

# Remission Thresholds in Spondyloarthritis: A Prospective Study in Current Practice

To the Editor:

Remission is the current target of management of chronic rheumatic diseases<sup>1,2</sup>. Whereas in rheumatoid arthritis remission criteria have been proposed<sup>3</sup>, in spondyloarthritis (SpA), no activity score allows a specific definition for remission. SpA activity is evaluated with the BASDAI score (Bath Ankylosing Spondylitis Disease Activity Index) and more recently with the ASDAS (Ankylosing Spondylitis Disease Activity Score), taking into account C-reactive protein (CRP), and validated by the ASAS group (Assessment in Ankylosing Spondylitis International Society)<sup>4</sup>. Thresholds for the ASDAS score have been proposed to classify disease activity (inactive, moderate, active, very active)<sup>5,6</sup>, and ASAS proposed a definition for partial remission.

The aim of our study was to evaluate a threshold for remission in patients with SpA (according to ASAS classification criteria) using a questionnaire filled out by patient and rheumatologist prospectively, answering the question: "do you consider the disease in remission at the present time?" Data allowing BASDAI, ASDAS-CRP, and ASDAS-erythrocyte sedimentation rate (ESR) calculation were collected, and PASS (Patient Acceptable Symptomatic State) was also assessed with a specific question at the same time. Receiver-operation characteristic (ROC) curves were built for the determination of the thresholds for remission.

One hundred and fifty patients were prospectively included (67.3% men, mean age 43.2 ± 11.5 yrs). HLA-B27 was positive in 84.5% of the patients; SpA was purely axial in 81.7%. Mean CRP was 8.6 ± 13.5 mg/l, and mean ESR 17.4 ± 16 mm/h. PASS existed in 56.6% of the patients. For disease activity, 47.3% of the patients had a BASDAI score < 4/10, and 19.2% an ASDAS-CRP score < 1.3 (inactive disease; 19.4% for the ASDAS-ESR score). These results are concordant with our previous study of 200 patients: using ROC curves, thresholds for PASS were ASDAS-CRP ≤ 2.3 (sensitivity 72.8%, specificity 86.2%), ASDAS-ESR ≤ 2.3 (sensitivity 74.4%, specificity 90.7%), BASDAI ≤ 4.1 (sensitivity 75.7%, specificity 85%)<sup>7</sup>. The thresholds of activity scores for remission defined by ROC curves are reported in Table 1. The results are identical for the whole group and for patients with purely axial disease. Concordance κ score between patient and rheumatologist for remission was 0.55

(0.40–0.71), and no correlation was found between ASDAS-CRP and disease duration.

This is the first study, to our knowledge, to attempt to define in a large series of patients in real life a threshold for remission in SpA with an ASDAS-CRP < 1.6. The results corresponding to the patients' reported definition were somewhat different from those endorsed by the ASAS classification of SpA as inactive for a threshold < 1.3. These differences may be related to different study methods (randomized controlled studies and thresholds evaluated by experts on one hand, and real-life situation and thresholds evaluated by the patients on the other hand) and population differences, with a higher level of inflammation in the ASAS study compared to our population (mean ESR 33.9 ± 24.1 mm/h, and mean CRP 31.9 ± 34.7 mg/l)<sup>6,8</sup>.

However, our results are coherent because the remission threshold is lower than in PASS. The results raise the question of whether the definition of remission in SpA<sup>9,10</sup> should consider only clinical variables, or also include biologic and eventually imaging outcomes.

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Table 1. Thresholds of activity scores corresponding to remission.

Threshold of Activity Score (ROC curves)	Remission (Patient), n = 41/128	Remission (Physician), n = 49/143	PASS in Case of Remission (Patient), n = 41/128
ASDAS-CRP	≤ 1.6	≤ 1.8	≤ 2.2
95% CI	0.67–0.84	0.82–0.94	0.82–0.99
Sensitivity, %	62.2	75.6	93.3
Specificity, %	86.3	91	100
AUC	0.76	0.89	0.95
ASDAS-ESR	≤ 1.7	≤ 2	≤ 2.4
95% CI	0.71–0.87	0.76–0.90	0.76–0.9
Sensitivity, %	63.9	75.6	71.4
Specificity, %	87	82.2	81.6
AUC	0.79	0.84	0.83
BASDAI	≤ 3.6	≤ 3.6	≤ 4.1
95% CI	0.71–0.86	0.81–0.93	0.8–0.9
Sensitivity, %	75.6	83.7	75.7
Specificity, %	75.9	79.4	85
AUC	0.79	0.88	0.86

AUC: area under the curve; ROC: receiver-operation characteristic; PASS: Patient Acceptable Symptomatic State; ASDAS: Ankylosing Spondylitis Disease Activity Score; CRP: C-reactive protein; ESR: erythrocyte sedimentation rate; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index.

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