AS, as both diseases belong to the spondyloarthritis group. 1100 patients with inflammatory rheumatic diseases provided the basis of Rh-GIOP, a prospective study monitoring glucocorticoid (GC)-induced osteoporosis in patients with rheumatic diseases. Rh-GIOP was established in 2015 at the Charité University Hospital. Bone mineral density data were measured by dual x-ray absorptiometry (DXA).

Methods: 92 patients with PsA (65% female) were compared with 51 patients suffering from AS (35% female). Potential risk and protective factors (e.g. data on GC treatment, anti-rheumatic therapy), laboratory parameters (e.g. Vitamin D, alkaline phosphatase, calcium and inflammatory markers) and functional status (e.g. Health Assessment Questionnaire, sporting activities, back pain) were compared between these groups. Statistical analysis was performed descriptively using mean and standard deviation, t-tests for metric variables, and chi-square tests for nominal variables. Due to the heterogeneous gender distribution, an additional statistical matching was performed to compare patients matched by age and gender.

Results: Patients with PsA displayed significantly higher minimal T-scores than patients with AS ($p=0.003$) even though patients with AS were younger and more often male ($p<0.001$). AS patients showed a higher frequency of osteopenic bone densities ($p<0.05$), however, no differences in the frequency of osteoporotic bone densities were found. Body-mass-index (BMI) was significantly higher ($p<0.001$) in PsA patients. PsA patients demonstrated a higher frequency of csDMARD use ($p<0.001$). Additional analyses among PsA patients with and without csDMARDs revealed also significantly higher minimal T-scores in PsA patients taking csDMARDs (90% Methotrexate), and both groups showed the same average of age and gender distribution. Furthermore, AS patients complained significantly more often of back pain (96 % vs. 74%, $p=0.001$) than PsA patients. No differences in GC use or cumulative GC dose were found. All results could be confirmed when groups were matched by age and gender.

Conclusion: Our results demonstrate that patients with PsA display higher bone density compared to age and gender matched patients with ankylosing spondylitis. Possible influencing factors could be the higher frequency of csDMARD use, higher BMI or the lower frequency of back pain in PsA patients. Multivariate tests and additional biomarker investigations in larger cohorts are necessary to corroborate these findings and to identify underlying pathogenic differences which could serve for an explanation.

Disclosure of Interests: Desiree Freier: None declared, Edgar Wiebe: None declared, Robert Biesen: None declared, Thomas Buttgerit: None declared, Sandra Hermann: None declared, Timo Gaber: None declared, Frank Buttgerit Grant/research support from: Amgen, BMS, Celgene, Generic Assays, GSK, Hexal, Horizon, Lilly, medac, Mundipharma, Novartis, Pfizer, Roche, and Sanofi. DOI: 10.1136/annrheumdis-2020-eular.3566

SAT0373

QUANTITATIVE ASSESSMENT OF RESPONSIVENESS IN SACROILIAC JOINTS MRI OF PATIENTS WITH AXIAL SPONDYLOARTHRITIS: A PILOT STUDY.

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Background: The presence of inflammatory signals in sacroiliac joints (SIJ), using MRI, is used for early diagnosis of axial spondyloarthritis (axSpA)[1]. Some studies also demonstrate that this inflammation can be suppressed quite dramatically by TNF- α blockers. Different scoring methods to quantify inflammatory changes in SIJ using MRI have been defined and validated: SPARCC, Leeds, Berlin, and ASSPiMRI-a. However, its use is complex and subjective. Recently Zarco et al[2] developed a method to measure bone marrow edema (BME) in MRI images from SIJ. This method, in a semiautomatic procedure, allows to measure the area affected by inflammation and the signal intensity to produce an index: the SCAISS. A simplified version, the s-SCAISS, using only a semi-coronal slide, has been proposed with good validity and reliability results.

Objectives: To assess responsiveness of inflammation in SIJ of axSpA patients, treated with TNF- α inhibitors, using a novel score method: the s-SCAISS.

Methods: Two rheumatologists independently quantified SIJ images from axSpA patients by three methods (s-SCAISS, SPARCC and Berlin) on a single semi-coronal MRI slide (STIR). Patients were assessed before TNF- α therapy (PRE) and 3 months later (POST). Spearman correlations was used to analyze relationship between variables, Wilcoxon signed-rank test for significant differences and Cohen's d for calculating the effect size of improvement. Figure shows MRI images of a patient before and after treatment.

Results: 9 axSpA patients were recruited from the COSPAR cohort (44% female, age 47 ± 13 years, disease duration 18 ± 14 years, BMI 29 ± 4). Results PRE and POST are shown in Table: mean values (sd), statistical significance (NS, not significant; *, $p<0.05$; **, $p<0.01$), and Effect Size. In the first rows, different scoring system for MRI inflammation appears: Area analyzed by s-SCAISS, s-SCAISS, Berlin and SPARCC (using only a semi-coronal slide). Activity and functional indexes were lower with significant differences and a large effect size. Correlations of s-SCAISS with Berlin ($\rho=0.78$; $p<0.05$) and SPARCC ($\rho=0.96$; $p<0.001$) were good; with clinical disease activity outcomes were poor, except with BASDAS ($\rho=0.70$; $p<0.05$). The best correlation according improvements appeared comparing reduction of ASDAS with reduction of s-SCAISS ($\rho=0.57$) but this difference was not significant. Although improvements in BASMI was not significant, a good correlation was found between improvement in s-SCAISS and BASMI ($\rho=-0.72$; $p<0.05$).

	PRE	POST	Sign	E.S.
Area	71.33 (66.71)	20.89 (39.02)	**	0.86-Large
s-SCAISS	118.67 (114.6)	27.78 (51.09)	**	0.98-Large
BERLIN	2.33 (1.66)	0.67 (1.12)	**	1.14-Large
SPARCC	3.11 (2.26)	0.78 (1.39)	**	1.18-Large
CRP	13.1 (9.4)	4.1 (3.2)	**	0.90-Large
BASDAI	6.5 (1.7)	4.4 (2.7)	*	0.84-Large
BASFI	6.3 (2.6)	4.1 (3.4)	*	0.69-Medium
ASDAS	3.6 (1.0)	2.3 (1.2)	**	1.15-Large
BASDAS	3.7 (1.1)	2.6 (1.3)	*	0.96-Large
BASMI	3.6 (1.5)	3.3 (1.3)	NS

PRE: Area= 178; s-SCAISS=234
Berlin = 4 Sparc = 7

POST: Area= 72; s-SCAISS=100
Berlin = 3 Sparc = 2

Conclusion: Different methods exist for quantifying inflammation in MRI images of SIJ in axSpA patients. According to our preliminary results, all of them had significant improvements in axSpA patients treated with anti tnf- α . The s-SCAISS index show good responsiveness, with similar features to validated indexes, but with an accuracy assessment of the BME area.

References:

- [1] Defining active sacroiliitis on MRI for classification of axial spondyloarthritis: update by the ASAS MRI working group. *Annals of the Rheumatic Diseases* 2016;75:1958-1963.
- [2] Development and validation of SCAISS, a tool for semi-automated quantification of sacroiliitis by magnetic resonance in spondyloarthritis. *Rheumatol Int.* 2018 Oct;38(10):1919-1926.

Disclosure of Interests: Cristina Garrido-González: None declared, María del Carmen Castro Villegas: None declared, M Lourdes Ladehesa Pineda: None declared, Juan L. Garrido-Castro: None declared, Rafaela Ortega Castro: None declared, Cristina Gonzalez-Navas: None declared, Pedro Zarco-Montejo Speakers bureau: Abbvie, MSD, Novartis, Pfizer., RAQUEL ALMODOVAR Speakers bureau: Abbvie, Celgene, Janssen, Lilly, Novartis, Pfizer.

, Angel Bueno: None declared, Luis Miguel Molinero: None declared, Eduardo Collantes Estevez Grant/research support from: ROCHE and Pfizer, Speakers bureau: ROCHE, Lilly, Bristol and Celgene

DOI: 10.1136/annrheumdis-2020-eular.2558

SAT0374

ONSET OF AXIAL SPONDYLOARTHRITIS REPERCUSSIONS ON PATIENTS' SOCIAL AND FAMILY LIFE: RESULTS FROM THE EUROPEAN MAP OF AXIAL SPONDYLOARTHRITIS (EMAS)

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La Paz, Madrid, Spain; ⁴Cardiff University, Cardiff, United Kingdom; ⁵Axial Spondyloarthritis International Federation (ASIF), London, Spain; ⁶Cyprus League Against Rheumatism, Nicosia, Cyprus; ⁷Novartis Pharma AG, Basel, Switzerland; ⁸Charité – Universitätsmedizin Berlin, Berlin, Germany; ⁹German Rheumatism Research Centre, Berlin, Germany

Background: Axial Spondyloarthritis (axSpA) is associated with a high degree of functional limitation in daily life activities. However, few studies have evaluated the social and family burden from the patient's perspective.

Objectives: To describe the impact of axSpA on social and family life since disease onset, and the associated PROs.

Methods: Data from 2,846 unselected patients of the European Map of Axial Spondyloarthritis (EMAS) study through an online survey (2017-2018) across 13 European countries were analysed. The impact of axSpA on social and family life were assessed through four PROs: i) Impact on relationships with the spouse, family, friends, neighbours, and work colleagues since disease onset (5 point Likert scale; 1 "much better" – 5 "much worse"); ii) Frequency of social activities including outings to bars/restaurants, cinema/theatre/museums, practising sports, travel/excursions, and intimate relations since disease onset (5 point Likert scale; 1 "much more" – 5 "much less"); iii) Adaptations made to cope with axSpA since disease onset (yes/no question); iv) The degree of functional limitation in 18 daily activities (3 point Likert scale). Self-reported BASDAI (0-10), spinal stiffness (3-12), functional limitation (0-54), and psychological distress (GHQ-12) were analysed using Pearson's correlation comparing the impact on relationships and frequency of social activities since disease onset.

Results: Among 2,846 participants, mean age was 43.9 years, 61.3% were female, 48.1% had a university degree. The greatest impact on relationships (sum of 'worse' and 'much worse') since disease onset were those with work-colleagues (44.5%), friends (35.6%), and spouse (30.4%). Sport was the activity they reduced the most since disease onset (64.2%), followed by travel/excursions (57.3%) and intimate relationships (56.4%) (Fig. 1). 55.5% had purchased comfortable shoes (N = 2748) and 43.9% had made adaptations to their workplace (N = 2651). For those who reported their level of functional limitation in daily activities, the greatest limitations were in physical exercise (85.5%), cleaning the house (84.4%) and using stairs (79.2%) (Fig. 2). In the correlation analysis, BASDAI, spinal stiffness, functional limitation, GHQ-12 were associated with a worsening in all of relationships and social activities (p < 0.001) (Table 1).

Table 1. Pearson's correlation between social and family life changes and PROs

Relationships: 1 much better – 5 much worse	BASDAI	Spinal Stiffness	Functional Limitation	GHQ-12
Spouse	0.157*	0.130*	0.167*	0.258*
Family	0.162*	0.133*	0.138*	0.206*
Friends	0.211*	0.173*	0.180*	0.282*
Neighbours	0.210*	0.165*	0.112*	0.229*
Work colleagues	0.229*	0.153*	0.213*	0.334*
Frequency activities: 1 much more – 5 much less				
Bars / restaurants	0.261*	0.246*	0.314*	0.316*
Cinemas / theatres / museums	0.291*	0.243*	0.299*	0.338*
Do sports	0.271*	0.213*	0.240*	0.242*
Travel / excursions	0.308*	0.218*	0.307*	0.362*
Intimate relations	0.284*	0.254*	0.288*	0.321*

*p <0.001

Figure 1. Reported social and family live changes since disease outset

Figure 2. Reported level of functional limitation in daily live activities

Conclusion: For most participants the onset of axSpA marked the worsening of personal relationships in different areas, as well as the reduction of social, leisure, and entertainment activities.

Acknowledgments: Funded by Novartis Pharma AG

Disclosure of Interests: Marco Garrido-Cumbrera: None declared, Victoria Navarro-Compán Consultant of: Abbvie, Lilly, Novartis, Pfizer, UCB, Speakers bureau: AbbVie, MSD, Lilly, Novartis, Pfizer, UCB, Christine Bundy Grant/research support from: Has received unrelated honoraria from Abbvie, Celgene, Janssen, Lilly, Novartis, and Pfizer., Raj Mahapatra: None declared, Souzi Makri: None declared, Sergio Sanz-Gómez: None declared, Laura Christen: None declared, Carlos Jesús Delgado-Domínguez: None declared, Denis Poddubnyy Grant/research support from: AbbVie, MSD, Novartis, and Pfizer, Consultant of: AbbVie, Bristol-Myers Squibb, Eli Lilly, MSD, Novartis, Pfizer, Roche, UCB, Speakers bureau: AbbVie, Bristol-Myers Squibb, Eli Lilly, MSD, Novartis, Pfizer, Roche, UCB

DOI: 10.1136/annrheumdis-2020-eular.4293

SAT0375 DETERMINANTS OF PATIENT'S GLOBAL ASSESSMENT OF WELL-BEING IN EARLY AXIAL SPONDYLOARTHRITIS: 5-YEAR LONGITUDINAL DATA FROM THE DESIR COHORT.

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Background: A framework has been proposed to explain which disease outcomes impact quality of life or well-being in patients with axSpA; this was based on cross-sectional data and patients with radiographic axSpA.¹

Objectives: To investigate the determinants of patient's well-being over time, and the influence of contextual factors on these relationships 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. X-rays and MRI of the spine and SIJ were performed at baseline, 2, and 5 years. The outcome was BAS-G, the patient's global assessment of the disease impact on well-being. Generalized estimating equations (GEE) were used to test the relationship between potential explanatory variables from 5 domains (disease activity, physical function, spinal mobility, structural damage, spinal and SIJ inflammation) and BAS-G over 5 years. Longitudinal relationships were analysed using an autoregressive GEE model. Contextual factors (patient's educational level, gender and age) were tested as potential effect modifiers or confounders.

Results: A total of 708 patients were included, mean age 33.7 (SD 8.6) years, 46% male, 41% lower educated. Higher scores of the individual questions of BASDAI on fatigue (Q1) (β [95% CI]: 0.17 [0.13-0.22]), back pain (Q2) (0.51 [0.46-0.56]), peripheral joint pain (Q3) (0.08 [0.04-0.12]) and severity of morning stiffness (Q5) (0.08 [0.03-0.13]), and BASFI (0.14 [0.08-0.19]) were independently associated with a higher BAS-G over time (Table 1). In the autoregressive GEE model, all variables except for the BASDAI Q5 showed true longitudinal