FRI0190

RELATIONSHIP BETWEEN FAECAL CALPROTECTIN, HLAB-27 AND ACUTE PHASE REACTANTS IN PATIENTS WITH SPONDYLOARTHRITIS WITHOUT PRIOR DIAGNOSIS OF INFLAMMATORY BOWEL DISEASE

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Background: Faecal calprotectin (FC) is a biomarker of inflammatory bowel activity widely used in the diagnosis and follow-up of inflammatory bowel disease (IBD). Microscopic intestinal inflammation is described in approximately 50% of patients with spondyloarthritis (SpA), and it is associated with more severe disease.

Objectives: The purpose of this study was to describe the possible relationship between FC, HLAB27 and acute phase reactants in patients diagnosed of SpA without clinical suspicion or prior diagnosis of IBD.

Methods: Unicentric, cross-sectional observational study with prospective clinical data collection. We included consecutively selected patients in the Rheumatology Clinic diagnosed of SpA who fulfilled ASAS criteria and did not have digestive symptoms suggestive of IBD (chronic diarrhoea, rectal bleeding, perianal disease or chronic abdominal pain persistent/recurrent). Demographic, clinical and analytical data from SpA (Uveitis, HLAB27, acute phase reactants), treatments and FC were collected and a FC cut-off point >50 MG/kg was determined. For patients on NSAIDs suspension was recommended two weeks prior to collection of stool samples. The study was approved by the centre's Ethics Committee for Clinical Trials.

Results: Ninety-nine patients were included. 50% male, average age 46±11 years old. 3.7±2.5 BASDAI. 79% HLA-B27 positive, 31% had elevated levels of ESR, 9% elevated CRP (>10 mg/L). 49 patients (49.5%) had high levels of FC, with mean levels of 276 mg/Kg (range 52–3,038). HLAB27 positive patients had significantly higher FC levels than HLAB27 negative patients (160 mg/kg vs 98 mg/kg; *p*<0.05). There were no differences in relation to the history of uveitis. Patients with high FC had significantly higher CRP levels than patients with normal FC (6.7 mg/L vs. 3.2 mg/L; *p*<0.05), in accordance with these results from the group of patients with CRP levels>10 mg/L, the percentage of FC elevation was 78% vs. 47% of patients with CRP <10 mg/L. There were no significant differences in relation to ESR.

Conclusions: Patients with spondyloarthritis (ASAS criteria), HLAB27 positive and elevated CRP have higher levels of faecal calprotectin, a biomarker of inflammatory bowel activity, which may indicate that inflammatory activity in SpA might be associated with subclinical intestinal inflammation.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5902

FRI0191

SIMILARITIES AND DIFFERENCES BETWEEN OSTEITIS CONDENSANS ILII AND AXIAL SPONDYLOARTHRITIS PATIENTS PRESENTING WITH CHRONIC BACK PAIN IN A RHEUMATOLOGY SETTING

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Background: Osteitis condensans ilii (OCI) is regarded as a non-inflammatory disorder, which is considered to be induced by mechanical stress (e.g., by pregnancy and delivery). The diagnosis is normally based on wide spread sclerosis of the sacroiliac joint without erosions or ankyloses on imaging. More recently, para-articular bone marrow oedema has been described on MRI, which can occur early but also intermittently later in the course of the disease. The clinical characteristics of OCI patientst have not been well described. To date, there are no published systematic data on the characteristics of OCI as compared to axial spondyloarthritis (axSpA).

Objectives: The objective of this matched case-control study was to investigate demographic, clinical, and lab characteristics of OCI as compared to axSpA.

Methods: Using medical database search we have identified n=103 patients aged ≥18 years who were diagnosed with OCI upon presentation with chronic back pain in the Early Spondyloarthritis Clinic of the rheumatology department in the Charité University Hospital between January 2010 and May 2015. These patients were contacted in order to obtain an informed consent and to complete a survey on the disease-related history. n=60 OCI patients who provided an informed consent and completed the survey were included in the final analysis. These patients were matched with a 1:2 ratio according to the back pain duration to patients with definite axSpA diagnosed in the same setting in order to compare demographic, clinical and lab characteristics.

Abstract FRI0191 – Table 1. Demographic, clinical and lab characteristic of OCI as compared to axSpA in the rheumatology setting.

Characteristics	OCI N=60	axSpA N=120	p-value
Age, years	40.3±10.0	39.4±11.3	0.51
Female sex, %	96.7%	41.7%	<0.001
Age at back pain onset, years	29.7±9.0	30.5±9.0	0.59
Back pain duration, years	9.0±7.9	8.9±8.0	n.a.*
HLA-B27 positive, %	35.2%	84.2%	<0.001
CRP, mg/l	2.1±2.1	11.3±27.6	<0.001
Elevated CRP (>5mg/l), %	7.1%	41.3%	<0.001
Inflammatory back pain, %	39.5%	92.3%	<0.001
Good response to NSAIDs, %	73.8%	76.9%	0.67
Peripheral arthritis, %	4.5%	12.5%	0.25
Enthesitis of the heel, %	4.8%	15.8%	0.11
Dactylitis, %	0%	5.0%	0.60
Uveitis, %	0%	11.7%	0.011
Psoriasis, %	5.6%	3.3%	0.68
Inflammatory bowel disease, %	1.8%	2.5%	1.00
Family history of SpA, %	32.7%	20.8%	0.12
BASDAI, NRS points (0-10)	4.6±2.0	4.0±2.0	0.17
BASFI, NRS points (0-10)	3.4±2.2	3.1±2.3	0.49
Menell's test positive, %	37.5%	62.5%	0.09
Patrick's test positive, %	45.8%	69.6%	0.07
Tenderness in the SIJ area, %	75.6%	66.7%	0.48
Schober's test, cm	4.2±0.9	4.6±2.1	0.63
Lateral spinal flexion, cm	15.6±5.0	15.3±4.5	0.83

*Matching variable

Results: The main characteristics of the two groups are presented in the table. Most importantly, all but 2 patients with OCI were females and had a significantly lower prevalence of inflammatory back pain, lower level of CRP stressing a rather non-inflammatory nature of this condition. All patients were referred because of possible axial SpA, therefore SpA features, although being lower than in axSpA patients (table 1), were higher than can normally expected in OCI patients. This is probably the reason why a statistical significance in comparison to axSpA was observed for uveitis only. There was no difference in age of back pain onset (but age <45 years was a referral parameter). Signs of sacroiliitis at physical examination were only slightly more frequent in axSpA; there were no differences in spinal mobility. The level of symptoms (BASDAI) and the perceived level of functional disability (BASFI) were comparable between groups. 83% of female patients with OCI reported a history of at least one pregnancy with a mean number of pregnancies of 3 (median=3, range 1–8).

Conclusions: OCI manifesting with chronic back pain starting prior to 45 years of age represents an important differential diagnosis for axSpA. A constellation of a female sex (with a history of pregnancies), negative HLA-B27 and negative CRP seems to be of differential diagnostic value as compared to axSpA.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4256

FRI0192

PREDICTORS OF SEVERE HIP INVOLVEMENT IN ANKYLOSING SPONDYLITIS: DATA FROM NATIONAL INPATIENT SAMPLE

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Background: Hip involvement in ankylosing spondylitis (AS) is common (24%–36%), leading to worse functional outcomes. While some cases achieve long-term remission, few develop progressive joint destruction with 5%–8% requiring hip replacement. Although studies in the past have looked at factors associated with severe hip involvement, these remain debated.

Objectives: To investigate the factors associated with severe hip disease in patients with AS using a large inpatient US database.

Methods: Using the Nationwide Inpatient Sample (NIS) data from 2009–2011, we identified patients with AS based on International Classification of Diseases, Ninth Revision (ICD-9) code 720.0 (first 5 positions) and identified patients with hip surgery with ICD-9 procedural codes 800.5, 801.5, 802.5, 803.5, 804.5, 807.5, 808.5, 809.5, 812.1, 815.1, 815.2, 815.3 (any position). NIS is the largest publicly available all-payer inpatient care database in the United States, sponsored by

Agency for Healthcare Research and Quality as a part of Healthcare Cost and Utilisation Project. Univariate and multivariate binomial logistic regressions were used to derive odds ratio for predictors of hip surgery. Statistical analysis was done using STATA version 13.0 (College Station, TX).

Results: NIS database from 2009–2011 contained 3538 (weighted counts in the whole US population $n=17,480$) patients with AS. Out of those, 190 (weighted $n=934$) had hip surgery (5.36%). Multivariate binomial regression analysis after controlling for confounders (table 1) showed male sex (OR 2.52, CI 1.65–3.83, $p<0.001$) and peripheral enthesopathy (OR 8.64, CI 2.48–30.12, $p<0.001$) to be significantly associated with hip surgery in AS patients, and an inverse relationship with inflammatory bowel disease (IBD) (OR 0.35, CI 0.16–0.76, $p=0.01$) was seen.

AS with Hip Surgery	Odds Ratio	Standard error	p-value	95% CI	
				Lower limit	Upper limit
Age	1	0	0.46	0.99	1.01
Male sex	2.52	0.54	<0.001	1.65	3.83
Non-white	1.11	0.25	0.65	0.71	1.74
Income quartile	1.33	0.21	0.07	0.97	1.83
CAD	0.6	0.16	0.06	0.35	1.02
CKD	0.65	0.31	0.36	0.25	1.66
DM	0.64	0.17	0.09	0.38	1.07
CHF	0.14	0.14	0.05	0.02	1.04
Current smoking	0.75	0.18	0.23	0.46	1.20
Obesity	1.24	0.35	0.46	0.71	2.16
Uveitis	1.04	0.77	0.96	0.25	4.43
IBD	0.35	0.14	0.01	0.16	0.76
Psoriasis	0.85	0.64	0.84	0.2	3.74
Peripheral enthesopathy	8.64	5.5	<0.001	2.48	30.12
Constant	0.04	0.01	<0.001	0.02	0.06

Conclusions: Our study found male sex and patients with peripheral enthesopathy to have higher odds of severe hip disease requiring surgery among hospitalised AS patients and significantly lower odds with IBD. Previous studies showed an association with age at onset, delay in diagnosis, bilateral involvement, axial/enthesial disease and severe sacroiliitis. Some of these associations could not be analysed in our study due to lack of individual level patient data. Interestingly, epidemiological factors like smoking and obesity which have been linked to severe disease in PsA, were not found to have any significant association. Routine clinical hip exam and radiological imaging might help to identify high-risk patients. Early therapeutic strategies might be indicated for this specific population to prevent severe hip disease and need for hip replacement surgery.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.5031

FRI0193 PROGNOSTIC MARKERS IN AXIAL SPONDYLOARTHRITIS (PROMISE) – CROSS SECTIONAL EVALUATION OF SERUM BIOMARKERS IN AXSPA, MECHANICAL BACK PAIN AND HEALTHY CONTROLS

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Background: In recent years there has been increasing interest in biomarkers in axial spondyloarthritis, for diagnosis, disease prognostication, and to monitor treatment effect.^{1,2} Many biomarkers have been evaluated, but the role each of these plays and how they may interact is unclear.

Objectives: Our aim was to evaluate a broad panel of serum biomarkers in a large mixed cohort of patients, with Ankylosing Spondylitis (AS), non radiographic axial Spondyloarthritis (nr-axSpA), mechanical back pain (MBP) and healthy controls (HC), in order to identify any potential biomarkers for diagnosis by assessing the differences between the groups.

Methods: Cross sectional evaluation of 46 serum biomarkers was undertaken by Myriad RBM using multiplexed immunoassays of Multi-Analyte Panels, in a cohort of patients from a tertiary referral centre, consented as part of the Bath Spondyloarthritis BioBank. Validated patient reported outcomes (including BASDAI, BASFI) and BASMI were completed. 50 HC blood samples were also collected at University College London for biomarker analysis.

Results: 331 patients were included in the study, of which 59.5% AS, 8.2% nr-axSpA, 15.7% mechanical back pain, 15.1% HC. 64.7% were male, mean age 44.2 years (SD 16.6), mean disease duration in the AS group of 22.4 years (SD 13.6) with 84% HLA B27 positive.

IL1 alpha and beta, IL1 receptor antagonist, IL2, 3, 4, 5, 7, 10, 15, 17, IL12 subunit p70, factor VII, GM-CSF, IFN gamma, MMP9, TNF beta were the only biomarkers not to show statistical differences across the diagnostic groups (table 1.). 12 biomarkers showed a statistical difference between genders (table 1, column 1, p value significance indicated with * <0.05 , ** <0.01 using Mann Whitney U, in addition to Factor VII*).

Abstract FRI0193 – Table 1. Statistically significant serum biomarker results by diagnosis

Mean (SD)	AS	nr-axSpA	Mechanical back pain	Healthy controls	P value using Kruskal Wallis
N	197	27	52	50	
Alpha 1 anti trypsin, mg/ml	3.2 (1.2)	2.3 (0.8)	2.1 (0.8)	1.4 (0.4)	<0.001
Alpha 2 macroglobulin, mg/ml	4.0 (1.4)	3.7 (1.2)	3.6 (1.5)	3.1 (1.9)	<0.001
** Beta 2 macroglobulin, ug/ml	3.4 (2.7)	2.2 (0.8)	2.0 (0.9)	1.6 (0.3)	<0.001
Brain derived neurotrophic factor, ng/ml	28.4 (8.3)	30.3 (8.2)	28.9 (7.2)	21.0 (4.5)	<0.001
* C Reactive Protein, ug/ml	29.6 (69.1)	4.6 (9.2)	4.7 (9.0)	3.0 (4.4)	<0.001
Complement C3, mg/ml	2.8 (1.3)	1.9 (0.9)	1.8 (1.0)	0.8 (0.2)	<0.001
** Eotaxin 1, pg/ml	374.1 (193.5)	241.4 (174.8)	241.4 (161.2)	170.1 (123.5)	<0.001
** Ferritin, ng/ml	248.5 (231.2)	177.7 (177.3)	205.4 (212.0)	89.9 (74.9)	<0.001
** Fibrinogen, mg/ml	0.0 (0.0)	0.0 (0.0)	0.0	0.0 (0.0)	<0.001
Haptoglobin, mg/ml	4.0 (4.2)	2.5 (1.4)	1.6 (1.3)	1.6 (0.8)	<0.001
Intercellular Adhesion Molecule 1, ng/ml	175.2 (81.5)	149.6 (61.4)	154.5 (84.2)	98.8 (22.3)	<0.001
IL6, pg/ml	2.4 (6.9)	0.3 (1.4)	0.7 (1.6)	0.0	<0.001
IL8, pg/ml	33.4 (69.6)	329.7 (1484.9)	52.7 (127.0)	4.4 (7.1)	<0.001
IL12 subunit p40, ng/ml	0.4 (0.2)	0.4 (0.2)	0.3 (0.3)	0.3 (0.2)	0.001
IL18, pg/ml	321.8 (157.6)	295.1 (171.5)	281.8 (204.3)	146.2 (60.8)	<0.001
* IL23, ng/ml	0.8 (1.0)	0.3 (0.7)	0.3 (0.7)	0.1 (0.4)	<0.001
Macrophage Inflammatory Protein 1 alpha, pg/ml	23.1 (62.1)	20.2 (41.2)	14.2 (27.6)	0.0	0.005
Macrophage Inflammatory Protein 1 beta, pg/ml	678.5 (595.4)	604.0 (382.2)	618.3 (447.8)	290.8 (192.3)	<0.001
** Matrix Metalloproteinase 3, ng/ml	24.2 (15.9)	11.6 (4.6)	14.1 (8.3)	13.5 (6.7)	<0.001
** Stem Cell Factor, pg/ml	550.1 (222.6)	362.6 (259.0)	389.1 (235.5)	173.2 (164.9)	<0.001
T cell Specific Protein RANTES, ng/ml	26.5 (15.1)	25.0 (16.8)	21.2 (10.5)	20.4 (7.6)	0.03
** Tissue Inhibitor of Metalloproteinases 1, ng/ml	262.1 (94.4)	197.9 (55.8)	186.7 (44.9)	141.7 (32.0)	<0.001
TNF alpha, pg/ml	13.3 (30.2)	8.9 (30.3)	0.6 (4.3)	0.0	<0.001
** TNF receptor 2, ng/ml	298.2 (740.4)	92.9 (433.1)	9.7 (5.2)	5.8 (1.8)	<0.001
* Vascular Cell Adhesion Molecule 1, ng/ml	1093.0 (465.3)	931.6 (307.9)	965.9 (391.9)	651.0 (141.1)	<0.001
Vascular Endothelial Growth Factor, pg/ml	493.8 (359.1)	439.6 (316.8)	394.1 (215.4)	261.7 (168.6)	<0.001
Vitamin D Binding Protein, ug/ml	538.1 (233.7)	414.6 (186.6)	439.3 (227.9)	334.4 (135.1)	<0.001
Von Willebrand Factor, ug/ml	161.2 (89.9)	110.5 (51.9)	109.2 (77.6)	95.5 (51.1)	<0.001
Monocyte Chemoattractant Protein 1, pg/ml	484.7 (220.0)	524.9 (369.2)	396.5 (174.9)	314.7 (133.6)	<0.001

Conclusions: Serum biomarkers have been shown to vary with gender and diagnosis. Further work is planned to evaluate their relationship to disease activity using outcome measures such as the BASDAI, and radiographic scoring, to better understand the role of each factor and combination of factors, and any causal link.

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Acknowledgements: This study was undertaken as part of an ongoing piece of work that is being funded by Celgene.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.6740

FRI0194 ANKYLOSING SPONDYLITIS DISEASE ACTIVITY SCORE (ASDAS) BASED ON A QUICK QUANTITATIVE CRP ASSAY PERFORMS SIMILARLY WELL TO ASDAS BASED ON CONVENTIONAL CRP IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS

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Background: The Ankylosing Spondylitis Disease Activity Score (ASDAS) is a composite index to assess disease activity in patients with axial spondyloarthritis (axSpA). According to the treat-to-target (T2T) recommendations for SpA, and the