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.

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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, GMCSF, 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 (37.6)	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)	110.6 (51.9)	109.2 (77.6)	95.5 (51.1)	<0.001
Monocyte Chemotactic 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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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

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