AB0889

CLINICAL CHARACTERISTICS OF 88 PATIENTS WITH PUSTULOTIC ARTHRO-OSTEITIS (PAO) IN JAPAN

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Background: The prevalence rate of PPP in Japan is somewhat as 0.13%¹⁾, accounting for 61% of cutaneous manifestations diseases associated with SAPHO syndrome²⁾. SAPHO syndrome³⁾ is not a new disease concept in which the cause of the disease has been clarified but is a name that classified diseased groups by collecting known diseases. On the other hand, PAO is a concept of disease that is a "proper subset" of SAPHO syndrome and is the smallest unit disease concept. Therefore, detailed information on PAO was sought.

Objectives: To examine the clinical features and treatment of PAO

Methods: We conducted a multicenter, non-intervention retrospective study of 88 PAO patients who were able to visit directly in 4 hospitals in Japan from January to June 2017. The criteria of "Sonozaki et al. 1981 4)" was used for PAO diagnosis. Evaluation items were clinical features, image/blood biochemical examination, treatment methods.

Results: The average age at the time of visit was 55.4 years old, palmoplantar pustulosis/PAO onset age was 44.4 years old, 49.3 years old, the onset pattern was skin leading type/simultaneous onset/joint advanced type (66.7/25.6/7.7%). The clinical features were pain joints of 33.0% of the thoracic joints, 22.7% of the shoulder joints and 10.2% of the joints of the ankle joints, and the adhesion flame was the most abundant in the Achilles tendon at 21.4%. ASDAS-CRP was 1.4 ± 0.8 on average, breakdown was inactive disease 52.3%, moderate 22.7%, severe 22.7%, very high disease activity 2.3%, and insufficient disease activity remained in 25% of cases. Radiographic change showed in 81.8% of the sternum/the sternocostoclavicular joint, 33.0% of the spine, 31.0% of the sacroiliac joint (NY Ilor more), and 9.8% of the peripheral joint. MRI findings showed changes in intraosseous luminance in 76.9% around the sternum, 52.2% in the spine and 65.2% in the sacroiliac joint. Bone scintigraphy showed abnormal findings in the anterior chest 96.4%, spine 23.6% and sacrum 30.9%. Blood biochemical examination showed CRP 0.35±0.52 mg/dl, RF positive rate 9.4%, ACPA positive rate 5.1%. First-line drugs (NSAIDs, biotin, anti-bacterial drugs) and second-line drugs (Iguratimod sulfasalazine MTX) were selected as therapeutic agents. For other treatments, 64.8% of topical therapy, 12.5% of phototherapy and 18.6% of tonsillectomy were performed.

Conclusions: In this study, we reported the clinical features, radiological findings and treatments in 88 Japanese patients with PAO in Japan. The treatment outcome for PAO in Japan is not sufficient, and it is necessary to try to elucidate further disease condition.

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AB0890

EFFICIENCY OF 8-YEAR EDUCATIONAL PROGRAMS FOR PRIMARY CONTACT PHYSICIANS IN DIAGNOSIS AND TREATMENT OF AXIAL SPONDILOARTHRITIS IN KAZAN

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Background: In recent years, there have been cardinal changes in terminology, understanding of pathogenesis of axial spondylitis (AxsSpA) and ankylosing spondylitis (AS), early diagnosis has improved. An important role is played by the level of awareness of primary care physicians in the early diagnosis of AxsSpA and AS.

Objectives: To evaluate the effectiveness of educational activities for primary contact physicians in AxsSpA (including AS) diagnostics for a long time.

Methods: From 2010 to the present time, educational activities are conducted for primary care physicians in diagnostics and tactics of managing patients with AS with discussion of the criteria for inflammatory back pain, options for onset and the algorithm for diagnosis and examination of patients with AxsSpA for primary contact physicians in Kazan. Since 2014, educational modules have been integrated into the system of continuing education of doctors. Assessment of the results of educational schools was carried out according to the analysis of reports of outpatient admission to rheumatologist of the City Rheumatological Centre in Kazan (Clinical Hospital # 7) and the analysis of medical records of patients sent to a rheumatologist in 2009 (base year) in comparison with 2010–2017 in the process of schools.

Results: In the process of conducting schools (2010–2017) the number of patients with AxsSpA and AS significantly increased for the first time this year. In 2010–2011, the number of patients almost doubled (575 pts in 2010, 683 pts in 2011) compared to 2009 (378 pts). The second sharp increase in the number of patients was observed in 2016 (1178 pts) and in 2017 (1298 pts).

The same dynamics was observed for AxsSpA patients (including AS) who applied for the first time to rheumatologist with a significant increase in patients in 2010–2011 (2009–118 pts, 2010–190 pts, 2011–204 pts) and in 2016–506 pts, 2017 year – 711 patients

"Peak" increase in the number of patients in 2010–2011 can be explained by the beginning of educational activities for doctors; in 2016–2017 – an increase in the number of activities (including remote ones), the amount of information, increased availability of MRI examinations for patients with AxsSpA.

Primary care physicians were more likely to refer patients with suspected AxsSpA or diagnosed AS, the percentage of discrepancies between diagnoses (referral and rheumatology) decreased from 78% in 2009 to 18.1% in 2011, 8.9% in 2013, 2.1% in 2015 and 3.3% in 2017.

The number of patients coming from the primary contact physician to rheumatologist with the required volume of examination (description of back pain, laboratory tests, HLAB27 determination, radiographs and/or MRI) increased significantly from 23.7% in 2009 to 87% in 2017, which allows to verify diagnosis without repeated consultations.

Conclusions: Educational programs for primary care physicians (lectures, schools, remote programs) have great importance for the timely diagnosis of AxsSpA, reducing the number of consultations before the diagnosis and with the subsequent appointment of adequate therapy.

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DISEASE ACTIVITY PREDICTS FUNCTIONAL IMPAIRMENT AND SPINAL MOBILITY IN AXIAL SPONDYLOARTHRITIS

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Background: Axial Spondyloarthritis (axSpA) is a chronic inflammatory disease, mainly affecting the spine and sacroiliac joints. This results in progressive spinal immobility and can result in a level of disability comparable to Rheumatoid Arthritis¹. The natural history of axSpA and relationships between active inflammation,

structural damage and functional impairment remain poorly understood. Previous studies have hypothesised that functional impairment and spinal mobility in axSpA are independently influenced by disease activity and radiographic damage^{1,2,3}.

Objectives: To define the relationship between disease activity, spinal mobility and radiographic damage with other patient-reported outcome measures in axSpA.

Methods: We performed a cross-sectional analysis of axSpA patients attending the Royal National Hospital for Rheumatic Diseases, Bath. The most recent outcome measures for each patient were compared. Spinal mobility was assessed using the BASMI; structural radiographic damage by the mSASSS; disease activity by the BASDAI; functional impairment by the BASFI; fatigue by the FACIT score; work disability by the WPAI-overall; quality of life by the ASQoL; overall health by the EQ5D. We analysed the correlation between these variables, separately for patients with Ankylosing Spondylitis (AS) and non-radiographic axSpA (nr-axSpA).

Results: 721 axSpA patients were included for analysis (548 AS; 42 nrAxSpA; 39 inflammatory bowel disease-related SpA; 47 juvenile-onset SpA; 24 psoriatic SpA; 3 reactive SpA; 18 undifferentiated SpA). Results are summarised in table 1:

Abstract AB0891 – Table 1

AS (n=185–655)	BASMI	BASDAI	mSASSS
BASFI	.52**	.67**	.10
ASQoL	.26**	.69**	–0.14
FACIT	–0.14**	–0.61**	.18*
WPAI-overall	.18**	.54**	–0.07
EQ5D	–0.34**	–0.65**	.11
mSASSS	.63**	–0.13	
BASDAI	.18**		
nr-axSpA (n=15–41)	BASMI	BASDAI	
BASFI	.67**	.71**	
ASQoL	.38*	.64*	
FACIT	–0.34	–0.55**	
WPAI-overall	.10	.56**	
EQ5D	–0.24	–0.58	
BASDAI	.68**		

**Correlation is significant at the 0.01 level (2-tailed); *Correlation is significant at the 0.05 level (2-tailed)

Conclusions: Spinal mobility and disease activity are both correlated with functional impairment, along with other measures of disability and poor health in axSpA, with BASDAI the strongest predictor of BASFI. Consistent with other studies, BASDAI was more predictive of spinal mobility in nrAxSpA than AS patients ($p=0.002$, 1-tailed). Structural radiographic damage is the strongest predictor of spinal mobility in AS. BASMI scores merit further investigation to ascertain their potential as a surrogate for radiographic disease burden in axSpA.

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AB0892 PREDICTING SYNDESMOPHYTE FORMATION IN AXIAL SPONDYLOARTHROPATHY

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Background: Axial spondyloarthropathy (axSpA) is a chronic inflammatory arthritis affecting the sacroiliac joints and spine. The consequence of inflammation in axSpA is new bone formation, or syndesmophytes, which can result in complete ankylosis of the spine. The pathogenesis of syndesmophyte formation is incompletely understood. It is agreed that presence of baseline syndesmophytes predicts further syndesmophytes, but other predictive factors have been difficult to define. In particular, the impact of extra-articular manifestations (EAMs) on syndesmophyte formation is unclear.

Objectives: 1. To assess the burden of radiographic disease in a well-characterised axSpA cohort.

2. To investigate demographic and disease-related variables associated with syndesmophytes (specifically EAMs).

Methods: A cross-sectional study of AxSpA patients was performed, comprising standardised clinical assessment and structured interviews. Validated measures of disease severity were used: BASDAI and ASDAS-CRP (disease activity), BASMI (spinal mobility), HAQ (disability), BASFI (function). Lateral x-rays of the lumbar and cervical spine were performed to quantify syndesmophytes using a validated score (mSASSS) ranging from 0–72, with higher numbers indicating a higher burden. BASRI-hip was used to determine hip involvement, assessed on x-ray of pelvis.

Results: One hundred and four patients with axSpA were included: 78.8% (n=82) male, 98.1% (n=102) Caucasian, average (SD) age 50.8 (12) years and average disease duration 25¹³ years. Modified New York (mNY) criteria were fulfilled by 84.6% (n=88) of the cohort. An EAM was present in 29.1% (n=30) of patients. Uveitis was the most prevalent EAM (29%), followed by inflammatory bowel disease (IBD) (18.4%) and psoriasis (17.5%). Average (SD) BASDAI was 3.9 (2.2), ASDAS-CRP 2.3 (1), BASMI 4.2 (1.9), indicating a mild to moderate disease burden in the cohort.

Median (IQR) mSASSS was 9.5 (33.8), 10.6% (n=11) of patients had an mSASSS of 0% and 7.7% (n=8) had a bamboo spine. There was no significant difference in the median cervical and lumbar spine mSASSS scores (4 v 6, $p>0.05$). The distribution of mSASSS was similar in males and females. HLA-B27 status had no effect on mSASSS scores.

Increasing mSASSS correlated significantly ($p<0.05$) with increasing age ($\rho=0.6$), longer disease duration ($\rho=0.5$), rising BASMI ($\rho=0.8$), higher BASFI ($\rho=0.4$) and higher HAQ ($\rho=0.3$). Worsening hip disease, as measured by BASRI, also correlated with an increasing mSASSS ($\rho=0.4$, $p<0.01$). There was also a statistically significant difference between patients who met mNY criteria compared to those that didn't (median 14.4 v 2.5, $p<0.01$).

Patients with hypertension had a significantly higher median mSASSS score than patients without (25.4 v 7, $p<0.01$). Smoking status, hypercholesterolaemia, ischaemic heart disease and diabetes had no impact on mSASSS.

The presence or absence of uveitis, psoriasis or IBD had no effect on syndesmophyte formation. Equally, peripheral arthritis had no effect. Patients with moderate or severe hip disease were more likely to have a higher mSASSS score (OR 3.8, 95% CI 1.5–9.3).

Conclusions: In keeping with previous literature, higher mSASSS was associated with more severe disease. However, in contrast to other published studies, gender had no effect on the severity of mSASSS in our cohort. EAMs did not affect the mSASSS score, but worse hip disease did. It remains a challenge to predict which patients will develop syndesmophytes.

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AB0893 INFLUENCE OF INFLAMMATION AND STRUCTURAL DAMAGE ON GLOBAL FUNCTIONING IN PATIENTS WITH AXIAL SPONDYLOARTHRITIS – USING THE ASAS HEALTH INDEX IN ROUTINE CARE

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Background: Global functioning of patients with spondyloarthritis (SpA) can be influenced by many different factors. ASAS Health Index (ASAS HI) has aims to measure global functioning in patients with SpA. So far, its association with inflammatory spinal changes and structural damage has not been examined.

Objectives: To investigate the relationship between spinal mobility and self-report global functioning as assessed by the ASAS HI, and to study the influence of structural and inflammatory spinal changes on global functioning.

Methods: Patients from the outpatient clinic of our hospital suffering from axial or peripheral SpA completed questionnaires assessing disease activity and functioning (ASAS HI, pain, BASDAI, ASDAS, BASFI). Axial inflammation as detected by magnetic resonance imaging (MRI) was assessed by the Berlin score, structural damage by the modified Stokes ankylosing spondylitis (AS) Spine Score (mSASSS) and spinal mobility by the Bath AS Metrology Index (BASMI). Imaging were scored by two independent readers. Correlations between the ASAS HI and other health outcomes were analysed by Spearman's test. Logistic regression analyses were performed to investigate the association between functioning and other clinical characteristics.

Results: A total of 203 patients (76 non-radiographic (nr)-axSpA, 115 AS patients, and 12 with peripheral SpA (pSpA) were included: 63.5% male, mean (SD) age 46.6 (14.1), symptom duration 18.8 (12.8) years, and 76.4% HLA-B27 positive. The mean values of clinical assessments were ASAS HI 7.9 (4.0), BASDAI 5.0 (2.2), ASDAS 2.8 (1.1), BASMI 3.3 (1.8), pain 6.0 (2.6), and BASFI 5.0 (2.6). Elevated CRP levels were found in 37.4% of the patients, while 59.1% of the AS patients had syndesmophytes and 11.3% a bamboo spine. The median (IQR)