providing, high-resolution, and non-invasive cross-sectional view of microscopical, anterior and posterior ocular structures.

Objectives: To evaluate the retina and choroidal vascular structures in axSpA patients by using the advantage of OCT and to compare the changes (if any) with healthy control subjects.

Methods: In total 70 (66% male; mean age 39.7 ± 10.4 years) axSpA patients (50 radiographic- and 20 nr-axSpA) and 50 (mean age 41.2 ± 6.2 years) healthy control subjects were included in the analysis. All patients underwent a detailed ophthalmologic examination by the same ophthalmologist. All individuals with significant refractive errors (>3 diopters of spherical equivalent refraction) and intraocular pressure ≥ 21 mmHg were excluded from the analysis. Choroidal thickness (ChT), macula, and the ganglion cell complex (GCC) were measured by spectral domain optical coherence tomography (SD-OCT) by the same experienced operator.

Results: Mean ($\pm$ SD) BASDAI score was 3.6 ± 2.5 , BASFI score was 3.4 ± 2.9 , ASDAS-CRP was 2.6 ± 1.3 in axSpA patients and 14% of them has a history of AAU and 61% ever treated with TNFi agents. There was no significant difference between groups regarding refractive error ($P=0.640$), intraocular pressure ($P=0.815$) and BMI ($P=0.124$) that could affect the OCT measurements. ChT ($P<0.001$) were increased and GCC thickness ($P<0.001$) were decreased in axSpA patients however both layer thicknesses were similar between r- and nr-axSpA patients ($P=0.780$ and $P=0.677$) (Table). History of uveitis was not associated with ChT and GCC. Although GCC was further decreased in TNFi treated patients (105.8 vs 113.3) this difference did not reach significance ($P=0.058$). Education level was associated both ChT and GCC measurement. GCC thickness was also related with BMI and sex in univariate analysis. Other disease related characteristics including the ones related with disease activity were not related with posterior segment measurements.

Conclusion: Our results showed that beside anterior segment inflammation, posterior segment of the eye could be affected in both r- and nr-axSpA patients. Retina and choroidal vascular network forms the posterior segment of the eye. The thinning of GCC which form the inner neural layer of the retina is a good indicative of micro-neurotoxicity in axSpA. Elevation of the ChT may be an important indicator of inflammation.

Table. Demographic features and eye assessment results of study population

Variables	r-axSpA (n=50)	nr-axSpA (n=20)	axSpA (n=70)	Control (n=50)	P*
Age, mean (SD)	41.3 (11.1)	35.8 (7.3)	39.7 (10.4)	41.2 (6.2)	>0.05
BMI, mean (SD)	25.1 (4.3)	26.3 (4.1)	25.5 (4.2)	25.9 (1.3)	>0.05
Education years, mean (SD)	9.1 (4.0)	10.6 (3.6)	9.5 (3.9)	N/A	-
History of AAU, n (%)	6/42 (14.3)	2/16 (12.5)	8/58 (13.7)	N/A	-
TNFi usage, n (%)	32 (64)	11 (55.0)	43 (61.4)	N/A	-
Intraocular pressure, mmHg, mean (SD)	15.0 (2.3)	14.6 (1.9)	14.8 (2.2)	14.8 (2.2)	>0.05
Choroid thickness μ M, mean (SD)	333.3 (68.8)	329.8 (69.8)	332.3 (68.6)	263.3 (26.9)	<0.001
Macula thickness μ M, mean (SD)	255.9 (32.3)	256.1 (16.8)	255.9 (28.6)	262.6 (20.8)	>0.05
GCIPL μ M, mean (SD)	106.9 (8.7)	113.2 (27.2)	108.7 (16.3)	112.7 (7.3)	<0.001

* P between AxSpA and controls.

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AB0713

MAGNETIC: RESONANCE IMAGING AND ULTRASONOGRAPHIC MEASUREMENTS OF THE FEMORAL CARTILAGE THICKNESS IN PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) is a progressive inflammatory disease involving cartilaginous structures in the spine and peripheral joints.

Objectives: To examine the role of musculoskeletal ultrasound (MSUS) and magnetic resonance imaging (MRI) in assessing femoral cartilage thicknesses in patients with AS and healthy controls, and to study the correlation between femoral cartilage thickness measurements and disease parameters

Methods: Twenty five patients with AS (17 males and 8 females), and twenty five age, sex and BMI matched healthy individuals were included. For all patients assessment of disease activity, spinal mobility, functional limitation and radiological changes were done. Thickness of the femoral articular cartilage was measured by MSUS using a 10-18 MHz linear probe, three mid-point measurements were taken from each knee at the lateral condyle, intercondylar area, and medial condyle. Thickness of the femorotibial articular cartilage was measured by MRI using 1.5 Tesla MR machine.

Results: AS patients had thinner femoral cartilage thickness than the healthy controls at all MSUS measurement sites, with statistically significant differences at medial femoral condyle and intercondylar area in both right and left knees ($p<0.05$). According to MRI examination, AS patients had statistically significant ($p<0.05$) thinner cartilage thickness at all subdivisions of femoral and tibial condyles than the healthy controls. Femoral cartilage thickness measurements either assessed by MSUS or MRI was negatively correlated with age, age at onset of the disease, and measures of disease activity and radiological changes. Positive correlation between ultrasonographic total femoral cartilage thickness and MRI total femoral cartilage thickness was found ($r=0.49$, $p=0.02$).

Conclusion: Patients with ankylosing spondylitis seem to have thinner femoral cartilage thickness than healthy controls. Correlations of knee cartilage thickness (assessed by MSUS and MRI) with demographic data and disease parameters reflect useful value of MSUS and MRI in determining early cartilage loss in AS patients.

REFERENCES

- [1] AIDhaeri F, Almeri T, Dwid N, Majdali A, Janoudi N and Almoallim H(2017). Rituximab Can Induce Remission in a Patient with Ankylosing Spondylitis Who Failed Anti-TNF- α Agent. Am J Case Rep.; 18 :143-147.
- [2] Amin S, LaValley MP, Guermazi A, Grigoryan M, Hunter DJ, Clancy M, et al (2005). The relationship between cartilage loss on magnetic resonance imaging and radiographic progression in men and women with knee osteoarthritis. Arthritis Rheum; 52: 3152-3159.
- [3] Andriacchi TP and Favre J (2014). The nature of in vivo mechanical signals that influence cartilage health and progression to knee osteoarthritis. Curr Rheumatol Rep.; 16(11) :463.
- [4] Anwar F, A-Khayer A, Joseph G, Fraser MH, Jigajinni MV and Allan DB (2011). Delayed presentation and diagnosis of cervical spine injuries in long-standing ankylosing spondylitis. Eur Spine J.; 20(3) :403-7.

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AB0714

BALANCE AND FALLS IN AXIAL SPONDYLOARTHRITIS: A CROSS SECTIONAL STUDY

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Background: Spondyloarthritis (SpA) patients may suffer of balance loss predisposing them to falls.

Objectives: To study balance impairment and falls in SpA patients and its association with clinical and epidemiological variables, disease activity, functional and metrology indexes.

Methods: Cross sectional study of 55 SpA patients with axial disease. Clinical and epidemiological were collected from the charts. Balance was assessed by Berg Balance Scale(BBS). The following instruments were applied: ASDAS (Ankylosing Spondylitis Disease Activity Score)-ESR, ASDAS-CRP, BASDAI (Bath Ankylosing Spondylitis Disease Activity Index), BASFI(Bath Ankylosing Spondylitis Functional Index), BASMI(Bath Ankylosing Spondylitis Metrology Index) and ASQoL (Ankylosing spondylitis quality of life questionnaire). The number of falls in the last year was collected.

Results: In this sample, 30.9% had high risk of falls by the BBS and 25.4% recalled having at least one fall in the last years. The BBS values were lower in those with white ethnic background($p=0.01$); and smokers($p=0.03$) and with HLA-B27($p=0.03$) and correlated inversely with BASDAI($\rho=-0.28$), ASDAS-ESR($\rho=-0.32$) and ASDAS-CRP($\rho=-0.33$), BASFI($\rho=-0.71$, $p<0.0001$), BASMI($\rho=-0.80$; $p<0.0001$), ASQoL($\rho=-0.57$; $p<0.001$) and age($\rho=-0.50$; $p<0.001$). Multivariate analysis showed that BASFI and BASMI were independently associated with BBS($p=0.02$ and

0.0001 respectively). Patients with falls had lower BBS ($p=0.03$) and loss of balance correlated with impairment of the quality of life ($\rho=-0.56$; $p<0.001$).

Conclusion: Balance is impaired in 1/3 of SpA patients and the BBS is associated mainly with functional and metrology indexes, showing that patients with severe cumulative damage are more affected.

REFERENCES

- [1] - Pompeu JE, Romano RS, Pompeu SM, Lima SM. Static and dynamic balance in subjects with ankylosing spondylitis: literature review. *Rev Bras Reumatol.* 2012; 52:409-16.
- [2] - Sawacha Z, Carraro E, Del Din S, Guiotto A, Bonaldo L, Punzi L, et al. Biomechanical assessment of balance and posture in subjects with ankylosing spondylitis. *J. Neuroeng Rehabil.* 2012; 9:63.

TABLE 1. - Study of BBS (balance berg scale) values according to epidemiological, clinical and treatment variables

	Median BBS with the variable (IQR)	Median BBS without the variable (IQR)	p
Male gender	51(44.0-55.0)	51.0(44.2-53.7)	0.80
White ethnic background	49.0(42.5-53.0)	54.0(30.2-55.0)	0.01
Exposed to tobacco (ex and current)	46.0(41.5-54.0)	52.0(46.5-55.0)	0.03
Bilateral sacroiliitis	51.0(45.0-55.0)	53.5(46.2-55.0)	0.63
Enthesitis	50.0(38.5-55.2)	51.0(44.5-55.0)	0.45
Dactylitis	50.5(42.0-54.2)	51.0(44.0-55.0)	0.73
Uveitis	51.0(46.5-55.0)	50.5(41.7-55.0)	0.26
Peripheral arthritis	52.0(40.7-55.7)	51.0(33.0-54.0)	0.92
HLA B27 presence	52.0(44.5-55.0)	48.5(39.5-51.1)	0.03
Anti TNF- α users	50.5(45.0-54.7)	52.0(39.0-55.0)	0.67
History of falls in the last year	46.5(40.0-50.2)	52.0(44.5-55.0)	0.03

TABLE 2. - Correlation studies of BBS (berg balance scale) values with age, disease duration, disease activity indexes, functional and metrology indexes and quality of life

	Rho	95% confidence interval	p
BASDAI	-0.28	-0.51 to -0.008	0.03
ASDAS VHS	-0.32	-0.54 to -0.05	0.01
ASDAS CRP	-0.33	-0.55 to -0.06	0.01
BASFI	-0.71	-0.82 to -0.55	<0.0001
BASMI	-0.80	-0.88 to -0.67	<0.0001
ASQoL	-0.56	-0.72 to -0.35	<0.0001
Age (years)	-0.50	-0.68 to -0.25	<0.0001
Disease duration (years)	-0.10	-0.36 to 0.17	0.44

BASDAI=Bath Ankylosing Spondylitis Disease Activity Index; ASDAS=Ankylosing Spondylitis Disease Activity Score, ESR=erythrocyte sedimentation rate; CRP=C reactive protein; BASMI=Bath Ankylosing Spondylitis Metrology Index; BASFI=Bath Ankylosing Spondylitis Functional Index; ASQoL=Ankylosing Spondylitis Quality of Life questionnaire.

Disclosure of Interests: None declared

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AB0715 ASSESSMENT OF BODY COMPOSITION IN LEAN MASS AND FAT MASS IN SPONDYLOARTHRITIS

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Background: Mohamed Montacer Kchir bsorptiometry Absorptiometer (DEXA) is the gold standard for the study of body composition. It allows to sepMohamed Montacer Kchirarate the 2 compartments lean mass (LM) and fat mass (FM), and to study their distribution at the android and gynoid level

Objectives:

- Evaluate the change in total body composition measured the DEXA in patients with spondyloarthritis (SpA) compared to a control group.
- Evaluate the distribution of LM/FM at the android and gynoid levels.
- Study the influence of disease activity and bone mass on body composition.

Methods: This was a case-control study involving 50 patients with SpA compared to 50 controls. Each control was comparable in age and sexe to the matched patient.

Results: The mean age was 36 years in the SpA group and 35,5 years in the control group. Eighty per cent of the patients with SpA were male. The mean BASDAI was $4,64 \pm 2,5$. The mean ESR rate was

$32,37 \pm 20,95$, the mean CRP rate was $18,05 \pm 27,22$ [0-141]. The mean body mass index (BMI) was $25,4 \text{ Kg/m}^2$ ($25,74 \text{ Kg/m}^2$ in the control group). The mean bone mineral density (BMD) at the lumbar spine was 1.033 g/cm^2 (with a mean T score of -1.5 DS and Z score -1.3 DS) while it was 0.956 g/cm^2 at upper end of the femur level (with a mean T score of -0.8 and a mean Z score of -1.2 DS). In controls, the mean BMD was 1.055 g/cm^2 and 1.013 g/cm^2 at the lumbar spine and upper end of the femur respectively (with a mean T score of -1.4 DS and -0.5 SD and a mean Z score of -1.4 and -0.3 respectively at the lumbar and superior femoral sites). In the SpA group, the mean value of whole body FM was 31.6%, whereas this average was around 36% in controls. FM was distributed as follows: 39.2% at the android level versus 37.7% at the gynoid level. For LM, the whole body average was 68.4%, while the average was 60.8% at the android level and 62.3% at the gynoid level. The 2 groups (patients and controls) were comparable in terms of BMD, T score and Z score measurements at different lumbar and superior femoral sites. The SpA group and their healthy controls were comparable in terms of FM and LM measurements and their distributions. We found a significant correlation between the rate of CRP and the measurements of FM at the android level ($r = -0.358$, $p = 0.023$) (and conversely the LM at the android level). However, we found no association between disease activity (BASDAI) and body composition.

Conclusion: Changes in body composition (MM/MG) related to chronic inflammatory status may occur during chronic inflammatory diseases. However, few studies in the world have focused on changes in the bodily compartments and their distribution in SpA.

Disclosure of Interests: None declared

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AB0716

ESTABLISHMENT OF BASDAI CUT-OFFS FOR THE DISEASE ACTIVITY STATES BASED ON ASDAS CUT-OFFS IN TAIWANESE ANKYLOSING SPONDYLITIS PATIENTS

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Background: The Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) has been widely utilized to evaluate disease activity in patients with ankylosing spondylitis (AS). However, the cut-off of BASDAI used to indicate high disease activity (i.e., ≥ 4) was determined arbitrarily and was suggested as a criterion to initiate biological therapy for AS patients. The Ankylosing Spondylitis Disease Activity Score (ASDAS) has been developed as a new composite index to assess AS disease activity. The cut-off values for disease activity states has been defined and validated. ASDAS ≥ 2.1 was selected as a criterion of starting biological therapy. However, the BASDAI cut-off values corresponding to the ASDAS cut-off values for disease activity states were unknown.

Objectives: The purpose of this study was to estimate the corresponding BASDAI and ASDAS cut-off in a Taiwanese AS cohort.

Methods: Since November 2016, we assessed the Ankylosing Spondylitis Disease Activity Score (ASDAS) and the Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) regularly and recorded demographic data, comorbidity, family history, medication use for AS patients in Taichung Veterans General hospital (TCVGH) using an electronic patient reported data system linked to an electronic medical record system. We identified 489 AS patients with complete baseline demographic and assessment data from the TCVGH electronic data system during 2016/11–2018/10. We used receiver operating characteristic (ROC) curves with Youden's J statistic to determine the cut-off values of BASDAI that correspond to ASDAS disease activity cut-offs (i.e., 1.3, 2.1 and 3.5).

Results: We included a total of 489 AS patients [114 (23.3%) females, mean age 44.1 years (S.D. 13.9), mean symptom duration 18.0 years (S.D. 11.9), 152 (31.1%) current biologic users]. Mean BASDAI, ASDAS-ESR and ASDAS-CRP scores were 2.1 (S.D. 1.5), 1.6 (S.D. 0.8) and 1.5 (S.D. 0.9) respectively. Mean levels of CRP and ESR were 0.6 (S.D. 1.5) mg/dl and 12.2 (S.D. 14.0) mm/hr respectively. Based on ASDAS-CRP, the numbers (%) of AS patients with inactive disease (<1.3), low disease activity (1.3-2.1), high disease activity (2.1-3.5) and very high disease activity (≥ 3.5) were 210 (42.9), 171 (35.0), 88 (18.0) and 20 (4.1) respectively. Based on ASDAS-ESR, the numbers (%) of AS patients with inactive disease, low disease activity, high disease activity and very high disease activity were 202 (41.3), 174 (35.6), 96 (19.6) and 17 (3.5)