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Background: The number of new biologics in treatment of axial spondyloarthritis (axSpA) is rapidly increasing. It is important to assess timely their place in the treatment of axSpA, especially with regard to retention on therapy.

Objectives: To compare retention on therapy with different biologics in patients with axSpA.

Methods: We retrospectively analyzed the data of axSpA patients receiving biologics from the MUAR register. Predictors of retention on therapy were selected by forward stepwise variable selection within Cox regression proportional hazard model. These predictors were considered as confounders when comparing the risks of biologics withdrawal.

Results: 990 treatment episodes in 640 patients with axSpA were analyzed (non-radiographic axSpA – 4.1%, ankylosing spondylitis – 95.9%). The duration of episodes was 824±920 days. Men were 66.6%, mean age 46.4±11.4. The patients were treated with Adalimumab (ADA) (n= 252 treatment episodes), Golimumab (GOL) (n=82), Infliximab (INF) (n=167), Netakimab (NET) (n=9), Secukinumab (SEC) (n=75), Certolizumab pegol (CER) (n=66), Etanercept (ETA) (n=339).

The following predictors of withdrawal risk were identified –

1. The total duration of the disease
2. The duration of the disease before the onset of biologic treatment
3. Gender
4. Family history of non-inflammatory spondylopathy (degenerative spinal disease)
5. The line of biologic treatment
6. The level of education

The severity of radiographic sacroiliitis and HLA B-27 positivity were not associated with the risk of discontinuation of biologics.

The identified predictors were further considered as confounders. Adjusted for confounders, ETA had the lowest treatment withdrawal risk (Figure 1). ADA, GOL, INF, SEC, CER had significantly higher risk of withdrawal compared with ETA (Table 1).

Conclusion: Our analysis detected predictors associated with risk of biologics withdrawal in axSpA patients in real clinical practice. There are significant differences between biologics regarding retention on treatment.

Table 1. Hazard ratio for treatment withdrawal

Drug	Hazard ratio (Exp B)	p
ADA	1.52 [*]	0.004
GOL	2.95 [*]	0.000
INF	2.574 [*]	0.000
NET	3.680 [*]	0.073
SEC	2.133 [*]	0.005
CER	2.922 [*]	0.000

^{*} - withdrawal risk relative to ETA

Figure 1. Picture 1. Treatment withdrawal risk

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POS0938

A NEW APPROACH FOR ULTRASOUND GUIDED SACROILIAC JOINT INJECTIONS IN SPONDYLOARTHRITIS

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Background: Sacroiliac joints (SIJ) inflammation and pain is particularly common in patients with Spondyloarthritis (SpA). SIJs injections represent a valuable therapeutic option in this condition. Traditionally this procedure (irrespective of the guidance method) aims at the lower (synovial) part of the joint. However, there is growing body of evidence that enthesitis rather than synovitis is the cardinal pathological lesion in SpA. Thus, an approach targeting the more superior (ligamentous) part of the joint, with the numerous entheses of the intraspinous sacroiliac ligaments placed there, could be more beneficial in SpA patients with active sacroiliitis. The Posterior sacroiliac ligament (PSIL) is the most superficial of the SIJ ligaments, covering the other dorsally. Thus, using PSIL as a landmark and placing the needle tip beneath it, the injected solution will inevitably spread in the ligamentous portion of the joint.

Objectives: To assess the feasibility and efficacy of a new technical approach of ultrasound (US) guided SIJ injections in SpA targeting the ligamentous part of the joint.

Methods: The feasibility and efficacy of our approach was tested on 22 consecutive SpA patients, after an inform consent, with pain in the SIJ that did not respond to NSAIDs and who were otherwise on a stable medical treatment. A solution consisting of 7 mg Betamethasone (1ml) and 1% Lidocaine (1.5 ml) was administered to all injected SIJs. The efficacy of the procedure was assessed by patients reported outcome measures: mean reported pain level (on VAS), level of disability due to the back pain (Roland Morris Disability Questionnaire – RMDQ) and quality of the night sleep (Jenkins Sleep Evaluation Questionnaire – JSEQ). They were filled by the patients at baseline and two months after the intervention. Methodology of the procedure: All injections were done with patients in a prone position using an Esaote My Lab 7 machine and a linear transducer (3-12 MHz). After visualization of the SIJ cleft, the probe was slide caudally to the level of the second sacral foramen. Then the probe was rotated to a slightly oblique position with its lateral part higher and the medial part lower. In this way the probe became parallel to the PSIL, and latter is visualized sufficiently well in its long axis. Then, in this position, a 22G, 9mm spinal needle (Spinocan) was inserted at the medial side of the probe following an in-plane free-hand technique and advanced in cranio-lateral direction. When the needle tip was seen to penetrate the PSIL, and thus enter the SIJ ligamentous part, 0.2ml of the solution was injected to confirm that it spreads beneath the PSIL, rather than above or in this ligament. After that, a Color Doppler (CD) box was activated and placed over the SIJ to monitor the spread of the injected solution and ensure that it keeps below the PSIL. The whole solution was injected under this direct US and CD visualization and the needle tip was repositioned again beneath the PSIL if needed during the procedure.

Feasibility of this injection approach was assessed on the basis of the encountered difficulties in adequate visualization of the PSIL and the injected solution flow beneath it from the start until the end of the intervention.

Results: The results of the procedure, assessed in two months showed that the mean pain score decreased by 68% (VAS from 7.22±1.23 to 2.28±2.37), the disability score - by 46% (RMDQ from 11.86±5.12 to 6.42±6.39), and the sleep quality improved by 41% (JSEQ from 9.86±4.76 to 5.84±3.43). The procedure was found completely feasible by the performing operator and the visualization of the landmark (PSIL) was adequate in all patients and throughout the whole procedure. The CD allowed to confirm reliably that the solution is injected under the PSIL at any time point.

Conclusion: The SIJ injections performed by our approach and targeting the ligamentous part of the joint, proved to be completely feasible and furthermore – efficient, in alleviating the symptoms of active sacroiliitis in SpA patients.

Disclosure of Interests: None declared

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POS0939

WHEN DO THE ACTIVE SACROILIITIS MRI FINDINGS LOSS IN ANKYLOSING SPONDYLITIS? A RETROSPECTIVE, CROSS-SECTIONAL, OBSERVATIONAL STUDY

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Background: Ankylosing Spondylitis (AS) is an inflammatory rheumatic disease that affects the spine and sacroiliac joints (SIJ). Non-steroidal anti-inflammatory drugs (NSAIDs), modifying antirheumatic drugs (DMARDs), and recently anti-TNF blockers, which are more costly than NSAIDs but used in resistant cases, are generally used in its treatment (1).

Objectives: While SIJ-MRI is one of the imaging methods in the diagnosis of the disease, it is not yet used in its follow-up (2). We wanted to define when the activated SIJ-MRI findings, which showed early sacroiliitis, regressed according to the treatment option.

Methods: Among the 8100 SIJ-MRIs taken in our hospital in the last 5 years, those that were reported normally were excluded from the study. Among the remaining 1150 patients with active or chronic SIJ findings, a total of 87 patients who were diagnosed with AS and had active SIJ findings in the first imaging and had a second SIJ-MRI examination for any reason were included in our retrospective, cross-sectional and observational study. According to the treatment option, how long the active SIJ-MRI findings disappeared was calculated in months using the Kaplan-Meier method.

Results: Of the 87 patients examined in the study, 41 were women and 46 were men. The average age is 32.7. Active SIJ-MRI findings disappeared in a mean of 30.6 months for 11 of 24 patients who did not use any medication, in a mean of 33.9 months for 6 of 16 patients using NSAIDs, in a mean of 40.7 months for 14 of 34 patients using sulfasalazine, in a mean of 28.2 months for 3 of 6 patients using adalimumab, in a mean of 24.4 months for 3 of 5 patients using methotrexate, 11.9 month for 2 of 1 patient using certolizumab. There was no statistically significant difference between the groups.

Conclusion: The signs of active sacroiliitis disappeared in less time in patients who did not receive any treatment than those using NSAIDs and sulfasalazine. Patients using anti-TNF blockers had earlier results than those using no medication. The reason for this may be the progressive course of patients who are switched to the next level of treatment and their late response to treatment, as well as the mechanism of the disease (2-3). This situation brings to the agenda the tendency of physicians to over-treat the disease. More randomized controlled studies are needed regarding new treatment options.

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POS0940

THE IMPACT OF TUMOUR NECROSIS FACTOR-ALPHA INHIBITOR TREATMENT ON WNT SIGNALING INHIBITORS, NOGGIN AND CYTOKINE LEVELS IN AXIAL SPONDYLOARTHRITIS

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Background: Axial spondyloarthritis (axSpA) is a common chronic inflammatory disease of the axial skeleton. Some cytokines have important roles in initiation and progression of disease and are elevated in active disease. Additionally, Wnt signaling pathway inhibitors and noggin also appear to be involved in pathogenesis of ankylosing spondylitis. Anti-tumor necrosis factor-alpha (TNF) agents have dramatically improved the clinical outcome of axSpA; however, acceptable clinical improvement is not achieved in all patients and capacity of anti-TNF to slow or prevent structural damage still remains controversial.

Objectives: To evaluate the effect of anti-TNF on inflammatory and noninflammatory milieu in patients with axSpA.

Methods: In this prospective study we included 30 biologic treatment naive adult patients with axSpA and 30 healthy controls. All patients with high disease activity were treated with anti-TNF therapy for 6 months. Laboratory and clinical evaluation of all patients were performed at baseline and after 6 months of anti-TNF treatment. Following cytokines and wnt/BMP antagonists were measured; TNF-Alpha, COX-2, IL-6, IL-17, IL-22, IL-23, IL-33, dickkopf-1, sclerostin, noggin.

Results: The mean age of patients with axSpA and healthy controls were 38.1±13.3 and 37.7±7.7 years, respectively (p>0.005). At baseline, the median (IQR) TNF-alpha was higher in axSpA patients when compared to healthy controls, 34.4 pg/ml (31.4-37.03) vs 18.1 pg/ml (12.1-28.4), (p<0.001), while the median (IQR) dickkopf-1 and sclerostin were lower in axSpA patients, 446.7 pg/ml (356.9-529.3) vs 1088.7 pg/ml (951.7-1244.4), (p<0.001) and 312.4 pg/ml (140.8-412.7) vs 412.3 pg/ml (295.4-512.8), (p<0.001), respectively. IL-17, IL-22, IL-33, dickkopf-1 and sclerostin increased with anti-TNF treatment (table 1).

Conclusion: Elevation of some cytokines which are important in pathogenesis of axSpA and nonincrease in noggin with anti-TNF drugs may affect effectiveness of anti-TNF treatment.

Table 1. Changes of cytokines, dickkopf-1, sclerostin and noggin with anti-TNF treatment.

	Pre-Anti-TNF	Post-Anti-TNF	P value
IL-6	45(39.1-68.8)	476(273-61.1)	0.750
IL-17	93.3 (85.1-104.8)	102.1(86.6-114.6)	0.026
IL-22	159.2 (151.9-178.4)	183.5(156.3-304.6)	0.033
IL-23	36.5 (26.1-52.9)	41.3(28.4-55.5)	0.658
IL-33	1278 (106.6-186.1)	14706(128.5-213.4)	0.016
COX2	0.176 (0-0.374)	0.202(0.051-1.151)	0.469
TNFalpha	34.4(31.4-37.03)	30.7(12.8-35.6)	0.004
Dickkopf-1	446.7(356.9-529.3)	881.3(663.1-972.2)	<0.001
Sclerostin	312.4 (140.8-412.7)	405.1(276.3-452.5)	0.018
Noggin	48.3(17.04-153.9)	31.2(11.3-103.7)	0.264

Disclosure of Interests: None declared

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POS0941

IN SPONDYLOARTHRITIS PATIENTS THE PRESENCE OF COMORBIDITIES IS AN INDEPENDENT PREDICTOR OF INSUFFICIENT RESPONSE TO THERAPY WITH BIOLOGIC AGENTS AND TREATMENT DISCONTINUATION

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Background: Long-term observational studies of patients under biologic disease-modifying anti-rheumatic drug (bDMARD) therapies in routine clinical practice can provide us with important data regarding patients with comorbidities, who are usually excluded from randomized controlled studies.

Objectives: To study the impact of comorbidities in the outcome (response and persistence to therapy) of patients with spondyloarthritis (SpA) receiving bDMARDs in real-world clinical practice.

Methods: Prospective study of all patients who start a bDMARD in a tertiary centre University Hospital after their consent. All patient comorbidities [among a list of approximately 100 pre-specified major comorbidities] are registered by treating physicians at baseline and during follow-up.

Comorbidities were studied as total Comorbidities Count (CC) and rheumatic disease comorbidity index (RDCI). Statistical analyses were performed using logistic and Cox regression models, adjusting for the potential confounding of age, sex, disease duration, diagnosis (axial vs. peripheral SpA), number of previous conventional synthetic and biologic DMARDs, year of therapy start, and co-administered methotrexate and corticosteroids (yes/no). Analyses of response to therapy also included baseline BASDAI or ASDAS indices as confounding variables.

Results: A total of 603 biologic treatments (1st: 298, 2nd: 157, ≥3rd: 148) were analyzed. Half (51%) of the patients were female, 413 patients had axial SpA (AxSpA) and 190 peripheral SpA (perSpA). At baseline, median (IQR) age: 48 (38-57) years, disease duration: 11 (4-19) years, CC: 2 (1-4) and RDCI: 1 (0-2). Both comorbidity indices were significantly higher in perSpA compared to AxSpA (p<0.001).

At 6 months of therapy, 31% of patients with AxSpA achieved BASDAI50 and 39% had ASDAS-ESR < 2.1. Higher CC was an independent predictor of insufficient response according to BASDAI50 [OR (95%) = 0.70 (0.52-0.94), p=0.019] and higher RDCI was predicting failure to achieve ASDAS-ESR < 2.1 [OR (95%) = 0.59 (0.37-0.94), p=0.027]. Other independent predictors of non-response were age, longer disease duration and (for ASDAS-ESR<2.1) higher baseline disease activity.

During 1405 patient-years of follow-up, 349 (58%) treatments were discontinued. The adjusted hazard ratio for bDMARD discontinuation within the first 2 years of treatment due to insufficient response was doubled in patients with CC ≥2 versus those with CC ≤1 [HR = 2.27 (1.14-4.53), p=0.020] or with RDCI ≥1 (vs. RDCI =