard deviation; IQR, interquartile range; CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; ASDAS, Ankylosing Spondylitis Disease Activity Score; mSASSS, modified Stoke Ankylosing Spondylitis Spinal Score.

Supplementary Table S2. Summary of the variables from the 2,956 intervals treated with TNF inhibitors

Continuous variables	No. with data	Value
ESR, mean (SD), mm/hr	2,928	10.99 (15.29)
CRP, mean (SD), mg/dL	2,928	1.01 (0.78)
ASDAS-CRP, mean (SD)	1,214	1.95 (0.42)
mSASSS, mean (SD)	2,956	19.56 (20.36)

SD, standard deviation; ESR, erythrocyte sedimentation rate; CRP, C-reactive protein; ASDAS, Ankylosing Spondylitis Disease Activity Score; mSASSS, modified Stoke Ankylosing Spondylitis Spinal Score.

Supplementary Table S3. Linear mixed model for the relationship between baseline mSASSS and mSASSS over time.

Variables	Beta estimate	95% CI		p-value
		LB	UB	
(Intercept)	-0.603	-0.961	-0.244	0.001
Baseline mSASSS	1.025	1.012	1.039	<0.001
Time	0.432	0.409	0.454	<0.001

mSASSS, modified Stoke Ankylosing Spondylitis Spinal Score; CI, confidence interval; LB, lower bound; UB, upper bound.

Supplementary Table S4. Beta coefficients of the lag inflammatory markers and mSASSS over time

Lag	CRP			ESR			ASDAS		
	Beta	95% CI		Beta	95% CI		Beta	95% CI	
		LB	UB		LB	UB		LB	UB
0 months	0.056	-0.272	0.383	0.059	-0.081	0.199	0.358	-0.043	0.760
6 months	0.253	-0.110	0.616	0.079	-0.083	0.241	0.411	-0.062	0.884
12 months	0.400	0.017	0.783	0.114	-0.068	0.296	0.441	-0.052	0.934
18 months	0.650	0.249	1.052	0.151	-0.047	0.350	0.317	-0.145	0.780
24 months	0.531	0.112	0.951	0.120	-0.094	0.334	-0.006	-0.435	0.423
30 months	0.495	0.055	0.935	0.083	-0.150	0.317	0.203	-0.300	0.706
36 months	0.602	0.143	1.061	0.090	-0.165	0.345	0.540	-0.021	1.101

CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; ASDAS, Ankylosing Spondylitis Disease Activity Score; CI, confidence interval; LB, lower bound; UB, upper bound.

Supplementary Table S5. Beta coefficients of the cumulative sum of inflammatory markers and mSASSS over time.

Duration of the cumulative sum	CRP			ESR			ASDAS		
	Beta	95% CI		Beta	95% CI		Beta	95% CI	
		LB	UB		LB	UB		LB	UB
6 months	0.034	-0.025	0.093	0.014	-0.011	0.039	0.087	0.021	0.153
12 months	0.037	0.000	0.075	0.011	-0.006	0.027	0.048	0.000	0.096
18 months	0.041	0.011	0.070	0.013	-0.001	0.026	0.031	-0.014	0.077
24 months	0.041	0.016	0.067	0.013	0.001	0.025	0.003	-0.041	0.047
30 months	0.037	0.014	0.060	0.013	0.002	0.025	-0.025	-0.070	0.021
36 months	0.037	0.015	0.058	0.014	0.002	0.025	-0.053	-0.111	0.005

CRP, C-reactive protein; ESR, erythrocyte sedimentation rate; ASDAS, Ankylosing Spondylitis Disease Activity Score; CI, confidence interval; LB, lower bound;

UB, upper bound.

Supplementary Figure S1. Changes in mSASSS at 6-month intervals in each patient during TNFi treatment.