Fig. 1. Modified Stoke Ankylosing Spondylitis Spine Score (mSASSS) for individual patients plotted as a function of duration since symptom onset.

Fig. 2. Two-year mSASSS progression depicted in a cumulative probability plot. Progression was defined as an increase in mSASSS of at least 2 units (dotted line) in 2 years.

Pharma; Director of Imaging Rheumatology BV, Robert B.M. Landewé Consultant of: AbbVie; AstraZeneca; Bristol-Myers Squibb; Eli Lilly & Co.; Galapagos NV; Novartis; Pfizer; UCB Pharma, Kristina Buerki: None declared, Michael Nissen Grant/research support from: Abbvie, Consultant of: Novartis, Lilly, Abbvie, Celgene and Pfizer, Speakers bureau: Novartis, Lilly, Abbvie, Celgene and Pfizer, Burkhard Moeller: None declared, Pascal Zufferey: None declared, Pascale Exer: None declared, Adrian Ciurea Consultant of: Consulting and/or speaking fees from AbbVie, Bristol-Myers Squibb, Celgene, Eli Lilly, Merck Sharp & Dohme, Novartis and Pfizer.

DOI: 10.1136/annrheumdis-2020-eular.3576

OP0076

CLINICAL DISEASE ACTIVITY, MRI SPINAL INFLAMMATION AND ENTHESITIS ARE KEY DETERMINANTS OF IMPAIRMENT OF SPINAL MOBILITY IN EARLY AXIAL SPONDYLOARTHRITIS – DATA FROM THE DESIR COHORT

P. Carvalho^{1,2,3}, A. Marreiros^{4,5}, J. E. Fonseca^{2,6}, A. Ruyssen-Witrand⁷, P. M. Machado⁸. ¹Centro Hospitalar Universitário do Algarve, Faro, Portugal; ²Centro Académico Médico de Lisboa, Lisbon, Portugal; ³Algarve Biomedical Center, Faro, Portugal; ⁴Universidade do Algarve, Faro, Portugal; ⁵Faro, Algarve Biomedical Center, Faro, Portugal; ⁶Hospital Santa Maria, Lisbon, Portugal; ⁷Le Centre Hospitalier Universitaire de Toulouse, Toulouse, France; ⁸University College London, London, United Kingdom

Background: It has been shown that spinal mobility impairment in axial spondyloarthritis (axSpA) is independently determined both by irreversible spinal damage and by reversible spinal inflammation. However, these relationships have only been investigated in patients with longstanding disease (ankylosing spondylitis). Moreover, only the composite score Bath Ankylosing Spondylitis Metrology Index (BASMI) has been evaluated rather than individual mobility assessments.

Objectives: Our aim was to investigate the determinants of spinal mobility in patients with early axSpA.

Methods: We analysed longitudinal data from the DEvenir des Spondyloarthrites Indifférenciées Récentes (DESIR) cohort, collected during the first five years of follow-up. We selected patients with a definite diagnosis of axSpA according to the treating rheumatologist, at the end of follow-up (month 60). Associations were tested using generalised estimating equations (GEE), a multilevel approach that adjusts for within-patient correlation. The Bath Ankylosing Spondylitis Metrology Index (BASMI) or the individual components of BASMI (lateral spinal flexion, tragus-to-wall distance, cervical rotation, anterior lumbar flexion, maximal intermalleolar distance) were used as dependent variables, and clinical and demographic variables were used as independent variables in univariable models. Spinal MRI inflammation was assessed using the Berlin scoring system and radiographic structural damage was assessed using the modified Stoke ankylosing spondylitis spinal score (mSASSS). As physical function and quality of life are considered to be hierarchically superior to spinal mobility, they were not included in the analysis. Multivariable models were built, adjusting for potential confounding. Variables with a p-value <0.10 were re-tested in the multivariable models. Six models were built, one regarding the BASMI total score and five regarding the individual components of BASMI.

Results: Data from 644 patients and 5152 visits were analysed. In the multivariable analyses (table), we found an independent association between higher BASMI values and age [adjusted B (aB)=1.02, confidence interval (CI)=1.01-1.03], Ankylosing Spondylitis Disease Activity Score-C Reactive Protein (ASDAS-CRP) (aB=1.23, CI=1.15-1.32), enthesitis score (aB=1.02, CI=1.01-1.04) and MRI inflammation score (aB=1.13, CI=1.05-1.23). All individual BASMI components were independently associated with ASDAS-CRP. Apart from maximal intermalleolar distance, all other mobility measures were associated with MRI spinal inflammation. Lateral spinal flexion, cervical rotation and maximal intermalleolar distance were associated with the enthesitis score. mSASSS was associated with lateral

Table: Multivariable GEE results (aB; 95% CI) presenting independent associations between BASMI (or its components) and clinical and demographic variables

	Mobility measures where higher values represent worse mobility		Mobility measures where higher values represent better mobility			
	BASMI	Tragus-to-wall distance	Lateral spinal flexion	Cervical rotation	Anterior lumbar flexion (modified Schober)	Maximal intermalleolar distance
Age	1.02 (1.01-1.03)		0.91 (0.87-0.96)	0.79 (0.69-0.90)		0.71 (0.61-0.82)
Male gender	#	2.35 (1.73-3.18)	5.01 (2.15-11.67)	#		171.35 (16.86-1742.22)
Education*	#	2.10 (1.06-4.16)	#	#		388.23 (32.09-4696.38)
BMI	0.97 (0.95-0.99)	1.04 (1.00-1.09)			1.08 (1.05-1.11)	
HLA-B27 positive	0.82 (0.70-0.97)		#	13.99 (1.09-180.20)		19.07 (1.56-233.62)
Symptoms' duration			0.76 (0.65-0.88)		1.07 (1.03-1.12)	1.72 (1.30-2.27)
Currently employed					#	
Current arthritis	#			0.01 (0.00-0.86)	#	
ASDAS-CRP	1.23 (1.15-1.32)	1.28 (1.07-1.52)	0.56 (0.39-0.79)	0.12 (0.04-0.38)	0.87 (0.79-0.97)	0.14 (0.08-0.25)
Enthesitis score	1.02 (1.01-1.04)		0.92 (0.86-1.00)	0.73 (0.59-0.89)		0.78 (0.67-0.89)
mSASSS	#	1.17 (0.90-1.51)**	0.77 (0.510-0.98)	0.42 (0.16-1.11)**	#	
MRI inflammation score	1.13 (1.05-1.23)	1.33 (1.08-1.64)	0.59 (0.44-0.80)	0.41 (0.17-0.95)	0.92 (0.86-0.98)	

#Statistically significant in the univariable models but excluded from the best-fit multivariable model; *Education at baseline (university or equivalent); **mSASSS not significant in the multivariable model but included as it was found to be a contributory variable improving model-fit.

spinal flexion and a contributory factor to tragus-to-wall distance and cervical rotation.

Conclusion: In early axSpA, spinal mobility impairment is independently determined by clinical disease activity, MRI spinal inflammation and the severity of enthesitis. Maximal intermalleolar distance (which is not a true measure of spinal mobility) was the only measure not associated with MRI spinal inflammation. The influence of spinal inflammation prevails in the early phase of axSpA while spinal damage becomes more relevant in later disease stages.

References: None.

Disclosure of Interests: Pedro Carvalho: None declared, Ana Marreiros: None declared, Joao Eurico Fonseca: None declared, Adeline Ruyssen-Witrand Grant/research support from: Abbvie, Pfizer, Consultant of: Abbvie, BMS, Lilly, Mylan, Novartis, Pfizer, Sandoz, Sanofi-Genzyme, Pedro M Machado Consultant of: PMM: Abbvie, Celgene, Janssen, Lilly, MSD, Novartis, Pfizer, Roche and UCB, Speakers bureau: PMM: Abbvie, BMS, Lilly, MSD, Novartis, Pfizer, Roche and UCB
DOI: 10.1136/annrheumdis-2020-eular.5015

OP0077 DETERMINANTS OF THE PHYSICIAN'S GLOBAL ASSESSMENT AND INFLUENCE OF CONTEXTUAL FACTORS IN EARLY AXIAL SPONDYLOARTHRITIS

F. Hirano¹, R. B. M. Landewé^{2,3}, F. A. Van Gaalen¹, D. Van der Heijde¹, C. Gaujoux-Viala⁴, S. Ramiro^{1,3}. ¹LUMC, Leiden, Netherlands; ²AUMC, Amsterdam, Netherlands; ³Zuyderland MC, Heerlen, Netherlands; ⁴Nîmes University Hospital, Nîmes, France

Background: In RMDs, the physician's global assessment (PhGA) is a major factor of treatment decision. It is not well-known which disease manifestations contribute to PhGA in early axSpA and if contextual factors have an impact.

Objectives: To investigate determinants of PhGA and the influence of contextual factors on this relationship in patients with early axSpA.

Methods: Five-year data from DESIR, a cohort of early axSpA, were analysed. Clinical data were collected every 6 months up to 2 years and annually thereafter. The primary analysis included all patients, and the subgroup analysis patients with follow-up MRI at 2 and/or 5 years. PhGA over 5 years was the outcome of interest. Univariable generalized estimating equation (GEE) models were used to investigate relationships between potential determinants and PhGA. Longitudinal relationships were investigated in autoregressive models. Effect modification by contextual factors (educational level, gender and age) was tested and, if significant, models were stratified. Univariable analyses were chosen to better assess the contributory explanatory effects of each of the determinants in each of the strata.

Results: A total of 708 patients were included, mean age 33.7 (SD 8.6) years, 46% male, 41% lower educated. The subgroup consisted of 220 patients with similar characteristics. Higher BASDAI questions 1-6, SJC28, TJC53, Maastricht Ankylosing Spondylitis Enthesitis Score (MASES), CRP and BASMI were associated with a higher PhGA (Table 1). Gender and age were effect modifiers of SJC28; the effect was largest in the younger male stratum (β [95% CI]: 1.07 [0.71, 1.43]), and smallest in the older female stratum (0.13 [0.04, 0.22]) (Figure 1). Autoregressive GEE models revealed the same determinants of PhGA and the same pattern of effect modification by gender and age.

Conclusion: Patient's subjective symptoms, peripheral arthritis, enthesitis, higher CRP and impaired spinal mobility contribute to explain PhGA in patients with early axSpA irrespective of gender and age. But physicians consider the presence of swollen joints as more important in males than in females.

Figure. Impact of swollen joint count on the physician's global assessment across gender and age groups

Regression coefficients (95% CI) of the effect of SJC28 on PhGA in the univariable GEE analyses across gender/age-stratified groups (in an ascending order).

Disclosure of Interests: Fumio Hirano Paid instructor for: Ono pharmaceuticals, Astellas Pharma Inc, Sumitomo Dainippon Pharma, Chugai Pharmaceutical Co., Ltd., Robert B.M. Landewé Consultant of: AbbVie; AstraZeneca; Bristol-Myers Squibb; Eli Lilly & Co.; Galapagos NV; Novartis; Pfizer; UCB Pharma, Floris A. van Gaalen: None declared, Désirée van der Heijde Consultant of: AbbVie, Amgen, Astellas, AstraZeneca, BMS, Boehringer Ingelheim, Celgene, Cytosine, Daiichi, Eisai, Eli-Lilly, Galapagos, Gilead Sciences, Inc., Glaxo-Smith-Kline, Janssen, Merck, Novartis, Pfizer, Regeneron, Roche, Sanofi, Takeda, UCB Pharma; Director of Imaging Rheumatology BV, Cecile Gaujoux-Viala: None declared, Sofia Ramiro Grant/research support from: MSD, Consultant of: Abbvie, Lilly, Novartis, Sanofi Genzyme, Speakers bureau: Lilly, MSD, Novartis
DOI: 10.1136/annrheumdis-2020-eular.843

OP0078 MAPPING FROM THE ANKYLOSING SPONDYLITIS DISEASE ACTIVITY SCORE (ASDAS) TO EQ5D IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS

M. Hernandez¹, A. Wailoo¹, G. Chrysanthou¹, P. Carvalho², D. Van der Heijde³, M. J. Santos⁴, P. M. Machado⁵. ¹University of Sheffield, Sheffield, United Kingdom; ²Centro Hospitalar Universitário do Algarve, Faro, Portugal; ³Leiden University Medical Centre, Leiden, Netherlands; ⁴Faculdade Medicina de Lisboa, Lisboa, Portugal; ⁵University College London, London, United Kingdom

Background: Clinical studies often omit outcomes that allow the direct estimation of Quality Adjusted Life Years (QALYs) for use in cost effectiveness analyses crucial for informing policy decisions. This means analysts often have to estimate the relationship, "map", between included outcomes and preference based ones like the EuroQoL EQ5D. In ankylosing spondylitis (AS), the relationship between BASDAI/BASFI and EQ5D has been established but the emergence and growing use of the Ankylosing Spondylitis Disease Activity Score (ASDAS), a new composite index used to assess clinical disease activity, means new mapping tools are required. Furthermore mapping has never been done for the entire axial

Table 1. Factors associated with PhGA over time in gender/age-stratified groups in univariable analysis

	Female/Older (n=200)	Female/Younger (n=181)	Male/Older (n=154)	Male/Younger (n=173)
	Coefficient (95% CI)			
BASDAI Q1 (fatigue, 0-10)	0.39 (0.34, 0.44)	0.39 (0.34, 0.44)	0.41 (0.35, 0.46)	0.46 (0.41, 0.51)
BASDAI Q2 (back pain, 0-10)	0.49 (0.45, 0.54)	0.53 (0.49, 0.57)	0.48 (0.43, 0.53)	0.58 (0.54, 0.63)
BASDAI Q3 (peripheral joint pain, 0-10)	0.31 (0.27, 0.36)	0.36 (0.31, 0.41)	0.32 (0.27, 0.37)	0.43 (0.37, 0.48)
BASDAI Q4 (enthesitis, 0-10)	0.37 (0.33, 0.41)	0.42 (0.37, 0.46)	0.36 (0.31, 0.41)	0.52 (0.47, 0.56)
BASDAI Q5 (severity of morning stiffness, 0-10)	0.42 (0.37, 0.46)	0.45 (0.40, 0.49)	0.44 (0.40, 0.49)	0.58 (0.54, 0.63)
BASDAI Q6 (duration of morning stiffness, 0-10)	0.30 (0.25, 0.35)	0.35 (0.30, 0.39)	0.36 (0.31, 0.41)	0.50 (0.45, 0.56)
BASMI linear (0-10)	0.61 (0.45, 0.78)	0.67 (0.48, 0.86)	0.49 (0.30, 0.68)	0.95 (0.75, 1.15)
SJC28 (0-28)	0.13 (0.04, 0.22)	0.52 (0.31, 0.73)	0.58 (0.40, 0.76)	1.07 (0.71, 1.43)
TJC53 (0-159) †	0.05 (0.04, 0.06)	0.13 (0.11, 0.16)	0.13 (0.11, 0.16)	0.15 (0.13, 0.18)
MASES (0-39)	0.10 (0.08, 0.12)	0.15 (0.12, 0.17)	0.18 (0.14, 0.23)	0.30 (0.25, 0.35)
CRP (mg/L)	0.02 (0.01, 0.04)	0.03 (0.01, 0.05)	0.06 (0.04, 0.07)	0.04 (0.03, 0.05)
Any EAM (presence vs absence)	-0.13 (-0.49, 0.23)	-0.20 (-0.58, 0.19)	-0.26 (-0.68, 0.17)	-0.28 (-0.69, 0.14)
SPARCC-spine (0-414) §	0.06 (-0.11, 0.22)	0.05 (-0.11, 0.20)	0.02 (-0.03, 0.06)	0.05 (-0.04, 0.14)
SPARCC-SIJ (0-72) §	-0.02 (-0.13, 0.09)	0.01 (-0.08, 0.10)	0.05 (-0.01, 0.11)	0.01 (-0.04, 0.06)

† Each joint graded 0-3

§ Coefficients were estimated in the subgroup