examine factors associated with presenteeism, absenteeism, work impairment and activity impairment.

Results: A total of 156 patients with axSpA were included: 72.4% employed, 80.1% male, 86.5% Chinese, mean age 39.2 (13.0) years, mean disease duration 8.5 (8.9) years. The mean BASDAI was 3.2 (2.0), mean BASFI was 2.1 (2.1), mean EQ-5D was 0.8 (0.1) and mean activity impairment was 28.2%. Among employed patients, mean absenteeism was 4.5%, mean presenteeism was 24.9% and mean work impairment was 27.6%. In multivariable analysis, absenteeism was associated with disease duration (β : -0.44; 95% CI: -0.80, -0.07; $p=0.02$) and EQ-5D (β : -46.28; 95% CI: -89.63, -2.92; $p=0.04$). Presenteeism was associated with BASDAI ≥ 4 (β : 8.23; 95% CI: 0.24, 16.22; $p=0.04$), BASFI (β : 3.59; 95% CI: 1.25, 5.92; $p<0.01$) and EQ-5D (β : -64.40; 95% CI: -115.79, -13.02; $p=0.02$). Work impairment was associated with BASFI (β : 3.57; 95% CI: 0.71, 6.43; $p=0.02$) and EQ-5D (β : -88.00, 95% CI: -150.87, -25.13; $p<0.01$). Activity impairment was associated with age (β : -0.21; 95% CI: -0.41, -0.01; $p=0.04$), BASDAI ≥ 4 (β : 19.94; 95% CI: 13.79, 26.09; $p<0.01$), BASFI (β : 3.29; 95% CI: 1.63, 4.95; $p<0.01$), EQ-5D (β : -82.28; 95% CI: -125.15, -39.41; $p<0.01$).

Conclusion: Factors such as active disease, reduced physical function and poorer quality of life are associated with reduced work outcomes in patients with axSpA in Singapore. These factors need to be addressed to improve work outcomes.

REFERENCES:

- [1] Martindale, J., et al. (2015). "The impact of ankylosing spondylitis/axial spondyloarthritis on work productivity." *Best Pract Res Clin Rheumatol* 29 (3): 512-523.
- [2] Ng, I. Y., et al. (2012). "Designing and implementing an evaluation of a national work support program." *Eval Program Plann* 35(1): 78-87

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THU0383

PREVALENCE OF SPONDYLOARTHRITIS IN FIRST DEGREE RELATIVES OF PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: Ankylosing spondylitis (AS) is a common rheumatic disease with higher prevalence in relatives of patients already diagnosed with the disease. Heritability of AS in twins is estimated to 90%.

Objectives: The aim of this study was to examine first degree relatives (FDR) of AS patients, to determine whether the patients already fulfil criteria for axial and/or peripheral spondyloarthritis (SpA) and compare the findings to healthy controls (HC).

Methods: We recruited 32 patients without prior rheumatologic diagnosis with first degree relative treated for AS and 20 age and sex matched HC. The clinical data were collected and rheumatology examinations were performed by trained rheumatologists. Magnetic resonance imaging (MRI) of sacroiliac joints (SIJ) was read by trained rheumatologist who was blinded to the patient's data. Patients were further divided into the subsets of axial SpA (imaging and clinical arm) and peripheral SpA fulfilling The Assessment of SpondyloArthritis international Society (ASAS) classification criteria¹ and subset of non-SpA. The ASAS modified Berlin algorithm for diagnosis of axial SpA² (axSpA) was also applied.

Results: Altogether, 78% (n=25) FDR referred back pain, 34% (n=11) referred inflammatory back pain (IBP), and 22% (n=7) did not refer back pain, which was significantly different from that in HC (65% referred back pain, 0% referred IBP, 35% referred no back pain, $p=0.0038$ and $p=0.03$, respectively). Bone marrow edema (BME) was found in 50% (n=16) of FDR, and 22% (n=7) had highly suggestive BME³ (hsBME) corresponding to typical findings of active sacroiliitis compared to HC where 10% (n=2) had BME, and none had hsBME ($p=0.063$, $p=0.035$, respectively). Furthermore, FDR had higher BASDAI and higher prevalence of HLA-B27 positivity compared to HC (2.0 (± 1.5) and 75% vs. 0.4 (± 0.6) and 5%, $p=0.001$ and $p=0.001$, respectively), no other significant differences were observed. The diagnosis of SpA was confirmed in 37% (n=12) of all FDR, 25% (n=8) patients fulfilled the imaging arm and 6% (n=2) fulfilled the clinical arm of ASAS classification criteria for axSpA, 6% (n=2)

patients fulfilled ASAS classification criteria for peripheral SpA. The diagnosis of axSpA according to the ASAS modified Berlin algorithm was confirmed in 41% (n=13) patients. Analysis of clinical characteristics showed significant difference between serum CRP levels in SpA vs. non-SpA (8.2 (± 12.5) vs. 2.3 (± 4.4), $p=0.02$, respectively) and HLA-B27 positivity (100% vs. 60%, $p=0.01$, respectively). Presence of back pain and inflammatory back pain were more often in SpA compared to non-SpA subsets (100% and 67% vs. 65% and 15%, $p=0.03$ and $p=0.006$, respectively).

Conclusion: More than one third of first degree relatives of patients with AS fulfilled the criteria for axial or peripheral SpA, and had significantly higher prevalence of inflammatory back pain and increased BASDAI compared to HC. Based on these data, screening of family members of patients with AS should be recommended.

REFERENCES:

- [1] Rudwaleit M, van der Heijde D, Landewé R, et al. The development of Assessment of SpondyloArthritis international Society classification criteria for axial spondyloarthritis (part II): validation and final selection. *Ann Rheum Dis* 2009; 68: 777-83.
- [2] van der Berg R, de Hooze M, Rudwaleit M, et al. ASAS modification of the Berlin algorithm for diagnosing axial spondyloarthritis: results from the SPondyloArthritis Caught Early (SPACE)-cohort and from the Assessment of SpondyloArthritis international Society (ASAS)-cohort. *Ann Rheum Dis* 2013; 72: 1646-53.
- [3] Lambert RG, Bakker PA, van der Heijde D, et al. Defining active sacroiliitis on MRI for classification of axial spondyloarthritis: update by the ASAS MRI working group. *Ann Rheum Dis* 2016; 75: 1958-68.

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THU0384

IMAGING OF SACROILIAC JOINTS IN EARLY SPONDYLOARTHRITIS: SHOULD WE CHOOSE COMPUTED TOMOGRAPHY OR MAGNETIC RESONANCE IMAGING?

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Background: In view of the limited utility of pelvic radiography to recognize sacroiliitis in its earliest stages, magnetic resonance imaging (MRI) has been considered as a reliable imaging modality to detect acute subchondral inflammation at disease onset. However, several recent studies reported a high proportion of false-positive of sacroiliac joints (SIJ) MRI. Other studies demonstrated that computed tomography (CT), by its ability to detect early structural damage, may be helpful. Consequently, strengths and limitations of each imaging technique need to be considered when choosing the most appropriate first-line modality in clinical practice.

Objectives: We aimed to assess the performance of CT scanning and MRI for detecting sacroiliitis in early SpA by estimating the sensitivity and the specificity of each imaging technique.

Methods: Consecutive patients, aged 16 years and over, referred for symptoms suggestive of SpA from February 2014 to February 2017 were enrolled in this cohort. After excluding patients whose conventional radiography showed a confirmed sacroiliitis, eligible patients underwent SIJ CT and/or MRI. The CT and MR images were reviewed by 2 musculoskeletal radiologists blinded to clinical findings. Then, 2 rheumatologists recorded from the clinical files if patients fulfilled the ASAS (Assessment of Spondyloarthritis international Society) classification criteria for SpA. This classification was considered as the gold standard of this study.

Results: Fifty-three patients were included: 14 men and 39 women. The mean age was 36 years. The prevalences of HLA-B27 and elevated CRP were 27.6% and 16%, respectively. Fifty-eight percent of the patients (n=31) fulfilled the ASAS criteria for axial SpA. Among these patients, 30 patients underwent SIJ CT and 27 underwent SIJ MRI. Sacroiliitis was visualized by CT in 28 out of 30 patients (93.3%) and by MRI in 17 out of 27 patients (63%). Among the 22 patients who did not

fulfill the ASAS criteria for SpA, 21 patients underwent SIJ CT and 20 underwent SIJ MRI. Sacroiliitis was not visualized by CT in any patients and was visualized by MRI in 2 out of 20 patients (10%). Sensitivity, specificity, positive and negative likelihood ratio of CT calculated with ASAS classification as golden standard were respectively estimated at 93.3%, 100%, 100% and 91.3%. Youden index was estimated at 0.93 and Q Yule coefficient at 1. Sensitivity, specificity, positive and negative likelihood ratio of MRI calculated with ASAS classification as golden standard were respectively estimated at 62.9%, 90%, 89.5% and 64.3%. Youden index was estimated at 0.53 and Q Yule coefficient at 0.88.

Conclusion: In our study, the evaluation of sacroiliitis by CT, in comparison with MRI, has shown to be more sensitive and more specific. However, other factors should also be taken into account while comparing CT and MRI such as the high radiation exposure of CT scanning in the one hand and the cost and the restricted accessibility of MRI in the other hand.

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THU0385

COMPARISON OF CLINICAL AND DEMOGRAPHIC FEATURES OF JUVENILE SPONDYLOARTHRITIS BETWEEN ISRAELI AND US CHILDREN

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Background: Clinical observations among Israeli pediatric rheumatologists reveal that some of the clinical and demographic features of Israeli children diagnosed with Juvenile Spondyloarthritis (JSpA) are different as compared to the typical characteristics described in US studies.

Objectives: In this study, we compared clinical, laboratory and radiographic features to determine whether differences occur between the two populations of JSpA.

Methods: We performed a retrospective, cross-sectional, multicenter comparison of JSpA patients from 3 large Israeli pediatric rheumatology centers and a large US pediatric rheumatology center. Patients with a diagnosis of Juvenile Ankylosing Spondylitis (JAS) and/or Enthesitis-related Arthritis (ERA) were included. The demographic, clinical and imaging features of the subjects upon presentation were compared, including MRI of the sacroiliac joints. Inter Center Comparison (ICC) between the Israeli and US musculoskeletal radiologists was conducted.

Results: Overall 87 patients met the inclusion criteria (39 Israeli, 48 US). As compared to the US population, the Israeli population was less likely to be male (56% vs. 75%, $p=0.11$), and more likely to be older at time of diagnosis (14.3 vs. 11.9 years, $p<0.001$). Upon presentation, axial symptoms (inflammatory back pain) and physical examination findings consistent with sacroiliitis (SIJ tenderness, modified Schober test), were significantly more prevalent among Israeli patients (59% vs. 35.4%, 48.7% vs. 16.7%, and 41.2% vs. 21.5%, respectively, all $p<0.05$), whereas peripheral arthritis and enthesitis were significantly more prevalent among the US patients (43.6% vs. 91.7% and 7.7% vs. 39.6% in Israeli patients vs. US patients, $p<0.05$). For HLA-B27, 32% of the Israeli patients vs. 66.7% of the US patients were positive ($p=0.007$). In addition, of those who had imaging ($N=30$ and $N=37$ for Israeli and US cohorts) 96.7% of the Israeli patients versus 29.7% of the US patients demonstrated positive MRI findings that were consistent with sacroiliitis ($p<0.001$, overall $N=67$). An excellent level of agreement was observed between the Israeli and US musculoskeletal radiologists ($\kappa=0.9$).

Conclusion: We found important distinctions between two populations with JSpA. Israeli children were more likely to present with axial disease, less likely to demonstrate HLA B27 carrier positivity, and more likely to demonstrate sacroiliitis on MRI than US children, who more commonly presented with peripheral arthritis and enthesitis, HLA-B27 positivity and negative MRI findings. These unique findings of the Israeli JSpA population, also as compared to descriptions of JSpA patients in the medical literature, point to environmental and/or population specific factors that merit additional studies in order to unravel the differences in disease presentation between the two countries.

Abstract THU0385 – Figure 1

REFERENCE:

- [1] Shirley M. L. Tse; Ronald M. Laxer. New advances in juvenile spondyloarthritis. *Nature Reviews Rheumatology*, 2012, Vol.8(5), p.269–279.

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THU0386

CHILEAN AXIAL SPONDYLOARTHRITIS PATIENTS REPORT HIGH DISEASE BURDEN AND IMPAIRED WORK ACTIVITY – AN INTERNET SURVEY IN 472 PATIENTS

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Background: Axial spondyloarthritis (axSpA) can be associated with significant burden and impaired work activity. In Chile, several barriers impede adequate treatment, such as insufficient access to specialists and biological treatment. Furthermore, there is an important lack of insight into the local situation. This hampers the development of adequate national treatment standards and financial support.

Objectives: 1. To evaluate the disease burden, quality of life and work participation in Chilean axSpA patients. 2. To assess gender differences in disease burden and 3) compare patients with and without biologics.

Methods: A cross sectional online survey among Chilean SpA patients, recruiting via the internet website and associated social media of the Chilean SpA Patient Foundation ("Espondilitis Chile"). The survey was written in Spanish and requested information, mostly via multiple choice options, on gender, age, disease characteristics (diagnosis, disease duration, treatment), disease burden (BASDAI and BASFI), quality of life (ASAS Health Index) and work participation (WPAI). Only axSpA patients were included for further analyses. The association between BASDAI, quality of life or work participation (presenteeism, absenteeism) and subgroups (gender, biologics) was assessed through univariable regression and subsequently multivariable regression analyses, correcting for age, disease duration and concomitant treatment (NSAIDs, DMARDs, opiates).

Results: Between July and October 2018, 625 patients completed the website survey, of whom 472 reported a diagnosis with axSpA (91% radiographic axSpA, 37% male, mean age 42 years, 83% BASDAI $\geq$ 4, table 1). Twenty percent used a biological and patients with biologics were more likely to have a paid job ($p=0.01$) and had significantly lower BASDAI, BASFI, ASAS HI and risk of absenteeism. In multivariable analyses, biologics remained significantly associated with a lower BASDAI. Interestingly, biologics were used significantly more often in male patients compared to females (26% versus 16%, $p<0.01$), while BASDAI, ASAS HI and chance of absenteeism and presenteeism were significantly higher in female patients (table 1). After correction for treatment, the gender difference in BASDAI, absenteeism and presenteeism was not significant anymore.

Conclusion: The results of the web survey demonstrate a high level of disease burden and work impairment in Chilean axSpA patients. The use of biologics is low, although its use is independently associated with having a lower disease activity. Women used significantly less biologics despite reporting a worse disease state (BASDAI, ASAS HI) and greater work disability, suggesting inequality in access to treatment.