

POS0981

COMPUTED TOMOGRAPHY-BASED ASSESSMENT OF RADIOGRAPHIC PROGRESSION IN SPINE AND SACROILIIAC JOINTS AFTER PREGNANCY IN WOMEN WITH ANKYLOSING SPONDYLITIS

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Background: Mechanical stress are one of the pathogenesis of ankylosing spondylitis (AS). During pregnancy, the mechanical overload on the spine and pelvis increases due to gravid uterus. Recently, computed tomography syndesmophyte score (CTSS) has been developed to analysis of the spinal damage in patients with AS. Indeed, CT has higher sensitivity and reliability compared to conventional radiography in the detection of sacroiliitis.

Objectives: We aimed to investigate whether pregnancy and delivery affect radiographic progression of spine and SIJ in women with AS based on CT evaluation.

Methods: This retrospective study included women aged 19-49 years with AS who performed at least twice CT scans of whole-spine or sacroiliac joints (SIJ) at intervals of 2 to 4 years. To compare the radiographic progression after delivery, we classified into 2 groups: delivery group or controls. Delivery group was restricted to subjects who had the first CT scans ~2 years before delivery and the second CT scans ~2 years after delivery. CTSS (0-522) and SIJ scores (0-40) were used to evaluate the spinal syndesmophyte and erosion, joint space narrowing, and sclerosis of SIJ.

Results: A total of 21 women in delivery group and 38 women in controls were included. The median (Q1-Q3) CTSS at baseline in delivery group and controls were 19 (16-23) and 20 (13.25-27.75), and median progression was 1 (0-3) and 0 (0-1) during the median 2.9 year follow-up. The median (Q1-Q3) SIJ scores at baseline in delivery group and controls were 13 (8-22) and 11 (6-22), and median progression was 1.5 (0-3) and 1 (0-2). The CTSS and SIJ scores significantly increased in both groups, but no difference in absolute score changes per time point between was observed. The changes in SIJ scores was comparable according to the delivery methods.

Conclusion: This study suggests that pregnancy and delivery had no effect on radiographic progression of spine and SIJ in female with AS.

REFERENCES:

- [1] de Bruin F, de Koning A, van den Berg R, Baraliakos X, Braun J, Ramiro S. Development of the CT Syndesmophyte Score (CTSS) in patients with ankylosing spondylitis: data from the SIAS cohort. 2018;77(3):371-7.

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POS0982

DIAGNOSTIC VALUE OF SPECT/CT IN AXIAL SPONDYLOARTHRITIS AND OTHER LOW BACK PAIN

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Background: Spondyloarthropathies (SpA) including ankylosing spondylitis are characterized by inflammatory arthritis involving the spine and peripheral joints. Bone SPECT/CT is in the spotlight as it can reflect the current level of inflammation.

Objectives: We aimed to investigate the diagnostic performance of bone SPECT/CT for axial SpA (axSpA) at the level of sacroiliac joints.

Methods: Patients with low back pain who had undergone SPECT/CT of the SI joints were selected for inclusion in this study through a retrospective review of medical records from August 2016 and July 2018. We used semi-quantitative scoring methods for SPECT/CT. For visual scoring, a score of 0 was assigned when tracer uptake in the sacroiliac joint was less than that in the sacrum; a score of 1, when equal to that in the sacrum; and a score of 2, when greater than that in the sacrum. A score of 2 was considered positive for the diagnosis of sacroiliitis on SPECT/CT (Figure 1). The diagnosis of axSpA was retained when patients fulfilled the Assessment of SpA International Society criteria.

Results: A total of 164 patients were enrolled (34 patients with axSpA). The remaining 130 patients had non-axSpA rheumatic inflammatory disease (n=24), vertebral disk herniation (n=13), avascular necrosis (n=11), and others such as bursitis, and fracture (n=85). The mean age of axSpA (37.8±15.6 years) was lower than controls (49.8±16.4 years) (p<0.001), and axSpA (64.5 %) had more male than others (42.1 %) (p=0.024). The sensitivity, specificity, positive and negative predictive values of bone SPECT/CT for axSpA were 83.9%, 63.2%, 34.7%, and 94.4%, respectively. The bone SPECT/CT maximal score and BASDAI score has positive correlation (r=0.481, p=0.007). The bone SPECT/CT compared with MRI is marginal correlation (k=0.369, p<0.001).

Conclusion: In patients with low back pain, the bone SPECT/CT has a high negative predictive value that can exclude AS. In addition, when contraindication in MRI the bone SPECT/CT can be an alternative test.

REFERENCES:

- [1] Rahul V. Parghane, Baljinder Singh, Aman Sharma, Harmandeep Singh, Paramjeet Singh, and Anish Bhattacharya. Role of 99mTc-Methylene Diphosphonate SPECT/CT in the Detection of Sacroiliitis in Patients with Spondyloarthropathy: Comparison with Clinical Markers and MRI. *J Nucl Med Technol* 2017; 45:280-28
- [2] Anuj Jain, Suruchi Jain, w A n i l A g a r w a l, Sanjay Gambhir, Chetna Shamsery, and Amita Agarwal(2015). Evaluation of Efficacy of Bone Scan With SPECT/CT in the Management of Low Back Pain. A Study Supported by Differential Diagnostic Local Anesthetic Blocks. *Clin J Pain* 2015;31:1054-1059
- [3] Yong-il Kim, Minseok Suh, Yu Kyeong Kim, Ho-Young Lee and Kichul Shin. The usefulness of bone SPECT/CT imaging with volume of interest analysis in early axial spondyloarthritis. *BMC Musculoskeletal Disorders* (2015) 16:9
- [4] Jennifer Saunders, Mel Cusi, and Hans Van der Wall. What's Old Is New Again: The Sacroiliac Joint as a Cause of Lateralizing Low Back Pain. *Tomography* (2018) VOLUME 4 NUMBER 2
- [5] Satoshi Kato, Satoru Demura, Hidenori Matsubara, Anri Inak2, Kazuya Shinmura, Noriaki Yokogawa, Hideki Murakami, Seigo Kinuya and Hiroyuki Tsuchiya. Utility of bone SPECT/CT to identify the primary cause of pain in elderly patients with degenerative lumbar spine disease. *Journal of Orthopaedic Surgery and Research* (2019) 14:185
- [6] Romain De Laroche, Erwan Simon, Nicolas Suignard, Thomas Williams, Marc-Pierre Henry, Philippe Robin, Ronan Abgral, David Bourhis Pierre-Yves Salaun, Frédéric Dubrana, Solène Querellou. Clinical interest of quantitative bone SPECT/CT in the preoperative assessment of knee osteoarthritis. *De Laroche et al. Medicine* (2018) 97:35
- [7] Inki Lee, Hendra Budiawan, Jee Youn Moon, Gi Jeong Cheon, Yong Chul Kim, Jin Chul Paeng, Keon Wook Kang, June-Key Chung, and Dong Soo Lee. The Value of SPECT/CT in Localizing Pain Site and Prediction of Treatment Response in Patients with Chronic Low Back Pain. *J Korean Med Sci* 2014; 29: 1711-1716

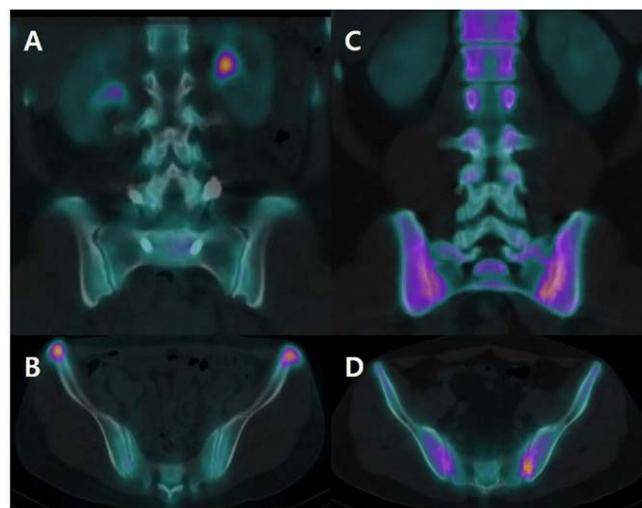


Figure 1. There is two bone SPECT/CT imaging. (A,B) 44 years old female diagnosed with ankylosing spondylitis (AS) and her Bath Ankylosing Spondylitis Disease Activity Index (BASDAI) score is 2.2. For visual scoring is 1 because sacroiliac joint was equal to sacrum. (C,D) 26 years old male, he diagnosed AS and BASDAI score is 4. sacroiliac joint uptake is greater than the sacrum, so semi-quantitative scoring is 2.

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POS0983

WORK PARTICIPATION IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS IN GERMANY: RESULTS FROM A MULTICENTER, OBSERVATIONAL SURVEY (ATTENTUS-axSpA)

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Background: Axial spondyloarthritis (axSpA) is a chronic inflammatory condition often associated with impaired working participation¹ not only translating to devastating outcomes for patients (pts) but also increased economic and social burden due to a significant amount of indirect costs. Data on the different work participation domains in axSpA pts with access to biologic therapies are limited.

Objectives: To characterise the different domains of work participation [presenteeism, absenteeism, sick leave, unemployment, disability pensions] in axSpA pts and their associations with demographic and clinical confounders.

Methods: Pts with confirmed clinical diagnosis of axSpA were enrolled in a multicenter, observational ATTENTUS survey conducted across Germany (Nov-2019 to Jul-2020). To ensure high data quality, inclusion criteria was verified by external monitoring, followed by evaluation of the domains of impaired work participation, including absenteeism and presenteeism (WPAI). Demographics, clinical parameters and patient related outcomes (PROs) were collected via tablet. This analysis included working age (18–65 years) pts; and excluded students and retired pts. Pts without absenteeism (value=0) and presenteeism ≤20% were defined as no impairment at work.

Results: A total of 787 axSpA pts were enrolled in the survey. Seven students, 68 retired pts and 17 pts not fulfilling the inclusion criteria were excluded from this analysis, leaving 695 pts with complete data sets. Baseline data are outlined in Table 1. 50 pts received disability pensions, 29 pts received unemployment benefits, 590 (84.9%) pts reported paid work [part-time: n=132 (22.4%); full-time: n=458 (65.9%)], with 242 (41.0%) pts having no impairments at work. 379 (64.2%) employed pts took sick leave within the previous 12 months (mo) (<3 mo: n=351; 3–6 mo: n=17; >6 mo: n=11). Absenteeism and presenteeism occurred in 140 (23.7%) and 496 (84.1%) pts, respectively. Pts without impairments were mostly of young age, male sex, well-educated, with low disease activity, less fatigue and shorter duration of morning stiffness, and preserved global and physical functioning. No apparent differences between pts with and without impairment of work participation were observed in terms of biologic treatment, disease duration and BMI.

Table 1. Descriptive characteristics of the study population

Mean (SD), unless specified	Impaired WP (n=453)	Full WP (n=242)	p-value	Total (n=695)
Age (yrs)	46.7 (11.1)	42.8 (10.1)	<0.001	45.3 (10.9)
BMI	28.5 (14.0)	27.0 (6.8)	0.146	28.0 (12.0)
Male, n(%)	246 (54)	177 (73)	<0.001	423 (61)
Disease duration (yrs)	12.7 (11.3)	12.4 (10.2)	0.813	12.6 (11.0)
University-Education, n(%)	104 (23.0)	82 (33.9)	0.001	186 (26.8)
In a committed relation, n(%)	310 (68.4)	159 (65.7)	0.464	469 (6.6)
ASAS-HI	8.0 (3.3)	3.7 (3.0)	<0.001	6.5 (3.8)
BASDAI	4.8 (1.9)	2.1 (1.6)	<0.001	3.9 (2.2)
BASDAI > 4, n(%)	286 (63.1)	28 (11.6)	<0.001	314 (45.2)
Fatigue [BASDAI #1]	5.8 (2.1)	2.8 (2.1)	<0.001	4.7 (2.5)
Duration morning stiffness [BASDAI #6]	3.5 (2.4)	1.6 (1.8)	<0.001	2.8 (2.4)
BASFI	4.2 (2.3)	1.5 (1.5)	<0.001	3.3 (2.4)
Biologic treatment, n(%)	230 (50.8)	134 (55.4)	0.390	364 (52.4)
Full time employment, n(%)	256 (56.5)	202 (83.5)	<0.001	458 (65.9)
Absenteeism	179 (32.1)	0	-	10.6 (26.2)
Presenteeism	48.6 (21.00)	9.6 (8.3)	-	32.6 (25.6)

ASAS-HI, Assessment of SpondyloArthritis International Society-Health Index; BASDAI, Bath Ankylosing Spondylitis Disease Activity Index; BASFI, Bath Ankylosing Spondylitis Functional Index; BMI, basal metabolic index; n, number of pts; SD, standard deviation; WP, work productivity; years, yrs

Conclusion: There was a substantial impact on work participation for axSpA pts, despite numerous available therapeutic options. Pts with impaired work participation compared to pts with no impairment, reported increased fatigue, longer duration of morning stiffness, decreased functional capacity, female sex and a lower level of education.

REFERENCES:

[1] Ramoda R et al. *Arthritis Res Ther.* 2016;78

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POS0984

PREVALENCE OF AXIAL SPONDYLOARTHRITIS AMONG YOUNG PEOPLE CONSULTING BECAUSE OF CHRONIC LOW BACK PAIN IN A UNIVERSITY HOSPITAL IN ARGENTINA

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Background: Axial spondyloarthritis (SpA) is an umbrella term encompassing a number of inflammatory conditions involving the axial skeleton. A substantial delay between disease onset, diagnosis and treatment often occurs, related in part to under-recognition of SpA symptoms. Although several studies have investigated since the publication of the ASAS classification criteria in 2009, the prevalence and incidence of axial SpA in the general population and in patients with SpA-related conditions, the actual prevalence of SpA in many countries (including Argentina) is unknown.

Objectives: To estimate the prevalence of axial SpA and the amount of undiagnosed axial SpA in people under 45 years of age that contacted the health care system for chronic low back pain.

Methods: The setting was a university hospital-based health management organization with a population distribution similar to that of Buenos Aires. All electronic medical records of patients < 45 years of age at the time of onset of symptoms (as per the ASAS 2009 criteria) and chronic low back pain for 3 or more months seen at the university hospital-based health management organization between 2009 and 2019, were reviewed. If the patient fulfilled the ASAS criteria, was classified as having axial SpA [ankylosing spondylitis (AS) or non-radiographic axial SpA (nr-axSpA)]. Among this group, if the diagnosis was already established in the medical records by the treating physicians, these patients were also classified as diagnosed with axial SpA; if not, they were classified as undiagnosed with axial SpA. We are reporting the results of descriptive analysis.

Results: A total of 796 patients were included (Table 1), 426 were women (53.52%, 95% CI 50.1-57) with a median age of 34 years (IQR 29-40) at initiation of low back pain with a median follow up of 77.7 months (IQR 35.7-136.4). The prevalence of axial SpA among patients with chronic low back pain was 5.78% (n= 46, 95% CI 4.2-7.4). 22 patients had AS (2.76%, 95% CI 1.6-3.9) with a median lag time between the onset of low back pain and diagnosis of 58.7 months (IQR 33.5 - 92). All AS cases were already diagnosed. 24 patients had nr-axSpA (3.02%, 95% CI 1.8 - 4.2). Of those, 14 were diagnosed by treating physicians with a lag time median of 23.2 months (IQR 13.1 - 36.5) between the onset of low back pain and diagnosis. Ten patients fulfilled the ASAS criteria (41.7%, CI 95% 22 - 61.4) but were not diagnosed by the treating physicians (22%, 95% CI 9.82-33.66) among the patients with axial SpA.

Table 1. Demographic, clinical features and therapeutic characteristics of patients with chronic low back pain stratified by diagnosis

	Axial spondyloarthritis N=46	Ankylosing spondylitis N=22	Diagnosed nr-axSpA N=14	Undiagnosed nr-axSpA N=10	Other diagnosis N=749
Female, n (% , CI)	18 (39.13%, 25.04-53.23)	4 (18.18%, 2.06-34.29)	10 (71.42%, 47.76-95.09)	4 (40%, 9.63-70.36)	407 (54.34, 50.77-57.9)
Age at chronic LBP initiation, years, median (IQR)	36 (29.25-40)	32 (32-40)	38 (22-36.75)	39 (35.25-41.5)	34 (29-40)
Follow up, median months (IQR)	88 (33.43-148.66)	33.67 (23.38-90.34)	16.73 (7.64-24.02)	64.77 (11.21-164.7)	77.69 (35.83-95.6)
Inflammatory chronic LBP by any criteria n (%)	44 (95.7)	21 (95.5)	13 (92.8)	10 (100)	56 (7.5, 5.6-9.4)
Seen by a Rheumatologist, n (%)	42 (91.3)	22 (100)	14 (100)	6 (60)	36 (5.1)
Lag time between first LBP to SpA diagnosis, months, median (IQR)	34.6 (22.6-63.2)	58.7 (33.5 - 92)	23.1 (13.1-36.5)	-	-
bdMARDs treatment n, (% , CI)	15 (33, 19.5-48)	10 (45, 24.4-67.8)	5 (36, 13-64.9)	-	-
Lag time between NSAIDs failure and first bdMARDs, months, median (IQR)	2.66 (2.05-4.63)	2.76 (2.07-11.3)	2.66 (2.04-3.25)	-	-

CI: 95% confidential interval, IQR: interquartile range, bdMARDs: biologic disease modifying anti-rheumatic drugs, LBP: low back pain