Table 1. Characteristics of the patients.

	All patients	Nutrition	Controls	All patients	Nutrition	Controls
		Baseline			Month 6	
Females, n, (%)	40 (36.4)	18 (38.3)	22 (34.9)			
Age, years, mean±SD	51.7±1.3	53.0±1.3	49.6±1.3			
HLA-B27 positivity, n (%)	58 (52.7)	22 (46.8)	37 (57.1)			
Psoriasis, n (%)	58 (50.7)	26 (55.3)	32 (50.8)			
Disease duration (years), mean±SD	15.3±9.7	15.7±10	15±9.5			
Duration of b/tsD-MARD treatment overall, years, mean±SD	5±4.1	5.8±4.5	4.5±3.8			
NSAID, n (%)	76 (69.1)	30 (63.8)	46 (73)			
csDMARD, n (%)	14 (12.7)	5 (10.6)	9 (14.3)			
BMI, Kg/meters^2, mean±SD	26.5±5.4	26.5±4.3	26.6±6.1	26.4±5.3	26.3±4	26.6±6.1
ASDAS-CRP, mean±SD	2.1±1	2.1±0.9	2.1±1	2±1.1	1.8±0.9	2.1±1.2
BASDAI, mean±SD	37.6±23	37.4±23.2	37.7±22.9	39.3±24.1	37.3±23.6	41.2±24.6
BASFI, mean±SD	20.5±21.4	21.6±19.2	19.7±23	19.8±19.6	19.1±18.8	20.5±20.4
BASMI, mean±SD	1.6±2	1.9±2.2	1.4±1.7	1.8±2.1	1.9±2.4	1.7±1.9
Tender joint count, mean±SD	1.1±2.3	0.8±2.1	1.4±2.5	0.9±2	0.8±2	0.9±1.9
Swollen joint count, mean±SD	0.3±1.3	0.4±2	0.1±0.5	0.2±1.3	0.3±1.8	0.2±0.8
Leeds Enthesitis Index, mean±SD	0.2±0.8	0.3±1	0.2±0.6	1.1±2	1.3±2.2	1±1.8
CRP, mg/L, mean ±SD	3.4±6.2	3.2±3.9	3.7±7.4	3.5±5.6	2.6±3.1	4.1±6.9
LDL-c, mg/dl, mean ±SD	130.8±36.5	132.3±35	129.7±38.4	130.6±34.7	125.7±34.8	134.4±34.5
PREDIMED score, mean ±SD	6.7±1.8	7±2.1	6.6±1.6	7.6±2.1	8.6±1.9	6.8±2

b/tsDMARD biological/targeted synthetic DMARDs; csDMARD conventional DMARDs. PREDIMED questionnaire to assess adherence to the Mediterranean diet.

Disclosure of Interests: None declared.
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POS0957 THE PREVALENCE AND FACTORS RELATED TO SLEEP APNOEA IN ANKYLOSING SPONDYLITIS

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Background: An increased prevalence of obstructive sleep apnoea (OSA) has been suggested in ankylosing spondylitis (AS), but few controlled studies have been performed.
Objectives: We thus aimed to study the prevalence of OSA in patients with AS compared to controls and to study if disease-related and non-disease-related factors were determinants of OSA in AS patients.
Methods: One hundred and fifty-five patients with AS were included in the Backbone study that investigates severity and comorbidities in AS. Controls were recruited from the Swedish CardioPulmonary bioImage Study (SCAPIS). Participants were asked to be examined with a home sleep-monitoring device during one night's sleep to evaluate the presence of OSA. For each AS patient, 45-70 years, four controls were matched for sex, age, weight and height. OSA was defined as an apnoea-hypopnea-index ≥5 events/hour.
Results: In total, 63/155(40.6%) patients with AS were examined with a home sleep-monitoring device out of which 46 patients were 45-70 years and therefore matched (mean age 57.2±7.5years, 30(65.2%) men) with 179 controls (mean age 57.2±4.5years, 123(68.7%) men). Twenty-two out of 46(47.8%) patients with AS vs. 91/179(50.8%) controls had OSA, p=0.72. No differences measurements evaluating OSA were noted in AS vs. controls. In logistic regression analysis, based on all 63 examined AS-patients, several AS-related variables were associated with OSA but after adjusting for age and sex, only higher age and BMI, remained to be significant determinants of OSA, Table 1.

Table 1. Univariable and age- and sex-adjusted logistic regression analyses with obstructive sleep apnoea as dependent variable in 63 patients with ankylosing spondylitis.

Variables	Univariable logistic regression analyses, Odds Ratio (95%CI)	P	Age- and sex-adjusted logistic regression analyses, Odds Ratio (95%CI)	P
Sex, male	1.9(0.6-5.5)	0.25	1.5(0.4-4.8)	0.53
Age	1.1(1.0-1.2)	**0.002**	1.1(1.0-1.2)	**0.002**
BMI	1.4(1.1-1.7)	**0.001**	1.6(1.2- 2.2)	**0.001**
Duration of symptoms	1.1(1.0-1.1)	**0.028**	1.0(0.9-1.1)	0.79
BASMI	1.9(1.3-2.9)	**0.002**	1.5(0.9 -2.5)	0.87
BASFI	1.4(1.0-2.0)	**0.038**	1.3(0.9-2.0)	0.88
≥1 Syndesmophyte	3.9(1.3-12.2)	**0.017**	3.0(0.8-11.3)	0.10
mSASSS	1.0(1.0-1.1)	**0.047**	1.0(0.98-1.05)	0.25
Metabolic syndrome	4.3(1.5-12.9)	**0.008**	1.4(0.3-6.6)	0.69
Epworth Sleep Scale	1.2(1.0-1-3)	**0.023**	1.2(1.0-1.4)	0.29

Conclusion: In this case-control study, patients with AS did not have a higher prevalence of OSA compared to controls. AS patients with OSA had higher BMI and were older compared to patients without OSA.
Disclosure of Interests: None declared.
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POS0958 RESPONSIVENESS OF CONVENTIONAL, SEMI-AUTOMATIC AND FULL-AUTOMATIC METHODS TO QUANTIFY MARROW BONE EDEMA LESIONS IN MRI OF AXIAL SPONDYLOARTHRITIS PATIENTS: A PILOT STUDY

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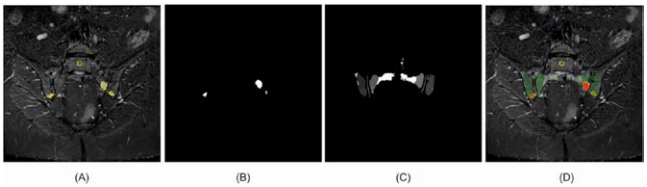
Background: The presence or absence of marrow bone edema (MBE) in the sacroiliac joints (SIJ) is very important in the diagnosis of axial Spondyloarthritis (axSpA). The quantification of this lesion and its extension may be important to analyze responsiveness of the treatment. Several scoring systems have been proposed for MRI images of SIJ, some of them being observer dependent (Berlin, SPARCC). Others, works in a semi-automatically way, such as the s-SCAISS[1], which makes it possible to quantify the size of the lesion, based on the indication of the expert. Recently, methods like the KITs4R[2], based on a deep patch-based classification network. allow a fully automated detection and quantification of the MBE lesions.
Objectives: To analyze responsiveness of several scores (observer independent, semiautomatic and full automatic) for quantify MBE in SIJ of axSpA patients.
Methods: Two rheumatologists independently quantified SIJ images from axSpA patients by visual inspection methods (Berlin and SPARCC indexes) and a semiautomatic system (s-SCAISS) on a single semi-coronal MRI slide (STIR). Full semi-coronal MRI images (15 to 18 slices) were used for an automatic detection algorithm (KITs4R), where total MBE was calculated as sum of areas of MBE in each slice. Patients were assessed before TNF-α therapy (PRE) and 3 months later (POST). Spearman correlations was used to analyze relationship between variables, Wilcoxon signed-rank test for significant differences and Cohen's d for calculating the effect size of improvement. Figure 1 shows processing of the MRI images: A) Area of MBE selected by the SCAISS, when the rheumatologist "click" on each MBE; B) Lesions detected automatically by KITs4R; C) Automated deep segmentation of bones and subchondral regions (with split into quadrants with central axes of joints also shown. D) Superposed A, B and C images.



Results: 12 axSpA patients were recruited from the CASTRO cohort (42% female, age 46±11 years, disease duration 16±13 years, BMI 28±5). Results PRE and POST are shown in Table 1: mean values (sd), statistical significance (NS, not significant; *, p<0.05; **, p<0.01), and effect size. Activity indexes and CRP were lower. ASDAS and CRP shown significant differences and a large effect size. All MRI scores showed good responsiveness (ES medium-large, p<0.01), specially KITs4R. Agreement between all MRI scores were high (r>0.8;p<0.01). Between semiautomatic and automatic methods, this agreement was also excellent (r=0.92;p<0.001). Correlation in improvements (reductions in scores) were also significant between all MRI scores (r>0.7;p<0.05).

	PRE	POST	Sign	ES
BASDAI	6.12 (2.45)	4.96 (2.74)	N.S.	0.44-Small
ASDAS	3.61 (1.04)	2.58 (1.25)	*	0.89-Large
CRP	11.26 (8.93)	4.81 (4.08)	**	0.84-Large
BERLIN	2.58 (1.98)	1.17 (1.85)	**	0.74-Medium
SPARCC	3.92 (3.42)	1.58 (2.43)	**	0.69-Medium
SCAISS	295 (332)	95 (163)	**	0.68-Medium
KITs4R	1671 (1596)	258 (421)	**	1.04-Large

NS, not significant; *, p<0.05; **, p<0.01

Conclusion: All MRI scores have good level of agreement between them and good responsiveness. Berlin and SPARCC are observer dependent, and do not quantify the extension of the MBE area. s-SCAIS helps to this quantification. KITs4R is not observer dependent but clinimetric validation, analizing agreement level with human expert, is necessary. New advanced tools are improving quantitative and objective measurement of BME which is important to analyze responsiveness.

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POS0959 DIAGNOSTIC DELAY IN AXIAL SPONDYLOARTHRITIS: RESULTS FROM THE NATIONAL EARLY INFLAMMATORY ARTHRITIS AUDIT

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Background: Diagnostic delay is a significant problem in axial spondyloarthritis (axSpA), and there is a growing body of evidence showing that delayed axSpA diagnosis is associated with worse clinical, humanistic and economic outcomes.[1] International guidelines have been published to inform referral pathways and improve standards of care for patients with axSpA.[2,3]

Objectives: To describe the sociodemographic and clinical characteristics of newly-referred patients with axSpA in England and Wales in the National Early Inflammatory Arthritis Audit (NEIAA), with rheumatoid arthritis (RA) and mechanical back pain (MBP) as comparators.

Methods: The NEIAA captures data on all new patients over the age of 16 referred with suspected inflammatory arthritis to rheumatology departments in England and Wales.[4] We describe baseline sociodemographic and clinical characteristics of axSpA patients (n=784) recruited to the NEIAA between May 2018 and March 2020, compared with RA (n=9,270) and MBP (n=370) during the same period.

Results: Symptom duration prior to initial rheumatology assessment was significantly longer in axSpA than RA patients (p<0.001), and non-significantly longer in axSpA than MBP patients (p=0.062): 79.7% of axSpA patients had symptom durations of >6 months, compared to 33.7% of RA patients and 76.0% of MBP patients; 32.6% of axSpA patients had symptom durations of >5 years, compared to 3.5% of RA patients and 24.6% of MBP patients (Figure 1A). Following referral, median time to initial rheumatology assessment was longer for axSpA than RA patients (36 vs. 24 days; p<0.001), and similar to MBP patients (39 days; p=0.30). The proportion of axSpA patients assessed within 3 weeks of referral increased from 26.7% in May 2018 to 34.7% in March 2020; compared to an increase from 38.2% to 54.5% for RA patients (Figure 1B). A large majority of axSpA referrals originated from primary care (72.4%) or musculoskeletal triage services (14.1%), with relatively few referrals from gastroenterology (1.9%), ophthalmology (1.4%) or dermatology (0.4%).

Of the subset of patients with peripheral arthritis requiring EIA pathway follow-up, fewer axSpA than RA patients had disease education provided (77.5% vs. 97.8%; p<0.001), and RA patients reported a better understanding of their condition (p<0.001). HAQ-DI scores were lower at baseline in axSpA EIA patients than RA EIA patients (0.8 vs 1.1, respectively; p=0.004), whereas baseline Musculoskeletal Health Questionnaire (MSK-HQ) scores were similar (25 vs. 24, respectively; p=0.49). The burden of disease was substantial across the 14 domains comprising MSK-HQ in both axSpA and RA (Figure 1C).

Conclusion: We have shown that diagnostic delay remains a major challenge in axSpA, despite improved disease understanding and updated referral guidelines. Patient education is an unmet need in axSpA, highlighting the need for specialist clinics. MSK-HQ scores demonstrated that the functional impact of axSpA is no less than for RA, whereas HAQ-DI may underrepresent disability in axSpA.

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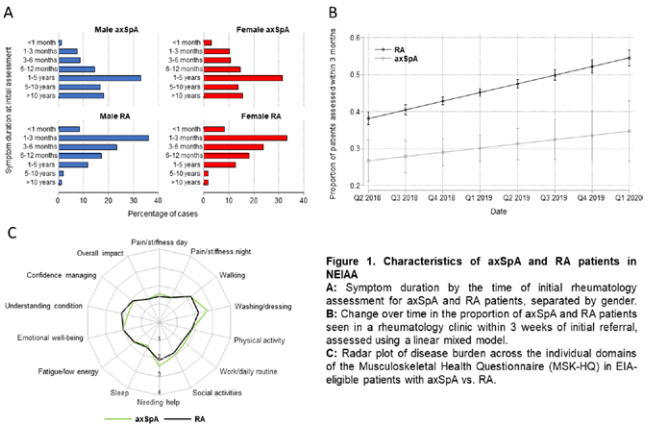

Figure 1. Characteristics of axSpA and RA patients in NEIAA
A: Symptom duration by the time of initial rheumatology assessment for axSpA and RA patients, separated by gender.
B: Change over time in the proportion of axSpA and RA patients seen in a rheumatology clinic within 3 weeks of initial referral, assessed using a linear mixed model.
C: Radar plot of disease burden across the individual domains of the Musculoskeletal Health Questionnaire (MSK-HQ) in EIA-eligible patients with axSpA vs. RA.

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POS0960 PRESENCE AND ASSOCIATED FACTORS OF FATIGUE IN PATIENTS IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS. RESULTS FROM THE EUROPEAN MAP OF AXIAL SPONDYLOARTHRITIS (EMAS)

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Background: Fatigue/tiredness is an essential aspect of disease for patients with axial spondyloarthritis (axSpA). However, little is known about its prevalence and associated factors.