SAT0263

PREDICTORS OF REMISSION MAINTENANCE AND SUCCESSFUL THERAPY DISCONTINUATION IN PATIENTS WITH NON-RADIOGRAPHIC AXIAL SPONDYLOARTHRITIS (NR-AXSPA) WHO ACHIEVED SUSTAINED REMISSION ON OPEN-LABEL ADALIMUMAB (ADA) TREATMENT

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Background: Sustained remission is an important treatment goal in patients (pts) with non-radiographic axial SpA (nr-axSpA). Factors predicting successful remission maintenance are unknown.

Objectives: We sought to identify predictors of remission maintenance in nr-axSpA pts who achieved remission after open-label (OL) adalimumab (ADA) treatment in the ABILITY-3 trial (NCT01808118) and were subsequently randomised to continuation or withdrawal of ADA therapy.

Methods: ABILITY-3 enrolled adult pts with nr-axSpA with objective evidence of active MRI inflammation in the SI joints or spine or elevated high-sensitivity CRP at screening, active disease at baseline (ASDAS $\geq$ 2.1, BASDAI $\geq$ 4, and Patient's Assessment of Total Back Pain score $\geq$ 4), and inadequate response to $\geq$ 2 NSAIDs (table 1). Pts received ADA 40 mg every other wk during a 28-wk OL lead-in period. Pts who achieved sustained remission, defined as ASDAS inactive disease [ID] score $<$ 1.3 at wks 16, 20, 24, and 28, were randomised to double-blind withdrawal (placebo; PBO) or continued ADA for 40 wks during period 2 (study wk 68). Stepwise logistic regression was used to identify predictors of sustained remission in those in the continued ADA and withdrawal (PBO) groups. Remission maintenance in period 2 was assessed with the following: ASAS partial remission (PR; score $\leq$ 2.0) and ASDAS ID at wk 68, ASAS PR and ASDAS ID at every visit, and ASDAS ID for $\geq$ 5 of 10 visits.

Abstract SAT0263 – Table 1. Characteristics at Baseline and Wk 28

Variable	ADA (40 mg EOW) n=152	PBO n=153	P Value	Wk 28, mean (SD)	ADA (40 mg EOW) n=152	PBO n=153	P Value
Age, y	34.7 (10.3)	35.3 (10.2)	0.611	ASDAS	0.7 (0.4)	0.6 (0.4)	0.355
Female, n (%)	56 (37)	60 (39)	0.724	BASDAI	0.8 (0.8)	0.7 (0.7)	0.145
SpA symptom duration, y	6.4 (6.9)	7.1 (6.8)	0.358	BASFI	0.7 (1.0)	0.7 (1.2)	0.994
HLA-B27 positive, n (%)	132 (87)	134 (88)	0.866	Hs-CRP, mg/L	1.5 (2.4)	1.4 (1.8)	0.647
ASDAS	3.5 (0.9)	3.5 (0.8)	0.851	Pt total back pain	1.1 (1.4)	1.0 (1.4)	0.567
BASDAI	6.8 (1.4)	6.8 (1.5)	0.851	PGA	0.8 (1.0)	0.9 (1.1)	0.386
BASFI	5.1 (2.3)	5.0 (2.3)	0.776	SPARCC SI joint score*	2.6 (6.1)	2.5 (4.0)	0.775
Hs-CRP, mg/L	9.9 (14.1)	9.1 (13.3)	0.576	SPARCC spine score*	1.2 (3.8)	1.2 (3.8)	0.889
Pt total back pain	7.0 (1.7)	7.0 (1.8)	0.946				
PGA	6.6 (1.5)	6.4 (1.4)	0.150				
SPARCC SI joint score*	8.5 (12.8)	10.3 (13.4)	0.226				
SPARCC spine score	3.3 (7.5)	3.6 (7.2)	0.671				

ASDAS, Ankylosing Spondylitis Disease Activity Score; BASDAI, Bath Ankylosing Spondylitis Disease Activity Index; BASFI, Bath Ankylosing Spondylitis Functional Index; EOW, every other week; HLA-B27, human leukocyte antigen B27; Hs-CRP, high-sensitivity C-reactive protein; PGA, physician global assessment of disease activity; Pt, patient; SI, sacroiliac; SpA, spondyloarthritis; SPARCC, Spondyloarthritis Research Consortium of Canada.

P value using analysis of variance. *ADA, n=150; PBO, n=151. †ADA, n=145; PBO, n=148. ‡ADA, n=149; PBO, n=150.

Results: By wk 68, 100/145 (69%) ADA pts had not flared, 41% achieved ASAS PR and 56% ASDAS ID at wk 68; 23% achieved ASAS PR and 29% ASDAS ID at every visit, while 70% achieved ASDAS ID for $\geq$ 5 of 10 visits. By wk 68, 70/148 (47%) PBO pts had not flared, 28% achieved ASAS PR and 33% ASDAS ID at wk 68; 14% achieved ASAS PR and 15% ASDAS ID at every visit, while 52% achieved ASDAS ID for $\geq$ 5 of 10 visits. Shorter symptom duration, lower wk 28 BASDAI, and male sex were associated with absence of flare in the continued ADA group. Lower wk 28 ASDAS was associated with absence of flare with ADA withdrawal. Lower wk 28 ASDAS consistently predicted ASAS PR and ASDAS ID

at wk 68, ASAS PR and ASDAS ID at every visit, and ASDAS ID for $\geq$ 5 of 10 visits in pts who continued or withdrew ADA.

Conclusions: In nr-axSpA pts who achieved remission after 28-wk OL ADA therapy, lower wk 28 ASDAS is a consistent predictor of remission maintenance using all definitions in both the adalimumab continuation and withdrawal groups, except absence of flare in the adalimumab continuation group, suggesting early aggressive treatment may be beneficial in achieving sustained remission.

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SAT0264

DOES BIOLOGICAL DISEASE-MODIFYING ANTI-RHEUMATIC DRUG NAÏVE VERSUS NON-NAÏVE PATIENTS WITH INFLAMMATORY JOINT DISEASES HAVE SIMILAR GOLIMUMAB DRUG SURVIVAL AND EFFICACY? DATA FROM THE PROSPECTIVE OBSERVATIONAL NOR-DMARD STUDY

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Background: Knowledge is limited regarding the impact of previously used biological disease modifying anti-rheumatic drugs (bDMARD) on golimumab drug survival and efficacy in inflammatory joint diseases (IJD).

Objectives: To explore golimumab drug survival and efficacy in bDMARD naïve vs. non-naïve IJD patients, as well as predictors of golimumab discontinuation.

Methods: From the observational prospective multicenter Norwegian-DMARD (NOR-DMARD) study rheumatoid arthritis (RA), psoriatic arthritis (PsA) and axial spondyloarthritis (ax-SpA) patients starting golimumab were included. Drug survival was explored by Kaplan-Meier analyses with comparison of bDMARD naïve vs. non-naïve patients with log rank test, stratified by diagnosis. 3 month responses were compared with independent t-test, and with ANCOVA adjusted for age, gender, disease duration and baseline values of the respective composite scores. Univariable and multivariable Cox regression analyses including age, gender, disease duration, smoking, concomitant synthetic DMARDs (sDMARDs) and previous bDMARD use were performed to identify predictors of golimumab discontinuation.

Results: Mean (SD) age of the 163 RA, 267 PsA and 382 ax-SpA patients was 51.2 (14.1)/48.1 (11.7)/41.8 (11.1) years, disease duration 11.3 (10.0)/8.7 (9.0)/10.6 (11.2) years, %females 76.1/55.1/44.1%, respectively. Golimumab drug

Diagnosis	Composite score	Changes (baseline minus 3 months)					
		Unadjusted analyses		Adjusted analyses		p-value	
		Mean (SD)	p-value	Estimated marginal means (95% CI)	p-value	Estimated marginal means (95% CI)	p-value
		bDMARD naïve patients	Previous bDMARD users	bDMARD naïve patients	Previous bDMARD users		
RA	Δ DAS28	-1.1 (1.3)	-0.7 (3.42)	0.39	-1.7 (-2.6,-0.7)	-0.6 (-1.5, 0.2)	0.08
	Δ CDAI	-9.0 (10.8)	-9.0 (13.2)	0.99	-11.7 (-14.5,-8.9)	-8.7 (-11.2,-6.1)	0.10
PsA	Δ DAS28	-1.2 (1.1)	-0.5 (1.0)	<0.001	-1.0 (-1.3,-0.8)	-0.6 (-0.8,-0.3)	0.01
	Δ CDAI	-7.1 (7.8)	3.8 (7.5)	0.005	-6.2 (-7.6,-4.8)	-4.8 (-6.3,-3.3)	0.18
Ax-SpA	Δ BASDAI	-1.4 (2.1)	-0.6 (2.1)	0.08	-1.2 (-1.6,-0.8)	-0.9 (-1.4,-0.5)	0.38
	Δ BASDAI	-1.9 (2.4)	-0.9 (2.1)	<0.001	-1.9 (-2.3,-1.6)	-0.8 (-1.2,-0.4)	<0.001
	Δ ASDAS	-1.2 (1.3)	-0.5 (1.1)	<0.001	-1.1 (-1.3,-0.9)	-0.5 (-0.8,-0.3)	<0.001

Identified predictors for golimumab discontinuation were [Hazard Ratio (95% CI)]: RA, None; PsA, female gender (1.63 (1.18-2.25), p=0.003) and no concomitant sDMARDs (1.39 (1.01-1.90), p=0.04); ax-SpA, female gender [1.97 (1.50-2.60), p<0.001].

survival for bDMARD naïve vs. non-naïve patients was similar for all diagnoses (RA, $p=0.15$; PsA, $p=0.23$; ax-SpA $p=0.71$), with trend towards better drug survival in bDMARD naïve RA and PsA patients (figure). 4 year drug survival in bDMARD naïve/non-naïve patients were: RA, 54/48%; PsA, 47/43%; ax-SpA, 48/46%, respectively. Subgroup analyses of patients with and without concomitant sDMARDs showed similar findings. A trend was seen towards better 3 month responses in bDMARD naïve vs. non-naïve patients, with statistically significant better responses for DAS28 in PsA and BASDAI and ASDAS in ax-SpA (table 1).

Conclusions: Golimumab drug survival was similar in bDMARD naïve vs. non-naïve RA, PsA and ax-SpA patients. A trend was seen towards better responses for bDMARD naïve patients. Identified predictors for golimumab drug discontinuation was female gender and no concomitant sDMARDs in PsA and female gender in ax-SpA.

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SAT0265

THE RESPONSE TO TNF-BLOCKERS TREATMENT OF SPA PATIENTS IS INFLUENCED BY THE INTERPLAY BETWEEN HLA-B27 AND GUT MICROBIOTA COMPOSITION AT BASELINE

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Background: The response to TNF-blockers in axial spondyloarthritis (AxSpA) is at least partially influenced by HLA-B27 through a still poorly understood mechanism.

Objectives: Given that HLA-B27 regulates the gut microbiota composition in rats^{1,2}, we seek to evaluate the predictive value of the gut microbiota composition in AxSpA patients on their responsiveness to TNF-blockers.

Methods: A total of 58 patients was monocentrically recruited between October 2014 and May 2015. At baseline, these patients had an active disease despite NSAIDs intake and were eligible for treatment with a TNF-blocker, while having no history of inflammatory bowel disease (IBD). The mean BASDAI ($\pm$ SD) was 45.6 ± 21.4 ; ASDAS 2.8 ± 0.9 and CRP 9.7 ± 11.4 mg/L. Among these patients, 56 fulfilled the ASAS classification criteria (imaging arm) with sacro-iliitis on X-rays ($n=37$) or objective signs of inflammation on MRI ($n=48$). Two patients fulfilled the clinical arm. These patients were not subjected to antibiotics within 3 months before stool sample collection. Bacterial 16S rRNA gene sequencing of the V3-V4 region was performed on stools samples before and 3 months after TNF-blocker

treatment. Beta diversity metrics were calculated on the abundance of operational taxonomic units (OTU) after their taxonomic assignment on quality-filtered sequences.

Results: Principal component analysis (PCA) ordination of Bray-Curtis similarity revealed that current smoking (compared with never or ever smokers) and HLA-B27 genotype were significantly associated with the overall composition of the microbiota at baseline. Meanwhile, the abundance of eleven bacterial OTUs was influenced by HLA-B27 genotype at baseline but not after 3 month of treatment. In contrast, we identified a bacterial signature that was linked to the smoking behaviour independently of TNF-blocker treatment, whereas the BASDAI and ASDAS indices were significantly associated to the general composition of the gut microbiota after the 3 month treatment. In line with a previous report³, the abundance of *Ruminococcus gnavus* was not associated with disease activity in the absence of IBD. Interestingly, the abundance of 5 and 7 bacterial OTUs at baseline was associated with the response to TNF-blockers assessed by BASDAI and ASDAS, respectively. Among these candidates, the abundance of one bacterial OTUs belonging to the *Clostridiales* order was associated with a better response to the treatment and with the HLA-B27 genotype.

Conclusions: Anti-TNF treatment was found to modulate the HLA-B27-induced variations of the intestinal microbiota of AxSpA patients. Moreover, the abundance of a subset of OTUs at baseline was found to predict the responsiveness to TNF-blockers. Further functional studies will be conducted to assess how these taxa can be use as predictors of the treatment outcome.

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SAT0266

USE OF CONVENTIONAL SYNTHETIC DMARDS AND BIOLOGICAL DMARDS IN PATIENTS WITH ENTEROPATHIC SPONDYLOARTHRITIS: A COMBINED GASTRO-RHEUMATOLOGICAL APPROACH

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Background: Enteropathic spondyloarthritis (eSpA) is a chronic autoimmune disease associated with inflammatory bowel disease (IBD) that is poorly diagnosed and managed.

Objectives: To assess the diagnostic and therapeutic effect of a combined gastro-rheumatological approach in eSpA patients.

Methods: IBD-patients with joint pain referred to a dedicated rheumatologist by gastroenterologist were enrolled. Clinical and biochemical variables, SpA and intestinal disease activity measures, and treatment (biologic; bDMARDs and conventional synthetic; csDMARDs) were recorded at baseline, 3, 6, 12 and 24 months. The association between treatment on demographic and clinical characteristics was evaluated by logistic regression.

Results: From a total of 229 IBD patients, 147 (64.2%) were diagnosed with eSpA; 96 (65.3%) showing peripheral involvement and 51 (34.7%) with axial involvement. The majority (67.3%) of eSpA patients were female ($n=99$), median age and disease duration of 46 and 14.6 years. bDMARD treatment increased over the follow-up period (baseline-24 months: 32.6% $\rightarrow$ 60%; AOR:3.45, 95% CI: 1.93–6.2, $p<0.001$), however, their use was less frequent in elderly patients (AOR: 0.73, 95% CI: 0.56–0.96, $p=0.023$), in ulcerative colitis patients (AOR:0.43, 95% CI:0.2–0.94, $p=0.034$) and in patients with peripheral involvement (AOR:0.53, 95% CI:0.3–1.04, $p=0.067$). csDMARD use was increased in patients with peripheral involvement (AOR: 4.65, 95% CI:2.09–10.33, $p<0.001$) and in patient with ulcerative colitis (AOR:2.30, 95% CI:1.13–4.67, $p=0.021$) (figure 1). CRP, ESR, ASDAS-ESR levels and BASFI were significantly decreased over the follow-up period whereas pMayo score, BASDAI and HAQ-S were unchanged (figure 2).