Conclusion: Secukinumab was associated with higher mean change in MASES and complete resolution of enthesitis compared to placebo at Week 16, which further improved through Week 52.

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Table. Summary of results

	SEC 150 mg N=355		SEC 300mg N=58		PBO N=280
	W16	W52 ^a	W16	W52 ^a	W16
LS mean change from BL in MASES score^a					
Overall MASES ^a	-2.4 [‡]	-3.5	-2.9 [§]	-3.9	-1.9
AxS ^b	-2.3 [‡]	-3.2	-2.9 [§]	-3.6	-1.8
PS ^c	-1.3	-1.9	-1.6	-2.1	-1.2
AT ^d	-1.0	-1.2	-1.0	-1.3	-0.8
Complete resolution of enthesitis (MASES=0)^e, %					
Overall MASES ^a	40.8 [§]	56.4	36.2	52.9	28.9
AxS ^b	42.7 [§]	58.6	42.1	60.0	30.1
PS ^c	46.3	65.5	52.5	69.7	38.3
AT ^d	57.0	78.4	55.0	77.8	48.0
Improvement from BL in MASES score (≥5 counts)^e, %					
Overall MASES ^a	23.7	34.1	27.6	43.1	16.1
AxS ^b	20.1	28.0	22.8	32.0	15.4

[§]P<0.01; [‡]P<0.05 vs PBO. [‡]P-values from repeated MMRM until Week 16. [§]P-values from logistic regression model. SEC 150mg (n=355, ^a344, ^c229, ^d128); 300mg (n=58, ^b57, ^c40, ^d20) and PBO (n=280, ^b272, ^c188, ^d98). ^aObserved data. LS, least squares; N, number of patients analysed; n, number of patients with measurement.

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FRI0381

TROUGH SERUM DRUG LEVELS AND DISEASE ACTIVITY IN AXIAL SPONDYLOARTHRITIS PATIENTS ON LONG-TERM TREATMENT WITH TNF- α INHIBITORS

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Background: In approximately 50% of patients with axial spondyloarthritis (ax-SpA) treated with TNF- α inhibitors, treatment loses efficacy after a period of time.¹ Previous research has shown that high disease activity is associated with low serum drug levels after 6 months of treatment with TNF- α inhibitors.² There is limited literature regarding this subject in axial SpA patients on long-term treatment with TNF- α inhibitors.

Objectives: To investigate the association between trough serum drug level of TNF- α inhibitors and disease activity in axial SpA patients.

Methods: All consecutive ax-SpA patients of the Groningen Leeuwarden Axial SpA (GLAS) cohort, fulfilling the ASAS classification criteria, treated with TNF- α inhibitors and visiting the out-patient clinic in Groningen

between the 1st of June 2015 until the 31st of May 2016 were approached to have a trough serum drug level measurement within two months from the out-patient visit. Serum trough levels were stratified in a 'therapeutic' and 'below-therapeutic' range according to the reference values of Sanquin³. Disease activity was assessed with the ASDAS, BASDAI and CRP.

Results: 67 (60%) of the 112 approached patients were eligible for analyses. Thirty-one (46%) were male, mean age was 45 $\pm$ 12 years, 48 patients (72%) were HLA-B27 positive, mean symptom duration was 20 $\pm$ 12 years and median duration of TNF- α inhibitor treatment was 49 months (IQR 14-64). 34 patients were on adalimumab (51%), followed by 21 on etanercept (31%) and the remaining 12 patients (18%) were on infliximab, certolizumab or golimumab. 32 of the 67 patients (48%) had a 'therapeutic' serum trough drug level and 35 (52%) were 'below-therapeutic', with no significant difference in patient characteristics between these 2 groups, including disease activity (ASDAS 2.2 $\pm$ 1.0 vs. 2.3 $\pm$ 0.8; BASDAI 3.9 $\pm$ 2.4 vs. 4.1 $\pm$ 2.1; CRP 4.5, IQR 2.0-6.6 vs. 3.0, IQR 2.0-6.0). No significant correlations for ASDAS, BASDAI and CRP with adalimumab or etanercept drug level were found (adalimumab r=-0.164, p=0.36; r=-0.191, p=0.29; r=-0.041, p=0.83 resp.; etanercept r=-0.185, p=0.42; r=-0.113, p=0.63; r=-0.216, p=0.36 resp.).

Stratified by gender, only women on adalimumab showed a weak significant negative correlation between serum level and ASDAS and BASDAI (r=-0.444, p<0.05; r=-0.497, p<0.05 resp.) but not for CRP (r=0.038, p=0.87). Compared to men, women had a significantly higher ASDAS and CRP. BASDAI was not significantly different (data not shown). Patient characteristics between patients with and without serum trough level measurements did not differ significantly.

Conclusion: In daily clinical practice random serum trough levels in ax-SpA patients are relatively low according to reference values of Sanquin. Furthermore, only for women on adalimumab a weak correlation was found between trough serum drug level and ASDAS and BASDAI but not for CRP.

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FRI0382

TEN-YEAR RETENTION RATES OF FIRST-LINE BIOLOGICAL AGENT IN AXIAL SPONDYLOARTHRITIS IN DAILY PRACTICE: A ROMANIAN MULTICENTRE EXPERIENCE

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Background: Although the efficacy and long-term persistence of TNF inhibitors (TNF-i) are widely recognized in axial spondyloarthritis (axSpA), up to about one third of patients experience failure (loss of therapeutic response or toxicity) with the first biological agent requiring switching to another drug.

Objectives: The aims of our study were to assess the 10-year survival of the first TNF- α , to compare retention rates of different anti-TNF drugs in real life settings and to identify factors associated with drug retention in active axSpA.

Methods: We performed a hospital-based retrospective cohort study on consecutive adult axSpA suboptimally controlled by standard therapy, starting their first biological agent with infliximab (IFX), adalimumab (ADA), etanercept (ETA) or golimumab (GLM) according to local policy, recruited at three academic centres between 2003 and July 2018.

Drug efficacy (BASDAI, ASDAS-CRP) as well as reasons for discontinuation were evaluated every 24 weeks. Drug survival was calculated using the Kaplan-Meier analysis, while univariate and multivariate regression was used for predictors of persistence and withdrawal ($p < 0.05$). Subanalysis was done according to discontinuation reasons.

Results: Of the 241 axSpA were recruited, 104 (43.15%) cases received ETA (original, biosimilar), 100 (41.49%) ADA, 26 (10.78%) IFX (original and biosimilar) and 11 cases (4.56%) GLM.

Statistical significant improvement was demonstrated (ASDAS-CRP, BASDAI, BASFI) in all patients, those with higher disease activity and functional impairment at baseline presenting earlier and higher response rate ($p < 0.05$).

We reported high long-term persistence of the first TNF- α with a median survival rate of 8.1 ± 2.1 years for IFX, ADA and ETA; furthermore, at 10 years, up to one third (36%) of axSpA remained on the initial drug achieving either stable remission (62.24%) or low disease activity (37.76%), while one out of five patients on the same drug after 140 months. The retention rates of ETA, ADA and IFX were 70%, 68% and 57% after 3 years; 68%, 48% and 53% after 5 years; 35%, 30% and 27% after 10 years. Overall, retention to ETA was superior to that of monoclonal antibodies ($p < 0.05$), with a total drug-exposure of 625.43 patient-years for ETN, 415.26 for ADA, 221.53 for IFX.

In addition, survival of the second TNF drug was good but inferior to the first TNF- α ($p < 0.05$).

Male sex, age under 40, high baseline C reactive protein, low initial BASFI and disease duration under 5 years were associated with retention rate in multivariate analysis ($p < 0.05$), while the presence of syndesmophytes and obesity with higher withdrawal ($p < 0.05$).

Conclusion: We reported high long-term persistence of the first biological agent in axSpA, with superior retention for ETA compared to monoclonal antibodies. Predictors for high retention rate advocate the rationale for the drug choice in different axSpA settings.

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FRI0383 PAMIDRONATE IN CHRONIC NON-BACTERIAL OSTEOMYELITIS: A RANDOMIZED, PLACEBO-CONTROLLED PILOT TRIAL

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Background: Chronic non-bacterial osteitis (CNO) is an autoinflammatory disease often associated with seronegative spondyloarthritides. Osteitic bone lesions in adults are predominantly located in the anterior chest wall, the spine and pelvis. Case series suggest that the amino-bisphosphonate pamidronate may be effective in improving bone inflammation, pain, and disability. No randomized controlled trials have been conducted in CNO.

Objectives: In a randomized double-blinded, placebo-controlled trial we hypothesized that pamidronate reduces radiological signs of bone inflammation assessed by whole-body magnetic resonance imaging, improve pain, disability and reduces systemic markers of bone inflammation and bone turnover in blood.

Methods: Patients with an established diagnosis of CNO were assessed for eligibility. Inclusion criteria were 1. Mono- or multifocal bone inflammation (osteitis with or without sclerosis) 2. Jansson clinical score for CNO in children and adults ≥ 39 ¹ or malignancy and infection excluded by biopsy and 3. Symptoms duration > 6 weeks. Patients were randomized 1:1 to receive placebo or pamidronate 1 mg/kg, max 60 mg, given for three consecutive days at baseline, week 12 and week 24. Whole-body MRI was performed at baseline, week 12 and 36. CT scan of the anterior chest wall was performed at baseline and week 36. Changes in active and chronic radiological bone inflammation in the ACW and spine were systematically scored.^{2, 3} Patient-reported outcome were measured at baseline and week 1,4,12,24 and 36 using a visual analogue scale for pain and global health assessment, Health Assessment Questionnaire for physical functioning and, EuroQoL-5 Dimension-3 Level and The Short Form (SF)-36 questionnaire for Quality of life. Biomarkers of bone turnover and inflammation in blood were measured at baseline and week 1,4,12,24 and 36.

Results: Analyses were performed in 12 patients with CNO, mean age 32 (range 20-63) years. From baseline to week 36 the radiological score of active bone inflammation decreased from 4.8(SD 2.2) to 2.5(SD 1.6) in the pamidronate group ($p = 0.01$). This differed significantly from the placebo group in which no change from baseline was observed ($p = 0.04$). We observed a decreasing trend in VAS pain from mean 38(SD 23)mm to 19(SD 18)mm and VAS global from 32(SD 22)mm to 13(SD 18)mm.

Conclusion: This study is the first randomized double-blinded, placebo-controlled trial in CNO. Treatment with pamidronate improved bone marrow oedema in the anterior chest wall assessed by whole-body magnetic resonance imaging. This pilot study points out methodological considerations in relation to study design and outcome measures in CNO.

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FRI0384 IMPACT OF INTERLEUKIN 17 BLOCKING AGENT ON CLINICAL OUTCOME IN SAPHO PATIENTS

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Background: SAPHO syndrome has to be considered as a rare subtype of seronegative spondyloarthritis (SpA) showing typical manifestations with palmoplantar pustulosis and osteitis with hyperostosis; the clinical response of conventional or biological disease modifying drugs (DMARDs) in SAPHO syndrome are often disappointing. Whereas in SpA peripheral arthritis and inflammatory back pain represent the leading symptoms, the SAPHO patients often complain painful osteitis with hyperostosis in the sternal region as well as the palmoplantar pustulosis accompanied by synovitis preferentially in large joints including sacroiliitis. Recently, the detection of higher numbers of CD4+IL17+ lymphocytes in the peripheral blood of SAPHO patients has arisen the hypothesis that Th4/17 helper cells with their secretion of interleukin 17 (IL17) could be involved in the development of inflammation in SAPHO syndrome (1)

Objectives: Here we present an observational study of 12 SAPHO patients which were treated with the IL 17 blocking agent secukinumab. In addition, the fraction of CD4/17+ lymphocytes in peripheral blood specimen has been monitored on treatment.

Methods: Between January 2015 and February 2017 clinical activity of disease were measured in 37 SAPHO patients with a disease duration of 11 years (median). The disease activity were evaluated by the osteitis