conditions. Isolated anti-DFS70 could be used as a differential marker for AARD.

Objectives: To analyse the clinical significance of isolated anti-DFS70 antibodies.

Methods: All the serum samples obtained in our hospital between January 2017 to December 2018 that were positive for ANA testing and negative for anti-extractable nuclear antigen (ENA) antibodies panel, were tested for anti-DFS70 (HEp-2/DFS70 knock-out IFA, A.MENARINI diagnostics). Demographic and clinical data were collected from anti-DFS70 positive adult patients.

Results: From 145 samples tested 68 were found positive for monospecific anti-DFS70: 82.4% were women and the median age was 55.4±14.4 years. The ANA titer was greater than 1/320 in all of cases and 26.5% of patients had two positive determinations DFS70 separated 15.4±9.2 months. The reasons for requesting ANA were diverse (arthralgias in 33.8% of the cases), and most of them were ordered from primary care. Clinical follow-up was performed in 66.1% of the patients for a mean of 2.9 years (between 2 months and 7 years). Only 3 patients (4.1%) had a defined AARD: 2 systemic lupus erythematosus and 1 antiphospholipid syndrome, diagnosed years before. There were 5 patients with rheumatoid arthritis (7.3%) and one had sarcoidosis. Nineteen patients (27.9%) had an organ-specific autoimmune disease: 14 autoimmune hypothyroidism, 2 autoimmune hepatitis, 2 primary biliary cholangitis and 1 immune thrombocytopenia. Six patients (8.8%) were followed up because of undifferentiated connective tissue disease (they did not meet criteria for AARD). Other clinical associations found were obesity (13.2%), depression (8.8%), sleep disorders (8.8%), fibromyalgia 5.8%, cancer, asthma and psoriasis (2.9% each one of them). Thirty-nine patients (57.3%) did not have any autoimmune disease (systemic or localized).

Conclusion: In our experience, patients with monospecific anti-DFS70 ANA rarely present AARD, even though 42.7% of subjects showed autoimmune features. Rheumatoid arthritis patients occasionally had an isolated anti-DFS70 ANA. Therefore isolated anti-DFS70 may be potentially considered as marker of benign autoimmunity.

REFERENCES

- [1] Michael Mahler, Luis E. Andrade, Carlos A. Casiano, Kishore Malyavantham & Marvin J. Fritzler (2019): Anti-DFS70 antibodies: an update on our current understanding and their clinical usefulness, Expert Review of Clinical Immunology, DOI: 10.1080/17446666X.2019.1562903.
- [2] Bonroy C, Schouwers S, Berth M, Stubbe M, Piette Y, Hoffman I, et al.: The importance of detecting anti-DFS70 in routine clinical practice: comparison of different care settings. Clin Chem Lab Med 2018; 56:1090-9.
- [3] Shovman O, Gilburd B, Chayat C, Amital H, Langevitz P, Watad A, et al.: Prevalence of anti-DFS70 antibodies in patients with and without systemic autoimmune rheumatic diseases. Clin Exp Rheumatol 2017; 36:121-6.

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AB1155

CORRELATION BETWEEN NAILFOLD VIDEOCAPILLAROSCOPY PATTERNS, LEFT VENTRICLE DYSFUNCTION AND PULMONARY DISEASE IN SYSTEMIC SCLEROSIS

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Background: Systemic Sclerosis (SSc) is a multisystem connective disease characterized by a microvascular damage, which leads to systemic fibrosis, immune dysregulation and progressive involvement of internal organs [1].

According to the classification of the morphological aspects, into the scleroderma pattern proposed by Cutolo et al. are described the early, active and late patterns.

Objectives: The aim of our study is thus to report a correlation between specific nailfold videocapillaroscopy pattern and internal organ involvement.

Methods: All enrolled patients were diagnosed for SSc, according to the American College of Rheumatology criteria and underwent an echocardiographic examination and a nailfold videocapillaroscopy.

Myocardial function parameters considered were: global contractility (computed with the Simpson method), linear contractility (computed through the MAPSE) [2], diastolic dysfunction (through the analysis of the transmitral flow) [3]; whilst those of lung damage were: PAPs and the evaluation of the right ventricle contractility through the TAPSE [4].

Statistics were performed with SPSS 20 software, by using the Mann Whitney U Test and the Fisher Test.

Results: We enrolled 27 patients, of which 16 showing "active pattern" and 11 "early pattern", compared to a group of 21 healthy controls.

Of the 11 patients belonging to the "early" group, 1 resulted affected by diastolic dysfunction, whilst 3 had pulmonary hypertension, defined by PAPs ≥40 mmHg [4] (early vs controls; p=0.03). In the 16 patients of the "active" group, instead, 5 were found to have a diastolic dysfunction (active vs controls; p=0.01) and 6 pulmonary hypertension (active vs controls; p=0.003). In the group with "active" pattern we also observed a reduction in TAPSE compared to the control group (2.0 ± 0.2 vs 2.2 ± 0.2; p=0.025) and compared to the group with early pattern (2.0 ± 0.2 vs 2.2 ± 0.3; p=0.07).

No presence of modifications in the global contractility emerged; however, we observed a progressive reduction of the MAPSE (controls 1.76 ± 0.08; early 1.57 ± 0.04; active 1.49 ± 0.12), which resulted statistically significant among the different comparisons (controls vs early p=0.001; controls vs active p=0.0001; early vs active p=0.04).

Conclusion: The analyses showed a strict correlation between the severity of the microvascular alterations, reported by nailfold videocapillaroscopy, and the severity of the cardiopulmonary damage, expressed by an increase in the percentage of pulmonary hypertension, diastolic dysfunction and a progressive reduction of MAPSE and TAPSE.

Abstract AB1155 Table 1. early vs controls

	EARLY	CONTROLS	P
PAPs	32,3 ± 5,4	22,6 ± 6,7	0,0001
TAPSE	2,2 ± 0,3	2,2 ± 0,2	NS
MAPSE	1,57 ± 0,04	1,76 ± 0,08	0,0001
EF	65 ± 4	64 ± 2,7	NS
E/A	1,34 ± 0,2	1,38 ± 0,19	NS
DECT	148 ± 23	163 ± 27	NS
Diastolic dysfunction	1(11)	0(21)	0,3
Pulmonary hypertension	3(11)	0(21)	0,03

Abstract AB1155 Table 2. active vs controls

	ACTIVE	CONTROLS	P
PAPs	34 ± 7,8	22,6 ± 6,7	0,0001
TAPSE	2,0 ± 0,2	2,2 ± 0,2	0,025
MAPSE	1,49 ± 0,12	1,76 ± 0,08	0,0001
EF	65 ± 4	64 ± 2,7	NS
E/A	1,34 ± 0,4	1,38 ± 0,19	NS
DECT	157 ± 24	163 ± 27	NS
Diastolic dysfunction	5(16)	0(21)	0,01
Pulmonary hypertension	6(16)	0(21)	0,003

REFERENCES

- [1] LeRoy EC. Systemic sclerosis. A vascular perspective. Rheum Dis Clin North Am.
- [2] Ibadete Bytci, Left atrial change in early stages of heart failure with preserved ejection fraction. Echocardiography
- [3] Sherif F. Recommendations for the Evaluation of Left Ventricular Diastolic Function by Echocardiography. Journal of the American Society of Echocardiography
- [4] Luke S. Howard, Echocardiographic assessment of pulmonary hypertension: standard operating procedure. European Respiratory Review

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AB1156

DEFINITION OF TWO NEW ULTRASOUND ENTHESOPHYTES SCORES: APPLICATION IN A CONSECUTIVE SERIES OF IBD PATIENTS

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Background: Recent studies have developed criteria for US definition of enthesal abnormalities [1] however no actual scores are available to

determine the extension and severity of enthesophyte growth in clinical practice.

Objectives: To evaluate the feasibility of two new scores to quantify enthesophytes occurrence and its dimensional changes with time.

Methods: We have evaluated 816 entheses two years apart in a consecutive series of 68 IBD patients for the presence and size of enthesophytes. Images were collected at baseline and after 24 months using an Esaote MyLabClass, 18-6 MHz linear multifrequency transducer both in B-mode and PD-mode. The following sites were evaluated bilaterally: lateral epicondyle of the humerus, distal quadriceps insertion at the patella, superior and inferior pole of the patella, Achilles tendon insertion, and plantar aponeurosis insertion. The presence of enthesophyte was scored dichotomously as present (=1) or absent (=0) for each site and summed up to generate the ARE score (ARES). Enthesophytes was also scored semi-quantitatively in a 0-3 scale (0 = absent, 1 = minimal, 2 = discrete, 3 = massive) according to Aydin SZ et al. [2] for each site and summed up to generate RES score (RESS). All the stored images were then reviewed and scored by 4 rheumatologists (FM, GC, PM, NG) well trained in US examination of entheses. ICC inter- and intra-observers was done for each site and for the ARES and RESS.

Results: ICC was excellent for presence or absence of enthesophytes both intra and inter examiner for all the sites. ICC of the ARE score was excellent (Cronbach alpha = 0.930, 95%CI 0.72-0.98). ICC was excellent also for the semiquantitative RESS at all the examined sites and only moderate at the plantar fascia level (Cronbach alpha = 0.571, 95%CI -0.72-0.89). The total RESS have an excellent ICC (Cronbach alpha = 0.963, 95%CI 0.85-0.99).

Conclusion: The two scores are easily feasible and have high reliability and excellent intra- and inter-observer reproducibility.

REFERENCES

- Balint PV, et al. *Reliability of a consensus-based ultrasound definition and scoring for enthesitis in spondyloarthritis and psoriatic arthritis: an OMERACT US initiative.* Ann Rheum Dis. 2018 Dec;77(12):1730-1735.
- Aydin SZ, et al. *A relationship between spinal new bone formation in ankylosing spondylitis and the sonographically determined Achilles tendon enthesophytes.* Rheumatol Int 2016 Mar;36(3):397-404.

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AB1157

VALIDATION OF VECTOR (VELCRO CRACKLES DETECTOR) FOR THE DIAGNOSIS OF INTERSTITIAL LUNG DISEASE IN PATIENTS WITH CONNECTIVE TISSUE DISEASES

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Background: Interstitial lung disease (ILD) represents one of the most frequent pulmonary manifestations in connective tissue diseases (CTD) and it is characterized by severe implications in morbidity and overall prognosis. However, a routinely assessment of ILD is not so common in all CTDs. Velcro-type crackles are typical of lung fibrosis and have been proposed for the early diagnosis of the disease.

Recently, we validated the algorithm VECTOR (Velcro Crackles detector), developed to detect the presence of velcro-crackles in pulmonary sounds recorded by an electronic stethoscope (ES) in RA-ILD patients as screening for the diagnosis of interstitial lung involvement, showing a diagnostic accuracy, a sensitivity and a specificity of 83.9%, 93.2% and 76.9%, respectively.

Objectives: The aim of the present study was to evaluate the diagnostic accuracy of VECTOR in a population of CTDs, compared with the reference standard of high-resolution computed tomography (HRCT), in a monocentric study.

Methods: CTDs patients who underwent HRCT in the last 12 months were enrolled. They were auscultated with an ES (Littmann 3200TM 3M, USA), bilaterally, at dorsal level, in at least 3 pulmonary fields (apical, medium and basal). All tracks recorded were analyzed by suitably developed software (VECTOR) capable of recognizing pathological crackles in lung sounds. Results were compared with HRCT findings detected in a blind manner by an expert radiologist.

Results: Ninety CTDs patients were enrolled, namely 27.8% systemic sclerosis (SSc), 31.1% primary Sjögren's syndrome (pSS), systemic lupus erythematosus 11.1%, 7.8% polymyositis, 6.6% dermatomyositis, and 15.5% undifferentiated CTD (UCTD). Male/female ratio was 1/3.1 and a mean age of 63.9±12.7 years; among them 45 (50%) showed ILD at HRCT. The algorithm correctly classified 73/90 patients, with a sensitivity and specificity of 93.3% and 68.9%, respectively, and a diagnostic accuracy of 81.1% (figure 1).

Figure 1. Contingency table of diagnostic accuracy of VECTOR (Velcro-Sounds Detector)

	ILD -	ILD +	
Velcro -	31 34.4%	3 3.3%	91.2%
Velcro +	14 20.9%	42 46.7%	75%
	68.9% Specificity	93.3% Sensitivity	81.1% Diagnostic accuracy

Conclusion: These data confirm the diagnostic accuracy of VECTOR in detection of ILD in CTDs patients, as previously described also for RA-ILD. In some CTDs such as SSc, a careful evaluation of lung involvement is quite diffused, while for other CTDs, for example pSS or UCTD, ILD remains often underestimated, with a delay in diagnosis and treatment. Since lung complications represent one of the most serious and frequent cause of poor prognosis for all CTDs patients, the search for a simple, repeatable and radiation-free tool for the screening of these patients is mandatory. The routinely employment of an ES and VECTOR, combined to clinical findings (cough, dyspnea) and respiratory lung function tests, could increase our ability to early identify ILD in CTD patients.

REFERENCES

- Kelly C, Iqbal K, Iman-Gutierrez L, Evans P, Manchegowda K. Lung involvement in inflammatory rheumatic Diseases. Best Pract Res Clin Rheumatol 2016; 30:870-888.
- Pancaldi F, Sebastiani M, Cassone G, Luppi F, Cerri S, Della Casa G, Manfredi A. Analysis of pulmonary sounds for the diagnosis of interstitial lung diseases secondary to rheumatoid arthritis. Comput Biol Med. 2018; 96:91-7

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AB1158

CLINICAL AND VISUAL US PARAMETERS IN SYMPTOMATIC KNEE OSTEOARTHRITIS AND ASYMPTOMATIC PATIENTS

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Background Sonography is widely used because of its easy accessibility, relatively low cost. Sonography provides distinct information that bridges the gap between clinical and radiologic evaluation. There has been a growing interest in determining the sources of pain with ultrasound (US) findings in patients with knee osteoarthritis.

Objectives The aim of this study was to determine the relationships between clinical parameters and features of US of the knee.

Methods This was a cross-sectional study, recruiting 47 consecutive patients aged 47 (36- 54), 60,42% (n=29) were female. Those with recent trauma, rheumatic diseases were excluded from the study. Patients underwent assessment for knee pain (Visual Analog Scale (VAS)), US examination of the knee joints according to the 4-point scale (synovial proliferation, joint effusion, power Doppler signal (PD), patellofemoral joint cartilage (PFJ), medial femoral cartilage (MF), medial (MM) and lateral meniscus (LM), osteophytes, Baker cysts). US staging of knee OA was also performed.

Results Patients were divided into 2 groups: those with knee pain (n=28) and asymptomatic patients (n=19). Pathological US features were found in both groups (Table). In 5 out of 19 asymptomatic patients, degenerative changes of different degree of the joint structures were identified (PFJ, MF, osteophytes, MM,