Results: Of all the 683 patients, 168 are current smokers, while 108 were ex-smokers and 407 patients never smoked. Mean scores of degree and duration of morning stiffness, overall pain, nocturnal back pain, overall back pain, CRP, BASDAI and BASFI score were all higher in the current smoker group compared to those who had never smoked ($P < 0.05$). In Spearman correlation analysis, pack years of smoking in current smokers were significantly associated with disease duration, morning stiffness (VAS) and duration, nocturnal back pain, overall back pain, CRP, and BASDAI ($P < 0.01$), and overall pain, BASFI and HAQ-S ($P < 0.05$). **Conclusions:** Cigarette smoking has a dose-dependent relationship with disease activity and correlates with more functional limitation and worse health assessment in patients with AS.

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FRI0471 PSYCHOLOGICAL DISORDERS, SLEEP DISTURBANCE AND STRESSFUL LIFE EVENTS IN THE PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) is a chronic inflammatory rheumatic disease that may result in pain, functionally limitation and even less life expectancy. Psychological symptoms not only have a substantial negative impact on the quality of life, but also on the course and outcome of the chronic disorder [1]. AS patients may also suffer from various sleep problems, and pain intensity, anxiety, and depression correlated significantly with poorer sleep quality [2]. Stressful life events have a substantial association with psychological disorders, and there is some evidence indicating that even early life stress constitutes a major risk factor for the subsequent development of mental disorder [3].

Objectives: Our study was to investigate psychological disorders, sleep disturbance and stressful life events in Chinese patients with AS, and to assess the correlation between each two disorders.

Methods: AS patients diagnosed with the modified New York criteria for AS were enrolled from several provinces all over China. Participants were required to complete a set of questionnaires and examinations, including demographic and clinical information, Zung self-rating anxiety scale (SAS), Zung self-rating depression scale (SDS), the Social Readjustment Rating Scale (SRRS) and the Pittsburgh Sleep Quality Index questionnaire (PSQI). The Statistical Package for Social Sciences (SPSS) software version 21 was used for all data management and analysis. The relations between psychological variables, stressful life events, sleep quality and other parameters were examined with Spearman correlation analysis.

Results: Of all the 2772 AS patients, 79.1% were male patients. 79.5% were employed. 48.4% were married. Mean age was 28.99 ± 8.87 . Mean disease duration was 6.84 ± 6.78 . Mean SAS score was 49.32 ± 18.75 . 31.6% of the patients had anxiety, of which 10.8% had severe anxiety. Mean SDS score was 54.97 ± 16.67 . 59.3% had suffered from depression, of which 11.3% had severe depression. Mean PSQI score was 6.48 ± 4.32 . 31.0% of the patients were poor sleepers. SRRS score was 129.33 ± 145.06 . 35.3% had stimulus of psychological and social elements (SPSE), while 14.4% came across severe SPSE. SAS scores were associated with age, age onset, SDS scores, SRRS scores positively and years of education negatively ($P < 0.01$). SDS scores were associated with age, SAS scores, SRRS scores positively and years of education negatively ($P < 0.01$). SRRS scores also correlated of less sleep efficiency ($P < 0.05$).

Conclusions: A large number of AS patients were found to have anxiety, depression, sleep disturbance and stressful life events. These problems correlated with each other. Clinicians should pay more attention to psychological disorders and sleep problems in AS patients.

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FRI0472 EXTRA-RHEUMATOLOGICAL FEATURES ARE FREQUENTLY ASSOCIATED WITH PERIPHERAL RHEUMATOLOGICAL FEATURES IN AXIAL SPONDYLOARTHRITIS AND INFLUENCE THE CHOICE OF THE ANTI-TNF IN DAILY PRACTICE. AN ANALYSIS OF 519 PATIENTS

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Background: Axial involvement is the predominant feature of axSpA but both extra-articular (EAM) and peripheral manifestations (including synovitis and dactylitis) can be concomitantly observed.

Objectives: To evaluate whether the EAM are associated with peripheral rheumatological features in axSpA and whether these EAM influence the choice of the anti-TNF.

Methods: *Study design:* Prospective, multicenter, cross-sectional study in France (baseline visit of the Predict-SpA trial). *Patients:* definite axSpA according to the rheumatologist, requiring an anti-TNF. *Data collected:* Past or present signs/symptoms of EAM (psoriasis, uveitis and Inflammatory Bowel disease (IBD)), peripheral (arthritis, enthesitis and dactylitis) SpA features, and the anti-TNF prescribed by the treating rheumatologist (according to usual practice). *Statistical analysis:* the frequency of peripheral involvement and the type of anti-TNF (e.g. monoclonal antibodies vs soluble receptor) were compared in patients with versus (vs) without EAM.

Results: Of the 519 patients (females: 46%, age: 42 ± 12 years, HLA B27 positive: 65%, X-Ray sacroiliitis: 56%, inflammation on MRI of the sacro iliac Joint: 56%), 386 were biologic naïve. A past history or current symptoms of psoriasis, uveitis and IBD was observed in 19%, 17% and 5% respectively and a past history or current symptoms of arthritis, enthesitis and dactylitis in 27%, 54%, 11%, respectively

In patients with vs without psoriasis, the % of arthritis, enthesitis and dactylitis were 40% vs 25% ($p=0.004$), 67% vs 50% ($p=0.002$) and 18% vs 10% ($p=0.026$), respectively

In patients with vs without uveitis, the % of arthritis, enthesitis and dactylitis were 31% vs 27% ($p=0.445$), 57% vs 53% ($p=0.200$) and 13% vs 11% ($p=0.772$), respectively

In patients with vs without IBD, the % of arthritis, enthesitis and dactylitis were 36% vs 27% ($p=0.440$), 68% vs 53% ($p=0.180$) and 21% vs 11% ($p=0.152$), respectively

Monoclonal antibodies were prescribed as the first biologic in 206 out of the 386 patients (53%). This percentage was 56% vs 58% and vs 52% in patients with a current presence of psoriasis vs any history of psoriasis but currently absent and vs without any history of psoriasis, respectively; $p=0.785$. This percentage was 100% vs nd% ($n=0$) and vs 53% in patients with a current attack of uveitis vs any history of uveitis but currently inactive and vs without any history of uveitis, respectively; $p=0.032$. This percentage was 100% vs 50% ($n=2$) and vs 53% in patients with a current active IBD vs any history of IBD but currently inactive and vs without any history of IBD, respectively; $p=0.064$.

Conclusions: In this study focused on ax SpA patients, both peripheral rheumatological clinical features and EAM were frequently observed. The peripheral rheumatological manifestations were more frequently observed in case of concomitant psoriasis. Monoclonal antibodies were the preferred anti-TNF in case of a past history (even currently quiescent) of uveitis or IBD in daily practice.

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FRI0473 PATIENT-PHYSICIAN DISCORDANCE IN GLOBAL ASSESSMENT IN 401 EARLY AXIAL SPONDYLOARTHRITIS (AXSPA) PATIENTS FROM THE DESIR COHORT: WHAT IS THE EFFECT ON OUTCOMES AT 3 YEARS?

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Background: Discordance between patients' and physicians' ratings of disease activity is frequent. We have previously shown this discordance occurs in around 28% of visits in early axSpA though repeated discordance (over several visits) is less frequent (1).

Objectives: To assess in patients with early axSpA, the impact at 3 years of repeated discordance on treatment prescription, functional incapacity and remission.

Methods: DESIR (Devenir des Spondyloarthropathies Indifférenciées Récentes) is a French, multicenter, longitudinal cohort of patients with early inflammatory back pain suggestive of axSpA (2). Patient and physician global assessment

(respectively PGA and PhGA) were rated on a 0–10 numeric scale, every 6 months during 2 years then at 3 years. Only patients with all data available for PGA and PhGA for each of the 6 visits were included. Repeated discordance was defined as an absolute difference $|PGA-PhGA| \geq 3/10$ for at least 3 of the 6 visits (i.e., at least half of the visits). Univariable and multivariable logistic models were used to determine if repeated discordance was associated at the 3 years timepoint, with prescription of TNFi, functional incapacity defined as HAQ>0.5, and remission defined as ASDAS-CRP<1.3.

Results: Of 401 patients, mean age 34.6±8.7 years, mean symptoms duration 17.8±10.7 months, 219 (54.6%) were female and mean ASDAS-CRP at baseline 2.7±1.0. At 3 years 140 (34.9%) patients had been prescribed a TNFi, 172 (43.2%) had HAQ>0.5 and 89 (25.1%) were in remission. Over the 6 visits, mean PGA was higher than mean PhGA with a mean absolute difference of 0.8±2.2 points. Discordance concerned 110 (27.4%) patients at baseline and repeated discordance concerned 92 (22.9%) patients. In multivariable logistic regression, after adjusting on the others significant factors (which included MRI sacroiliitis, HLA-B27 and ASDAS-CRP at baseline), repeated discordance was associated with more functional incapacity (61% vs 38%, odds ratio, OR 2.85 [95% CI 1.49–5.62]) and less remission (10% vs 30%, OR 0.38 [0.15–0.85]) but not more TNFi use (34% vs 35%, 1.39 [0.78–2.54] p=0.27).

Conclusions: In early axSpA, repeated discordance concerned 22.9% of patients confirming the frequency of this situation. Repeated discordance was associated with worse outcomes at 3 years, even after adjustment of other factors including baseline ASDAS, indicating for the first time that discordance may indeed reflect an unsatisfactory management of medical care leading to worse outcomes. Future studies should concentrate on understanding the reasons of patient-physician discordance for disease activity in axSpA.

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FRI0474 DOES AXIAL SPONDYLOARTHRITIS PHENOTYPE CORRELATE WITH IMAGING MORPHOTYPE?

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Background: Traditionally, radiographic imaging was used to describe morphological differences between various types of axial SpA (axSpA). The advent of MRI has advanced understanding of disease, enabled earlier diagnosis and visualization of structural changes, and facilitated the identification of non-radiographic axial SpA (nr-axSpA). The magnitude of the pathologic changes in the axial skeleton is used to quantify inflammatory and structural outcomes of clinical trials and treatment of patients with axSpA.

Objectives: To examine the MRI morphology of sacroiliitis (SI) and vertebral corner lesions in patients with primary (1°, no psoriasis) and secondary (2°, with psoriasis) axSpA.

Methods: This posthoc analysis was performed on data from patients with axSpA enrolled in the EMBARK trial (NCT01258738). Only patients with baseline MRI lesions were included. Symmetric and asymmetric SI, structural lesions, and corner inflammatory lesions were analyzed in 1° axSpA vs 2° axSpA patients. Data were analyzed using one-way analysis of variance for continuous parameters, chi-square tests, or Fisher's exact tests for categorical parameters.

Results: The baseline demographics and disease characteristics between the 122 patients with 1° axSpA and 19 with 2° axSpA were similar. Asymmetric sacroiliitis was seen in significantly fewer 1° (43%) vs 2° (68%) axSpA patients. There were no differences in mean SpondyloArthritis Research Consortium of

Canada (SPARCC) scores between 1° and 2° axSpA for any of the 4 SI joint (SIJ) quadrants. However, the lower iliac quadrants had the highest SPARCC SIJ score and the upper iliac quadrants had the lowest SPARCC SIJ scores. When analyzing the 4 spine quadrants (lower/upper anterior and lower/upper posterior), 1° patients had higher total SPARCC spine scores than 2° patients for all 4 quadrants at baseline. Collapsing the 4 quadrants shows that 1° axSpA patients had higher SPARCC MRI of the entire spine (23 discovertebral units [DVU]; mean=5.7) compared with 2° axSpA patients (mean=2.7).

Conclusions: We found 1° axSpA patients had more symmetric sacroiliitis and extensive spinal bone marrow edema compared with 2° axSpA patients. In addition, women appeared to have more asymmetric sacroiliitis. These data may help physicians accurately diagnose patients and decide best treatment options.

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FRI0475 ANTI-CD74 ANTIBODIES AS DIAGNOSTIC BIOMARKER FOR EARLY AXIAL SPONDYLOARTHRITIS: DATA FROM THE SPONDYLOARTHRITIS CAUGHT EARLY (SPACE) COHORT STUDY

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Background: Diagnosis of axSpA is often delayed with 5–10 years. A robust biological disease marker is lacking and could decrease the current diagnostic delay. Two studies showed that serum anti-CD74 IgG antibodies are increased in SpA^{1,2}.

Objectives: To explore the value of anti-CD74 antibodies as diagnostic biomarker for axSpA in patients with early, chronic back pain.

Methods: We tested the prevalence of anti-CD74 IgG and IgA antibodies in patients from the SPondyloArthritis Caught Early (SPACE) cohort by enzyme-linked immunosorbent assay (ELISA). Patients from the SPACE cohort have chronic back pain for >3 months and ≤2 years with an onset <45 years.

Results: We included 560 patients of the SPACE cohort, of whom 274 patients were diagnosed with axSpA by a rheumatologist at baseline. Anti-CD74 IgG levels did not differ between patients with and without axSpA (p=0.152, Table 1). Median anti-CD74 IgA levels (tested with either casein or BSA as a blocking buffer) were higher in patients with axSpA (both p<0.0001). Despite these differences at the group level, the diagnostic value of the anti-CD74 IgA antibodies was limited as shown by ROC analysis. The optimal cut off according to ROC analysis was an optical density (OD) of 0.875, providing a sensitivity of 38.3% and a specificity of 77.6%. In line with previous reports, further analysis revealed that total IgA levels were elevated in early axSpA patients vs. non-SpA early back pain patients (p=0.008). When correcting the level of anti-CD74 IgA for the level of total IgA, the differentiating capacity of anti-CD74 disappeared for casein but remained intact for BSA (casein: p=0.731, BSA: p=0.038). Additional analyses using the ASAS classification criteria rather than a clinical diagnosis of axSpA, a strict combination of clinical diagnosis and ASAS classification criteria (excluding patients fulfilling the ASAS axSpA criteria without a clinical diagnosis and vice versa) (Table 1) and using the clinical diagnosis at 1 year of follow-up yielded similar results.

	Axial SpA (baseline)			ASAS axSpA criteria (baseline)			Diagnosis and ASAS axSpA positive (baseline)		
	Yes (n=274)	No (n=286)	P-value	Yes (n=224)	No (n=331)	P-value	Yes (n=108)	No (n=177)	P-value
anti-CD74 IgA (casein, OD)	0.73	0.57	<0.0001	0.74	0.58	<0.0001	0.78	0.55	<0.0001
anti-CD74 IgA (BSA, U/ml)	19.92	14.02	<0.0001	22.55	14.20	<0.0001	21.82	13.47	<0.0001
anti-CD74 IgG (OD)	0.50	0.52	0.152	0.49	0.52	0.054	0.50	0.52	0.075
anti-CD74 IgA (IgG, OD)	0.59	0.6	0.653	0.54	0.62	0.112	0.54	0.61	0.383
IgA total (g/L)	3.94	3.39	0.0008	3.79	3.51	0.084	3.92	3.38	0.017
ratio IgA (casein) / IgA total	0.17	0.17	0.731	0.17	0.17	0.614	0.18	0.17	0.435
ratio IgA (BSA) / IgA total	4.35	3.56	0.038	4.37	3.70	0.070	4.37	3.39	0.036
ratio IgA (IgG) / IgA total	0.18	0.18	0.387	0.18	0.18	0.388	0.17	0.19	0.294

Table 1. Levels of IgG and IgA anti-CD74 antibodies, total IgA and anti-CD74/total IgA ratios in patients from the SPACE cohort. Values are expressed as median and compared using Mann-Whitney U testing. Diagnosis and ASAS axSpA positive: patients diagnosed as axSpA and fulfilling the ASAS axSpA criteria vs. patients not diagnosed as axSpA and not fulfilling the ASAS axSpA criteria.

Conclusions: Serum anti-CD74 IgA antibody levels, but not serum anti-CD74 IgG levels, are elevated in patients with axSpA versus non-SpA with back pain of <2 years duration. However, ROC analyses revealed that these numerical differences are of limited diagnostic value in these patients with early back pain.

Abstract FRI0474 – Table 1

Parameter	Total (n=141)	1° axSpA with			2° axSpA with			P value
		Symmetric SI (n=63)	Asymmetric SI (n=52)	Non-SI (n=7)	Symmetric SI (n=4)	Asymmetric SI (n=13)	Non-SI (n=2)	
Age, y	32.1 (7.4)	30.9 (6.8)	32.5 (7.8)	35.3 (7.3)	29.3 (7.9)	33.5 (6.2)	47.0 (2.8)	0.2132
Male, n (%)	92 (65.3)	46 (73.0)	27 (51.9)	4 (57.1)	4 (100)	9 (69.2)	2 (100)	0.0896
Symptom duration, y	2.6 (1.9)	2.4 (2.2)	2.6 (1.5)	2.7 (1.6)	1.8 (1.5)	3.2 (1.6)	2.9 (1.6)	0.2944
SPARCC MRI SIJ score	10.5 (9.9)	15.9 (10.4)	5.4 (5.1)	2.1 (0.2)	27.5 (10.2)	5.9 (4.1)	2.5 (0.7)	0.0007
Left SPARCC SIJ	5.2 (6.0)	7.9 (6.1)	3.1 (5.3)	0.8 (0.3)	10.4 (7.4)	1.8 (2.1)	1.3 (0.4)	0.0004
Right SPARCC SIJ	5.4 (6.2)	8.0 (7.0)	2.3 (2.5)	1.4 (0.2)	17.1 (6.3)	4.0 (5.0)	1.3 (0.4)	0.0542
SPARCC MRI 6 DVU spinal score	4.7 (6.8)	6.4 (8.5)	3.8 (5.5)	2.4 (2.1)	1.6 (3.3)	2.6 (3.4)	0.8 (1.1)	0.0133
SPARCC MRI 23 DVU spinal score	5.3 (9.3)	7.5 (12.2)	4.0 (6.0)	2.4 (2.1)	1.6 (3.3)	3.4 (5.3)	0.8 (1.1)	0.0335
Fat metaplasia	0.5 (1.6)	0.3 (0.9)	0.9 (2.5)	0 (0)	0.3 (0.5)	0.7 (1.1)	0 (0)	0.6805
Erosions	2.6 (3.5)	4.2 (4.0)	1.1 (2.0)	0.3 (0.4)	3.1 (1.8)	1.0 (1.9)	0 (0)	0.0002