

**Table.** Association between the sum radiographic sacroiliitis score and functional status / spinal mobility in patients with axial spondyloarthritis.

Parameters	Unadjusted mixed model	Adjusted mixed model
	analysis β (95% CI)	analysis β (95% CI)
Outcome: BASFI		
Sacroiliitis sum score (0-8)	0.09 (-0.05 to 0.22)	0.10 (0.01 to 0.19)
mSASSS, points (0-72)	-	0.05 (0.03 to 0.07)
BASDAI, points NRS (0-10)	-	0.81 (0.74 to 0.88)
CRP, mg/l	-	0.00 (-0.01 to 0.01)
Male vs. Female sex	-	-0.02 (-0.40 to 0.37)
Outcome: BASMI		
Sacroiliitis sum score (0-8)	0.20 (0.11 to 0.30)	0.12 (0.03 to 0.21)
mSASSS, points (0-72)	-	0.07 (0.05 to 0.09)
BASDAI, points NRS (0-10)	-	0.22 (0.15 to 0.29)
CRP, mg/l	-	0.01 (0.00 to 0.02)
Male vs. Female sex	-	0.00 (-0.39 to 0.39)

mSASSS - modified Stoke Ankylosing Spondylitis Spine Score; AS - Ankylosing Spondylitis; nr-axSpA - non-radiographic axial spondyloarthritis; BASFI – Bath Ankylosing Spondylitis Functional Index; CRP - C-reactive protein; BASDAI – Bath Ankylosing Spondylitis Disease Activity Index; BASMI – Bath Ankylosing Spondylitis Metrology Index.

although small, on spinal mobility and physical function in patients with axial SpA independently of structural damage in the spine and disease activity.

**References:**

[1] Machado P. et al. Ann Rheum Dis 2010; 69:1465–1470.  
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**OP0119 EVALUATION OF THE PREDICTIVE VALIDITY OF THE ASAS AXIAL SPONDYLOARTHRITIS CRITERIA IN THE DESIR COHORT**

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**Background:** The face validity<sup>1</sup> and cross-sectional external validity<sup>2</sup> of the Assessment of SpondyloArthritis international Society (ASAS) criteria for axial spondyloarthritis (axSpA), and its arms has been already confirmed in previous studies. However, so far, only one study<sup>3</sup> has reported data regarding the predictive validity of such criteria after 4 years of follow-up.

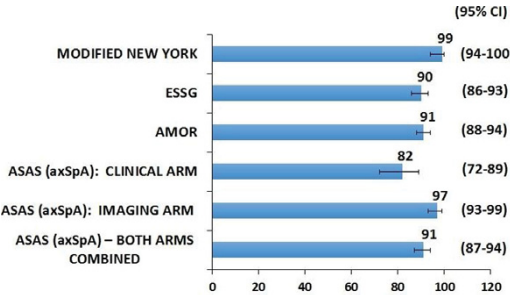
**Objectives:** To evaluate the predictive validity of the ASAS criteria and its arms after 5 years of follow-up. The predictive validity of the other axSpA sets of criteria (Amor, ESSG and mNY) was also evaluated.

**Methods:** Patients: This analysis was performed on the DESIR cohort. A total of 708 adult (>18 and <50 years) patients presented with inflammatory back pain suggestive of axSpA (according to the rheumatologist's conviction of ≥5/10) for >3 months but <3 years duration. They were followed up every 6 months for the first 2 years and then yearly up to 5 years. Starting from month 24, as per protocol, patients could be excluded from the cohort in case another diagnosis (different from SpA) was made.

**Methods:** The gold standard for this analysis was the diagnosis of axSpA according to the rheumatologist at 5 years of follow-up. For this analysis, patients were considered as axSpA, if the rheumatologist at 5 years with a conviction of ≥7/10 for an axSpA diagnosis. Conversely, patients excluded as per protocol due to another diagnosis or patients with a rheumatologist conviction at 5 years of ≤3/10 for axSpA were considered as Non-axSpA. The set of criteria collected at baseline (ASAS, and its arms, Amor, ESSG and modified NY criteria: fulfilled/not fulfilled) were tested against the Rheumatologist's axSpA diagnosis (fulfilled/not fulfilled) after 5 years of follow-up. Predictive validity of all sets of criteria at baseline was evaluated by the positive predictive value (PPV).

**Results:** In total, among the 708 patients included in the DESIR cohort at baseline, data on Rheumatologists diagnosis at 5 years was available in 454 patients; amongst them, 352 (77.5%) had an axSpA diagnosis according to the rheumatologist. Among these 352 patients, 245, 300, 291 and 88 patients fulfilled the ASAS criteria for axSpA, Amor, ESSG and modified NY criteria's respectively. Figure 1 shows the PPV (95% CI) of the different sets of criteria below.

**Conclusions:** Predictive validity of the ASAS criteria for axSpA (including both arms) at 5 years was excellent; it is worth noting that the performances of the other criteria were also very good.



**Figure 1.** Bar diagram representing Positive Predictive Value (95% Confidence Interval) of various axSpA criteria

**References:**

[1] Molto A et al. Performances of the Assessment of SpondyloArthritis International Society Axial Spondyloarthritis Criteria for Diagnostic and Classification Purposes in Patients Visiting a Rheumatologist Because of Chronic Back Pain: Results From a Multicenter, Cross-Sectional Study. Arthritis Care & Research 2013;65:1472–81.  
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[3] Sepiano A et al. Predictive validity of the ASAS classification criteria for axial and peripheral spondyloarthritis after follow-up in the ASAS cohort: a final analysis. Ann Rheum Dis. 2016;75:1034–42.

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**OP0120 THE ROLE OF SMOKING IN THE DEVELOPMENT AND PROGRESSION OF STRUCTURAL DAMAGE IN PATIENTS WITH ANKYLOSING SPONDYLITIS: THE PRELIMINARY RESULTS OF A SYSTEMATIC REVIEW AND META-ANALYSIS**

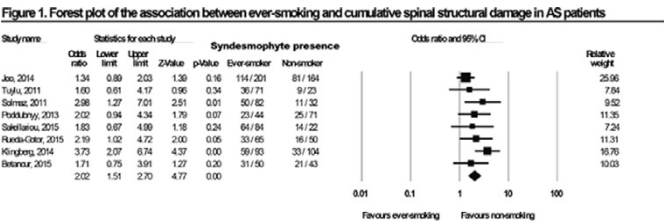
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**Background:** Smoking may constitute a major risk factor for not only disease susceptibility but also disease severity in patients with ankylosing spondylitis (AS). Some previous cross-sectional and longitudinal studies suggested that smoking may be associated with cumulative spinal radiographic damage and regarded it as an independent predictor of spinal radiographic progression.

**Objectives:** The objective of this study is to determine whether smoking is associated with the cumulative radiographic spinal structural damage and radiographic progression in AS patients. In order to reach this objective, we conducted a systematic review and meta-analysis of the available studies to-date.

**Methods:** An electronic search was conducted from inception to June 21 2016 in EMBASE, MEDLINE/PubMed Cochrane Central Register of Controlled Trials databases. Cross-sectional and longitudinal cohort studies investigating the association between smoking and cumulative spinal structural damage or radiographic progression were included. The outcome of interest were the presence of syndesmophytes in cross-sectional studies and radiographic progression in longitudinal studies. Two independent reviewers carried out the screening process. The Quality assessment was done using The Agency for Healthcare Research and Quality (ARHQ) checklist and Newcastle-Ottawa scale. Authors of potential relevant studies were contacted for the unpublished data. Data from eligible cross-sectional studies were extracted and arranged in a 2x2 table. The odds ratios (ORs) and 95% confidence intervals (CIs) for the dichotomous outcome of interest were computed. Random-effects method was used to combine the outcome data in Comprehensive Meta Analysis Software Version 3.3.070.

**Results:** The combined data of eight eligible cross-sectional studies for the assessment of association between smoking and cumulative spinal structural damage suggested a significant association (OR, 2.02; 95% CI 1.51–2.70)



Test of heterogeneity: Q = 9.09, df = 7 (P = 0.25), I<sup>2</sup> = 23.0%

(Figure 1). No significant heterogeneity was detected between studies ( $P=0.25$ ,  $I^2=23.0\%$ ). The data from the longitudinal studies investigating the association between smoking and spinal radiographic progression is still been assessed.

**Conclusions:** The preliminary results of our meta-analysis showed that smoking is associated with increased cumulative spinal structural damage in patients with AS. Rheumatologists should encourage AS patients to quit smoking.

**Disclosure of Interest:** None declared

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## OP0121 VALIDATION OF MRI STRUCTURAL LESIONS USING COMPUTED TOMOGRAPHY IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS

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**Background:** MRI can detect both inflammatory and structural lesions in the sacroiliac joints (SIJ) of patients with axial SpA. However, standard MRI sequences do not directly depict bone and the appearance of erosion may vary according to the presence/absence of inflammation. Consequently, further validation using an accepted gold standard, namely, computed tomography (CT), is essential.

**Objectives:** We aimed to assess the detection of structural lesions in the SIJ by MRI using CT as the gold standard.

**Methods:** CT scans from 44 patients (26 females, mean age 49.4 years, mean symptom duration 9.1 years) were reconstructed in the semicoronal plane parallel to the superior border of the sacrum, as for conventional MRI evaluation of the SIJ, and scoring of lesions by CT was confined to this plane. Structural lesions were scored in consecutive slices in SIJ quadrants (erosion, sclerosis) or SIJ halves (ankylosis) on a dichotomous basis (present/absent) using the same anatomical principles for defining SIJ quadrants as developed for the SPARCC MRI SIJ inflammation and structural scores. T1W MRI scans of the SIJ from the same cases conducted at the same time as CT were assessed independently for structural lesions (erosion, fat, backfill, ankylosis, sclerosis) blinded to CT assessments using the SPARCC method. Agreement between CT and MRI was assessed by kappa statistics. Sensitivity/specificity of MRI for CT lesions was calculated. The primary analysis was based on lesions detected concordantly by both readers at the level of the individual iliac/sacral joint surface (erosion, sclerosis) or the individual joint (ankylosis, backfill).

**Results:** With CT as gold standard and a lesion defined as being present when recorded in the same location on at least 1 coronal slice by both readers, MRI-defined ankylosis had 56.3% sensitivity and 100% specificity for CT ankylosis (Table). For erosion, sensitivity and specificity of MRI was 81.3% and 96.2%, and for sclerosis, sensitivity and specificity of MRI was 50% and 97%, respectively. Agreement between CT and MRI for erosion increased when the cut-off for presence of a lesion was set at 2 slices but only marginally for sclerosis, even when the cut-off for presence of a lesion was set at 3 slices. Lesions observed on CT corresponding to backfill on MRI were ankylosis, erosion, and sclerosis, in 66.7%, 66.7%, and 80% of backfill lesions, respectively.

Concordance for 2 readers		Type of Lesion	K value	Sensitivity of MRI	Specificity of MRI
MRI lesion +	CT lesion +				
≥1 slice	≥1 slice	Ankylosis	0.67	56.3%	100%
		Erosion	0.76	81.3%	96.2%
		Sclerosis	0.47	50.0%	97%
≥2 slices	≥2 slices	Ankylosis	0.71	60.0%	100%
		Erosion	0.83	84.6%	98.1%
		Sclerosis	0.53	42.9%	99.2%
≥2 slices	≥3 slices	Ankylosis	0.83	75.0%	100%
		Erosion	0.84	90%	98.1%
		Sclerosis	0.53	42.9%	99.2%

**Conclusions:** Ankylosis and erosion on MRI correspond closely with the same type of lesion observed on CT. Both new bone formation and erosion are frequently evident on CT at locations where backfill is observed on MRI supporting the hypothesis that backfill is an intermediary tissue between erosion and ankylosis.

**Disclosure of Interest:** None declared

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THURSDAY, 15 JUNE 2017

## Clinical and therapeutic news in systemic sclerosis

## OP0122 VENOUS THROMBOEMBOLISM IN SYSTEMIC SCLEROSIS: PREVALENCE, RISK FACTORS AND IMPACT ON SURVIVAL

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**Background:** Systemic sclerosis (SSc) is characterized endothelial dysfunction and vasculopathy, which may result in thrombosis. Venous thromboembolism (VTE) is a vascular phenomenon that includes deep vein thrombosis (DVT) and pulmonary embolism (PE).

**Objectives:** To evaluate the epidemiology of VTE in SSc, specifically cumulative incidence, risk factors and impact of VTE on survival.

**Methods:** We conducted a cohort study of patients who fulfilled the ACR-EULAR classification criteria for SSc attending the Toronto Scleroderma Program 1970–2017. DVT was defined as the presence of thrombus on doppler ultrasound of either upper or lower extremity. PE was defined as the presence of thrombus on CT angiogram of the thorax. Time to all-cause mortality was evaluated in Kaplan Meier and Cox models.

**Results:** 1181 subjects (971 (82%) female, 210 (18%) male) were included. There were 40 (3.4%) VTE events. The cumulative incidence of VTE was 2.7 (95% CI 1.9, 3.7) per 1000 patient years. The presence of ILD, PAH, Scl70 antibody, anticardiolipin antibody, coronary artery disease, diabetes mellitus and PVD occurred more frequently in subjects who developed VTE.

Table 1. Venous Thromboembolism in SSc

Characteristics	VTE (N=40)	No VTE (N=1141)	Relative Risk (95% CI)
Diffuse subtype	12 (30%)	382 (33%)	1.04 (0.84, 1.30)
Male sex	9 (23%)	201 (18%)	1.28 (0.71, 2.30)
Raynaud's phenomenon	39 (98%)	1087 (95%)	1.02 (0.97, 1.08)
Esophageal dysmotility	35 (88%)	981 (86%)	1.02 (0.90, 1.15)
Interstitial lung disease	23 (58%)	393 (34%)	1.67 (1.26, 2.20)*
Pulmonary arterial hypertension	28 (70%)	367 (32%)	2.18 (1.75, 2.71)*
Abnormal nailfold capillaries	14 (35%)	354 (31%)	1.13 (0.73, 1.74)
Digital ulcers	13 (33%)	386 (34%)	0.96 (0.61, 1.51)
Scl 70 antibody	11 (28%)	186 (16%)	1.73 (1.03, 2.91)*
Anticentromere antibody	5 (13%)	215 (19%)	0.68 (0.30, 1.56)
Anticardiolipin	3 (8%)	14 (1%)	6.27 (1.88, 20.9)*
Coronary artery disease	9 (23%)	98 (9%)	2.69 (1.47, 4.92)*
Hypertension	11 (28%)	237 (21%)	1.32 (0.79, 2.22)
Diabetes mellitus	6 (15%)	61 (5%)	2.81 (1.29, 6.10)*
Hyperlipidemia	5 (13%)	78 (7%)	1.83 (0.78, 4.27)
Peripheral vascular disease	8 (20%)	41 (4%)	5.57 (2.79, 11.08)*
Cancer	7 (8%)	127 (11%)	1.57 (0.79, 3.14)
Atrial fibrillation	6 (15%)	45 (4%)	3.80 (1.72, 8.39)*

\*Denotes statistical significance.

On multivariate logistic regression PAH (OR 3.77 (95%CI 1.83, 8.17), Scl70 antibodies (OR 2.45 95% CI 1.07, 5.30), anticardiolipin antibodies (OR 5.70 (95% CI 1.16, 21.2) and PVD (OR 5.31 (95% CI 1.99, 12.92) were independent predictors of VTE. Subjects with ILD more frequently experienced DVT (RR 2.85 95% CI 1.08, 7.54) but not PE (RR 1.82 (95% CI 0.89, 3.70). There were 440 deaths. There was no significant difference in survival between those with and without VTE (HR 1.6 (95% CI 0.70, 1.92). Only the presence of ILD (HR 1.54 (95% CI 1.27, 1.88) or PAH (HR 1.35 (95% CI 1.10, 1.65) remained independent predictors of mortality.

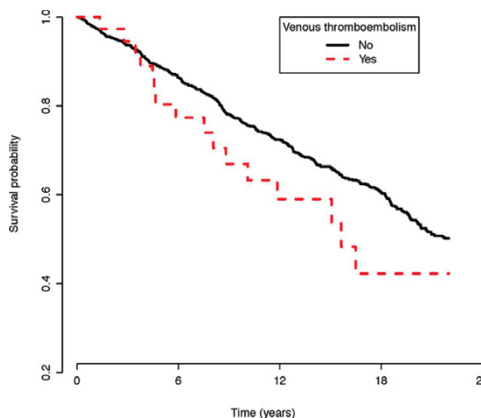


Figure 1. Kaplan Meier survival curves of SSc subjects with and without venous thromboembolism. Log rank test  $p=0.54$

**Conclusions:** The risk of VTE in SSc is not increased, as the incidence of VTE in SSc is comparable to the general population. The presence of PAH, PVD, Scl70 and anticardiolipin antibodies are risk factors for VTE in SSc. VTE does not independently affect SSc survival.

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**Disclosure of Interest:** None declared

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