A COMPARATIVE STUDY OF NAILFOLD

**IL-17A IS UPREGULATED IN SYSTEMIC SCLEROSIS**

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angiogenesis.

The study population consisted of 50 patients each of IIP and

IPAF who fulfilled ERS/JRS/ALAT 2011 revised diagnostic criteria for IIP.

**Results:** Total plaque burden increased in 42% of patients; progression was predicted by older age, higher cumulative inflammation (TA- CRP) and higher total prednisone dose (table 1). Longer exposure to bDMARDs and statins was linked to lower risk of NCP progression (all p<0.05). MP change was predicted by a-b2GPI-IgA presence, whereas CP progressors were older, more obese, hypertensive, and with higher cumulative inflammation compared to non-progressors (p<0.05). CAC increase correlated with older age, hypertension, obesity, higher inflammation and a-b2GPI-IgA presence (Table 1). Both total plaque and CAC progression predicted CVE independently of baseline burden and cardiac risk scores (all p<0.01).

**Conclusion:** Change in coronary atherosclerosis burden and consistency was differentially impacted by inflammation, cardiac risk factors, a-b2GPI-IgA presence and medications such as prednisone, biologics and statins and independently predicted cardiovascular events in RA.

**Table 1.** Coronary plaque progression in RA: Role of Inflammation, risk factors and medications

<table>
<thead>
<tr>
<th>Model</th>
<th>Predictors OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIS Total</td>
<td>Age 1.09 (1.04-1.15)***</td>
</tr>
<tr>
<td></td>
<td>time-averaged CRP 2.04 (1.33-3.10)***</td>
</tr>
<tr>
<td>SSS Total</td>
<td>Age 1.07 (1.02-1.12)***</td>
</tr>
<tr>
<td></td>
<td>time-averaged CRP 1.83 (1.20-2.77)***</td>
</tr>
<tr>
<td>TPS Total</td>
<td>Age 1.08 (1.03-1.14)***</td>
</tr>
<tr>
<td></td>
<td>Cumulative prednisone dose 1.01 (1.00-1.02)***</td>
</tr>
<tr>
<td></td>
<td>Time-averaged CRP 1.66 (1.02-2.71)***</td>
</tr>
<tr>
<td>CAC</td>
<td>Age 1.14 (1.05-1.23)***</td>
</tr>
<tr>
<td></td>
<td>Hypertension 4.98 (1.46-16.94)***</td>
</tr>
<tr>
<td></td>
<td>Waist-to-height ratio 1.10 (1.02-1.17)***</td>
</tr>
<tr>
<td></td>
<td>a-b2GPI-IgA (a) 4.67 (1.22-17.94)***</td>
</tr>
<tr>
<td></td>
<td>Time-averaged CRP 1.68 (1.00-2.84)***</td>
</tr>
</tbody>
</table>

**p<0.1, *p<0.05, **p<0.01, ***p<0.001**

**Disclosure of Interests:** None declared, Elizabeth Hernandez: None declared, Matthew Budoff: None declared

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**SAT0546**

**IL-17A IS UPREGULATED IN SYSTEMIC SCLEROSIS PATIENTS WITH MIXED ANA IMMUNOFUORESCENT PATTERN AND MORE THAN ONE POSITIVE ANINUCLEAR ANTIBODY IN THE SERUM**

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**Background:** Systemic sclerosis (SSc, scleroderma) is a rare systemic connective tissue disease characterized by deposition of connective tissue in the skin and internal organs, microvascular impairment and shift in cellular and humoral immune response. More than 95% of the patients produce antinuclear autoantibodies (ANA) years before the first clinical manifestations of SSc. The majority of SSc patients have positive ANA at a high-titre of dilution and nuclear immunofluorescent staining pattern. The direct immunofluorescent assay (DFA) on Hep-2 cells is the reference method for ANA screening. According to the International consensus on antinuclear antibody patterns (ICAP) the most relevant and usual patterns ANA patterns have been assigned an alphanumerical code from anti-cell (AC)-1 to AC-28 and are organized into a classification tree.

**Objectives:** The aim of the present study is to investigate whether there is a significant correlation between the AC-pattern and the specific autoantibodies in the serum of SSc patients on the one hand, and the percentage of Tregs, Th17 cells and the serum levels of their corresponding cytokines - IL-6, IL-10, TGF-β, IL-17A on the other hand.

**Methods:** We enrolled 31 patients who fulfilled the 2013 ACR/EULAR Classification Criteria for SSc at mean age of 47±3 were recruited in the study: 17 with diffuse SSc and 14 patients with localized SSc, respectively. IFA on Hep-2 cells was performed to screen the patients’ sera for ANA and to determine the AC staining pattern. Immunoblot method was used to evaluate the specific ANA in patients’ sera. We performed flow cytometric analysis of Th17 and Tregs’ percentage in the peripheral blood of the patients. The serum levels of IL-6, IL-10, TGF-β and IL-17A were detected by ELISA.

**Results:** All patients’ sera were ANA positive at high titer of dilution (above 1:1280). We detected increased IL-17A levels in the serum of patients with AC-3 IFA pattern versus patients positive for AC-29 (18.7 [3.95-99.67] vs 2.50 [3.35-8.45], p=0.045). Moreover, IL-17A levels were elevated in the sera with AC-4 IFA pattern when compared to AC-29 (15.6 [4.4-28.9] vs 2.50 [3.35-8.45], p=0.033). When opposing patients’ sera, positive for only one ANA, with “simple” AC-IFA pattern, to sera with mixed AC pattern (positive for more than one ANA on immunoblot) we found: increased levels of IL-17A (13.7 [10.2 – 67.2] vs 3.9 [0.4 – 11.6], p = 0.01) and IL-10 (4.4 [2.2 – 5.8] vs 1.5 [0.3 – 3.2], p = 0.043) in the

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**DOI:** 10.1136/annrheumdis-2019-eular.1185

**SAT0545**

**A COMPARATIVE STUDY OF NAILFOLD CAPILLAROSCOPY CHANGES IN IDIOPATHIC INTERSTITIAL PNEUMONIA WITH IDIOPATHIC INTERSTITIAL PNEUMONIA AUTOIMMUNE FEATURES**

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**Background:** Lung involvement especially interstitial lung disease (ILD), can be the first manifestation of an underlying connective tissue disease (CTD). About 25% of IILD occurs in the context of an ‘undi
differentiated’ CTDs, characterized by signs and symptoms that are not specific for any of the described CTD entities, now known as IPAF. Nailfold capillaroscopy (NFC) is an important tool, which helps us in early recognition of microvascular changes in patients with ILD.

**Objectives:** To study the various patterns on Nailfold Capillaroscopy in patients of Interstitial Pneumonia with autoimmune features (IPAF) and compare them with those having idiopathic Interstitial Pneumonia (IIP).

**Methods:** The study population consisted of 50 patients each of IIP and IPAF who fulfilled ERS/JRS/ALAT 2011 revised diagnostic criteria for IIP and ERS/ATS classification criteria for Interstitial pneumonia with autoimmune features respectively. The study also included 50 age and sex matched controls, having normal respiratory examination clinically, normal CXR and normal PFTs. All patients underwent NFC at room temperature and the following parameters were recorded: capillary density, presence of megacapillarities, tortuosity, avascular areas, disarrangement and neoangiogenesis.

**Results:** Our study consisted of 23 (46%) female patients and 27 (54%) male patients for IPAF group and 19 (38%) female patients and 31 (62%) male patients for IIP. The mean capillary density was significantly reduced in IPAF group and also had presence of abnormal capillary morphologic patterns (microhemorrhages, neangiogenesis and megacapillaries).

**Conclusion:** This single centre study found that Nailfold Capillaroscopy (NFC) is an important adjunct to differentiate between patients of IPAF and IIP demonstrating a higher frequencies of abnormalities (microhemorrhages, megacapillaries and reduced capillary density) among patients with IPAF.
sena with mixed AC pattern. Regarding the Tregs and Th17 cells, we identified a reduced percentage of the CD25^+CD127^+ Tregs at a marginal trend threshold significance in the patients with mixed AC pattern versus the group with simple AC pattern (5.9 [3.2–10.6] vs 11.2 [6.1–14.3]; p = 0.06).

Conclusion: Although the pathogenetic contribution of ANA in SSc remains unclear, ANA play an important role in the differential diagnosis, risk stratification and assessment of disease activity in SSc. Further research is warranted to clarify the interconnection between the disregulated Th17/Tregs axis and the production of high-high-tier specific ANA in SSc. In the future rheumatologists could benefit from ANA in order to apply the most accurate therapeutic strategy for each patient.

Disclosure of Interests: None declared
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SAT0548
TRACKING RESIDUAL INFLAMMATION USING ULTRASONOGRAPHY IN PATIENTS WITH RHEUMATOID ARTHRITIS IN CLINICAL REMISSION
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Background: With current treatment strategies, achieving a state of remission has become a realistic goal in rheumatoid arthritis (RA). Several composite scores and indices are available to assess remission based on clinical and biological parameters. None of the European League Against Rheumatism or American College of Rheumatology current recommendations include ultrasonography (US) findings as a parameter to define whether or not a patient is in remission.

Objectives: Describe and compare clinical and ultrasonographic findings in RA patients in clinical remission.

Methods: We included RA patients who were in clinical remission by the Disease Activity Score (DAS28<2.6) for at least three months. B mode and Power Doppler (PD) US examination were performed by an experienced rheumatologist, blinded to clinical data. Twenty-two joints of both hands (wrists, metacarpo-phalangeal (MCP) and proximal interphalangeal joints (PIP)) were assessed. A binary score (absence or presence) of synovial hypertrophy/effusion (SH) and power Doppler (PD) signals was applied for each joint. The sonographic Remission was defined by the absence of PD signals.

Results: Thirty patients were recruited (25 female and 5 male). The mean age of our population was 48 ± 8.98 years-old. All patients were in remission according to DAS28. The mean DAS28 was 2.03 ± 0.40 ranged from 1.13 to 2.6. Average length of remission was 16 months [3–72 months].

On clinical examination, nine swollen joints were identified, represented by wrists in all cases. On B mode, synovial hypertrophy was detected in 80% of patients. Among the 660 joints examined, synovitis was identified in 89 cases. A wrist synovitis was detected in 55% of cases (33 out of 60 wrists studied) making it the most affected joint, followed by the second and third PIP in 14 and 12 cases out of 60 studied, respectively [Table 1]. PD signal, as a sign of active disease, was observed in 78% of patients and detected in 43% of the total wrists examined [26/60] [Table 1]. Among the swollen joints found on clinical examination, only one had no synovial hypertrophy in B mode. However, subclinical synovitis was detected in 81 joints (12% of total joints) with predilection for PIP joints (47% of subclinical synovitis). In PD mode and among subclinical synovitis, PD signals were found in 38 joints (47%). Thus, the sensitivity of the clinical examination to identify swollen joints compared to US was 9%, its specificity of 99%, its PPV of 89% and its VPN of 88%.

Conclusion: Subclinical joint inflammation detected by US might explain the structural deterioration in RA patients despite clinical remission. Our findings support the use of US for the accurate evaluation of disease status before concluding to remission or otherwise to adjust treatment.

REFERENCES

Table 1. Clinical and Ultrasonographic synovitis distribution in B mode and PD mode

<table>
<thead>
<tr>
<th>Examined joint</th>
<th>Wrist</th>
<th>MCP1</th>
<th>MCP2</th>
<th>MCP3</th>
<th>MCP4</th>
<th>MCP5</th>
<th>IP1</th>
<th>PIP2</th>
<th>PIP3</th>
<th>PIP4</th>
<th>PIP5</th>
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<tr>
<td>Swollen joints</td>
<td>9</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Synovial hypertrophy</td>
<td>33</td>
<td>1</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>1</td>
<td>14</td>
<td>12</td>
<td>9</td>
<td>2</td>
</tr>
<tr>
<td>Active synovitis on PD</td>
<td>26</td>
<td>5</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>4</td>
<td>3</td>
<td>2</td>
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SAT0549  
SARCOPENIA IN RHEUMATOID ARTHRITIS FEMALE PATIENTS: RELATIONSHIP BETWEEN WHOLE BODY AND TRABECULAR BONE SCORE
Andrea Casabellà1, Barbara Ruani1, Chiara Seriò2, Luigi Molletta2, Elisa Alessandri1, Carmen Pizzorni3, Alberto Sulli1, Maurizio Cutolo1, Sabrina Pascali1. 1Research Laboratory and Academic Division of Rheumatology, Department of Internal Medicine, University of Genova, IRCCS San Martino Polyclinic Hospital, Genova, Italy. 2Osteoporosis, Bone and Joint Disease Research Center, CROPO, Department of Internal Medicine, University of Genova, Italy. Genova, Italy

Background: Rheumatoid arthritis (RA) is associated with muscle loss, osteoporosis and an increased risk of fractures. Sarcopenia is a syndrome in which muscle mass loss is linked to functional loss. Trabecular Bone Score (TBS), is an index extracted from the dual-energy X-ray absorptiometry (DXA) that provides an indirect measurement of bone microarchitectue and allows to get information about bone quality [1-3].

Objectives: The aims of this study were to examine associations between bone mineral density, bone quality, fat mass and lean mass in the whole body in female patients with RA and healthy controls (CNT).

Methods: 55 female patients (mean age 58±12 years) affected by RA and 55 CNT (mean age 52±16 years) were enrolled. Bone Mineral Density (BMD, g/cm²) of the lumbar spine (L1-L4) and whole body expressed by Relative skeletal mass index (RSMI) was analyzed using a DXA scan (GE, Lunar Prodigy). Lumbar spine TBS was derived for each spine DXA examination using the TBS Index (TBS Insight Medimaps). For all subject was calculate the Body Mass Index (BMI, kg/m²). According to the anthropometric equation [4], sarcopenia was defined as RSMI<5.5 kg/m² on women.

Results: The mean BMI±SD compared by RA and CNT was 0.894 ±0.127 g/cm² vs 1.288±0.672 g/cm² at the lumbar spine and 0.694±0.842 g/cm² vs 1.132±0.998 g/cm² on total hip, respectively, all p<0.001. The mean of BMI and RSMI value in RA patients was lower, 26.1 ± 3.92 kg/m² and 6.92±0.71 kg/m²). Nineteen RA women (35%) presented a positive correlation between the TBS and RSMI values in RA patients (0.868±0.227 vs 1.482±0.113, p= 0.006; p= 0.014, respectively) with lower Peak (99.1 ±71.8 nM; p< 0.001; p= 0.005, respectively) and AUC (1150.5 ±837.4 nM; p= 0.001; p= 0.004, respectively). Furthermore, also when analyzing the TGA profile of APS patients compared to patients treated with warfarin and no APS, APS patients had significant higher tLag (13.3 ±5.9 min; p= 0.003; p= 0.006, respectively) and AUC (2057.1 ±571.8; mean AUC (nM) 2092.2±103.8 vs. 265.4±106.2; mean AUC (nM) 2023 ±489.2 v.s. 2057.1 ±571.8, respectively).

Conclusion: This study show that sarcopenia is frequent in RA patients, mostly on those classified as normal or overweight according to BMI. Therefore TBS and BMD values, as demonstrated could have a key role in a bone-muscle feedback in chronic systemic inflammatory rheumatic diseases, such as RA.

REFERENCES

Disclosure of Interests: None declared

SAT0550  
THROMBIN GENERATION ASSAY AND GLOBAL ANTIPHOSPHOLIPID SCORE (GAPSS) FOR RISK STRATIFICATION IN ANTIPHOSPHOLIPID SYNDROME
Massimo Radin, Irene Cecchi, Elena Rubini, Silvia Grazia Zio Fodda, Savino Sciascia, Dario Roccato. University of Turin, Turin, Italy

Background: Thrombin generation assay (TGA) is a simple and reproducible technique, that could potentially be used in coagulation laboratories, that measures the concentration of generated thrombin after plasma recalcification. The clinical usefulness of TGAs in assessing thrombotic risk has been a matter of growing interest, however, it has not been applied on a large scale to a large cohort of patients with antiphospholipid syndrome (APS).

Objectives: The aim of our study was to assess the potential use of TGA in monitoring the pro-coagulant state in APS patients and its role in predicting the relative risk score in developing APS clinical manifestations, by comparing its parameters to the validated global antiphospholipid score (GAPPS).

Methods: After chart-reviewing all APS patients that presented at San Giovanni Bosco Hospital in the last 5 years, we enrolled 4 groups of patients for the sake of this study, matched for age and sex. Clinical and laboratory characteristics were retrospectively collected.

Inclusion criteria were as follows:
Group A) Fulfilled the diagnosis of Thrombotic APS defined as per Sidney criteria [1]: 60.
Group B) Patients with aPL positivity, but with no clinical manifestations of APS defined as per Sidney criteria [1]: 30.
Group C) Patients treated with Warfarin (target INR 2-3), negative for aPL and other autoimmune conditions: 60.
Group D) Healthy Controls: 60.

Results: Figure 1 resumes the representative TGA profiles between groups.

Healthy controls and patients with aPL positivity, but no APS clinical manifestations, had similar TGA profiles [mean tLag (min) 9.6 ±2.9 v.s. 8.6 ±3.2; mean iPeak (min) 16.2 ±4.7 v.s. 13.7 ±5.8; mean Peak (nM) 209.2 ±103.8 v.s. 265.4±106.2; mean AUC (nM) 2023 ±489.2 v.s. 2057.1 ±571.8, respectively].

When analyzing the TGA profile curve of the patient with APS compared with healthy controls and aPL positive patients with no clinical manifestations of APS, we observed a statistically significant higher tLag (13.3 ±5.9 min; p< 0.001; p= 0.005, respectively) and AUC (1150.5 ±837.4 nM; p= 0.001; p= 0.004, respectively). Moreover, also when analyzing the TGA profile of APS patients compared to patients treated with warfarin and no APS, APS patients had significant higher tLag (13.3 ±5.9 min v.s. 8.2 ±2.1; p< 0.001; p= 0.001) and AUC (209.2 ±103.8 min v.s. 13 ±2.8; p= 0.001). Peak (99.1 ±71.8 nM v.s. 62.3 ±21.5; p= 0.018) and AUC (1150.5 ±837.4 nM; p= 0.001). When analyzing a correlation model between GAPPS and TGA parameters, we observed a statistically significant correlation for tLag (Pearson

Disclosure of Interests: None declared

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