and the contradictory messages among professionals. Therefore we decided to develop an electronic tool to facilitate and encourage the prescription of exercise. **Objectives:** To evaluate the usefulness of a computer tool and a training workshop to improve the prescription of physical exercise in SpA by rheumatologists. **Methods:** An online platform was developed for the individualised prescription of exercise to patients with SpA according to stage and with 3D animations (EJES-3D), which was presented in a training workshop. Tests were conducted before and after the workshop to assess the change in knowledge. Six months after the workshop, the degree of use and acceptance of the tool was evaluated through a survey aimed at rheumatologists and the fulfilment of the concepts learned through a survey of 100 consecutive patients attended in the centres of the attendees.

Results: The level of knowledge improved with the workshop (6.8/10 to 7.7). After 6 months 77.8% indicated that the contents of the workshop were useful and adapted to their expectations and all applied the knowledge. 22% stated that they prescribed exercise more regularly and 44% with greater confidence. 67% of rheumatologists considered the tool EJES-3D useful. The 82 patients who completed the survey agreed in their majority that they had been prescribed exercise, they had been informed and the messages received had been positive and coherent. 50% of the patients were prescribed specific exercises, which were qualified by them as simple, adaptable and attractive. And 64% were satisfied with the degree of exercise they performed. On the other hand, aspects to be improved at the tool and training level were identified.

Conclusions: The specialised training in the prescription of the exercise directed to the professionals who are in charge of the management of patients with SpA can be very beneficial to homogenise the type of exercise in each phase of the disease and help to gain confidence. In addition to having a specific tool (EJES-3D) to perform individualised prescription, it can be very useful.

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Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.1826

SAT0296

PATIENTS WITH DIFFUSE IDIOPATHIC SKELETAL HYPEROSTOSIS AND LOW BACK PAIN – EVALUATION AND REHABILITATION

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Background: Diffuse Idiopathic Skeletal Hyperostosis (DISH) generally occurs in people between the ages of 50 and 60, more often in men than women. Physical therapy and kinetic program may help delay the loss of motion in affected joints and control the low back pain (LBP). In most cases of DISH with LBP, certain muscles of the back that stabilise the spine are reflexively inhibited and do not spontaneously recover even if patients are pain free with a return to normal activity levels.

Objectives: In our observational study we evaluated the role of rehabilitation program in quality of life and assessed the thickness of the erector spinae (ES) muscle in these patients and to evaluate the correlation between thickness difference in three different trunk postures and functional parameters.

Methods: 38 male patients (61.5 years mean age) with DISH and LBP were enrolled in this study. Frontal (AP) and lateral lumbosacral regions were radiologically evaluated. Clinical and functional parameters were collected by a physiotherapist, that applied rehabilitation program (12 sessions of TENS, interferential current, ultrasound, aerobic training) and an US examination was performed by a physiatrist within 72 hours of the clinical examination. We performed ultrasonography to measure the thickness of the ES muscle at L4 and L5 level in maximum flexion, neutral posture, and maximum extension. All collected clinical and imaging data were statistical analysed, pre-post rehabilitation.

Results: Multivariate analysis showed that thickness differences between flexed and neutral, and flexed and extended maximally positions were correlated statistically with functional parameters (VAS and The Roland-Morris Disability Questionnaire score). We obtained a significant improvement in VAS ($p<0.01$) and Disability Questionnaire score ($p<0.05$) after supervised rehabilitation program.

Conclusions: Although ossification in DISH generally affects the ligament of the spine, pain is more likely to arise in correlation with the erector vertebral muscle status. Visual observation of the image during contraction indicates that US may

be a valuable biofeedback tool. Kinetic program (regular exercises that strengthen spine, walking and global stretching), avoiding sitting position for long periods of time, sleep on a correct mattress and optimal daily activities are the most important recommendations for all patients with DISH.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4018

SAT0297

THE ROLE OF BASELINE CONCOMITANT USE OF CONVENTIONAL SYNTHETIC DISEASE MODIFYING ANTI-RHEUMATIC DRUGS WITH TNF INHIBITORS IN SPONDYLOARTHRITIS PATIENTS

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Background: Conventional synthetic disease modifying anti-rheumatic drugs (csDMARDs) are drugs of choice in the treatment of rheumatoid arthritis and their concomitant use with TNFi is also of unequivocal importance. On the other hand there is limited evidence regarding the efficacy of csDMARD in axial spondyloarthritis (SpA) and concomitant use with TNFi are not recommended. However recently there is conflicting results about the comedication with csDMARD on the TNFi drug survival in patients with AS.

Objectives: To evaluate the effect of concomitant csDMARD use on first TNFi drug survival in patients with spondyloarthritis.

Methods: The data of patients that have been included in two Turkish registries (TURKBIO (n=356) and TReasure (n=1382)) with the diagnosis of ankylosing spondylitis (AS) or SpA obtained. Drug survival was calculated from the date of first TNFi prescription to the last visit or until the stop date of first biologic agent. For drug survival analysis Kaplan-Meier method with log-rank test. Cox proportional hazard method was used to evaluate the relative effects of each covariate on the drug survival.

Results: In total 1738 patients (1040 [59.1%] male, median [range] age 39^{16–81} years) with SpA initiating first TNFi were included in the analysis. Median disease duration was 116 months. 690 (39.7%) patients received adalimumab, 387 (22.3%) etanercept, 324 (18.6%) infliximab, 202 (11.6%) golimumab and 135 (7.8%) certolizumab. At the time of first biologic prescription 794 (45.7%) were using sulfasalazine or methotrexate. Baseline median BASDAI score was 60 (0–100), BASFI score was 46 (0–100), patient global assessment of disease activity was 70 (0–100), ESR was 23^{1–140} mm/h and median CRP value was 13 (0–659) mg/L. In our study group median drug survival time was 12 (0–205) months. In total 585 (33.7%) of our patients stop their first TNFi. 323 (55.2) patients discontinued the medication due to inefficacy, 133 (22.7) due to adverse effect. Drug survival was significantly better in patients using concomitant csDMARDs at baseline (with a median survival 104 vs 30 months; $p<0.001$; figure). In Cox regression model baseline age (HR 0.978, $p=0.028$), and concomitant csDMARD usage (HR 0.341, $p<0.001$) were found to be as the predictors for better drug survival, female sex (HR 1.546, $p=0.039$), presence of psoriasis (HR 3.803, $p=0.015$), enthesitis

(HR 1.619, $p=0.018$) and uveitis (HR 1.732, $p=0.025$) as predictors for worse drug survival. At the time of censoring only 202 (11.6%) patients were using csDMARDs with TNFi agent. When we repeat the analysis with patients continuing csDMARDs we showed that there is no significant differences regarding TNFi survival.

Conclusions: The results of present study showed that considerable amount of SpA patients were using csDMARDs at time of first TNFi initiating and drug survival was significantly better in those patients.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4646

SAT0298 TRANSCUTANEOUS VAGUS NERVE STIMULATION IN PATIENTS WITH PSORIATIC ARTHRITIS OR ANKYLOSING SPONDYLITIS

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Background: Psoriatic arthritis and ankylosing spondylitis are chronic autoimmune diseases characterised by inflammation of both peripheral and spinal joints. The chronic inflammation may lead to impaired functionality and absenteeism from work. It has become increasingly accepted that the vagus nerve plays a pivotal role as a communicator between the immune and nervous systems¹. Recent studies in similar immune-mediated inflammatory diseases have demonstrated promising anti-inflammatory effect of vagus nerve stimulation^{2,3}.

Objectives: We hypothesised that transcutaneous vagus nerve stimulation (t-VNS) would increase the activity of the vagus nerve, and that this enhanced parasympathetic tone would reduce inflammation and disease activity. The aims of this study were to investigate the effects of t-VNS on cardiac vagal tone and disease activity in patients with psoriatic arthritis or ankylosing spondylitis.

Methods: Twenty patients diagnosed with psoriatic arthritis (median disease duration 7.0 years) and 17 patients diagnosed with ankylosing spondylitis (median disease duration 4.5 years) were included in the study. Transcutaneous vagus nerve stimulation for 120 s was performed bilaterally, thrice daily for four days, using a non-invasive handheld device. Cardiac vagal tone, measured on a linear vagal scale (LVS), and disease activity scores were assessed on the 1 st, 2nd and 5th day.

Results: In the ankylosing spondylitis group, cardiac vagal tone was significantly increased 30 min after t-VNS in comparison to baseline (6.46 vs. 6.57. LVS, $p<0.05$) (figure 1A), accompanied by a significant reduction in heart rate (68.44 vs. 65.37, $p<0.01$). Transcutaneous vagus nerve stimulation did not change cardiac vagal tone in the psoriatic arthritis group (figure 1C), however, a significant reduction in heart rate 30 min after t-VNS in comparison to baseline was observed (71.26 vs. 68.04, $p<0.01$). A significant reduction in ASDAS score was demonstrated in the psoriatic arthritis group on both day 2 (2.09 vs. 1.96, $p<0.05$) and day 5 (2.09 vs. 1.88, $p<0.01$) (figure 1D).

Abstract SAT0298 – Figure 1. Cardiac vagal tone and ASDAS score. * $p<0.05$, ** $p<0.01$

Conclusions: Transcutaneous vagus nerve stimulation may have an acute effect on cardiac vagal tone and heart rate in patients with ankylosing spondylitis and psoriatic arthritis. The observed effect of t-VNS on ASDAS scores in patients with psoriatic arthritis was not associated with a modulation of cardiac vagal tone.

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Acknowledgements: This project was supported by the Danish Psoriasis Research Fund and the Danish Rheumatism Association.

Disclosure of Interest: None declared

DOI: 10.1136/annrheumdis-2018-eular.4731

SAT0299 REAL WORLD SECUKINUMAB STUDY IN AS AND PSA – COMORBIDITIES AND EXTRAARTICULAR MANIFESTATIONS: INCIDENCE AND STATUS THROUGHOUT NON-INTERVENTIONAL AQUILA STUDY IN GERMANY

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Background: Patients with psoriatic arthritis (PsA) or ankylosing spondylitis (AS) may suffer from extraarticular manifestations (EAM) (uveitis, psoriasis) and have higher rates of comorbidities like cardiovascular diseases (CVD) or depression than the normal population. Comorbidities should be kept in mind when managing pts with PsA and AS, as they can contribute to increased mortality and influence disease activity¹.

Objectives: The aim of this interim analysis is to evaluate the incidence of selected EAM and comorbidities at baseline and the impact of secukinumab on the status of these attributes compared to baseline.

Methods: The presence and severity of uveitis and psoriasis (assessed by PASI) as well as diagnosis of coronary heart disease (CHD), stroke, heart insufficiency, and depression (assessed by Becks Depression Inventory (BDI-II)) were documented according to clinical routine at baseline and at week 4, 16, 24 and 52 after initiation of secukinumab. At baseline 486 patients were included and observed up to 52 weeks, at the time of analysis not all patients have already reached the end of the study, therefore the results are presented as observed.

Results: As expected, current plaque psoriasis was very frequent in PsA pts (63.3%), but also present in AS pts (11.5%) at baseline. For PsA pts, median PASI improved from 5.0 at baseline to 0.0 at wk 52. Half of pts with available PASI achieved clear skin at wk 52 (Tab 1).

Uveitis was more frequent in AS pts than in PsA pts (6.2% vs 0.9%). Only 1 AS pt and 2 PsA pts experienced new onset of uveitis.

CVD were more frequent in PsA than in AS patients at baseline: CHD (PsA 8.9%, AS 3.5%), heart failure (PsA 3.3%, AS 0.7%) and stroke (PsA 2.4%, AS 0.0%). During 52 wks study duration none comorbidity worsened with secukinumab treatment. Two patients with PsA were newly diagnosed with CHD and heart insufficiency throughout wk 52. No new stroke occurred.

Depression was common in both populations (PsA 15.4%, AS 12.2%) at baseline. Up to wk 52 median BDI-II improved from 12.0 to 6.0 (AS pts) and from 9.0 to 6.0 (PsA pts [Tab 1]).

Abstract SAT0299 – Table 1. PASI and BDI response under secukinumab

	Baseline	Wk 4	Wk 16	Wk 28	Wk 40	Wk 52
PASI 100 n(%)	0 (0.0)	7 (13.0)	23 (34.3)	28 (47.5)	18 (41.9)	15 (50.0)
PASI 75 n(%)	0 (0.0)	9 (16.7)	26 (38.8)	33 (55.9)	21 (48.8)	18 (60.0)
BDI-II (AS pts)	12.0	9.0	8.0	8.0	7.5	6.0
BDI-II (PsA pts)	9.0	8.0	7.5	8.0	7.0	6.0