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OP0080

#### CENTRAL SENSITIZATION AND ILLNESS PERCEPTIONS SHOULD BE TAKEN INTO ACCOUNT WHEN INTERPRETING DISEASE ACTIVITY IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS

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**Background:** Up to 40% of ankylosing spondylitis patients report persistently high pain scores of >4 (scale of 0-10) even after responding to long-term TNF-alpha blocking therapy.[1] In other rheumatic diseases, nociplastic pain (due to altered functioning of the nervous system leading to peripheral and central sensitization) is common.[2] In axial spondyloarthritis (axSpA), patient illness and pain perceptions were shown to influence disease outcome.[3] Therefore, we hypothesized that central sensitization and patients' illness perceptions are associated with persistently high disease activity in axSpA.

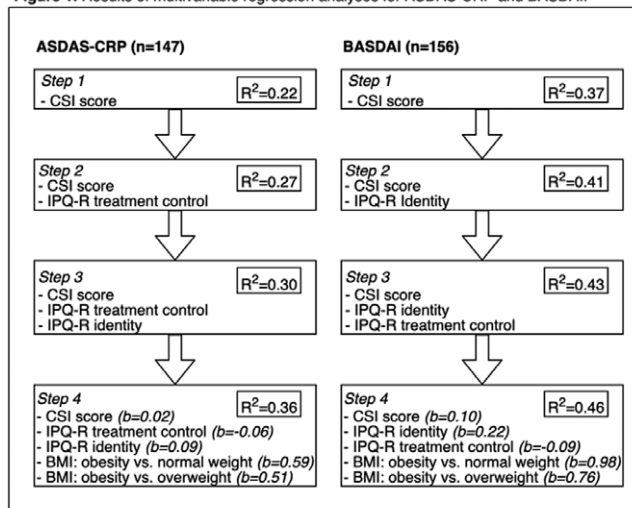
**Objectives:** To investigate to what extent central sensitization, pain catastrophizing and patients' perceptions play a role in axSpA and to explore associations with disease activity.

**Methods:** Between April and September 2019, consecutive outpatients from the Groningen Leeuwarden axSpA (GLAS) cohort,[4] an ongoing large prospective cohort, were included in this study. Besides the standardized assessments, patients filled out three additional questionnaires: Central Sensitization Inventory (CSI), Pain Catastrophizing Scale (PCS) and Revised Illness Perception Questionnaire (IPQ-R). Univariable and multivariable linear regression analyses were used to investigate the association of CSI, PCS and each of the eight subscales of the IPQ-R, and disease activity assessments ASDAS-CRP, BASDAI, and CRP. We corrected for the following potential confounders: gender, symptom duration, BMI, educational level, smoking status and HLA-B27 status.

**Results:** Of 171 included patients, 58% were male, 79% were HLA-B27 positive, median symptom duration was 21 (IQR 10-32), mean ASDAS-CRP 2.1 ± 1.0, mean BASDAI 3.9 ± 2.2 and median CRP 2.9 (IQR 1.2-6.3). Mean CSI score was 37.8 ± 14.1 (scale of 0-100), and 44% of patients scored ≥40 on the CSI.[5] Median PCS score was 15 (IQR 7-22) (scale of 0-52), median IPQ-R illness identity subscore 3 (IQR 2-4) (scale of 0-14) and mean IPQ-R treatment control subscore 18.1 ± 3.4 (scale of 5-25). In univariable regression analysis, CSI and PCS scores and IPQ-R subscores all showed significant associations

with ASDAS-CRP, and all except the IPQ-R subscale personal control showed significant associations with BASDAI. Only IPQ-R treatment control was significantly associated with CRP. Central sensitization, two IPQ-R subscales (perceived treatment control and the number of symptoms patients attributed to their axSpA: illness identity) and BMI were independently associated with disease activity assessments BASDAI (R<sup>2</sup>=0.46) and ASDAS-CRP (R<sup>2</sup>=0.36) (Figure 1).

**Figure 1.** Results of multivariable regression analyses for ASDAS-CRP and BASDAI.



ASDAS-CRP: Ankylosing Spondylitis Disease Activity Score with C-reactive protein; BASDAI: Bath Ankylosing Spondylitis Disease Activity Score; CSI: Central Sensitization Inventory; IPQ-R: Revised Illness Perception Questionnaire; BMI: Body Mass Index.

**Conclusion:** In this axSpA population with long-term disease, 44% scored above the CSI cutoff point of 40, indicating a high probability of central sensitization. CSI score, illness identity and treatment control were independently associated with disease activity assessments.

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OP0081

#### THE IMPACT OF AXIAL SPONDYLOARTHRITIS ON PATIENTS' SEXUAL LIFE: RESULTS FROM THE EUROPEAN MAP OF AXIAL SPONDYLOARTHRITIS (EMAS)

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**Background:** Axial Spondyloarthritis (axSpA) involves a great degree of functional limitation in daily activities and psychological health, which can impact patients' sexual life.

**Objectives:** To study the determinants of reduced frequency of sexual activity and intimacy since disease onset in axSpA patients.

**Methods:** Data from 2,846 unselected patients of the European Map of Axial Spondyloarthritis (EMAS) through an online survey (2017-2018) across 13 countries were analysed. The impact of axSpA on patients' sexual life was evaluated by a question assessing changes in the frequency of intimate relations since the onset of axSpA on a 5 point Likert scale. Impact of axSpA on the spousal relationship since disease onset was also assessed using 5 point Likert scale. Other lifestyle variables included smoking and physical activity and burden of disease [BASDAI (0-10), spinal stiffness (3-12), functional limitation in intimate relations (0-2), and psychological distress (GHQ-12)]. Regression analysis were carried out to determine the relative weight of the assessed variables.

**Results:** EMAS total sample mean age was 43.9 years, 61.3% were female, 48.1% had a university degree, and 67.9% were married. Out of the 2,515 participants that reported on the frequency of intimate relations since disease onset, 56.4% declared that it was less or much less than before; 74.1% declared high or medium limitation in intimate relations; and 30.4% reported worsening relations with their spouse. A lower frequency of intimate relations was related to: older age, female gender, higher BASDAI, spinal stiffness, higher functional limitation in intimate relations, higher psychological distress, self-reported diagnosis of depression, worsening relationship with spouse since disease onset, higher BMI, smoking, lack of physical activity, and lack of biologicals use. In the multivariate regression analysis, the most strongly associated variables with lower frequency of intimate relations were: functional limitation in intimate relations ( $\beta = 0.218$ ; 95% CI 0.185 – 0.251), worse relationship with spouse ( $\beta = 0.207$ ; 95% CI = 0.165 - 0.250), female gender ( $\beta = 0.150$ ; 95% CI 0.071 – 0.229), and no engaging in physical activity ( $\beta = -0.135$ ; 95% CI -0.234 – -0.036) (Table 2).

**Conclusion:** EMAS results reveal a great impact of axSpA on patients' sexual life, with multiple sociodemographic, lifestyle and PROs being associated with a lower frequency of intimate relations.

**Table 1. Regression analysis to predict frequency of intimate relations**

	Simple linear regression			Multivariable stepwise linear regression		
	B	95% CI	p	B	95% CI	p
Age (Years)	0.007	0.004,0.010	<0.001	0.010	0.007,0.013	<0.001
Gender (Female)	0.215	0.146,0.284	<0.001	0.150	0.071,0.229	<0.001
BASDAI	0.124	0.107,0.141	<0.001	0.029	0.007,0.050	0.010
Spinal Stiffness	0.089	0.075,0.102	<0.001	NA	NA	0.214
Functional Limitation – Intimate relations	0.297	0.271,0.323	<0.001	0.218	0.185,0.251	<0.001
GHQ-12	0.067	0.059,0.075	<0.001	0.035	0.024,0.045	<0.001
Depression (Yes)	0.375	0.298,0.452	<0.001	NA	NA	0.064
Relationship with spouse	0.343	0.306,0.380	<0.001	0.207	0.165,0.250	<0.001
BMI	0.017	0.011,0.024	<0.001	0.008	0.001,0.015	0.031
Smoking (Yes)	0.075	0.002,0.148	0.044	NA	NA	0.907
Physical activity (Yes)	-0.212	-0.306,-0.119	<0.001	-0.135	-0.234,-0.036	0.007
Biologics (Yes)	0.188	0.110,0.267	<0.001	NA	NA	0.185

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#### OP0082 GROWTH AND DEVELOPMENT OF CHILDREN FROM MOTHERS WITH ANKYLOSING SPONDYLITIS

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**Background:** Ankylosing spondylitis (AS) is a chronic inflammatory disease featured with involvement of sacroiliac joint and starts in the second or third decade

of life. Female patients with AS are mostly in childbearing ages. There are several studies of pregnancy outcomes but no studies about their offsprings.

**Objectives:** The objective of our study was to investigate the growth and development of offsprings from AS mothers.

**Methods:** This is a nationwide population-based case-control study using two South Korean databases that are managed by the National Health Insurance Service (NHIS): (1) the National Health Screening Program for Infants and Children (NHSIC) database, which records screening data of the growth and development of all children; (2) the NHIS database, which covers the entire population and includes comprehensive health claims data. In Korea, the NIH supports patients with 133 rare severe, intractable diseases including AS via a registration system of rare intractable disease (RID). We enrolled subjects born from 2008–2013 who had participated in the NHSIC program at three consecutive times; during 4-6 months (1st), 9-12 months (2nd), either 54-65months or 66-71 months (6th, 7th). The Korean Developmental screening test (K-DST) was used to assess development. By linking maternal and offspring healthcare data through their unique personal identification numbers, we constructed a mother-child database to track the growth of the child. We classified childrens from AS mothers using RID system (ICD code M45.X) and those from non-AS mothers. The primary outcome was to compare the growth and development of offsprings from AS mothers and those from general population. The secondary outcome was to compare the growth and development of offsprings from mothers who diagnosed AS before delivery (ante-partum, AS-AP) and those from mothers who diagnosed AS after delivery (postpartum, AS-PP). Low birth weight (LBW) was defined as a birth weight below 2500g. Growth retardation (GR) was defined as a body weight below 10th percentile according to birth weight reference curves for the south Korean population.

**Results:** A total of 794,544 subjects were identified. Among those cohort subject, there were 369 subjects with AS mother (124 subjects from AS-AP, 245 subjects from AS-PP) while 794,175 subjects with non-AS mother. Offsprings with LBW were comparable between those from AS mother and non-AS mother (OR 1.3, 95% CI 0.74-2.02). At 4-6 months, an OR of GR was comparable between two groups (OR 1.18, 95% CI 0.72-1.92) but increased at 9-12 months (OR 1.62, 95%CI 1.14-2.31) in infants from AS mothers. This difference disappeared at 54-71months (OR 0.24,95% CI 0.87-1.74). An OR of development abnormality (i.e. children needed the further evaluation or the follow-up test by K-DST) was also comparable between two groups (OR 0.94, 95% CI 0.71-1.25). Mothers with AS-AP had as about three times as a higher OR for having babies with LBW than mothers with AS-PP (OR 2.8, 95% CI 1.15-6.86). At 4-6 months, an OR of GR was comparable between two groups (OR 0.59, 95% CI 0.19-1.86) but decreased at 9-12 months (OR 0.39, 95%CI 0.16-0.98) in infants from AS-PP. This difference disappeared at 54-71months (OR 0.63,95% CI 0.29-1.39). An OR of development abnormality (i.e. children needed the further evaluation or the follow-up test by K-DST) was also comparable between two groups (OR 1.37, 95% CI 0.77-2.43).

**Conclusion:** Growth and development of children from AS mothers were comparable with those from non-AS mothers. Although mothers with AS-AP had significantly higher ORs for having LBW babies than those with AS-PP, their growth and development were comparable between two groups in young childhood.

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#### Pain pathology, progression and pharmacotherapy

##### OP0083 DORSAL ROOT GANGLIA INFILTRATING MACROPHAGES MAINTAIN OSTEOARTHRITIS PAIN

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**Background:** Pain is a major debilitating symptom of knee osteoarthritis (OA). However, the extent of joint damage in OA does not correlate well with the severity of pain. The mechanisms that govern OA pain are poorly understood. Immune cells infiltrating nervous tissue may contribute to pain maintenance.

**Objectives:** Here we investigated the role of macrophages in the initiation and maintenance of OA pain.

**Methods:** Knee joint damage was induced by an unilateral injection of mono-iodoacetate (MIA) or after application of a groove at the femoral condyles of rats fed on high fat diet. Pain-like behaviors were followed over time using von Frey test and dynamic weight bearing. Joint damage was assessed by histology. Dorsal root ganglia (DRG) infiltrating immune cells were assessed over time using flow cytometry. To deplete monocytes and