population. We found that AS was more active in patients who were diagnosed as IDA. We suggest that AS activity 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 symptom (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.

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

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 symptoms 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