population. We found that AS was more active in patients who were diagnosed as IDA. We suggest that AS activitiy may cause mucosal inflammation and subsequently may result as IDA. Also we found that mucosal inflammation in AS patients is not related to NSAIDs because there was no difference about mucosal lesions between NSAID taking and non-NSAID taking group. No study was met in the literature concerning AS and IDA. Our findings should be supported by further studies.

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SAT0397 RISK FACTORS FOR DEVELOPMENT AND PERSISTENCE OF CHRONIC WIDESPREAD PAIN, IN ANKYLOSING SPONDYLITIS AND UNDIFFERENTIATED SPONDYLOARTHRITIS

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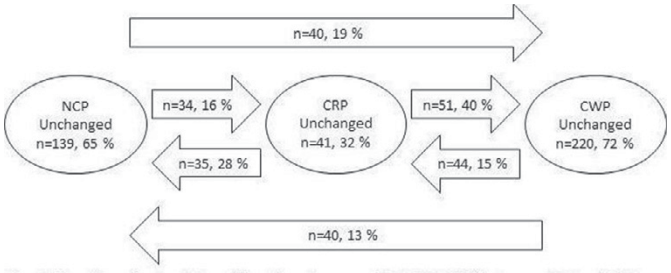
Background: Chronic back pain is a prominent symptom in Spondyloarthritis (SpA), and an important contributor to diminished quality of life (1,2). Chronic pain can develop in intensity, become more spread, and progress to chronic widespread pain (2). Mechanisms for this are yet inconsistent (3), and in SpA, knowledge of progression to chronic widespread pain (CWP) is lacking.
Objectives: To study the development of CWP in patients with SpA, and to identify risk factors for development and persistence of CWP.
Methods: A cohort study with baseline and 2.5-year follow-up postal surveys. 644 patients (47% women) with ankylosing spondylitis (AS) and undifferentiated spondyloarthritis (SpA) answered both surveys, and were categorized as no chronic pain (NCP), chronic regional pain (CRP), and CWP. Logistic regression analyses, with CWP as the main outcome were performed. Due to multicollinearity, each risk factor candidate (disease duration, BMI, smoking, and different patient-reported outcome measures; PROMs) were analysed in separate logistic regression models together with a base model (age, sex, and SpA-subgroup).
Results: At follow-up, prevalence estimates for NCP, CRP and CWP were similar to those at baseline, but 38% of the patients had transitioned between the groups. A large group, 72% of the patients with initial CWP, also reported persistent CWP at follow-up (Figure). Risk factors (OR and 95% CI) for development of CWP from initial NCP/CRP were more pain regions (1.36; 1.20–1.53), pain intensity (1.35; 1.20–1.52), fatigue (1.25; 1.13–1.38), global health (1.35; 1.19–1.54), EQ-5D (0.05; 0.01 – 0.19), BASDAI (1.25; 1.07 – 1.45), BASFI (1.32; 1.16 – 1.50), ASES pain (0.97; 0.96 – 0.99), ASES symtom (0.98; 0.97 – 0.99), and HADb (1.10; 1.02 – 1.19). The risk factors for persistent CWP, compared to patients transitioning to NCP or CRP, were similar to those predicting development of CWP, but in addition, also higher age (1.02; 1.00–1.04), and female sex (1.82; 1.06–3.10), predicted the outcome.



Figur 1. Transition of patients to and from the pain groups (NCP, CRP, CWP) between 2009 and 2011. Pearson Chi-Square test p≤0.001.

Conclusions: The total prevalence of CWP did not change over the study-period, although a substantial transition between the pain-groups were found. More pain regions, higher pain intensity, fatigue and worse self-reported health predicted the development into CWP, and persistent CWP. Also, higher age and female sex were risk factors for persistent CWP in SpA. Special attention in patients who report increased pain and related symtoms is essential, to early identify the development of CWP in patients with SpA.

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SAT0398 PREGNANCY OUTCOMES IN KOREAN WOMEN WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) is a chronic, systemic, inflammatory disease that primarily affects the sacroiliac joints and spine. Despite overwhelming prevalence of AS in men, it can also occur in women. Since AS mainly affects the sacroiliac joints, a special attention should be paid to the normal labors and pregnancy outcomes in these female patients. However, very little is known about the impact of AS on pregnancy outcomes due to rare occurrence of the disease in women.
Objectives: To investigate the pregnancy outcomes in Korean female patients with AS.
Methods: All of the 27 deliveries from 20 AS female patients who had been cared at Seoul National University Hospital between February 1994 and June 2016 were retrospectively evaluated through medical record review. After matching each pregnancy of the AS women with the pregnancies of the control group on a 1 to 4 ratio based on maternal and gestational age, pregnancy outcomes of AS patients were compared with those of the control group. Pregnancy outcomes included cesarean section (CS) rate, preterm birth, low birth weight infant, fetal growth restriction (FGR), fetal malformations and preeclampsia. Each pregnancy was considered as a separate observation, and outcomes between the groups were compared by regression models estimated using Generalized Estimating Equations (GEEs) to account for the matched nature of the data. For zero events in either group in which GEE models do not converge, Fisher's exact test or Chi-square test were used.
Results: Caesarean section (CS) was performed in 44.4% of deliveries among women with AS compared with 20.4% in controls (p=0.002) (Table 1). The indications of CS included previous uterine surgery, breech position, placenta previa, placental abruption, fetal distress, and cephalopelvic disproportion (CPD), which were comparable between two groups. When excluding the cases of elective CS, 16 pregnant women with AS were tried for the vaginal delivery. Among them, 15 cases (93.8%) achieved successful vaginal deliveries, which was comparable to the successful vaginal delivery rate in controls (86/90 (95.6%), p=0.566). CS due to CPD was done in 1 case (8.3%) of AS women, while there was no case in the controls (p=0.353). Interestingly, the severity of sacroiliitis in AS patients did not show any association with CS (p=0.342). Women with AS had a higher frequency of LBW compared to the controls (22.2% vs 8.3%, p=0.024). However, there was no statistically significant difference in other adverse pregnancy outcomes, including preterm birth, FGR, fetal malformations, and pre-eclampsia.

Table 1. Overall pregnancy outcomes

Characteristics	Pregnancies with AS (n=27)	Pregnancies without AS (n=108)	*p*-value[1)]
Caesarian section delivery, n (%)	12(44.4)	22(20.4)	0.002
Fetal loss, n (%)	0(0.0)	0(0.0)	-
Maternal death, n (%)	0(0.0)	0(0.0)	-
Preeclampsia, n (%)	0(0.0)	4(3.7)	0.583*
Twin pregnancy, n (%)	5(18.5)	8(7.4)	0.016
Fetal malformation, n (%)	1(3.7)	1(0.9)	0.329
Transfusion, n (%)	1(3.7)	2(1.9)	0.577
Hospital stay, days, mean (SD)	4.1(2.9)	5.1(7.9)	0.283
Sex of child, female, n (%)**	17(53.1)	63(54.8)	0.883
Neonatal weight, g, mean (SD)**	2960.3(523.8)	3065.3(509.4)	0.370
1 min Apgar Score <4, n (%) **	1(3.1)	7(6.1)	> 0.999
5 min Apgar Score <7, n (%) **	1(3.1)	4(3.5)	> 0.999

1) P-value: calculated from regression models estimated using GEEs to account for the matched nature of the data
* P-value: calculated from Fisher's exact test because of zero events in either group in which GEE models do not converge
** Analyzed by neonates and information of twins reflected, pregnancies with AS, n=32; pregnancies without AS, n=115

Conclusions: Although pregnant women with AS are concerned about CPD during their labors due to the involvement of the sacroiliac joints, vaginal deliveries

can be tried in patients with AS. The obstetric and perinatal outcomes in women with AS were also comparable to normal pregnant women.
Disclosure of Interest: None declared
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SAT0399 HEADACHE AS A CLINICAL COMPLAINT AT INITIAL PRESENTATION AND DURING THE DISEASE COURSE IN PATIENTS WITH SPONDYLOARTHRITIS INDICATES CONCOMITANT / SECONDARY FIBROMYALGIA

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Objectives: To evaluate the symptom of headache as being able to clinically distinguish associated secondary fibromyalgia in patients with spondyloarthropathies (SpA). To compare the incidence of MSK complaints (related to SpA) in patients with headache to those that did not. To assess headache during the SpA disease course.
Methods: Registry data from 776 patients seen in clinic with SpA were analysed with reference to headache as symptom at presentation. The data of those patients presented with headache were compared with data of those patients who did not report headache with regards to demographics and disease characteristics. In addition, other MSK complaints, fatigue and pain during disease course were also analysed.
Results: From a total of 776 patients (m: f=265:508) age 48.3 (SD +14.1), 13 were excluded as no answer was recorded. 117/ 763 patients (15.08%) representing 28 males and 89 females (23.9% vs 76.1% ratio 1:3.1) reported headache at disease onset.
During the disease course, 13 patients out of the initial 117 did not record an answer to the question and were excluded. From remaining 104 patients, 95 patients (91.3%) continued to describe headache as a symptom.
From those not reporting headache as initial symptom, (n=659) 148 did not record an answer and were excluded. From the remaining 511 patients, 194 (37.9%) reported headache during the disease course.
On the data obtained from these 2 sub-groups, comparison took place using paired sample t-test.
Table shows demographics and disease characteristics as well as differences between the 2 SpA sub-groups. Those presenting with headache describe worse disease, more fatigue and a greater percentage describe pain at pressure points and MSK system.

	Headache at presentation (n=117)	No headache at presentation (n=656)	Statistical significance (p)	CI
Age (mean ± SD)	47.7 (13.16)	48.3 (14.3)	0.1	-5.757 to 0.912
Gender (M:F) ratio	28:89 (1:3.1)	219:419 (1:1.9)	0.3	-0.025 to 0.077
Disease duration (y) (mean ± SD)	11.4 (12.1)	10.9 (10.8)	0.4	-1.905 to 4.470
Delay in diagnosis (y) (mean ± SD)	6.43 (8.9)	6.3 (8.1)	0.7	-3.151 to 2.151
ESR (mean ± SD) mmHg	15.5 (14.8)	18.2 (18)	0.07	-11.064 to 0.582
CRP (mean ± SD) mg/dL	10.4 (36)	8.2 (9.8)	0.4	-6.106 to 12.536
BASDAI score (mean ± SD)	7.31 (3.7)	6.06 (2.08)	<0.005	0.783 to 2.624
BASFI score (mean ± SD)	5.6 (2.7)	5.04 (2.7)	0.09	-0.143 to 1.626
Buttock pain (%)	31.6	12.8	0.001	0.083 to 0.293
Back pain (%)	82.9	58.8	<0.005	0.125 to 0.337
Neck pain (%)	72.6	24.4	<0.005	0.340 to 0.583
Knee pain (%)	63.2	30.6	<0.005	0.284 to 0.520
Shoulder (%)	70.9	23	<0.005	0.312 to 0.559
Foot (%)	57.2	22	<0.005	0.279 to 0.524
Hip (%)	55.5	19.9	<0.005	0.217 to 0.467
Eye (%)	23	4.3	<0.005	0.102 to 0.274
Fatigue	77/116 (66.4%)	340/608 (55.9%)	0.018	0.029 to 0.299
Pain with pressure	71/117 (61.2%)	257/807 (42.4%)	0.000	0.122 to 0.378
Headache as co-morbidity	95 (109) 87.2%	195/509 (38.3%)	0.000	0.808 to 0.935

Conclusions: Headache can clinically represent secondary FM among SpA patients. A proportion of patients (representing 15%) report headache at presentation. The majority of those patients (>90%) continue to describe headache during the disease course. From those patients who did not have headache at presentation, 38% report headache during the disease course. Patients describing headache at presentation have more MSK complaints at presentation.
Disclosure of Interest: None declared
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SAT0400 IS WHIPLASH INJURY A TRIGGERING OR EXACERBATING FACTOR FOR AXIAL SPONDYLOARTHRITIS?

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Background: Axial spondyloarthritis (AxSpA) can be triggered by infection and environmental factors, and some cases involve trauma. Whiplash injury in a traffic accident may lead to exacerbation of symptoms of AxSpA.
Objectives: The aims of this study are to survey the prevalence of trauma before or after onset of AxSpA and to examine the prevalences of neck trauma and other trauma in patients with a history of AxSpA.
Methods: The patients completed a questionnaire, and clinical presentation, inflammatory markers (ESR, CRP), radiographs, MRI of sacroiliac joints, Bath ankylosing spondylitis disease activity index (BASDAI), Bath ankylosing spondylitis functional index (BASFI), and Bath ankylosing spondylitis metrology index (BASMI) were assessed. Onset of symptoms was evaluated using European criteria for spondyloarthritis and patients were asked about mechanical stress (spinal trauma, extremity trauma, and internal organ injury). Patients with rheumatoid arthritis (RA) were included as controls and underwent the same evaluation. Patients with neck trauma were divided into four groups based on a short (<3 years) (group A) or long (≥3 years) (group B) period between disappearance of trauma symptoms and onset of inflammatory back pain (IBP); continuous IBP after trauma (group C); and a gradual change from minor symptoms to severe IBP after trauma (group D).
Results: The subjects were 124 patients with AxSpA and 102 with RA. Trauma occurred at a significantly higher rate in patients with AxSpA than in those with RA (66 (53.2%) vs. 12 (11.8%), p<0.0001). Neck trauma was also significantly more frequent in patients with AxSpA (63 (53.2%) vs. 9 (8.8%), P<0.0001) (Table 1). There were no significant differences in clinical background between patients with AxSpA with and without trauma (Table 2). Regarding the period from neck trauma to onset of IBP in patients with AxSpA, there were 4 (6.3%), 22 (34.9%), 14 (22.2%), and 23 (36.5%) cases in groups A, B, C and D, respectively.

Table 1. Prevalence of items related to mechanical stress in patients with axial spondyloarthritis (AxSpA) and rheumatoid arthritis (RA)

Item	AxSpA n (%) (95%CI)	RA n (%) (95%CI)	P value
Cases (male/female)	124 (46/78)	102 (15/87)	
Mean age (yrs)	51.8±12.9* (49.5-54.1)	66.0±11.7* (63.7-68.2)	<0.0001
Mean duration of illness (yrs)	25.8±14.4*(23.3-28.3)	23.4±10.5* (21.3-25.6)	0.1294
Trauma to date	66 (53.2%) (44.4-62.0)	12 (11.8%) (5.5-18.0)	<0.0001
Neck trauma to date	63 (50.8%) (41.2-58.8)	9 (8.8%) (3.3-14.3)	<0.0001
Neck trauma before onset	25 ** (20.2%) (13.1-27.2)	9 (8.8%) (3.3-14.3)	0.1046
Lumbar trauma	2 (1.6%) (-0.6-3.8)	1(1%) (-0.1-3.0)	0.9244
Operation before onset	33 (26.6%) (18.8-34.4)	16 (15.7%) (8.6-22.7)	0.1048
Fracture before onset	9 (7.3%) (2.7-11.8)	7(6.9%) (2.0-11.8)	0.9001

n: Number of patients, CI: confidence interval, * standard deviation, ** groups A and B

Table 2. Clinical features in patients with AxSpA and without trauma

	AxSpA with trauma average ± SD (95% CI)	AxSpA without trauma average ± SD (95% CI)	Statistical significance
ESR (mmHg/h)	10.48±9.39 (8.21-12.75)	12.84±15.32 (8.90-12.78)	ns
CRP (mg/dl)	0.23±0.42 (0.13-0.33)	0.35±0.78 (0.15-0.55)	ns
BASDAI	2.66±1.24 (2.36-2.96)	2.40±1.23 (2.08-2.72)	ns
BASFI	2.95±2.46 (2.36-3.54)	2.36±2.70 (1.67-3.05)	ns
BASMI	2.62±1.58 (2.24-3.00)	2.48±1.69 (2.05-2.91)	ns

SD: standard deviation, CI: confidence interval, ns: not significant (P>0.05)

Conclusions: The remarkable finding in this study is that half of patients with AxSpA had a history of whiplash injury. These results suggest that trauma may influence the course of AxSpA through the immunological system or hypothalamic-pituitary-adrenal axis.
Disclosure of Interest: None declared
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SAT0401 PREVALENCE OF ULTRASONOGRAPHIC LOWER AND UPPER ENTHESITIS IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE

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Background: Spondyloarthritis (SpA) occurs in up to 20% of patients with inflammatory bowel disease (IBD) [1]. Symptomatic enthesitis is a characteristic feature of SpA and represents an early sign of SpA [2]. The prevalence of enthesitis in patients with IBD is not known.
Objectives: This study was designed to evaluate whether patients with IBD showed an increased prevalence of entheseal involvement, even in the absence of clinical symptoms.
Methods: Thirty-five IBD patients (25 M and 10 F, median age 41 yrs), 25 with Crohn's disease (CD) and 10 with ulcerative colitis (UC), all with moderate intestinal activity, and 22 (13 M and 12 F, median age 44 yrs) control subjects with irritable bowel syndrome underwent a thorough clinical evaluation followed by entheses ultrasonography of upper limb (brachial triceps) and lower limb (quadriceps, proximal and distal rotuleus, Achilles tendon and plantar fascia). The Madrid sonographic entheses index (MASEI) was used to score entheses abnormalities [thickness, enthesophytosis, bursitis, erosions with and without power doppler (PD)]. Correlation between IBD features (type, duration and