Deodhar Speakers bureau: AbbVie, Amgen, Boehringer Ingelheim, Bristol-Myers Squibb, Eli Lilly, GSK, Janssen, Novartis, Pfizer, and UCB, Consultant of: AbbVie, Amgen, Boehringer Ingelheim, Bristol-Myers Squibb, Eli Lilly, GSK, Janssen, Novartis, Pfizer, and UCB, Grant/research support from: AbbVie, Eli Lilly, GSK, Novartis, Pfizer, and UCB, R Ranza Speakers bureau: AbbVie, Janssen, Novartis, and Pfizer, Consultant of: AbbVie, Janssen, Novartis, and Pfizer, Simona Rednic: None declared, francesco ciccia Speakers bureau: AbbVie, Bristol-Myers Squibb, Celgene, Novartis, Pfizer, UCB, and Werfen, Consultant of: AbbVie, Bristol-Myers Squibb, Celgene, MSD, Novartis, Pfizer, and UCB, Grant/research support from: AbbVie, Celgene, Chugai, Pfizer, and UCB, Fabiana Ganz Shareholder of: May own stock or options in AbbVie, Employee of: AbbVie, Tianming Gao Shareholder of: May own stock or options in AbbVie, Employee of: AbbVie, Apinya Lertratanakul Shareholder of: May own stock or options in AbbVie, Employee of: AbbVie, In-Ho Song Shareholder of: May own stock or options in AbbVie, Employee of: AbbVie, Andrew Ostor Speakers bureau: AbbVie, Bristol-Myers Squibb, Eli Lilly, Gilead, MSD, Novartis, Pfizer, and Roche, Consultant of: AbbVie, Bristol-Myers Squibb, Eli Lilly, Gilead, MSD, Novartis, Pfizer, and Roche, Laura C Coates: None declared.

DOI: 10.1136/annrheumdis-2021-eular.2105

Clinical aspects of spondyloarthritis

POS0236

COMPARISON OF WORK PRODUCTIVITY OUTCOMES BETWEEN CHRONIC BACK PAIN PATIENTS WITH AND WITHOUT A DIAGNOSIS OF AXIAL SPONDYLOARTHRITIS AFTER 2-YEAR PROTOCOLISED FOLLOW-UP: DATA FROM THE SPONDYLOARTHRITIS CAUGHT EARLY COHORT

A. Boel¹, M. Van Lunteren¹, K. M. Fagerli², R. Ramonda³, S. Exarchou⁴, M. Van de Sande⁵, F. A. Van Gaalen¹, D. Van der Heijde¹. ¹Leiden University Medical Centre, Rheumatology, Leiden, Netherlands; ²Diakonhjemmet Hospital, Rheumatology, Oslo, Norway; ³University of Padova, Rheumatology Unit, Padova, Italy; ⁴Lund University, Clinical Sciences, Section of Rheumatology, Malmö, Sweden; ⁵Amsterdam University Medical Center, Rheumatology and Clinical Immunology, Amsterdam, Netherlands

Background:

Objectives: To compare work-productivity and activity impairment outcomes between chronic back pain (CBP) patients with and without an axSpA diagnosis after two years of protocolised follow-up.

Methods: Work productivity was assessed using the Work Productivity and Activity Impairment (WPAI) general health version 1.0 questionnaire. Presenteeism was defined as a reduction in performance due to disease while at work; absenteeism was time missed from work due to disease; work productivity loss (WPL) was a combined measure of presenteeism and absenteeism; and activity impairment was impairment due to disease in all non-work related activities. All WPAI outcomes were presented as percentages; higher scores implying greater impairment. Additionally, the proportion of patients with any (>0%) absenteeism, presenteeism, WPL and activity impairment were given.

This study used data from the SPACE cohort, which consists of patients with CBP (≥ 3 months <2 years) suspected of axSpA. Analyses were restricted to patients with a diagnosis axSpA or no axSpA (CBP group) with a level of confidence ≥ 7 (on a 0-10 scale) after locally read imaging. Additionally, data had to be available on the WPAI questionnaire at both timepoints. Assessment of presenteeism, absenteeism and WPL was restricted to the working population, defined as having paid work at baseline and 2-year follow-up. Activity impairment was assessed for the entire study population.

Regression models were used to test the difference between groups at two-year follow-up for all WPAI variables. Baseline WPAI values and NSAID-use over time were tested as confounders.

Results: Patients with a diagnosis of axSpA were more frequently male (56% vs 30%) and HLA-B27 positive (73% vs 31%) and had more SpA features at baseline compared to the patients with CBP [mean (SD) 5(2) vs 3(1)]. Age, symptom duration, NSAID-use and the percentage of patients with paid work at baseline were similar between groups.

The population having paid work at baseline and 2 years consisted of 124 patients (69%) in the axSpA group and 52 patients (70%) in the CBP group. In both groups the proportion of patients with any as well as the mean WPL reduces. This reduction was apparent in both presenteeism and absenteeism. Nevertheless, presenteeism, WPL and activity impairment were significantly higher at two-year follow-up in the group with CBP (Table 1). In these regression models with baseline values and NSAID-use over time as covariates, axSpA was an independent predictor of lower presenteeism, WPL and activity impairment at two-year follow-up.

Table 1. Work-productivity outcomes at baseline and two-year follow-up for the group with a diagnosis of axSpA and the group without a diagnosis.

	Diagnosis axSpA	CBP	p-values
	Baseline 2 years	Baseline 2 years	between groups at 2yrs
Working population	N=124	N=52	
Presenteeism, mean (SD) %	31 (28)	40 (29)	p=0.003*
Presenteeism present, %	73	87	
Absenteeism, mean (SD) %	7 (18)	12 (25)	p=0.334
Absenteeism present, %	22	27	
Overall work impairment, mean (SD) %	33 (29)	43 (30)	p=0.005*
Overall work impairment present, %	72	87	
Total population	N=181	N=74	
Activity impairment, mean (SD) %	38 (28)	50 (29)	p=0.001*
Activity impairment, n(%)	86	93	

* Significant difference between groups at two years; after correction for baseline values and NSAID use over time† Significant improvement within group over time

Conclusion: Despite significant improvements in both groups, patients with axSpA have significantly better work-related outcomes after two years of protocolised follow-up compared to those without axSpA.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.351

POS0237

GUT DYSBIOSIS LINKED TO WORSE DISEASE STATUS IN AXIAL SPONDYLOARTHRITIS

J. Sagard^{1,2}, T. Olofsson^{1,2}, E. Mogard^{1,2}, J. Marsal^{3,4}, K. Andréasson^{1,2}, M. Geijer^{5,6,7}, L. E. Kristensen^{1,8}, E. Lindqvist^{1,2}, J. K. Wallman^{1,2}. ¹Lund University, Department of Clinical Sciences Lund, Rheumatology, Lund, Sweden; ²Skåne University Hospital, Department of Rheumatology, Lund, Sweden; ³Lund University, Department of Immunology, EMV, Lund, Sweden; ⁴Skåne University Hospital, Department of Gastroenterology, Lund, Sweden; ⁵University of Gothenburg, Sahlgrenska Academy, Institute of Clinical Sciences, Department of Radiology, Gothenburg, Sweden; ⁶Sahlgrenska University Hospital, Department of Radiology, Gothenburg, Sweden; ⁷Lund University, Department of Clinical Sciences, Lund, Sweden; ⁸Copenhagen University Hospital, Frederiksberg and Bispebjerg, Parker Institute, Department of Rheumatology, Copenhagen, Denmark

Background: Based on clinical and genetic associations, axial spondyloarthritis (axSpA) and inflammatory bowel disease (IBD) are suspected to have a linked pathogenesis. Gut dysbiosis, intrinsic to IBD, has also been observed in axSpA. It is, however, not established to what degree gut dysbiosis is associated with axSpA disease severity.

Objectives: To compare presence and degree of gut dysbiosis between axSpA patients and controls, and to explore whether gut dysbiosis is associated with axSpA disease activity, function and pain.

Methods: The GA-map Dysbiosis Test (Genetic Analysis, Oslo, Norway) was used to identify and grade gut dysbiosis based on faecal samples from 44 non-radiographic axSpA (nr-axSpA; ASAS criteria) and 88 ankylosing spondylitis (AS; modified New York criteria) patients without IBD, consecutively enrolled in a population-based cohort study, and from 46 controls without rheumatic disease or IBD (frequency-matched to the patients for age/sex). The GA-map Dysbiosis Test is a validated method grading microbiota aberration on a 1-5 scale (Dysbiosis Index, DI), where ≥ 3 denotes dysbiosis. Analysis of covariance (ANCOVA) was used to compare DI between axSpA patients (nr-axSpA and AS combined) and controls, adjusted for age, sex, body mass index (BMI) and smoking. Within the axSpA group, disease activity (ASDAS-CRP; BASDAI), function (BASFI) and pain (VAS pain) were compared between patients with various DI levels by One-way analysis of variance (ANOVA) or Kruskal-Wallis test, as appropriate. Finally, axSpA patients were subdivided by presence of dysbiosis (DI ≥ 3 vs. <3) followed by comparison of ASDAS-CRP, BASDAI, BASFI, VAS pain and Evaluator's global assessment of disease activity (EvalGlobal; 0-4: remission-maximal) by ANCOVA. Analyses were conducted unadjusted and adjusted for age, sex, BMI, smoking, axSpA subtype, gut inflammation (faecal calprotectin ≥ 50 mg/kg), irritable bowel syndrome symptoms (ROME III criteria), ASAS 3-month NSAID score and cs/bDMARD treatment.

Results: Characteristics of the patients/controls are shown in the Table 1. Gut dysbiosis (DI ≥ 3) was observed in 33% of axSpA patients and 17% of controls. DI was significantly higher among the patients (β -estimate [bootstrapped 95%CI] for the between-group difference: 0.34 [0.04-0.65]; p=0.027). In the axSpA group, higher DI was associated with worse scores in all assessed outcomes (Figure 1, panel A). Moreover, presence of dysbiosis (DI ≥ 3) was associated with worse ASDAS-CRP, BASDAI, BASFI, VAS pain and EvalGlobal (Figure 1, panel B; EvalGlobal not shown in the Figure: unadjusted β [bootstrapped 95%CI]: 0.32 [0.09-0.55], adjusted: 0.28 [0.03-0.52] for patients with DI ≥ 3 vs. <3), with between-group differences remaining significant after adjustment, except for ASDAS-CRP (p=0.079) and VAS pain (p=0.064).

Conclusion: Gut dysbiosis, present to a higher degree in axSpA patients than controls, is associated with worse axSpA disease activity and function. These

associations appear independent of gut inflammation and both NSAID and immunomodulatory treatment. This provides further evidence for an important link between disturbances in gastrointestinal homeostasis and axSpA manifestations, and implies that gut dysbiosis may be a novel biomarker for severe disease.

Table 1.

	All patients n=132	Nr-axSpA n=44	AS n=88	Controls n=46
Male sex, n (%)	72 (55)	17 (39)	55 (63)	23 (50)
Age, y	53 (13)	48 (12)	55 (13)	51 (14)
Symptom duration, y	26 (14)	21 (11)	28 (14)	
Body mass index, kg/m ²	27 (4.3)	27 (4.2)	27 (4.3)	25 (3.3)
Smoking ever, n (%)	43 (33)	9 (20)	34 (39)	13 (28)
CRP, mg/L	3.7 (5.3)	2.3 (2.4)	4.3 (6.1)	
F-Calprotectin ≥50 mg/kg, n (%)	46 (35)	12 (27)	34 (39)	
Evaluator's global, 0-4, median (IQR)	1 (0-1)	1 (0-1)	1 (0-1)	
ASDAS-CRP	1.8 (0.9)	1.9 (0.9)	1.8 (0.9)	
BASDAI	3.1 (2.2)	3.3 (1.9)	3.0 (2.4)	
BASFI	2.0 (2.1)	2.0 (1.7)	2.1 (2.2)	
VAS pain, cm	3.3 (2.5)	3.4 (2.2)	3.2 (2.7)	
IBS symptoms, n (%)	43 (33)	15 (34)	28 (32)	
ASAS 3-month NSAID score	37 (44)	36 (44)	37 (44)	
Ongoing csDMARD, n (%)	24 (18)	9 (20)	15 (17)	
Ongoing bDMARD, n (%)	56 (42)	19 (43)	37 (42)	

Mean (SD) unless otherwise specified. y, years; IBS, irritable bowel syndrome

Disclosure of Interests: Jonas Sagard: None declared, Tor Olofsson Consultant of: Eli Lilly, Merck Sharp & Dohme, Elisabeth Mogard: None declared, Jan Marsal Consultant of: AbbVie, Bristol-Myers Squibb, EuroDiagnostica, Ferring, Hospira, Janssen-Cilag, Merck, Sharp & Dohme (MSD), Otsuka, Pfizer, Sandoz, Takeda, Tillotts, UCB Pharma, Grant/research support from: AbbVie, Ferring, and Pfizer, Kristofer Andréasson: None declared, Mats Geijer Speakers bureau: UCB Pharma, AbbVie, Novartis, Pfizer, Lars Erik Kristensen Speakers bureau: Pfizer, AbbVie, Amgen, UCB, Celgene, BMS, MSD, Novartis, Eli Lilly, Janssen pharmaceuticals, Consultant of: Pfizer, AbbVie, Amgen, UCB, Celgene, BMS, MSD, Novartis, Eli Lilly, Janssen pharmaceuticals, Elisabet Lindqvist: None declared, Johan K Wallman Consultant of: Celgene, Eli Lilly, Novartis

Figure 1. AxSpA outcomes in relation to Dysbiosis Index (DI, a measure of gut microbiota aberration, with ≥3 denoting dysbiosis). P-values for overall between-group differences (One-way ANOVA; * Kruskal-Wallis test). B: Between-group differences (unadjusted and adjusted) in axSpA outcomes between patients with gut dysbiosis (DI≥3) vs. those without. * Bootstrapped 95%CI:s.

DOI: 10.1136/annrheumdis-2021-eular.472

POS0238

SICK LEAVE AND ITS PREDICTORS IN EARLY AXIAL SPONDYLOARTHRITIS: THE ROLE OF CLINICAL AND SOCIOECONOMIC FACTORS. FIVE-YEAR DATA FROM THE DESIR COHORT

E. Nikiphorou^{1,2}, P. Carvalho^{3,4,5}, A. Boonen^{6,7}, B. Fautrel⁸, P. Richette⁹, P. M. Machado¹⁰, D. Van der Heijde¹¹, R. B. M. Landewé^{12,13}, S. Ramiro^{11,12}. ¹King's College London, Centre for Rheumatic Diseases, London, United Kingdom; ²King's College Hospital NHS Trust, Rheumatology, London, United Kingdom; ³Centro Hospitalar Universitário do Algarve, Rheumatology, Faro, Portugal; ⁴Centro Académico Médico de Lisboa, Rheumatology, Lisboa, Portugal; ⁵Algarve Biomedical Center, Rheumatology, Faro, Portugal; ⁶Maastricht University Medical Center and Care and Public Health Research Institute (CAPHRI), Rheumatology, Maastricht, Netherlands; ⁷Academic Hospital Maastricht, Internal Medicine, Div. of Rheumatology, Maastricht, Netherlands; ⁸Sorbonne University – Assistance Publique Hôpitaux de Paris, Pitié Salpêtrière Hospital, Pierre Louis Institute for Epidemiology and Public Health, INSERM UMRS 1136, PEPITES Teams, Rheumatology, Paris, France; ⁹Université de Paris, Hôpital Lariboisière, Rheumatology, Paris, France; ¹⁰University College London, Centre for Rheumatology, London, United Kingdom; ¹¹Leiden University Medical Center (LUMC), Rheumatology, Leiden, Netherlands; ¹²Zuyderland MC, Rheumatology, Heerlen, Netherlands; ¹³Amsterdam University Medical Center, Rheumatology, Amsterdam, Netherlands

Background: Sick leave (SL) represents an often poorly studied adverse work outcome especially in early axSpA, with speculation around the potential role of clinical and socioeconomic (SE) factors.

Objectives: To investigate the occurrence of SL and the impact of clinical and SE factors on SL in early axSpA.

Methods: Patients with a clinical diagnosis of axSpA from the DESIR cohort up to 5 years of follow-up (6-month visits in the first 2 years, followed by annual visits) were studied. Time to SL and potential baseline and time-varying predictors were explored, with a focus on SE variables: age, gender, smoking status since last visit, ethnicity (Caucasian vs other), job type based on 'collar' (blue vs white), educational status (low vs high-university), marital status (married vs not) and parental status (number of children); and clinical factors including disease activity (ASDAS/BASDAI), function (BASFI), mobility (BASMI), at each time point. The incidence of SL was calculated as the number of SL events over the total number of person-days under observation. Univariable analyses, followed by collinearity and interaction tests, guided subsequent multivariable Cox survival model building.

Results: In total, 704 axSpA patients with work-related data were included in this study: mean (SD) age 33.8 (8.6); 46% male. At baseline, 80% of patients were employed; of these, 5.7% reported being on SL, with people shifting in and out of different work states over time. The distribution of first and recurrent SL episodes over time is shown in the figure 1. The incidence of SL amongst those at risk (n=620, 88%) and across the five years of DESIR was 0.05 (95% CI 0.03, 0.06) per 1000 days calculated in a total of 913,559 observed person-days. In survival analyses, 7% (n=43) of those at risk developed SL at some point. Mean (SD) time to SL was 806 (595) days (min 175, max 2021 days). In people who developed SL, 25% did so at 364 days; 50% and 75% at 545 and 1172 days, respectively. Significant differences were seen between baseline socio-demographic, clinical variables and treatment in patients who developed SL at any point, compared to those who did not. In multivariable models (Table 1) older age, higher disease activity, smoking and use of TNFi, the latter likely a proxy to worse disease, were all significantly associated with more SL. Male gender and higher education were associated with less SL. There were no relevant interactions between SE factors and clinical variables.

Figure 1. Distribution of first and recurrent sick leave episodes over time in the study population at risk.

Table 1. Univariable and multivariable model analyses with Sick Leave as outcome.

Type of analysis	Univariable analysis HR (95% CI)	Multivariable model HR (95% CI) (N = 614)
Explanatory variables		
Age	1.04 (1.01, 1.08)	1.05 (1.01, 1.09)
Male gender	0.37 (0.19, 0.74)	0.41 (0.20, 0.86)
High education	0.33 (0.17, 0.61)	0.48 (0.24, 0.95)
Marital status	2.44 (1.12, 5.27)	NS
ASDAS (CRP)	1.83 (1.34, 2.50)	1.49 (1.04, 2.13)
BASFI, 0-10	1.24 (1.09, 1.40)	*
BASMI, 0-10	1.76 (1.31, 2.38)	*
Comorbidity count	1.77 (1.22, 2.57)	NS
HLA-B27 positive	0.51 (0.28, 0.93)	NS
Smoking (current vs not)	2.40 (1.31, 4.37)	2.55 (1.32, 4.91)
NSAID score last week, 0-400	1.01 (1.00, 1.01)	NS
Oral Corticosteroid use (vs no)	3.90 (1.80, 8.46)	NS
TNF use	2.86 (1.55, 5.28)	2.41 (1.27, 4.58)

*Variables tested in models separate from ASDAS. NS=Not significant in multivariable model.

Conclusion: In this early axSpA cohort of young, working-age individuals, older age and worse disease activity were associated with more SL, whereas male gender and higher education were associated with less SL. The findings suggest a role of SE factors such as gender and level of education in adverse work outcomes, alongside active disease.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2021-eular.723

POS0239

ROOT JOINT INVOLVEMENT IN SPONDYLOARTHRITIS: A POST-HOC ANALYSIS FROM THE INTERNATIONAL ASAS-PERSPA STUDY

N. Ziade¹, J. El-Hajj², J. Rassi^{3,4}, S. Hlais^{5,6}, C. López-Medina^{7,8}, S. Gamal⁹, B. Zorkany^{9,10}, M. Dougados⁷, X. Baraliakos¹¹. ¹Saint-Joseph University, Rheumatology, Beirut, Lebanon; ²Saint-Joseph University, Medicine, Beirut, Lebanon; ³Saint-Joseph University, Surgery, Beirut, Lebanon; ⁴Hôtel-Dieu de France, Orthopedic Surgery, Beirut, Lebanon; ⁵Saint-Joseph University, Family Medicine, Beirut, Lebanon;