Results: Overall, 562 pts (SEC: 150 mg, N=467; 300 mg, N=95) were analysed. The mean ASAS-NSAID score decreased with time in both dose groups. Greater improvements were observed in high NSAID users and with longer treatment exposure (Figure). Proportion of pts who achieved 50% reduction in ASAS-NSAID score increased with time in both SEC 150 and 300 mg groups. Proportion of pts with clinically meaningful reduction of ASAS-NSAID score <10 increased with time in both dose groups and in both low and high NSAID users (Table).

Table

	Time (years)	NSAID intake					
		Low (<0 ASAS-NSAID <75)		High (ASAS-NSAID ≥75)		Overall	
		SEC 150 mg (N=167)	SEC 300 mg ^a (N=37)	SEC 150 mg (N=300)	SEC 300 mg ^a (N=58)	SEC 150 mg (N=467)	SEC 300 mg ^a (N=95)
Proportion of pts who achieved 50% reduction from BL in ASAS-NSAID score, % (n/m)*	2	25 (38/154)	18 (6/33)	19 (50/267)	14 (7/49)	21 (88/421)	16 (13/82)
	3	23 (13/56)	21 (7/33)	26 (26/100)	17 (8/46)	25 (39/156)	19 (15/79)
	4	29 (7/24)	-	26 (14/54)	-	27 (21/78)	-
Proportion of pts with ASAS-NSAID score <10, % (n/m)*	2	39 (60/154)	33 (11/33)	12 (33/267)	12 (6/49)	22 (93/421)	21 (17/82)
	3	34 (19/56)	33 (11/33)	17 (17/100)	13 (6/46)	23 (36/156)	22 (17/79)
	4	38 (9/24)	-	20 (11/54)	-	26 (20/78)	-

*Observed data. #MEASURE 3 that evaluated 300 mg was only a 3 year study. N, total number of pts in the group; n, number of pts with response; m, number of evaluable pts

Conclusion: SEC provided sustained improvement in ASAS-NSAID score in AS pts and was associated with clinically relevant NSAID-sparing effect in AS pts, when used to measure NSAID intake up to 4 years of treatment. Overall, SEC provided long-term NSAID-sparing effects in both high and low NSAID users.

References:

- [1] Molto A, et al. *Joint Bone Spine*. 2017;84:79–82.
[2] Dougados M, et al. *Arthritis Res & Ther*. 2014;16:481.
[3] Dougados M, et al. *Ann Rheum Dis*. 2011;70:249–51.

Disclosure of Interests: Maxime Dougados Grant/research support from: AbbVie, Eli Lilly, Merck, Novartis, Pfizer and UCB Pharma, Consultant of: AbbVie, Eli Lilly, Merck, Novartis, Pfizer and UCB Pharma, Speakers bureau: AbbVie, Eli Lilly, Merck, Novartis, Pfizer and UCB Pharma, Uta Kiltz Grant/research support from: AbbVie, Amgen, Biogen, Novartis, Pfizer, Consultant of: AbbVie, Biocad, Eli Lilly and Company, Grünenthal, Janssen, Novartis, Pfizer, UCB, Speakers bureau: AbbVie, MSD, Novartis, Pfizer, Roche, UCB, Alan Kivitz Shareholder of: AbbVie, Amgen, Gilead, GSK, Pfizer Inc, Sanofi, Consultant of: AbbVie, Boehringer Ingelheim, Flexion, Genzyme, Gilead, Janssen, Novartis, Pfizer Inc, Regeneron, Sanofi, SUN Pharma Advanced Research, UCB, Paid instructor for: Celgene, Genzyme, Horizon, Merck, Novartis, Pfizer, Regeneron, Sanofi, Speakers bureau: AbbVie, Celgene, Flexion, Genzyme, Horizon, Merck, Novartis, Pfizer Inc, Regeneron, Sanofi, Karel Pavelka Speakers bureau: AbbVie, BMS, MSD, UCB, Medac, Egis, Pfizer, Roche, Biogen, Novartis, Susanne Rohrer Employee of: Novartis, Suzanne McCreddin Shareholder of: Novartis, Employee of: Novartis, Erhard Quebe-Fehling Shareholder of: Novartis, Employee of: Novartis, Brian Porter Shareholder of: Novartis, Employee of: Novartis, Zsolts Talloczy Shareholder of: Novartis, Employee of: Novartis

DOI: 10.1136/annrheumdis-2020-eular.824

THU0375

IMPROVEMENTS IN GLOBAL FUNCTIONING AND HEALTH-RELATED QUALITY OF LIFE AND THEIR ASSOCIATION WITH DISEASE ACTIVITY AND FUNCTIONAL IMPROVEMENT IN PATIENTS WITH ACTIVE ANKYLOSING SPONDYLITIS TREATED WITH UPADACITINIB: RESULTS FROM THE SELECT-AXIS 1 TRIAL

U. Kiltz¹, J. Sieper², A. Deodhar³, P. Zueger⁴, I. H. Song⁴, N. Chen⁴, D. Van der Heijde⁵. ¹Rheumazentrum Ruhrgebiet und Ruhr-University Bochum, Herne/Bochum, Germany; ²Charité Universitätsmedizin Berlin, Berlin, Germany; ³Oregon Health & Science University, Portland, United States of America; ⁴AbbVie Inc., North Chicago, United States of America; ⁵Leiden University Medical Center, Leiden, Netherlands

Background: Upadacitinib (UPA) has been shown to be effective in patients with active ankylosing spondylitis (AS) [1]. However, improvements in global functioning and health-related quality of life (HRQoL) in these patients, and their relationship with established clinical response measures have not been fully characterized.

Objectives: To evaluate the effect of UPA on the Assessment of SpondyloArthritis international Society Health Index (ASAS HI) and Ankylosing Spondylitis Quality of Life (ASQoL) questionnaire and quantify incremental improvements in ASAS HI and ASQoL response in patients achieving established AS disease activity and physical function improvements at Week (Wk) 14.

Methods: This was a post-hoc analysis of the SELECT-AXIS 1 trial [1]. Patients received either UPA 15 mg once daily or placebo (PBO) for 14 wks. Mean change in ASAS HI and ASQoL from baseline (BL) to Wks 4, 8 and 14 for UPA and PBO were calculated and UPA vs PBO responses were compared. Changes in ASAS HI and ASQoL above the minimum clinically important difference (MCID ≥3-point improvement for both measures) and ASAS HI 'good health state' (ASAS HI score ≤5) at Wk 14 were determined. Changes from BL in ASAS HI and ASQoL were assessed within the combined UPA and PBO group reaching established improvement thresholds across AS clinical response measures (ASAS response criteria, ASDAS improvement criteria, and BASFI MCID) at Wk 14. Mean ASAS HI and ASQoL changes across groups within each measure and magnitude of ASAS HI and ASQoL change between responders and non-responders were compared.

Results: UPA treatment resulted in significant improvement from BL in ASAS HI and ASQoL at Wk 14 with more patients achieving a MCID and ASAS HI good health state vs PBO (Table). Significant improvements were observed earlier for ASAS HI than for ASQoL, starting at Wk 4. At Wk 14, achievement of clinical improvement thresholds was associated with increasing improvements in both ASAS HI and ASQoL scores (Figures 1 and 2). The magnitude of improvement between the best and worst response categories was greater for ASAS HI than ASQoL: 43-fold vs 7-fold for ASAS response, 5-fold vs 3.8-fold for ASDAS improvement, and 34-fold vs 10.4-fold for BASFI MCID achievement.

Table. ASAS HI and ASQoL Outcomes at Week 14

Outcome	ASAS HI		ASQoL	
	UPA (n=93)	PBO (n=94)	UPA (n=93)	PBO (n=94)
LSM change from baseline	-2.8 ^a	-1.4	-4.2 ^a	-2.7
Achievement of MCID (≥3-point improvement) ^c , n/N (%)	38/85 (44.7) ^b	24/89 (27.0)	51/83 (61.4) ^b	37/86 (43.0)
ASAS HI good health state (ASAS HI score ≤5) ^d , n/N (%)	33/74 (44.6) ^b	15/71 (21.1)	NA	NA

^ap<0.05 vs PBO based on mixed-effects model for repeated measures

^bp<0.05 vs PBO based on Cochran-Mantel-Haenszel test with non-responder imputation

^cIn patients with ASAS HI/ASQoL score ≥3 at baseline

^dIn patients with ASAS HI >5 at baseline

LSM, least squares mean; NA, not applicable

Conclusion: UPA treatment in patients with active AS resulted in clinically meaningful improvements vs PBO in global functioning and HRQoL as measured by ASAS HI and ASQoL, with both measures showing discriminatory ability. Earlier UPA vs PBO response and greater magnitude of change across known clinical response groups suggests that ASAS HI may demonstrate greater responsiveness and ability to capture improvements in AS disease activity and physical function achieved with treatment.

References:

- [1] van der Heijde D, et al. *Lancet* 2019;394:2108–17.

Figure 1. Responsiveness of ASAS HI Scores by Measures of Clinical Response and Physical Function at Week 14

*p-value for difference in group means using analysis of variance.
Fold increase = Mean ASAS HI change for best clinical response category / Mean ASAS HI change for worst clinical response category.
^aSee table 1, et al. *J Rheumatol* 2019;46(1):160-6. CII: clinically important improvement; MCID: minimum clinically important difference; MI: major improvement.

Acknowledgments: Financial support for the study was provided by AbbVie. AbbVie participated in interpretation of data, review, and approval of the abstract. All authors contributed to development of the abstract and maintained control over final content. Medical writing services, provided by Joann Hettasch of JK Associates Inc., were funded by AbbVie.

Disclosure of Interests: Uta Kiltz Grant/research support from: AbbVie, Amgen, Biogen, Novartis, Pfizer, Consultant of: AbbVie, Biocad, Eli Lilly and Company, Grünenthal, Janssen, Novartis, Pfizer, UCB, Speakers bureau: AbbVie, MSD, Novartis, Pfizer, Roche, UCB, Joachim Sieper Consultant of: AbbVie, Boehringer Ingelheim, Eli Lilly and Company, Janssen, Merck, Novartis, Pfizer, Roche, and UCB Pharma, Speakers bureau: AbbVie, Boehringer Ingelheim, Eli Lilly and Company, Janssen, Merck, Novartis, Pfizer, Roche, and UCB Pharma, Atul Deodhar Grant/research support from: AbbVie, Eli Lilly, GSK, Novartis, Pfizer, UCB, Consultant of: AbbVie, Amgen, Boehringer Ingelheim, Bristol Myer Squibb (BMS), Eli Lilly, GSK, Janssen, Novartis, Pfizer, UCB, Speakers bureau: AbbVie, Amgen, Boehringer Ingelheim, Bristol Myer Squibb (BMS), Eli Lilly, GSK, Janssen, Novartis, Pfizer, UCB, Patrick Zueger Shareholder of: AbbVie, Employee of: AbbVie, In-Ho Song Shareholder of: AbbVie Inc., Employee of: AbbVie Inc., Naijun Chen Shareholder of: AbbVie Inc., Employee of: AbbVie Inc., Désirée van der Heijde Consultant of: AbbVie, Amgen, Astellas, AstraZeneca, BMS, Boehringer Ingelheim, Celgene, Cyxone, 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

DOI: 10.1136/annrheumdis-2020-eular.857

THU0376

THE EFFECT OF 8 YEARS OF TNF-A BLOCKING THERAPY ON BONE MINERAL DENSITY IN PATIENTS WITH ANKYLOSING SPONDYLITIS

M. Siderius^{1,2}, F. Wink^{1,2}, A. Spoorenberg^{1,2}, S. Arends^{1,2}. ¹University Medical Center Groningen, Rheumatology and Clinical Immunology, Groningen, Netherlands; ²Medical Center Leeuwarden, Rheumatology, Leeuwarden, Netherlands

Background: Ankylosing spondylitis (AS) is a chronic inflammatory disease that mainly affects the axial skeleton. Bone loss reflected by low bone mineral density (BMD) is a common feature of AS and can already be observed at early stages of the disease. A recent cohort study of 135 AS patients reported 7.2% improvement in lumbar spine BMD and 2.2% improvement in hip BMD after 4 years of tumor necrosis factor- α (TNF- α) blocking therapy.¹

Objectives: To assess the effect of 8 years of TNF- α blocking therapy on BMD of the lumbar spine and hip in AS patients.

Methods: Included in this study were consecutive AS outpatients from the Groningen-Leeuwarden Axial SpA (GLAS) cohort who received TNF- α blocking therapy for at least 8 years. A maximum of one switch to another TNF- α inhibitor was allowed. Patients were excluded when they used bisphosphonates at baseline or during follow-up. BMD of the lumbar spine (anterior-posterior projection L1-L4) (LS-BMD) and hip (total proximal femur) (hip-BMD) was measured at baseline, 1 year, 2 years and then bi-annually using dual-energy X-ray absorptiometry (Hologic QDR Discovery (UMCG) or Hologic QDR Delphi (MCL), Waltham, MA, USA). Z-scores, the number of SD from the normal mean corrected for age and gender, were calculated using the NHANES reference database. Low BMD was defined as lumbar spine and/or hip BMD Z-score ≤ 1 . Generalized estimating equations were used to analyze BMD over time within subjects. Pairwise contrast were used to compare baseline and follow-up visits. P values <0.05 were considered statistically significant.

Results: In total, 131 AS patients were included; 73% were male, 83% HLA-B27+, mean age was 41.3 ± 10.8 years, median symptom duration 14 years (IQR 7-24), median CRP levels 13 mg/L (IQR 6-22), and 28% had poor vitamin 25(OH)

D3 status (<50) at baseline. 27% of patients switched to a second TNF- α inhibitor during follow-up and disease activity improved significantly during treatment: mean ASDAS_{CRP} 3.8 ± 0.8 at baseline and 2.1 ± 0.9 after 8 years ($P<0.001$). At baseline, low BMD at the lumbar spine and hip was present in 34% and 19% patients, respectively. Both LS-BMD and hip BMD Z-scores were significantly improved during TNF- α blocking therapy at all follow-up visits compared to baseline. Significant improvement compared to the previous time point was found up to and including 4 years for the lumbar spine and up to and including 2 years for the hip. Thereafter, flattening of improvement was observed. Median percentage of improvement in absolute BMD after 8 years of TNF- α blocking therapy compared to baseline was 7.1% (IQR 0.8-13.5) for the lumbar spine and 1.6% (IQR -3.5-5.5) for the hip (Figure 1).

Conclusion: In AS patients with established disease, both lumbar spine and hip BMD improved significantly at group level during 8 years of TNF- α blocking therapy. This effect was most pronounced in the lumbar spine, which corresponds to the disease process in AS. Main improvements in lumbar spine BMD were observed during the first 4 years of treatment.

References:

- [1] Beek et al. J Bone Miner Res. 2019; jun;34(6):1041-8

Figure 1. Percentage improvement during 8 years of TNF- α blocking therapy on LS-BMD (A) and hip-BMD (B) in patients with AS (n=131). Box-and-whisker plots (Tukey): boxes indicate medians with interquartile ranges, + indicates mean; whiskers indicate 1.5 times interquartile distances; • indicate outliers.

Disclosure of Interests: Mark Siderius: None declared, Freke Wink Consultant of: AbbVie, Janssen, Anneke Spoorenberg: None declared, Suzanne Arends Grant/research support from: Grant/research support from Pfizer

DOI: 10.1136/annrheumdis-2020-eular.2189

THU0377

IMPACT OF FILGOTINIB ON STRUCTURAL LESIONS IN THE SACROILIAC JOINTS AT 12 WEEKS IN PATIENTS WITH ACTIVE AXIAL SPONDYLOARTHRITIS: MAGNETIC RESONANCE IMAGING DATA FROM THE DOUBLE-BLIND, RANDOMIZED TORTUGA TRIAL

W. P. Maksymowych¹, M. Østergaard², R. B. M. Landewé³, W. Barchuk⁴, K. Liu⁴, C. Tasset⁵, L. Gilles⁶, T. Hendriks⁷, R. Besuyen⁸, X. Baraliakos⁹. ¹University of Alberta, Edmonton, Canada; ²Rigshospitalet, University of Copenhagen, Copenhagen, Denmark; ³Maastricht University Medical Center, Maastricht, Netherlands; ⁴Gilead Sciences, Inc., Foster City, CA, United States of America; ⁵Galapagos NV, Mechelen, Belgium; ⁶LACO, contracted by Galapagos NV, Mechelen, Belgium; ⁷Galapagos BV, Leiden, Netherlands; ⁸Ruhr-University Bochum, Herne, Germany

Background: Filgotinib, an oral selective Janus kinase (JAK) 1 inhibitor, reduced disease activity and improved symptoms and inflammation of the sacroiliac joint (SIJ) and spine in patients with active axial ankylosing spondylitis (AxSpA) in the Phase 2 TORTUGA trial (NCT03117270).¹ The effects of JAK inhibitors on structural lesions in active AxSpA are unknown and optimal methods for image analysis of structural disease progression are not established.

Objectives: The aim of this post hoc analysis was to evaluate the effects of filgotinib on magnetic resonance imaging (MRI) measures of structural changes in the SIJ in patients from the TORTUGA trial, as assessed by Spondyloarthritis Research Consortium of Canada (SPARCC) SIJ Structural Scores (SSS).

Methods: TORTUGA was a multicenter, double-blind, randomized trial of 116 patients with active AxSpA treated with filgotinib 200 mg (n=58) or placebo (n=58) once daily for 12 weeks. MRI was conducted at baseline and Week 12 (or early discontinuation visit). MRIs were re-evaluated post hoc by two independent experts (blinded to time point and assigned treatment) to determine SPARCC SSS; inter-reader discrepancies were resolved by an independent adjudicator. Observed changes from baseline were evaluated using analysis of covariance