Abstract AB0837 – Figure 1

Conclusions: This study demonstrates that anti-TNF is not associated with renal function in AS patients, which means that use of anti-TNF is safe concerning renal function in patients with AS. From our results it seems that the effect of anti-TNF on CVD in AS patients is not mediated by an effect on renal function.

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AB0838 THE EFFICACY OF ADALIMUMAB AND SULFASALAZINE IN ALLEVIATING AXIAL AND AORTIC INFLAMMATION DETECTED IN PET/CT IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS

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Background: Inflammatory pathways are likely the central link from axial spondyloarthritis to the known increased risk of cardiovascular morbidity. Literature on positron emission tomography imaging together with computed tomography (PET/CT) in the context of spondyloarthritis is limited.

Objectives: The aim was to grade the inflammatory signals in the sacroiliac joints and aorta in the PET/CT imaging before and after antirheumatic treatment of clinically active axial spondyloarthritis with either sulfasalazine (SSZ), the firstline antirheumatic drug in Finland for axial spondyloarthritis, or adalimumab (ADA).

Methods: Fourteen patients aged 18–75 years with axial spondyloarthritis and radiologic sacroiliitis as detected either by MRI or X-ray and Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) and visual analogue scale (VAS) ≥ 4 have been recruited to the pilot study. DMARD-naïve patients started SSZ for 12 weeks. Those who failed to reach remission (BASDAI and VAS ≥ 4) with SSZ or were known to be resistant to conventional DMARDs before inclusion, adalimumab was started for 16 weeks. The patients were scanned with 18F-fluorodeoxyglucose (FDG) PET/CT after inclusion and after treatment with SSZ and/or ADA. Target-to-background ratio (TBR) was assessed from the aortic root to abdominal aorta as well as for the sacroiliac joints. For statistical comparisons before and after antirheumatic treatment, paired t-test was used. Mean $\pm$ SD are shown.

Results: Our pilot study comprised of nine patients with ADA and five with SSZ. In the SSZ patients (three men, age 36.0 ± 13.4 years), mean BASDAI was 4.7 ± 1.6 before and 3.4 ± 1.8 after the treatment ($p=0.091$). In the ADA patients (six men, age 35.1 ± 9.8 years), BASDAI decreased from 4.9 ± 1.2 to 2.3 ± 1.8 ($p=0.004$). Among the SSZ patients, maximal TBR in sacroiliac joints declined from 2.35 ± 0.55 to 1.51 ± 0.22 (-35.8% , $p=0.03$) (figure 1). Aortic maximal TBR declined from 2.44 ± 0.46 to 2.07 ± 0.43 (-15.0% , $p=0.23$). In the ADA patients, maximal TBR in sacroiliac joints was 1.89 ± 0.37 before and 1.90 ± 0.51 after treatment ($+0.3\%$, $p=0.97$), and in aorta 2.15 ± 0.54 before and 2.37 ± 0.53 after treatment ($+10.4\%$, $p=0.19$).

Abstract AB0838 – Figure 1. Maximal TBR in PET/CT in sacroiliac joints and aorta are shown before and after treatment with either sulfasalazine (five patients) or adalimumab (nine patients). Each colour depicts one unique patient.

Conclusions: As detected by reduced 18F-FDG uptake, SSZ reduced inflammation in sacroiliac joints. There was also clear trend towards reduction of inflammation in aorta. ADA and SSZ both reduced clinical symptoms, but only ADA reached statistical significance. PET/CT could not show any reduction in FDG uptake in the ADA group. This may be due to the fact that ADA was used as the second line treatment, when the inflammation had already been reduced to the limit detectable by the method.

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AB0839 RADIOLOGIC PARAMETERS OF ANKYLOSING SPONDYLITIS PATIENTS TREATED WITH ANTI-TNF- α VERSUS NON-STEROIDAL ANTI-INFLAMMATORY DRUGS AND SULFASALAZINE

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Background: The introduction of anti-tumour necrosis factor- α (anti-TNF- α) has significantly altered the treatment landscape of inflammatory arthritis. It has proven to be an excellent treatment option for reducing Ankylosing spondylitis (AS) symptoms. The impact of anti-TNF- α on the radiographic progression of AS has been difficult to characterise, in part because of the relatively slow rate of radiographic change in AS and the hurdles it imposes on longer-term placebo-controlled trials. Despite symptomatic improvement, conclusions concerning effect of anti-TNF- α treatment on radiographic progression in patients with AS remain inconsistent. Furthermore, while many studies have reported the impact of anti-TNF- α on radiographic progression, limited data are available on the relationship between treatment agents and sagittal balance in AS.

Objectives: Limited data are available on the relationship between treatment agents and sagittal balance in AS. We investigated radiological features related to treatment agents and compared sagittal balance between patients treated with anti-tumour necrosis factor- α (anti-TNF- α) or non-steroidal anti-inflammatory drugs (NSAIDs) and sulfasalazine.

Methods: We prospectively enrolled 133 consecutive AS patients. Patients were eligible for the trial if they were under medical treatment with the same treatment agents for at least 1 year. All patients were treated initially with NSAIDs and

sulfasalazine. Sixty-nine patients were achieved an excellent pain control outcome with these agents (Group A). Sixty-four patients who complained of intractable low back pain were switched to anti-TNF- α treatment (Group B). Twelve radiographic parameters were measured. Clinical outcome was assessed with the Bath AS Disease Activity Index (BASDAI), erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP). All parameters were measured at enrolment, upon changing treatment agents, and every 6 months during follow-up.

Results: Mean ESR, CRP, BASDAI, and thoracic kyphosis at baseline were significantly higher in group B. After treatment, group B had significantly higher lumbar lordosis and significantly better clinical outcomes. Correlation analysis revealed significant relationships between radiologic parameters and BASDAI. On multiple regression analysis, lumbar lordosis was a significant predictor of BASDAI.

Abstract AB0839 – Figure 1

Conclusions: This study demonstrated a clear association between treatment agents and radiologic parameters in AS. Anti-TNF- α treatment improved lumbar lordosis and slowed thoracic kyphotic progression with improvement of clinical outcomes. Lumbar lordosis was a significant predictor of clinical outcome in AS patients treated with anti-TNF- α .

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AB0840

DETERMINATION OF SERUM LEVELS OF AND ANTI-DRUG ANTIBODY PRODUCTION AGAINST TNF INHIBITORS IN ANKYLOSING SPONDYLITIS: TESTING MAY BE USEFUL FOR THE ASSESSMENT OF COMPLIANCE BUT NOT THAT OF TREATMENT EFFECTIVENESS

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Background: Targeted therapies, such as TNF-alpha inhibitors revolutionised the treatment of spondyloarthritis including ankylosing spondylitis (AS).

Objectives: To determine the correlation between serum TNF-alpha inhibitor levels of patients receiving biological therapy and concentration of anti-drug antibodies, disease activity (treatment effectiveness), age of patients and elapsed time since the onset of the diagnosis and from the initiation of the therapy.

Methods: Serum levels of TNF-alpha inhibitors (mg/ml) and concentration of anti-drug antibodies (AU/ml) were measured in 37 AS patients. Altogether 12 patients were treated with infliximab (IFX), 15 received adalimumab (ADA) and 10 received etanercept (ETN). Demographic data and parameters measuring disease activity (BASDAI) were also included in the analysis.

Results: A strong negative correlation was found between the concentration of anti-drug antibodies and drug serum levels (IFX: $R^2=0.833$; ADA: $R^2=0.426$; ETN: $R^2=0.587$). On the other hand, similar correlation could not be demonstrated between serum concentrations of IFX, ADA or ETN and other factors, such as age of the patient (IFX: $R^2=0.050$; ADA: $R^2=0.090$; ETN: $R^2=0.016$), BASDAI (IFX: $R^2=0.099$; ADA: $R^2=0.071$; ETN: $R^2=0.015$), disease duration (IFX: $R^2=0.024$; ADA: $R^2<0.001$; ETN: $R^2=0.182$) and time since the initiation of therapy (IFX: $R^2=0.008$; ADA: $R^2=0.052$; ETN: $R^2=0.062$).

Conclusions: As anti-TNF-alpha antibodies decrease the serum concentration of TNF inhibitors. In our study, drug serum levels and anti-drug antibody concentrations significantly correlated with each other. However, similarly to some other reports, drug levels did not correlate with treatment efficacy. Therefore, routine assessment of serum drug and anti-drug antibody levels should not be recommended in the everyday practice in order to determine treatment effectiveness. However, the parallel evaluation of drug and anti-drug antibody levels may be effectively used in order to determine patient compliance in the case of subcutaneously administered drugs.

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AB0841

ASSESSMENT OF RELATIONSHIP BETWEEN LONELINESS, PERCEIVED SOCIAL SUPPORT, DEPRESSION AND MEDICATION ADHERENCE IN ANKYLOSING SPONDYLITIS PATIENTS

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Background: Ankylosing spondylitis (AS) is a chronic, progressive, inflammatory disease which can cause labour loss and deformities and requiring long-term treatment. Loneliness, perceived social support, depression, patients' beliefs about medicines and treatment may affect their medication adherence and treatment success.

Objectives: In this study, we aimed to investigate the relationship between loneliness, perceived social support, depression and medication adherence in AS patients.

Methods: This cross-sectional study was conducted in a tertiary rheumatology outpatient clinic. One hundred and nineteen AS patients were enrolled to the study. The socio-demographic and clinical features of the patients agreeing to participate were recorded to the "Patient Assessment Form". The patients' disease activity and functional status were determined with the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI), and the Bath Ankylosing Spondylitis Functional Index (BASFI), respectively. The pain and global assessment of the patients' were assessed with a numerical visual analogue scale (nVAS; 0–10 cm). The medication adherence of the patients was assessed with the Morisky Green Levine Scale (MGLS). The UCLA Loneliness Scale, the Multidimensional Scale of Perceived Social Support (MSPSS) and the Beck Depression Inventory (BDI) were used to determine loneliness, perceived social support, and depression of the patients.

Results: One hundred five patients (88.2%) were male, the mean age was 35.80 ± 9.08 years, and the mean disease duration was 9.88 ± 6.34 years. The mean BASDAI, BASFI and patient global assessment scores were; 4.57 ± 2.63 , 3.23 ± 2.76 , and 4.13 ± 3.23 , respectively. According to the MGLS medication adherence groups, patients with low medication adherence had higher BASDAI, spinal pain, spinal pain at night, fatigue and patient global assessment scores and had lower mean ages ($p<0.05$). Among the MGLS medication adherence groups, patients with low medication adherence had lower MSPSS scores, and had higher UCLA Loneliness Scale and Beck Depression Inventory scores ($p=0.037$, $p<0.001$, $p=0.022$, respectively) (table 1).