Methods: Consecutive patients undergoing a LSG for clinically suspected pSS were included in this study from January 2018 to October 2020. UHFUS of LSG was performed by using VEVO MD, equipped with a 70 MHz probe, scanning first the central compartment of the inferior lip, and then both peripheral compartments. Parenchymal homogeneity was graded on a scale of 0 (normal) to 3 (evident). UHFUS imaging was used to locate the LSG for the US-guided biopsy. For each of the LSG specimens the area of the glandular tissue, the presence and number of foci and the focus score (FS) were assessed. Immunostaining for CD21 was performed to evaluate the presence of follicular dendritic cells (FDC) in foci.

Results: We included a total of 171 patients with suspected pSS: out of them, 83 (48.5%) received a diagnosis of pSS (ACR 2016 criteria) and 88 (51.5 %) were diagnosed as no-SS sicca controls. Out of the 171 LSG biopsies, 73/171 (42.7%) were characterized by a nonspecific chronic sialadenitis (NSCS) whereas a focal lymphocytic sialadenitis (FLS) was described in the remaining 98/171 (57.3%). UHFUS-LSG scores were differently distributed in pSS patients with respect to no-SS sicca controls: a score 0 was detected in 16/88 no-SS sicca controls and in none of the 83 pSS patients, whereas a score 3 was detected in 12/83 pSS and in none of no-SS sicca controls. ($p<0.001$). The higher was the UHFUS grading, the higher was the number of foci (from a mean (S.D) = 0.38 (0.72) in UHFUS-score 0 to 4.58 (3.11) in UHFUS-score 3, $p<0.001$) and the focus score (from 0.17 (0.32) in UHFUS-score 0 to 1.88 (0.90) in UHFUS-score 3, $p<0.001$) of the samples. Overall, out of the 16 no-SS controls with LSG-UHFUS score 0, only 4/16 showed histological features of focal lymphocytic infiltrate; however, the mean FS of those 4/16 samples was 0.17 (0.32). In fact, considering a FS $\geq$ 1, negative UHFUS-LSG was highly predictive of a negative histology (100 %). By contrast, out of the 12 pSS patients with the highest score at LSG-UHFUS (score 3), 10/12 presented FDC networks in their biopsies, with a positive predictive value of 83% of the severity of the infiltrate.

Conclusion: UHFUS of LSG appeared feasible and sensitive in pSS; due to its striking negative predictive value this novel tool can help to identify negative patients on subsequent lip biopsy, thus avoiding invasive procedures in selected cases. Besides its diagnostic role, considering the association with the presence of FDC networks, UHFUS-LGS may also have a role in patients prognostic stratification.

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POS0779

MYOCARDIAL INFARCTIONS, SUBTYPES, LOCATIONS AND CORONARY ATHEROSCLEROSIS IN SLE - A COMPARATIVE STUDY WITH MATCHED CONTROLS

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Background: Myocardial infarction (MI) is estimated to be 2- to 3-fold elevated in systemic lupus erythematosus (SLE) as compared to gender- and age-matched controls (1-2). Even though some risk factors have been purposed, mechanisms of increased MI incidence remains to be determined.

Objectives: To explore underlying mechanisms, we compared MI characteristics and risk factors between SLE patients with MI (MI-SLE), MI patients without SLE (MI-nonSLE) and SLE patients without MI (nonMI-SLE).

Methods: We performed retrospective medical file review including angiography and echocardiography reports in 34 MI-SLE patients, 34 MI-nonSLE patients and 34 nonMI-SLE patients – all individually matched for gender and age in a ratio of 1:1:1.

Results: Median age was 61 years and 88% were females. MI-SLE patients had more coronary arteries involved (table 1; $p=0.038$), and $\geq 50\%$ coronary atherosclerosis/occlusion at MI was numerically more common compared to MI-nonSLE controls (88% versus 66%; $p=0.065$). The left anterior descending artery was most frequently involved in both MI groups (73% versus 59%; $p=0.11$). Decreased ($<50\%$) left ventricular ejection fraction occurred with similar frequency (45% versus 36%; $p=0.79$) in MI-SLE patients compared to MI-nonSLE patients. Cardiovascular disease (CVD) (44%, 5.9%, 12%; $p<0.001$) and coronary artery disease excluding MI (CAD, 32%, 2.9%, 0%; $p<0.001$) preceded MI/inclusion more commonly in MI-SLE than in MI-nonSLE and nonMI-SLE patients, respectively. MI-SLE patients differed from nonMI-SLE patients through lower plasma albumin levels (35 (29-37) versus 40 (37-42) g/L; $p=0.002$) and longer disease duration (22 (14-32) versus 14 (6.3-24) years; $p=0.038$).

Conclusion: We demonstrate that non-procedural MIs in SLE are in 88% of cases associated with significant coronary atherosclerosis. Increased prevalence of CAD prior MI and higher number of coronary arteries involved at MI, suggest accelerated coronary atherosclerosis in SLE patients. This calls for attentive surveillance of CVD and early atheroprotective treatment in this patients group.

REFERENCES:

- [1] Hak AE et al. Systemic lupus erythematosus and the risk of cardiovascular disease: Results from the nurses' health study. *Arthritis and rheumatism* 2009;61:1396-402.
- [2] Fischer LM et. Effect of rheumatoid arthritis or systemic lupus erythematosus on the risk of first-time acute myocardial infarction. *The American journal of cardiology* 2004;93:198-200.

Table 1. MI characteristics

	MI-SLE	N _{total}	MI-nonSLE	N _{total}	P-value
ECG findings	23 (72%)	32	21 (66%)	32	1.0
NSTEMI					
STEMI	9 (28%)	32	11 (34%)	32	
Presence of atherosclerosis					
0-VD	3 (12%)	26	10 (35%)	29	0.065
MI-CAD (≥ 1 -VD)	23 (88%)	26	19 (66%)	29	
Number of involved arteries					
0-VD	3 (12%)	26	10 (35%)	29	0.038
1-VD	13 (50%)	26	9 (31%)	29	
≥ 2 -VD	10 (39%)	26	10 (35%)	29	
Involvement of specific arteries	3 (12%)	26	0 (0%)	29	0.50
LMCA					
LAD	19 (73%)	26	17 (59%)	29	0.11
RCA	7 (27%)	26	9 (31%)	29	0.75
Cx	6 (23%)	26	6 (21%)	29	1.0
Left ventricular ejection fraction					
$<50\%$	13 (45%)	29	12 (36%)	33	0.79
$\geq 50\%$	16 (55%)	29	21 (64%)	33	

0-VD = 0-Vessel disease. 1-VD = 1-Vessel disease. 2-VD = 2-Vessel disease. Cx = Circumflex artery. LAD = Left anterior descending artery. LMCA = Left main coronary artery. MI-CAD = MI with coronary artery disease. NSTEMI = Non-ST-elevation MI. RCA = Right coronary artery. STEMI = ST-elevation MI.

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POS0780

SKIN LESIONS IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS AND ANTIPHOSPHOLIPID SYNDROME

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Background: In more than 40% of cases, systemic lupus erythematosus (SLE) is associated with the presence of highly positive antiphospholipid antibodies, with 50-70% of patients developing antiphospholipid syndrome (APS) over the next 10 years of the disease. Both diseases have similar and different clinical manifestations of skin lesions. The variety of skin lesions in SLE and APS requires a differential diagnosis and can make it difficult to diagnose a systemic autoimmune disease in a timely manner.

Objectives: To study the frequency of skin manifestations in SLE and APS, depending on the positivity of aPL.

Methods: The study included 116 patients with SLE (104 women and 12 men), mean age 37.9 $\pm$ 12.9, disease duration 8.5 [1.15-13.0]; 40 patients with APS (33 women and 7 men), mean age 36.2 $\pm$ 9.39. All patients were evaluated for skin lesions, and patients with APS were determined by IgG/IgM-aCL and IgG/IgM-a β 2HP1 by enzyme immunoassay (ELISA), 19 of them were determined by IgA-aCL, IgA-a β 2HP1 and IgG-a β 2HP1-D1 chemiluminescence analysis (CMA).

Results: Acute skin lesions in past history were noted in 58 (50%) patients, chronic lesions - in 21 (18.1%) patients; photosensitivity and alopecia were indicated in 46 (39.6%) patients, mucosal lesions were noted in 36 (31%) of 116 patients, which corresponds to the literature data on the frequency of skin lesions and its appendages in SLE. At the time of inclusion in the study, skin lesions were detected in 20 patients. Score according to the CLASI index in patients with skin lesions: activity index=1.55 [0-22]; damage index=1.81 [0-36].

Skin lesions are the second most common signs of SLE onset (debut in 26 (22.4%) patients), second only to arthritis (38 (32.5%) patients), while the

detection of immunological disorders (highly positive ab to dsDNA) was observed in 7 patients (6%) with reliable APS and probable SLE, who may not have had time to develop a clinic for reliable SLE.

Livedo, as one of the most frequent skin manifestations of APS, was detected in 60 patients and was significantly associated with IgM-aCL and IgM-aβ2HP1 positivity ($p<0.0001$). Significantly, positivity for IgG-aCL, IgG-aβ2HP1 and IgG-aβ2HP1-D1 ($p=0.0001$) and IgA-aCL ($p=0.008$) was associated with the development of comminuted hemorrhages, which occurred in 7 patients with APS and was associated with positivity of IgG-aCL, IgG-aβ2HP1, IgG-aβ2HP1-D1 ($p=0.0001$) and IgA-aCL ($p=0.008$).

The development of ulcerative-necrotic vasculitis with deep skin necrosis was observed in 3 patients, 2 of them were highly positive for IgG-aCL, IgG-aβ2HP1, IgG-aβ2HP1-D1. Melanoma was detected in the past history in 2 patients with highly positive for IgG-aCL, which is not a manifestation of the underlying disease, but confirms an increased risk of malignancy with aPL-positivity.

Conclusion: More than half of the patients had acute skin lesions, and about a quarter of the cases had skin lesions at the onset of the disease. The presence of comminuted hemorrhages was associated with positivity of IgG-aCL, IgG-aβ2HP1, IgG-aβ2HP1-D1 and IgA-aCL. Assessment of skin activity and damage (in particular, according to the CLASI index) is necessary for a comprehensive analysis of the dynamics of the disease and the response to therapy. The detection of aPL is necessary not only for the purpose of predicting thrombotic catastrophes, but also for the development of skin manifestations of APS.

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POS0781

PERFORMANCE OF MAJOR SALIVARY GLAND ULTRASOUND FOR THE DIAGNOSIS OF SJÖGREN'S SYNDROME IN CLINICAL PRACTICE

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Background: There is no specific test to diagnose Sjögren's Syndrome (SS) although available classification criteria intended for research purposes help guide the diagnosis. Major salivary gland ultrasound (MSGUS) may contribute to SS diagnosis.

Objectives: To study the performance of MSGUS for the clinical diagnosis of SS and its relationship with other relevant markers of disease.

Methods: We included patients with a clinical suspicion of SS that underwent MSGUS evaluation at our Department. Parotid and submandibular glands were classified bedside on a 0-4 scale, based on tissue inhomogeneity. The score of the highest graded gland was considered and a score ≥ 2 was defined as a positive MSGUS. Minor salivary gland biopsy (mSGB) was considered positive if a focus score ≥ 1 was reported. We compared MSGUS findings across diagnoses and against mSGB result and anti-SSA status. Categorical variables were compared using the chi-square test. Continuous variables were compared using Student's t-test, Mann-Whitney U test, or ANOVA. P-value was considered significant at <0.05 .

Results: A total of 219 patients were included (Table 1). MSGUS was positive in a higher proportion of patients with primary and secondary SS, in comparison to non-Sjögren's sicca syndrome (nSSS) and undifferentiated connective tissue disease (UCTD; $p<0.001$). Mean MSGUS score was higher in SS patients in comparison to nSSS and UCTD ($p<0.001$). A positive MSGUS was associated with anti-SSA positivity (61.4% vs 38.6% in anti-SSA negative patients; $p<0.001$). Patients positive for anti-SSA had a higher mean MSGUS score (2.12 ± 1.03) in comparison with anti-SSA negative patients (1.31 ± 0.97 , $p<0.001$). While MSGUS and mSGB were not significantly associated ($p=0.237$), the mean MSGUS score was higher in patients with a positive mSGB (1.95 ± 1.17) in comparison with those with a negative mSGB (1.61 ± 0.99 ; $p=0.027$).

Table 1. General sample characteristics

	Overall (n=219)	pSS (n=131)	sSS (n=17)	nSSS (n=62)	UCTD (n=9)	p-value
Age, years (mean $\pm$ sd)	60 $\pm$ 14	58 $\pm$ 17	56 $\pm$ 19	60 $\pm$ 13	48 $\pm$ 16	0.07
Female, n (%)	210 (95.9)	127 (97.0)	15 (88.2)	59 (95.2)	9 (100)	<0.001
Anti-SSA positive, n (%)	105 (47.9)	91 (69.5)	10 (5.8)	3 (4.8)	1 (11.1)	<0.001
Positive mSGB, n (%)	85 (46.4)	69 (63.3)	7 (46.7)	8 (15.7)	1 (12.5)	<0.001
MSGUS score, mean $\pm$ sd	1.70 $\pm$ 1.09	1.98 $\pm$ 1.09	1.76 $\pm$ 1.11	1.13 $\pm$ 1.09	1.44 $\pm$ 1.12	<0.001
Grade 0, n (%)	35 (16.0)	17 (13.0)	3 (17.7)	15 (24.2)	0 (0.0)	<0.001
Grade 1, n (%)	62 (28.3)	25 (19.1)	4 (23.5)	27 (43.6)	6 (66.7)	
Grade 2, n (%)	62 (28.3)	39 (29.8)	4 (23.5)	17 (27.5)	2 (22.2)	
Grade 3, n (%)	54 (24.7)	44 (33.6)	6 (35.3)	3 (4.9)	1 (11.1)	
Grade 4, n (%)	6 (2.7)	6 (4.6)	0 (0.0)	0 (0.0)	0 (0.0)	
MSGUS score ≥ 2 , n (%)	122 (55.7)	89 (67.9)	10 (58.8)	20 (32.3)	3 (33.3)	<0.001

Conclusion: MSGUS is a valuable resource in the investigation of SS. It is associated with clinical diagnosis, anti-SSA and MSGUS findings. Together with these other complementary exams, it can be used to assist in the diagnosis of patients presenting with sicca features suggestive of SS.

REFERENCES:

- Jousse-Joulin S, Milic V, Jonsson MV, Plagou A, Theander E, Luciano N, et al. Is salivary gland ultrasonography a useful tool in Sjögren's syndrome? A systematic review. *Rheumatology (Oxford)*. 2016 May;55(5):789–800.
- Zhou M, Song S, Wu S, Duan T, Chen L, Ye J, et al. Diagnostic accuracy of salivary gland ultrasonography with different scoring systems in Sjögren's syndrome: a systematic review and meta-analysis. *Sci Rep*. 2018 Dec;8(1):17128.
- Cornec D, Jousse-Joulin S, Pers J-O, Marhadour T, Cochener B, Boissramé-Gastrin S, et al. Contribution of salivary gland ultrasonography to the diagnosis of Sjögren's syndrome: toward new diagnostic criteria? *Arthritis Rheum*. 2013 Jan;65(1):216–25.

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POS0782

FOLLICULAR DENDRITIC CELL NETWORKS IN MINOR SALIVARY GLAND BIOPSIES: A MARKER OF DISEASE ACTIVITY AT BASELINE AND DURING THE FOLLOW-UP IN SJÖGREN'S SYNDROME

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Background: Minor salivary gland biopsy (MSGUS) has been increasingly recognized as an important tool for the stratification of patients with primary Sjögren's syndrome (pSS). Recently, the presence of follicular dendritic cell (FDC) networks in the inflammatory infiltrate has been associated with more severe biological and serological abnormalities compared with less organized infiltrates.

Objectives: To investigate the associations between the presence and number of FDC networks in foci and pSS glandular and extra-glandular disease activity at baseline and during the follow-up.

Methods: Consecutive MSGUS performed in daily practice for clinically suspected pSS from January 2017 to October 2020 were reviewed. Patients' demographic, clinical, biological and serological data were obtained from medical records. The ESSDAI was used to measure disease activity at baseline and at the end of the follow-up in pSS patients. For histopathology, 3 µm sections were cut from each formalin-fixed paraffin-embedded block of MSGUS and stained with haematoxylin and eosin (H&E). Immunohistochemical stainings were performed on additional 3 µm sections in order to detect T lymphocytes (CD3), B lymphocytes (CD20) and follicular dendritic cells (CD21). Glandular tissue areas, number of foci, focus score (FS) and the presence and number of FDC networks were assessed.

Results: We reviewed 330 consecutive MSGUS from patients with suspected pSS: out of them 146/330 (44%) were classified as nonspecific chronic sialadenitis (NSCS) whereas 184/330 (56%) as focal lymphocytic sialadenitis (FLS). According to the ACR/EULAR criteria the diagnosis of pSS was confirmed in 130 patients (117 F/13M, age 56 ± 13 yrs). The mean (S.D) surface area of the MSGUS was 7.8 (3.9) mm². The number of foci in the FLS samples ranged from 1 to 12 (mean (S.D)= 3.1 (2.6)), whereas the FS ranged from 0.3 to 9.0 (mean (S.D) = 1.4 (1.2)). The presence of FDC networks was documented in 106/330 (32%) of the samples; in 54/106 (51%) of these MSGUS the number of FDC networks ranged from 2 to 8 (mean (S.D)= 3.1 (1.4)). The number of FDC networks significantly correlated with the number of foci ($r=0.721^{**}$) and FS ($r=0.707^{**}$). Patients with FDC networks in the inflammatory infiltrate presented more serological abnormalities (i.e. anti-Ro/SSA, anti-LA/SSB, Rheumatoid factor) and elevated IgG levels ($p<0.001$). In pSS patients, the number of FDC networks slightly correlated also with C4 levels ($r=-0.216^{*}$), peripheral lymphocyte count ($r=-0.274^{**}$) and with glandular ($r=0.213^{*}$), and biological ($r=0.230^{**}$) domains of the ESSDAI at baseline. After a mean (S.D) follow-up of 21(13) months, the number of FDC networks still correlated with the final total ESSDAI ($r=0.312^{**}$).

Conclusion: The presence and number of FDC networks in foci represent a useful histopathological parameter able to reflect disease activity at baseline and during the follow-up, thus allowing more personalized interventions.

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