obtained lower results (AUC=0.60, cutoff=2.38). Figure 1 shows cumulative probability plots of mSASSS and ASDAS versus OWD, showing cutoff values determined by ROC analysis.

Conclusion: Structural damage, in cervical and lumbar spine, are the main contributor to HK appearance in axSpA patients. Inflammation it is not so determinant and acts only in the short term. HK produces a significant reduction of cervical mobility and physical function. New treatments that decrease radiographical progression, and overweight reduction are the most important factor to avoid HK.

REFERENCES:

[1] Measuring Spinal Mobility Using an Inertial Measurement Unit System: A Validation Study in Axial Spondyloarthritis. *Diagnostics* 2020, 10(6), 426.

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POS0949

HIGH PREVALENCE OF ABDOMINAL OBESITY IN FEMALES WITH AXIAL SPONDYLOARTHRITIS

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Background: Worldwide prevalence of obesity has been steadily increasing, despite significant public health campaigns to raise health awareness. In axial spondyloarthritis (axSpA) obesity has been shown to be associated with higher levels of disease activity and decreased response to treatment. The waist to hip ratio (WtHr) is a tool to screen for abdominal obesity. Abdominal deposition of adipose tissue is associated with increased risk of cardiovascular disease, type II diabetes and premature death. Abdominal obesity is more commonly found in males, while females are more prone to gluteal-femoral fat deposition. The Ankylosing Spondylitis Registry of Ireland (ASRI) is a source of epidemiological data of axSpA patients in Ireland.

Objectives: To capture the prevalence of abdominal obesity in a large cohort of axSpA patients and assess for variation in prevalence between sexes.

Methods: Participants were analysed on the basis of sex and presence of obesity by BMI and WtHr. Obesity was defined by body mass index (BMI) with a result of >30 categorised as obese as per CDC definitions. Abdominal obesity was assessed by WtHr and defined as per WHO guidelines. Categorical variables were recorded as frequencies, with a chi² test for independence used to test for statistical significance. Numerical variables were recorded as means within each group and an independent t-test or Mann Whitney U test was used to test for statistical significance between groups. A p-value of <0.05 was deemed significant. IBM SPSS version 26 was used for statistical analysis of the patient population captured within the ASRI.

Results: At the time of analysis, physical measurements were available on 692 patients in the ASRI made up of 96.2% (666) Caucasians with 22.3% (154) females and 77.7% (538) males. The average age was 45.9 years with a mean disease duration of 18.8 years (mean scores: BASDAI 4.09, BASFI 3.71, BASMI 3.99, HAQ 0.54, ASQoL 6.72). 80.9% (560) of patients had radiographic sacroiliitis while 49.1% (340) had sacroiliitis on MRI.

Overall 29.5% (215) patients were obese based on BMI results, while 37.5% (274) were centrally obese as per the WtHr. Analysis on the basis of sex revealed no significant variation in mean BMI (28.1 vs 27.7, p=0.45) or prevalence of obesity as assessed by BMI (29.9% vs 28.6%, p=0.49) between males and females (table 1). As expected analysis of WtHr revealed higher mean ratios in males compared to females (0.96 vs 0.89, p<0.01), however there was a significantly higher prevalence of abdominal obesity in females (29.9% vs 68.2%, p<0.01).

Conclusion: There is a high prevalence of abdominal obesity as assessed by WtHr in axSpA, this is especially high in females with axSpA. Use of WtHr should be considered when screening for obesity in this population.

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Table 1. Assessment of Obesity by Sex

	Males	Females	p value
n	77.7% (538)	22.3% (154)	
Weight (kg)	84.98	72.76	<0.01
BMI	28.08	27.69	0.45
Underweight	0.9% (5)	0.06% (1)	0.49
Normal Weight	29.2% (157)	36.4% (56)	
Overweight	39.2% (211)	34.4% (53)	
Obese	29.9% (161)	28.6% (44)	
Waist Circumference (cm)	97.43	90.03	<0.01
Hip Circumference (cm)	102.11	101.27	0.56
Waist to Hip Ratio	0.956	0.8901	<0.01
Normal Weight	23.8% (128)	17.5% (27)	<0.01
Overweight	46.3% (249)	14.3% (22)	
Obese	29.9% (161)	68.2% (105)	

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POS0950

ARE THERE GENDER DIFFERENCES IN AXIAL SPONDYLOARTHRITIS: DATA FROM A PORTUGUESE SPONDYLOARTHRITIS COHORT

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Background: Historically, axial spondyloarthritis (particularly ankylosing spondylitis) was considered a men's disease and has been under-recognized in women.

Emerging evidence reveals gender differences in pathophysiology, disease presentation and therapeutic efficacy.

Objectives: To determine if there are differences between genders in a Portuguese cohort of patients with axSpA as regards clinical manifestations, disease activity, functional capacity, patient related outcomes and radiographic findings.

Methods: Patients with ≥18 years fulfilling the ASAS- Assessment of Spondyloarthritis International Society classification criteria for axSpA and registered in the electronic national database- Reuma.pt were included in a multicentric cross-sectional study. Sociodemographic data, clinical features and radiographic findings were collected from the first record in Reuma.pt. These variables were compared between genders using Mann-Whitney test and Chi-Square test. Variables with a significant association with group variable (gender) were considered in the multiple variable analysis to adjust the gender effect on the outcome variables.

Results: A total of 1995 patients were included, 1114 (55.9%) men and 881 (44.1%) women. Men had a lower median age at onset of disease (25.1 vs 28.4, p=0.000) and median age at diagnosis (26.9 vs 30.4, p=0.000) and were more frequently smokers (32.1% vs 15.7%, p=0.000). Comparing to women, men had worse BASMI scores (4.0 vs 3.4, p=0.000), higher levels of CPR (10.5 vs 6.9, p=0.000) and were more often HLA-B27 positive (67.8% vs 54%, p=0.000). In univariable analysis, sacroiliitis on radiograph or/and MRI (95.5% vs 91.7%, p=0.04) was more common in men, however that wasn't confirmed in multivariable analysis.

In contrast, women more frequently had more inflammatory bowel disease (8.8% vs 4.9%, p=0.004), higher levels of ESR (25.0 vs 21.0, p=0.003) and worse PROs- BASDAI (5.7 vs 4.5, p=0.000), PGA (60.0 vs 55.0, p=0.000) and fatigue (6.2 vs 5.4, p=0.000).

Conclusion: Physicians must be aware of differences between genders in axial spondyloarthritis because this can result in less underdiagnosis and misdiagnosis, allow optimization of treatment strategies, and decrease overall disease burden in women with axSpA patients.

REFERENCES:

- [1] Rusman T, van Vollenhoven RF, van der Horst-Bruinsma IE. Gender Differences in Axial Spondyloarthritis: Women Are Not So Lucky. *Curr Rheumatol Rep.* 2018;20(6):35.
- [2] Tournadre A, Pereira B, Lhoste A, Dubost JJ, Ristori JM, Claudepierre P, et al. Differences between women and men with recent-onset axial spondyloarthritis: results from a prospective multicenter French cohort. *Arthritis Care Res (Hoboken).* 2013;65(9):1482-9.

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	BASDAI		BASMI		PGA		Fatigue		Sacroiliitis on radiograph or/and MRI	
	β	p	β	p	β	p	β	p	OR	p
Male gender	-0.963881	1.25 x10⁻⁸	0.647295	0.000856	-5.76893	0.00568	-1.319037	1.09x10⁻¹⁰	1.8793034	0.074607
Age at diagnosis	-0.003272	0.62910	0.025231	0.001720	-0.05975	0.47469	0.006319	0.4384	0.9995867	0.977807
HLA-B27	-0.503885	0.00182	-0.247478	0.164533	-7.96053	6.89 x10⁻⁵	-0.359688	0.0640	0.8436131	0.627840
CRP	0.004264	0.16449	0.004137	0.213673	0.02060	0.58906	-0.002740	0.4566	1.0014834	0.837317
Smoker	0.062283	0.73877	0.865084	0.000104	4.09464	0.08010	0.252386	0.2612	1.4020156	0.424626
Ex-smoker	0.171008	0.41963	0.627238	0.009923	3.94157	0.13256	0.304220	0.2324	2.4690088	0.150762
IBD	-0.699610	0.01762	-0.334230	0.288871	-1.95205	0.59487	-0.804620	0.0242	0.9475121	0.932460
ESR	0.024332	1.22x10⁻¹⁴	0.011760	0.000525	0.31131	1.08x10⁻¹⁵	0.024713	5.52x10⁻¹¹	1.0060363	0.400118

Table 1: Multiple variable analysis to adjust the gender effect on the outcome variables.

OR: Odds ratio; BASDAI: Bath Ankylosing Spondylitis Disease Activity Index; BASMI: Bath Ankylosing Spondylitis Metrological Index; PGA: Patient Global Assessment; HLA-B27: Human Leukocyte Antigen-B27; CRP: C-reactive protein; ESR: erythrocyte sedimentation rate; IBD: inflammatory bowel disease; MRI: magnetic resonance imaging

POS0951

ASSOCIATION BETWEEN INDIVIDUAL AND COUNTRY-LEVEL SOCIOECONOMIC FACTORS AND HEALTH OUTCOMES IN AXIAL AND PERIPHERAL SPONDYLOARTHRITIS: ANALYSIS OF THE ASAS PERSPA STUDY

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Background: Health outcomes in spondyloarthritis (SpA) are largely determined by socioeconomic (SE) factors, leading to the great inequity observed between countries across the world. However, the impact of these SE factors on health outcomes across the different SpA phenotypes (axSpA, pSpA and PsA), is less well known.

Objectives: To investigate (1) the association between individual and country-level SE factors and health outcomes in different SpA phenotypes, and (2) to explore whether any effect of these SE factors is mediated by the use of b/tsDMARD therapy.

Methods: Patients with axSpA, pSpA or PsA from the multinational cohort ASAS-perSpA were included in the analysis. The effect of individual (age, gender, education and marital status) and country-level SE factors (Gross Domestic Product [GDP], Healthcare Expenditure [HCE], Human Development Index [HDI], Gini Index) over health outcomes (ASDAS ≥ 2.1 , continuous ASDAS, BASFI, fatigue and ASAS-HI) were assessed in multivariable mixed-effects logistic and linear regression models (as appropriate), adjusting for confounders. Interactions between each individual and country-level SE factors and disease phenotype and between both levels of SE factors, were tested. Finally, a mediation analysis was conducted to explore whether the impact of country-level SE factors on ASDAS is mediated through b/tsDMARD uptake.

Results: A total of 4185 patients from 23 countries were included: 61% males, mean age 45 (SD 14), 65% axSpA, 10% pSpA and 25% PsA. Female gender, lower educational level and marital status (single vs married) were associated with higher ASDAS, without significant differences across disease phenotype. Living in lower-(vs higher) GDP countries was also associated with higher ASDAS ($\beta=0.39$

[95%CI 0.16; 0.63], with similar results for other economic indicators (Figure 1). 7% of the association between GDP and ASDAS was mediated by b/tsDMARD uptake. The above-mentioned individual and country-level SE factors remained significant to discriminate active disease (ASDAS ≥ 2.1), with greater impact of gender (OR=1.32 [1.13; 1.54]), educational level (primary vs university OR=1.76 [1.40;2.20]) and lower GDP (OR= 1.74 [1.22;2.46]). Higher BASFI was also associated with gender (female vs male: $\beta=0.12$ [0.01; 0.24]), lower education (primary vs university: $\beta=0.29$ [0.11; 0.46]), and marital status (single vs married: $\beta=0.23$ [0.09; 0.38]), without effect of country-level SE factors, and no differences across SpA phenotype. Gender and lower educational level were similarly associated with worse ASAS-HI scores (female vs male $\beta=0.88$ [0.68;1.09], and primary vs university $\beta=0.61$ [0.31;0.91]), while more fatigue was only associated with female gender and, in an opposite direction, with higher country-level SE factors (Figure 1). No interactions were found between individual and country-level SE factors for any of the outcomes.

Conclusion: Individual (female gender and lower education) and country-level SE factors are independently associated with higher disease activity in SpA. Uptake of b/tsDMARD had a small mediating effect on the association between GDP and ASDAS. Lower education and female gender are also associated with worse outcomes of functional disability, global functioning and fatigue. Country-level SE factors are not associated with functional disability or global functioning; in contrast, there is a paradoxical effect with fatigue: living in a country with a higher SE status is independently associated with higher levels of fatigue. Management of disease outcome in SpA requires also awareness of the role of individual and country level SE-factors.

Figure 1. Effect of individual and country-level socioeconomic factors on ASDAS and fatigue, derived from multivariable mixed-effects models adjusted by clinical confounders.