SAT0647

PREDICTIVE FACTORS OF POSITIVE POSITRON EMISSION TOMOGRAPHY FOR DIAGNOSING AORTITIS IN PATIENTS WITH POLYMYALGIC SYNDROME

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Background: Isolated non-infectious aortitis is a potentially serious condition whose diagnosis is often delayed due to the non-specific nature of its symptoms. Most of the patients initially present with polymyalgic syndrome associated with atypical symptoms. Nowadays, ¹⁸F-FDG PET/CT scan is the best tool for early detection of aortitis. However, it is a complex and expensive technique. Thus, we should make an effort to select those patients who will benefit the most from this procedure. Unfortunately, we have no data about which factors may improve the probability of a positive diagnosis of aortitis using this imaging technique.

Objectives: Our aim was to evaluate, in patients with polymyalgia rheumatica (PMR), the predictive factors for a positive ¹⁸F-FDG PET/CT scan, in order to make an early diagnosis of aortitis and optimise the use of this technique.

Methods: Retrospective study on 97 patients with PMR who had undergone an ¹⁸F-FDG PET/CT scan between January 2010 and August 2017 with a high clinical suspicion of aortitis. Only patients with polymyalgic syndrome without any other underlying disease were included. We considered two groups: **a)** Classic PMR: patients who fulfilled the 2012 EULAR/ACR criteria; and **b)** Atypical PMR: patients with symptoms resembling PMR but did not fulfil the 2012 EULAR/ACR criteria. Distribution of categorical variables was compared by the Pearson Chi-squared test or Fisher exact test. Quantitative variables were analysed using the Student t test or MannWhitney U test as appropriate. An adjusted logistic regression model was built to assess the best set of predictive factors for a positive PET scan in both groups of patients.

Results: ¹⁸F-FDG PET/CT scans were performed in 97 patients due to clinical suspicion of aortitis, being positive in 60 (61.9%). Patients (60 women/37 men) had a mean age of 68.4±10.7 years. Fifty-one (52.6%) had classic PMR and 46 (47.4%) atypical PMR. In patients with classic PMR, the best set of predictors for a positive PET/CT scan were lower limb pain (OR=8.4, 95% CI 2.0–35.1; p=0.004) and low back pain (OR=7.6, 95% CI 1.3–45.5, p=0.027), once adjusted for age, sex and current tobacco use. In atypical PMR patients, only the pelvic girdle affection (OR: 5.0, 95% CI 1.3–19.5; p=0.002) was significantly associated with a positive PET/CT scan, in the logistic adjusted model.

Abstract SAT0647 – Table 1

	PMR (N=97)					
	Classic PMR (N=51)			Atypical PMR (N=46)		
	Positive PET/CT (N=29)	Negative PET/CT (N=22)	P	Positive PET/CT (N=31)	Negative PET/CT (N=15)	P
Sex (women), n (%)	20 (69.0)	13 (59.1)	0.47	18 (58.1)	9 (60.0)	0.90
Age (years), mean ±SD	72.8 ± 8.8	75.2 ± 8.0	0.32	62.5 ± 9.1	62.4 ± 11.8	0.97
Recurrence of polymyalgic symptoms						
Neck pain, n (%)	6 (20.7)	4 (18.2)	0.99	3 (9.7)	2 (13.3)	0.71
Shoulder girdle, n (%)	17 (58.6)	15 (56.6)	0.48	12 (38.7)	10 (66.7)	0.075
Pelvic girdle, n (%)	19 (65.5)	11 (50.0)	0.27	20 (64.5)	4 (26.7)	0.016
Morning stiffness, n (%)	4 (36.4)	8 (36.4)	0.06	3 (9.7)	2 (13.3)	0.99
Atypical symptoms						
Inflammatory low back pain, n (%)	10 (34.5)	3 (13.6)	0.09	11 (35.5)	3 (20.0)	0.33
Diffuse lower limb pain, n (%)	17 (58.6)	4 (18.2)	0.004	17 (54.8)	6 (40.0)	0.35
Asthenia, n (%)	9 (31.0)	6 (27.3)	0.77	3 (9.7)	4 (26.7)	0.19
Hyporexia, n (%)	2 (6.9)	6 (27.3)	0.06	3 (9.7)	3 (20.0)	0.38
Weight loss, n (%)	4 (13.8)	6 (27.3)	0.30	5 (16.1)	4 (26.7)	0.45
Laboratory abnormalities						
Anaemia, n (%)	11 (37.9)	12 (54.5)	0.24	8 (25.8)	5 (33.3)	0.73
CRP > 6 mg/l, n (%)	3 (10.3)	4 (18.3)	0.35	5 (16.7)	2 (13.3)	0.77
ESR >40 mm, n (%)	12 (41.4)	12 (54.5)	0.57	16 (51.6)	8 (53.3)	0.91
Treatment response						
Lack of improvement with 15 mg of PD, n (%)	5 (17.2)	4 (18.2)	0.99	5 (16.1)	3 (20.0)	0.95

Conclusions: We have found that, in patients with classic PMR, the presence of diffuse lower limb pain and inflammatory low back may have clinical relevance when requesting a PET/CT scan due to aortitis suspicion. On the other hand, in patients with atypical PMR, only the presence of pain in the pelvic girdle seems to be a predictive factor for a positive result in PET/CT scan.

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SAT0648

COXALGIA IN HEMOPHILIC PATIENTS. SONOGRAPHIC EVALUATION OF A NOT TARGET JOINT

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Background: Spontaneous bleeding in haemophilia shows a predilection for joints, and repeated hemarthrosis induce synovial inflammation, cartilage degeneration and bone damage, leading to hemophilic arthropathy. The hip is not a target joint and its involvement is not easy to be distinguished from other conditions which may provoke pain referred to the hip.

Objectives: Aim of the study was to analyse the different sonographic findings related to different pain producing conditions.

Methods: Thirty patients with haemophilia A and monolateral coxalgia were examined. Sonographic exam (US) was performed in all patients by Esaote equipment My Lab 70 with linear probe 4–13 MHz and power Doppler. The iliopsoas muscle and its bursa, the greater trochanteric bursa, and the hip joint were analysed. Sonographic findings in the joint were scored (score ranging from 0 to 21) for effusion, bone remodelling, cartilage damage, synovial hypertrophy, hemosiderin, osteophytes, hemarthrosis, erosion and fibrotic septa. The World Federation of Haemophilia (WFH) orthopaedic joint scale score and the radiologic Pettersson score were evaluated in all patients.

Results: US showed effusion in 20 hip joints (67%), bone remodelling in 18 (60%), cartilage damage in 10 (33%), synovial hypertrophy in 12 (40%), hemosiderin in 4 (13%), osteophytes in 7 (23%), hemarthrosis in 10 (33%) with power Doppler activity (>3 flags). In no patient erosion or fibrotic septa were observed. Fifteen out of 30 joints showed US score ≤5, and 15 US score >5. In 8 patients a hematoma of iliopsoas muscle was present, in two patients great trochanteric bursitis was detected. WFH mean score value was 39.5 (range 12–57) and the mean Pettersson score value was 10.4 (range 6–12).

Conclusions: Surprisingly, in most cases (67%) coxalgia was not related to trochanteric bursitis or iliopsoas muscle involvement but was due to hemophilic arthropathy of the hip which is not a target joint. Moreover, power Doppler allowed to detect hemarthrosis in 33% of patients, supporting the hypothesis that vascular changes and remodelling in haemophilia are associated with bleeding and joint damage.

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SAT0649

CORRELATION BETWEEN CLINICAL MANIFESTATIONS AND ¹⁸F-FDG UPTAKE IN PATIENTS WITH POLYMYALGIA RHEUMATICA

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Background: Polymyalgia rheumatica (PMR) is an inflammatory disease characterised by pain and stiffness of the neck, shoulder and pelvic girdles. It can also be accompanied by other non-specific symptoms such as inflammatory low back pain, diffuse lower limb pain and constitutional syndrome. The role of ¹⁸F-FDG PET/CT is increasing in the diagnosis of PMR but it remains unknown if there is a correlation between clinical symptoms and ¹⁸F-FDG uptake.

Objectives: Our aim was to assess if the localization of pain of patients with PMR correlates with ¹⁸F-FDG uptake in the corresponding region of interest.

Methods: Retrospective study of 75 patients with PMR and their respective PET/CT scans from a referral centre. PMR diagnosis was based on 2012 EULAR/ACR criteria.

Results: We evaluated 75 patients (27 men and 48 women) with a mean age ±SD of 68.2±10.7 years. A PET/CT was performed in all of them. Pattern of ¹⁸F-FDG uptake in patients with different clinical manifestations were summarised in the **TABLE**. Twenty-two out of thirty-three patients (66.7%) with ¹⁸F-FDG uptake in sternoclavicular joints had shoulder girdle pain. In all patients with morning

stiffness (n=11) an increase of ^{18}F -FDG uptake in shoulders was observed. Twenty-three patients of thirty-two patients (71.8%) with ^{18}F -FDG uptake in hips had pelvic girdle pain. The remaining localizations of ^{18}F -FDG uptake in PET/CT scans did not show significant correlations with clinical symptoms.

Clinical manifestation/location of FDG uptake	F-FDG uptake		
	Positive, n/N (%)	Negative, n/N (%)	P
Shoulder girdle pain (n=40)/			
Shoulder	27/45 (60.0)	13/30 (43.3)	0.16
Sternoclavicular joints	22/33 (66.7)	18/42 (42.9)	0.04
Cervical interspinous bursae	6/9 (66.7)	34/66 (51.5)	0.49
Neck pain (n=12)/			
Shoulder	8/45 (17.8)	4/30 (13.3)	0.61
Cervical interspinous bursae	2/9 (22.2)	10/66 (15.5)	0.63
Morning stiffness (n=11)/			
Shoulder	11/45 (24.4)	0/30 (0.0)	0.002
Sternoclavicular joints	7/33 (21.2)	4/42 (9.5)	0.20
Cervical interspinous bursae	3/9 (33.3)	8/66 (12.1)	0.12
Pelvic girdle pain (n=42)/			
Hips	23/32 (71.8)	19/43 (44.2)	0.02
Lumbar interspinous bursae	18/29 (62.1)	24/46 (52.2)	0.40
Subtrochanteric bursae	11/20 (55.0)	31/55 (56.4)	0.92
Ischial tuberosities	10/19 (52.6)	32/56 (57.1)	0.73
Pubic symphysis	3/4 (75.0)	39/71 (54.9)	0.63
Inflammatory low back pain (n=20)/			
Hips	10/32 (31.3)	10/43 (23.3)	0.44
Lumbar interspinous bursae	10/29 (34.5)	10/46 (21.7)	0.22
Ischial tuberosities	3/19 (15.8)	17/56 (30.4)	0.26
Subtrochanteric bursae	7/20 (35.0)	13/55 (23.6)	0.33
Pubic symphysis	3/4 (75.0)	17/71 (23.9)	0.06
Diffuse lower limb pain (n=35)/			
Knees	16/33 (48.5)	19/42 (45.2)	0.78
Subtrochanteric bursae	8/20 (40.0)	27/55 (49.1)	0.49
Ischial tuberosities	9/19 (47.4)	26/56 (46.4)	0.94
Hips	15/32 (46.9)	20/43 (46.5)	0.98

Conclusions: In patients with PMR, the presence of shoulder girdle pain seems to correlate with F- ^{18}F FDG uptake in sternoclavicular joints, morning stiffness with ^{18}F -FDG uptake in shoulders and pelvic girdle pain with ^{18}F FDG uptake in hips. No other significant correlations were found between any other symptom and ^{18}F -FDG uptake.

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SAT0650

MUSCULOSKELETAL ULTRASOUND IN FIRST DEGREE RELATIVES OF RHEUMATOID ARTHRITIS PATIENTS

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Background: Preclinical phase of rheumatoid arthritis (RA) is characterised by a state of autoimmunity and inflammation. MSUS is known for its ability to detect subclinical synovitis, but changes in first degree relatives (FDR) are not yet defined.

Objectives: To investigate the presence of abnormal MSUS findings in FDR of RA who are free of clinical disease.

Methods: Study included 20 RA patients, and 25 of their FDR without evidence of arthritis. All were subjected to full history taking with special emphasis on joint symptoms, and joint examination. Measurements of ESR, CRP, RF and anti-CCP were performed in all and MSUS scan using the 7 joint ultrasonography (US7) score¹

Results: Mean age in FDR 33.1±13.4 years, and in RA was 39.50±13.43 years with a mean disease duration of 11.95±8.36 years. All RA (100%) had symmetrical, polyarthralgia and/or arthritis, mostly involving small joints of hands and feet. 8/25 FDR (32%) had arthralgia that included different joints. While 17/25 FDR (68%) were asymptomatic. None of FDR had arthritis as it was an exclusion criteria. MSUS findings were detected in 16/20 (80%) RA and in 10/25 (40%) FDR. Of whom 3/10 FDR (12%) had arthralgia and 7/10 (28%) were asymptomatic. Synovitis was the commonest MSUS finding in RA (n=16, 80%), and in their FDR (n=10, 40%). Tenosynovitis was present in 5 (25%) RA and only one (4%) FDR. Erosions were detected in 9 (45%) of RA and one (4%) FDR in the 2nd MCP. In RA the wrist was most common joint to be involved on MSUS (n=14, 70%), followed by 2nd MCP and 2nd MTP joints in 11 (55%), 5th MTP joint in 8 (40%), 3rd MCP joint in 6 (30%), 2nd PIP joint in 4 (20%), with least involvement in the 3rd PIP joint in 3 (15%) of RA. In FDR the wrist was also the most commonly involved joint on MSUS and 2nd MTP joint in 6 (24%), followed by 2nd MCP joint in only 1 (4%). Whereas, the 3rd MCP, 2nd and 3rd PIPs and 5th MTP joints were spared.

US7 score in RA and FDR are shown in table 1. US7 erosion score correlated significantly with disease duration in RA. Anti-CCP significantly correlated with all parameters of US7 and RF with the tenosynovitis GS (grey scale) score. While, in FDR there was no statistical significant correlation between US7 score with any of the inflammatory or seromarkers.

Abstract SAT0650 – Table 1. US7 Joint score in RA and FDR

US7 score	RA (n=20)	FDR (n=25)	P
Synovitis GS	5.15±4.26	0.64±1.04	<0.001*
Synovitis PD	2.05±2.54	0.24±0.83	0.003*
Tenosynovitis GS	0.35±0.75	0.04±0.20	0.040*
Tenosynovitis PD	0.30±0.80	0.0±0.0	0.048*
Erosions	1.60±3.10	0.04±0.20	0.001*
Total score	9.45±7.21	0.96±2.01	<0.001*

Shown values are mean ±SD. p: p values for Mann Whitney test for comparing between the two groups*. Statistically significant at p<0.05

Conclusions: This study confirms the presence of inflammatory synovial changes in FDR of RA who are free of clinical disease. This strengthens the concept of FDR as pre-RA. US7 score is a useful screening tool to identify subclinical synovitis in at-risk individuals. While in RA, US7 score is significantly correlated to disease duration and autoantibodies. More long term studies on FDR are needed for establishing the predictive value of abnormal MSUS findings for the development of persistent arthritis.

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SAT0651

CAROTID ULTRASOUND IN PATIENTS WITH ARTHRITIS: ¿IN WHICH PATIENTS DOES IT RE-STRATIFY CV RISK?

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Objectives: To explore in which patients with inflammatory rheumatic disease, the findings in a carotid ultrasound result in a change in cardiovascular (CV) risk stratification as compared to the CV risk measured with the SCORE index.

Methods: Longitudinal prospective study in patients included in a program geared at CV risk factor screening followed by optimisation of their treatment. Patients with rheumatoid arthritis (RA), spondyloarthritis (SpA) and psoriatic arthritis (PsA) were included in the program. In a nurse-led single-visit, the existence and adequate control of classic CV risk factors were recorded. SCORE index was calculated and then modified according to EULAR recommendations. CV risks was stratified according to European guidelines. A carotid ultrasound was performed in patients with a low, intermediate or high-risk stratification in order to assess intimal-media thickness (IMT) and plaques. If plaques were detected, CV risk was re-stratified to very high risk.

From this program, patients who had completed the baseline evaluation and the carotid ultrasound were selected. The characteristics of patients with findings in carotid ultrasound that allowed re-stratification to those without these findings were compared.

Results: A total of 181 patients have completed the baseline work-up, including the carotid ultrasound. 122 (67%) of the patients were women with a mean age of 55 (±11) years of age. Included patients had RA (n=96, 53%), SpA (n=37, 20%) or PsA (n=48, 27%).

A diagnosis of DM was performed in 19 (10%), hypertension in 78 (43%) and hypercholesterolemia in 92 (51%); 38 (21%) were active smokers and 63 (35%) were obese (BMI >30). Mean SCORE index (modified according to EULAR recommendations) was 2.4 (±1.7). Risk stratification before ultrasound was 145 (80%) patients with intermediate risk and 36 (20%) with high risk.

Carotid ultrasound imaging showed plaques in 43 patients (bilaterally in 14). In these, risk was re-stratified as very high risk. Overall, 11 patients showed a thickening of IMT; all presented plaques as well. Final risk stratification after including