Background: Enthesitis is an important feature of ankylosing spondylitis (AS) and structural and inflammatory enthesal lesions (EL) are frequently present on ultrasound. Plain radiographs also provide good imaging of structural enthesal involvement. Until now, little is known about the presence of structural EL at the hip and pelvic region and the association with patient characteristics in AS.

Objectives: Our aim was to investigate the prevalence of radiographic EL at the hip and pelvic region in AS patients compared to age and sex matched control subjects and to explore the relation with AS patient characteristics.

Methods: AS patients from the Groningen Leeuwarden Axial SpA (GLAS) cohort, included between November 2004 and December 2010, with available anteroposterior (AP) pelvis radiographs at baseline were included. All patients fulfilled the modified New York criteria for AS. Additionally, 100 randomly selected AP pelvis radiographs from age and sex matched control subjects were obtained from the radiology department of the University Medical Center Groningen. The sacroiliac joints of all radiographs were blinded and radiographs were scored independently by two trained observers unaware of patient characteristics and treatment. The enthesal sites scored were: trochanter major, trochanter minor, os ischiolum, crista ischiadica and left and right side. The following 3 EL were scored: erosion/cortical irregularity, calcification and enthesophyte. Only lesions with absolute agreement between both observers were used for analyses. Radiographic spinal involvement was scored according to the modified Stoke AS Spine Score (mSASSS; range 0-72) and radiographic hip involvement according to the Bath AS Radiology Index (BASRI)-hip (range 0-4).

Results: Of the 167 included AS patients, 117 (70%) were male, mean age was 43 ± 11 years, 133 (80%) were HLA-B27 positive and mean symptom duration was 16 years (range 1-53), 127 (76%) AS patients and 58 (58%) controls showed EL, with 501 lesions in total of which 377 (75%) in AS patients. AS patients showed significantly more lesions than controls at all 5 locations. AS patients without EL had significantly more often radiographic spinal involvement (p<0.005) and had longer symptom duration (median 18 vs 7.5 yrs, p<0.005) than patients without EL. Furthermore, patients with BMI >25 had significantly more lesions (p<0.005) and had longer symptom duration (median 18 vs 7.5 yrs, p=0.22). AS patients with EL were significantly older (mean 45.2 vs 35.1 yrs, p<0.05) and had longer symptom duration (median 18 vs 7.5 yrs, p<0.005) than patients without EL. Additionally, AS patients with EL had significantly more often radiographic spinal damage than patients without EL with median mSASSS total score 8.7 vs 1.0 (p<0.005) and a trend toward significance for radiographic hip involvement (BASRI-hip score ≤2, p=0.06).

Conclusion: Radiographic EL at hip and pelvic region are significantly more prevalent in AS patients than in controls (31% vs 21%, p=0.07). Prevalence of calcifications was low in both groups and not significantly different (5% vs 2%, p=0.22). AS patients with EL were significantly older (mean 45.2 vs 35.1 yrs, p<0.005) and had longer symptom duration (median 18 vs 7.5 yrs, p<0.005) than patients without EL. Furthermore, patients with BMI >25 had significantly more often enthesophytes (42% vs 16%, p<0.05) than patients with a normal BMI. Additionally, AS patients with EL had significantly more often radiographic spinal damage than patients without EL with median mSASSS total score 8.7 vs 1.0 (p<0.005) and a trend toward significance for radiographic hip involvement (BASRI-hip score ≤2, p=0.06).


References:
interception over union (I/U:Intersection over Union is a form of measurement used to indicate the accuracy of an object detector.) for grade 3-4. The mean average precision (mAP) score of our object detection model is ≥85.9 for test data set (image 1). The evaluation quality of the model can be affected by the distribution and number of each class.

Conclusion: The experience of the x-ray technician, dose adjustment, and position differences due to patient compliance complicate the standardization of SIJ radiography and this may cause interobserver disagreement (3). Artificial intelligence models to be created with a larger and homogeneous data set in order to ensure objective standardization in the interpretation of the SIJ graph can help physicians.

REFERENCES:

Disclosure of Interests: None declared.
DOI: 10.1136/annrheumdis-2021-eular.3343

POS0037

DOES IMAGING OF THE SACROILIAC JOINT DIFFER IN PATIENTS PRESENTING WITH UNDIAGNOSED BACK PAIN AND PSORIASIS, ACUTE ANTERIOR UVEITIS, AND COLITIS: AN INCEPTION COHORT STUDY


Background: Axial spondyloarthritis (axSpA) presents diagnostic challenges incurring a delay of up to a decade and relies considerably on radiographic and MRI evaluation of the sacroiliac joint (SIJ) as assessed by magnetic resonance imaging (MRI). Several studies have reported high rates of bone marrow edema (BME) suggestive of inflammatory SIJ changes in up to 20% of individuals in the general population <45 years. An update of the definition of a positive MRI of the SIJ in axSpA for classification purposes, based on the number of slices or quadrants showing BME or structural changes such as erosions or fat lesions (FL), was recently published by ASAS.

Objective: To compare the influence of age on the prevalence of inflammatory and structural MRI changes in the SIJ of patients with and without axial spondyloarthritis.

Methods: MRI of the SIJ of patients referred for differential diagnosis of back pain who were finally diagnosed with axSpA or not by experienced rheumatologists, were evaluated using semi-coronal STIR and T1-weighted MRI sequences. All images were scored blinded to, age, sex and diagnosis for the occurrence of BME, FL, erosions and ankylosis on the level of SIJ-quadrants (SIJ-Q). Patient groups were based on decade of age (until 29, 30-39, 40-49 and ≥50 years).

Results: A total of 309 patients were recruited, 175 axSpA and 134 non-SpA patients were included in the analysis. The mean age was 38.5±11.4 and 43.4±13.8 years, respectively. There were no significant group differences for unilateral versus bilateral radiographic sacroiliitis and no significant differences in the frequencies, type, or distribution of MRI lesions (Table 1).

Disclosure of Interests: Walter P Maksymowych: Novartis, Pfizer, UCB, Consultant of: Abbvie, BMS, Boehringer, Galapagos, Gilead, Lilly, Novartis, Pfizer, UCB, Grant/research support from: Abbvie, Novartis, Pfizer, Ulrich Weber: None declared, Jon Chan: None declared, Raj Carmona: None declared, James Yeung: None declared, Sibel Aydin: None declared, Lisa Reis: None declared, Liam Martin: None declared, Olga Zioluzia: None declared, Dianne Mosher: None declared, Stephanie Keeling: None declared, Sherry Roheker: None declared, Rana Dadashova: None declared, Joel Paschke: None declared, Amanda Carapelli: None declared, Robert G Lambert: None declared.
DOI: 10.1136/annrheumdis-2021-eular.3382

POS0038

THE INFLUENCE OF AGE ON THE PREVALENCE OF INFLAMMATORY AND POST-INFLAMMATORY MRI LESIONS IN THE SACROILIAC JOINTS OF PATIENTS WITH AND WITHOUT AXIAL Spondyloarthropathy

X. Baraliakos1, S. Tsiamis1, A. Kühn1, M. Fruth2, J. Braun1, 1Ruhr-University Bochum, Rheumazentrum Ruhrgebiet, Herne, Germany; 2Radiologie blick, Rheumazentrum Ruhrgebiet, Herne, Germany

Background: Axial spondyloarthritis (axSpA) is clinically characterized by chronic inflammatory back pain and by inflammatory and structural changes in the sacroiliac joint (SIJ) as assessed by magnetic resonance imaging (MRI). Several studies have reported high rates of bone marrow edema (BME) suggestive of inflammatory SIJ changes in up to 20% of individuals in the general population <45 years. An update of the definition of a positive MRI of the SIJ in axSpA for classification purposes, based on the number of slices or quadrants showing BME or structural changes such as erosions or fat lesions (FL), was recently published by ASAS.

Objectives: To compare the influence of age on the prevalence of inflammatory and structural MRI changes in the SIJ of patients with chronic low back pain diagnosed with axSpA or non-SpA.

Methods: MRIs of the SIJ of patients referred for differential diagnosis of back pain who were finally diagnosed with axSpA or not by experienced rheumatologists, were evaluated using semi-coronal STIR and T1-weighted MRI sequences. All images were scored blinded to, age, sex and diagnosis for the occurrence of BME, FL, erosions and ankylosis on the level of SIJ-quadrants (SIJ-Q). Patient groups were based on decade of age (until 29, 30-39, 40-49 and ≥50 years).

Results: A total of 309 patients were recruited, 175 axSpA and 134 non-SpA patients were included in the analysis. The mean age was 38.5±11.4 and 43.4±13.8 years, respectively. There were no significant group differences for unilateral versus bilateral radiographic sacroiliitis and no significant differences in the frequencies, type, or distribution of MRI lesions (Table 1).

Disclosure of Interests: None declared.