peripheral lymphocyte phenotyping using 8-colour flow cytometry, with specific focus on helper T cell subsets, between 26 patients with PsA and healthy donors. In addition, the therapeutic response of 26 patients in whom the optimal bDMARDs was strategically chosen based on the results of peripheral lymphocyte analysis was evaluated at 6 months of treatment intervention in comparison with 38 patients in whom the standard biological product was used based on the 2011 and 2015 EULAR recommendations. Thus, the possibility of the optimisation of drug selection for bDMARDs therapy based on peripheral blood lymphocyte phenotyping was investigated.

Results: The 26 patients with PsA in the strategic treatment group were classified into the following 4 types based on the peripheral blood analysis: a CXCR3⁺CCR6⁺CD38⁺HLA-DR⁺ activated Th1 cell-predominant type, CXCR3⁺CCR6⁺CD38⁺HLA-DR⁺ activated Th17 cell-predominant type, Th1/Th17-high type, and Th1/Th17-low type. Accordingly, ustekinumab was administered to the activated Th1 cell-predominant patients, secukinumab to the activated Th17 cell-predominant patients, secukinumab or TNF inhibitor to the Th1/Th17-high patients, and TNF inhibitor to the Th1/Th17-low patients. At 6 months of strategic treatment, there was a significant decrease in SDAI (from 16.2 to 3.52), DAS28 (ESR) (from 4.13 to 2.27), and PASI (from 8.36 to 2.40). There were no statistically significant differences in background factors at baseline between these 2 groups. Moreover, the proportion of patients with the combined use of MTX was significantly lower in the strategic bDMARDs treatment group. There were significant decreases in TJC, SJC, PGA, CRP, ESR, DAS28 (ESR), SDAI, and PASI in both groups at 6 months of therapy. There were no significant differences in the amounts of these decreases between the two groups. However, at 6 months of therapy, the rate of low disease activity achievement according to SDAI, DAS28 (ESR), and ACR20 response rate was significantly higher in the strategic bDMARDs treatment group.

Conclusions: Strategic treatment in which different bDMARDs were selected according to phenotypic differences in helper T cells showed significantly higher efficacy than standard bDMARD therapy. The results of this study provide an important guide to the implementation of more effective therapeutic intervention.

Disclosure of Interest: None declared

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The art of diagnosis of axial SpA

OP0322

ARE WE TREATING WITH BIOLOGICAL THERAPIES WOMEN PATIENTS WITH REAL NON-RADIOGRAPHIC AXIAL SPONDYLOARTHRITIS?

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Background: As a result of the development of the ASAS criteria for axial spondyloarthritis (axSpA), a new entity (non-radiographic axSpA –nr-axSpA) was created. In some countries major concerns have been raised with regard to this entity because this could imply administering TNF inhibitors (TNFi) to non-SpA patients. Especially the possibility of treating women with fibromyalgia has been mentioned.

Objectives: To evaluate if the gender distribution and the pattern of patients have changed in clinical practice since TNFi were approved for nr-axSpA.

Methods: Dataset from a prospective cohort including all patients with axSpA treated with biological therapy (BT) since 2000 till August-2017 in a tertiary hospital was analysed. Patients' and disease' characteristics and disease activity parameters were collected at baseline. Based on the starting date for the first BT, patients were classified in two groups: i) before 2013 and ii) during or after 2013, since the nr-axSpA approval-date for TNFi in the country was July 2012. Gender distribution and other characteristics were compared between both groups using Chi-square and Student-t tests.

Results: In total, 385 axSpA patients initiated BT. Out of these, 266 initiated BT in period i) and 119 in period ii). The characteristics of patients in both groups are depicted in table 1. Importantly, no differences between period i) and ii) were observed regarding gender distribution (38% and 39% of women; $p=0.8$, respectively). Additionally, during period ii), the percentage of patients with nr-axSpA was similar for both genders and out of all patients with nr-axSpA, the majority (60%) were men. Overall, disease duration was shorter in period ii) for both genders. Women in period ii) had significantly higher ASDAS, BASMI and CRP than women in period i) and higher ASDAS, BASDAI and BASFI than men in period ii).

Abstract OP0322 – Table 1 Patients characteristics stratified for starting first TNFi period and gender

	2000-2012			2013-2017		
	Total n=266	Males n=164	Females n=102	Total n=119	Males n=72	Females n=47
Age, yrs mean (SD)	43.7 (11.9)	43.7 (11.4)	43.6 (12.8)	45.1 (14.1)	43.9 (13.8)	47.0 (14.5)
Smokers %	44	47	39	49	47	51
Disease duration, months median (IQR)	61.0 (125.0)	63.5 (136.5)	55.5 (118.0)	51.0 (119.0)	62.5 (139.5)	49.0 (106.0)
HLA-B27 %	60	65	54	57	57	57
BASDAI median (IQR)	6.0 (2.3)	5.7 (2.5)	6.9 (2.4)	6.0 (2.4)	5.8 (2.2)*	6.5 (2.6)*
ASDAS mean (SD)	3.3 (0.9)	3.3 (1.0)	3.3 (0.9)	3.4 (1.0)	3.2 (1.0)*	3.6 (1.4)*
BASFI median (IQR)	5.0 (3.8)	4.9 (3.7)	5.3 (3.0)	4.7 (3.8)	4.3 (4.1)*	5.7 (2.9)*
BASMI median (IQR)	2.1 (2.2)	2.4 (2.4)	2.0 (1.4)*	2.4 (2.0)	2.2 (2.2)	2.7 (1.7)*
CRP median (IQR)	4.1 (10.1)	4.3 (6.8)	3.2 (7.4)*	7.5 (16.7)	6.8 (17.0)	10.2 (21.9)*
PtGA median (IQR)	69 (30.0)	67 (30.0)	70 (30.0)	70 (30.0)	70 (30.0)	70 (30.0)
PGA median (IQR)	45 (40.0)	40 (40.0)	50 (40.0)	45 (30.0)	40 (30.0)	45 (30.0)
Peripheral involvement, %	43	35	57	48	46	51
DMARDs, %	49	47	51	51	46	60
Nr-axSpA, %	-	-	-	51	50	53

* $p<0.05$

Conclusions: In clinical practice, the frequency of women initiating BT have not increased since its approval for nr-axSpA. Additionally, women treated nowadays with BT have more objective parameters of disease activity than they used to do. This supports that when treating axSpA women (including nr-axSpA) with BT, we are currently treating axSpA -and not fibromyalgia- patients.

Disclosure of Interest: None declared

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OP0323

ARE GENDER-SPECIFIC APPROACHES NEEDED IN DIAGNOSING EARLY AXIAL SPONDYLOARTHRITIS? DATA FROM THE SPONDYLOARTHRITIS CAUGHT EARLY COHORT

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Background: Although gender differences have been observed in the severity of axial spondyloarthritis (axSpA), gender differences in disease presentation of early axSpA have not been thoroughly investigated.

Objectives: Our aim was to assess if the disease presents differently in males and females, and to evaluate if this has an impact on the diagnostic process.

Methods: Baseline data from the SPondyloArthritis Caught Early cohort, which includes patients with chronic back pain (CBP; ≥ 3 months, ≤ 2 years, onset < 45 years), were analysed. Patients underwent a full diagnostic workup, including MRI and radiograph of the sacroiliac joints (MRI-SIJ and X-SIJ), to establish a diagnosis of axSpA. Characteristics of male and female patients with a definite diagnosis of axSpA (based on a level of confidence about the diagnosis ≥ 7 , as expressed by the physician on a 0–10 rating scale) were compared. Regression models were built for 1) the whole CBP cohort stratified by gender to study which SpA features were associated most with diagnosis in each gender, and 2) for axSpA patients to test if gender was associated with imaging positivity (MRI SIJ+and/or X-SIJ+).

Results: Of the 719 CBP patients, 275 were male. With 146/275 (53.1%) males and 155/444 (34.9%) females diagnosed as axSpA, males were more likely to be diagnosed with axSpA (OR 2.1, 95% CI: 1.5 to 2.9). Despite similar symptom duration, male axSpA patients were younger at diagnosis (27.4 ± 7.5 vs 29.5 ± 7.8 years; $p=0.021$). Presence of SpA features was similar in male and female axSpA patients (table 1) except for HLA-B27 and imaging positivity, which were more common in male axSpA patients (HLA-B27 +80% vs 60%; $p<0.0001$ and positive imaging 78% vs 64%; $p=0.007$). Nevertheless, both these SpA features were still more prevalent in female axSpA patients than in non-axSpA patients, either females (HLA-B27 +23% and imaging 7%) or males (HLA-B27 +34% and positive imaging 11%) (all $p<0.001$). Moreover, in multivariable models with diagnosis as

outcome, HLA-B27 and imaging positivity were associated with a diagnosis of axSpA in both sexes (male patients: HLA-B27+: OR 3.8, 95% CI: 1.7 to 8.8; MRI-SIJ+: OR 24.3, 95% CI: 9.7 to 60.6; X-SIJ+: OR 2.7, 95% CI: 0.7 to 9.4 and female patients: HLA-B27+: OR 6.7 95% CI: 3.2 to 14.0; MRI-SIJ+: OR 32.6 95% CI: 14.2 to 75.0; X-SIJ+: OR 6.9 95% CI: 1.4 to 32.7). In models with imaging positivity as the outcome, male gender and HLA-B27 positivity were both independently associated with MRI+and/or X-SI+ (OR 1.8, 95% CI: 1.0 to 3.1 and OR 1.8 (1.0–3.3).

Abstract OP0323 – Table 1 Characteristics of patients with a definite diagnosis of axial spondyloarthritis (level of confidence $\geq 7/10$), comparison between genders (n=301)

	Male N=146	Female N=155	p-value
Age at CBP onset (years), mean (SD)	27.4 (7.5)	29.5 (7.8)	0.021
Duration BP (months), mean (SD)	13.3 (7.1)	13.4 (7.0)	0.49
Alternating buttock pain	65 (60)	64 (51)	0.15
IBP	123 (84)	129 (84)	0.98
Response to NSAIDs	92 (64)	98 (66)	0.79
Family history of SpA	68 (47)	69 (45)	0.79
Peripheral arthritis	37 (25)	34 (22)	0.52
Heel enthesitis	46 (31)	51 (33)	0.73
Dactylitis	16 (11)	16 (10)	0.87
Uveitis	19 (13)	20 (13)	0.98
Psoriasis	22 (15)	37 (24)	0.051
IBD	10 (7)	12 (8)	0.75
HLA-B27 positive	114 (80)	92 (60)	<0.001
Elevated CRP/ESR	71 (49)	64 (42)	0.23
SpA features without imaging or HLA-B27, mean (SD)	3.5 (1.7)	3.5 (1.6)	0.99
MRI-SIJ+/X-SIJ-,	65 (45)	68 (44)	0.91
MRI-SIJ-/X-SIJ+	5 (3)	5 (3)	0.92
MRI-SIJ+/X-SIJ+	44 (30)	26 (17)	0.006
Any positive imaging	114 (78)	99 (64)	0.007

Results are presented as n (%) unless otherwise indicated. AxSpA= axial spondyloarthritis; CBP=chronic back pain; HLA=human leukocyte antigen; IBP=inflammatory back pain; IBD=inflammatory bowel disease; NSAIDs=non-steroidal anti-inflammatory drugs; CRP= C reactive protein; ESR=erythrocyte sedimentation rate; MRI=magnetic resonance imaging; SIJ= sacroiliac joints; X=X rays; any positive imaging= MRI-SIJ+ and/or X-SIJ+. All features were complete in at least 95% of patients unless specified otherwise. Bold indicates significant results.

Conclusions: Although our data show clear gender differences in early axSpA, they highlight that in both genders HLA-B27 and imaging are key elements for a diagnosis of axSpA. Therefore, our study does not suggest that separate diagnostic strategies are required for men and women.

Disclosure of Interest: None declared

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Understanding the language of basic research, epidemiology and health services articles

OP0324

RISK OF SERIOUS INFECTIONS IN RHEUMATOID ARTHRITIS PATIENTS TREATED WITH ABATACEPT, RITUXIMAB AND TOCILIZUMAB IN DENMARK AND SWEDEN

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Background: Safety concerns have been raised regarding the risk of serious infections (SI) with the different available biologic disease-modifying anti-rheumatic drugs (bDMARDs). Little is known about the risk of SI in patients with rheumatoid arthritis (RA) treated with non-tumor-necrosis-factor-inhibitors (non-TNFi) bDMARDs.

Objectives: In RA patients treated in routine care with the three non-TNFi, abatacept, rituximab and tocilizumab 1) to compare crude as well as adjusted incidence

rates (IR) of SI after the first year of treatment, and 2) to estimate the relative risk (RR) of SI across these drugs after 1 year of treatment.

Methods: Collaborative observational cohort study conducted in Denmark (DK) and Sweden (SE) in parallel. RA patients in DANBIO (DK) and ARTIS/SRQ (SE) who started a non-TNFi treatment Jan 2010-Dec 2015 were included and their clinical characteristics at baseline were identified. Baseline comorbidities, reimbursed antibiotic prescriptions and incident SI (hospitalisation listing infection as major cause of admission) were identified through linkage to National Patient Registries and Prescription Drug Registries. IR of SI per 100 patient years (adjusted for age and sex) and rate ratios (as estimates of RR, adjusted for additional covariates) during 1 year treatment were assessed via Poisson regression.

Results: 8987 treatment episodes were identified (abatacept 2,725/rituximab 3,363/tocilizumab 2,899). Differences in baseline characteristics between the three drugs were observed (table 1). During the first year of treatment, 456 SI were identified. Across all three non-TNFi there was a non-significant tendency towards higher IRs in DK than in SE. Age/sex-adjusted IRs for SI were similar across treatments in each country (abatacept/rituximab/tocilizumab for SE 6.0/6.4/4.7 and for DK 7.1/8.1/6.1, respectively). The 1 year adjusted between-drug comparisons (=RR) were formally non-significant (table 1).

Abstract OP0324 – Table 1 Baseline characteristics, IR and RR of RA patients starting non-TNFi stratified by drug and country

Variable	ABA, N=2725		RTX, N=3363		TCZ, N=2899	
Country	DK	SE	DK	SE	DK	SE
Treatment episodes, n	830	1895	718	2645	1098	1801
Female gender, %	78	81	78	76	78	79
Age, years	59(50-67)	61(51-69)	61(52-69)	64(54-71)	59(50-67)	59(49-67)
Disease duration, yrs	7(3-16)	11(6-21)	11(6-19)	13(6-22)	8(3-16)	11(5-20)
DAS28	4.7(3.9-5.5)	4.9(4.1-5.7)	4.9(4.0-5.6)	5.0(4.1-5.8)	5.0(4.1-5.8)	5.1(4.2-6.0)
HAQ	1.4(0.8-1.9)	1.3(0.9-1.8)	1.5(1-2)	1.3(0.9-1.8)	1.4(1-2)	1.3(0.9-1.8)
CRP, mg/L	8(3-20)	8(4-21)	10(4-25)	10(4-25)	11(4-30)	11(4-30)
Previous cancer, %	1	4	9	11	1.7	4
Incidence rates (IR) of serious infections, 0-12 months						
Person years	568	1477	571	2189	906	1426
Infections, n	40	90	50	156	55	65
IR (95%CI)*	7.1(5.1, 9.9)	6.0(4.8, 7.5)	8.1(5.9, 11.0)	6.4(5.3, 7.7)	6.1(4.6, 8.1)	4.7(3.7, 6.1)
Risk Ratios (RR) for serious infections, 0-12 months**						
ABA vs TCZ (ref)						
Adjusted RR (95%CI)	1.15	1.13	0.94	0.86	0.82	0.77
	(0.69, 1.90)	(0.83, 1.54)	(0.55, 1.60)	(0.66, 1.13)	(0.50, 1.36)	(0.57, 1.03)
ABA vs RTX (ref)						
Adjusted RR (95%CI)	1.15	1.13	0.94	0.86	0.82	0.77
	(0.69, 1.90)	(0.83, 1.54)	(0.55, 1.60)	(0.66, 1.13)	(0.50, 1.36)	(0.57, 1.03)
TCZ vs RTX (ref)						
Adjusted RR (95%CI)	1.15	1.13	0.94	0.86	0.82	0.77
	(0.69, 1.90)	(0.83, 1.54)	(0.55, 1.60)	(0.66, 1.13)	(0.50, 1.36)	(0.57, 1.03)

DK=Denmark, SE=Sweden

*adjusted for age and gender, ** Adjusted for age, sex, DAS28, smoking, disease duration, HAQ, previous serious infection, previous cancer, previous chronic obstructive pulmonary disease and tertiles of antibiotic prescriptions. Numbers are medians (IQR) unless otherwise stated. End of follow-up was July 2015 in DK and December 2015 in SE

Conclusions: The risk of SI across treatment with non-TNFiS ranged between 4.7 and 8.1/100 patient years after 1 year, but no significant differences were observed between specific drugs. The numerical between-drug differences may partly be explained by differences in baseline characteristics.

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OP0325

EFFECT OF THREE HEALTH IT INTERVENTIONS ON RA DISEASE ACTIVITY SCORE DOCUMENTATION IN AN ACADEMIC RHEUMATOLOGY CLINIC

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Background: Routine assessments of disease activity are a key part of high quality rheumatoid arthritis (RA) care. Recommendations published in 2012 detailed the preferred disease activity measures, but little has been published about how to best implement these measures to guide routine clinical practice.