Conclusion: Our study suggests that the finding of NVC, especially the extent of capillary loss, is correlated with disease process of PAH, even subclinically, and may predict the progression to PAH in SSc. Since NVC is non-invasive, NVC can detect earlier PAH candidates and contribute to the improvement of prognosis.

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AB0635

POTENTIAL BIOMARKERS OF SKIN CHANGES IN SYSTEMIC SCLEROSIS

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Background: Skin fibrosis is a hallmark of systemic sclerosis (SSc). There are no widely accepted biomarkers of skin involvement in this condition. Several serum or plasma markers have been studied in patients with SSc - monocyte chemoattractant protein-1 (MCP-1), chemokine (C-X-C motif) ligand 8 (CXCL8), interleukin-13 (IL-13), and some more recognized such as - platelet derived growth factor (PDGF), transforming growth factor-beta 1 (TGF-beta 1), epidermal growth factor (EGF) and basic fibroblast growth factor (bFGF).

Objectives: The aim of this study was to assess several circulating biomarkers which may be relevant to the fibrosing process and further to correlate the obtained data with clinical indicators specific for SSc skin involvement.

Methods: 59 SSc patients (M/F 9/50; mean age 52.1 years, mean disease duration 6.7 years, 36 patients with limited cutaneous SSc and 23 with diffuse cutaneous SSc. As a control group 36 healthy individuals matched to sex and age were examined. Serum concentrations of bFGF, granulocyte-colony stimulating factor (G-CSF), granulocyte-macrophage-colony stimulating factor (GM-CSF), MCP-1, PDGF, IL-8 and 13 were analysed using commercial multiplex kit. The following clinical examinations were performed: modified Rodnan skin score (mRSS), Hand Mobility in Scleroderma Test (assessing hand function) (HAMIS), Cochin Hand Function Scale (hand function) (CHFS), Delta Finger-to-Palm Distance (extension-flexion) (dFTP), Inter-lip Distance (inter-lip), Inter-incisor Distance (inter-incisor), and Mouth Handicap in Systemic Sclerosis Scale (mouth opening) (MHISS). For statistical evaluation Spearman's correlation coefficient was used.

Results: When compared with healthy controls serum concentrations of bFGF ($p<0.001$), G-CSF ($p<0.0001$), GM-CSF ($p<0.0001$), MCP-1 ($p<0.0001$) IL-8 ($p<0.0001$), and IL-13 ($p<0.001$) were significantly elevated in SSc cohort. PDGF levels were increased in SSc patients with only a lower significance ($p<0.01$). bFGF, G-CSF, MCP-1 and IL-8 levels correlated significantly ($p<0.05$) with mRSS and HAMIS. GM-CSF levels correlated with mRSS and HAMIS and there was only a trend for negative correlation with inter-incisor. The was no correlation of IL-13 and PDGF levels with the evaluated clinical data.

Conclusion: Our results have shown that G-CSF, GM-CSF and IL-8 play a substantial role in SSc fibrosing process. Potential biomarkers as bFGF, G-CSF, MCP-1 and IL-8 correlated with a few clinical indices of SSc skin involvement.

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AB0636

INFLUENCE OF CARDIOVASCULAR RISK FACTORS ON NAILFOLD VIDEOCAPILLAROSCOPY IN THE STUDY OF CONNECTIVE TISSUE DISEASES

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Background: Nailfold videocapillaroscopy is a non-invasive technique used to assess Raynaud syndrome. It is mainly used for the early diagnosis of connective tissue disorders (CTD) such as systemic sclerosis. There is some evidence that capillaroscopy findings may be altered by microcirculation abnormalities in patients with cardiovascular risk factors (CVRF).

Objectives: to analyze the influence of cardiovascular risk factors on nailfold capillaroscopy in patients with Raynaud or suspect of CTD.

Methods: An observational and descriptive study of consecutive patients that underwent a videocapillaroscopy examination for the study of Raynaud syndrome was conducted. A "Capiscope" model videocapillaroscope from Optilia was used, with a fixed magnification of 200x. Examination was made on 8 hand fingers, with 2 images per finger. The patients had to be at least 30 minutes in a fixed warm temperature room and without smoking 1 hour before the performance of the test. The following capillaroscopic parameters were considered: nailfold morphology, capillary loop enlargements, megacapillaries, microhaemorrhages, avascular areas and signs of neoangiogenesis. Demographic information (including age, gender and previous diagnosis) and cardiovascular risk factors (including arterial hypertension (HT), diabetes mellitus (DM), dyslipidemia (DL) and smoking habit), were collected. The influence of cardiovascular risk factors on nailfold capillaroscopy was analyzed, using univariate and multivariate logistic regression models, adjusted for possible confounders.

Results: Out of the 136 included patients, 91% were women. Mean age was 54.6 ± 18.7 years. Raynaud syndrome was reported in 83% patients, with a mean duration of 6.1 ± 5.7 years and 12% of the patients had a previous diagnosis of CTD, including systemic lupus erythematosus (5%), systemic sclerosis (4%), undifferentiated connective tissue disorder (2%) and mixed connective tissue disease (1%). Regarding CVRF, HT was observed in 25%, DM in 7%, DL in 23% and past or current smoking habit in 32%. Capillaroscopic findings were: loop enlargements (81%), megacapillaries (30%), microhaemorrhages (46%), signs of neoangiogenesis (71%) and avascular areas (20%).

Regarding the capillaroscopic pattern, 46% presented a normal or non-specific pattern; 31% a microangiopathy pattern and 23% a scleroderma pattern (of which 58% had an early or active scleroderma pattern and 42% a late scleroderma pattern). A new diagnosis of CTD was made in 24 patients (18% of the cohort). In the group of patients without CTD, HT was associated with microhaemorrhages ($p = 0.02$) and avascular

areas ($p = 0.007$), and there was a tendency to association between smoking habit and megacapillaries ($p = 0.08$). After adjusting for confounding factors for this group, an association between CTD and microhaemorrhages ($OR = 1.9$; $p = 0.01$) and avascular areas ($OR = 2.12$; $p = 0.007$) was found. The multivariate study showed no relationship between CVRF and capillaroscopy patterns.

Conclusion: In our cohort we found an increased frequency of microhaemorrhages and avascular areas in the nailfold capillaroscopy in patients with arterial hypertension. The presence of cardiovascular risk factors could have an influence on the microvasculature and therefore on the findings of the capillaroscopy. More studies are required to better assess these findings.

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AB0637 IS VERY EARLY SYSTEMIC SCLEROSIS (SSC) A COMBINATION OF MILD AND EARLY DISEASE?

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Background: SSc has a high morbidity and mortality, therefore it is important to detect the disease at an early stage. Very early detection of SSc allows early management, which has been shown to profoundly impact on the disease course in different inflammatory rheumatic diseases. However, patients fulfilling criteria for the diagnosis of very early SSc could also be patients with a very mild, very slowly progressing, long-standing disease.

Objectives: To identify a subgroup of patients with long-standing, very mild SSc among the patients fulfilling the criteria for the very early diagnosis of SSc by analyzing clinical, epidemiological and immunological characteristics of the Zurich patient cohort.

Methods: Baseline data of the SSc patients from the University Hospital of Zurich cohort are analyzed in this study. Demographic and disease characteristics of the patients enrolled between January 2009 and June 2018 into the Very Early Diagnosis of Systemic Sclerosis (VEDOSS) cohort were analyzed. Patients fulfilling the ACR/EULAR2013 criteria and patients with primary Raynaud phenomenon were excluded. Disease duration was calculated as the difference between the baseline visit date and the date of the first Raynaud's phenomenon (RP) symptom reported by the patient. For further analysis, the cohort was divided into two subgroups using a cut off value of $</\geq 5$ years disease duration. Data were expressed as absolute and relative frequencies (n /total valid cases (%)) and percentages for categorical variables or as means $\pm$ SD and medians $\pm$ interquartile range for continuous variables.

Results: A total of 107 patients met the inclusion criteria. The patients' demographic and disease characteristics are shown in Table 1 and Table 2. The majority of patients had a short disease duration measured from first Raynaud attack of < 5 years. However, 43/107 patients (40.2%) had a long-standing disease with long-standing Raynaud's (Figure 1). Further analysis of the clinical characteristics of early patients with $</\geq 5$ years disease duration showed no significant differences in demographics and disease manifestations between the subgroups.

Abstract AB0637 Table 1. Description of the study cohorts at baseline (total N=107)

Age (years)	53 (43.64)	Musculoskeletal	
Female	96 (89.7)	Synovitis	13/103 (12.6)
Disease duration RP (years)	4 (1, 10.25)	Tendon friction rubs	1/103 (0.9)
Disease duration NRP (years)*	4 (1.75, 7)	Muscle weakness	4/17 (23.5)
Raynaud's Phenomenon	100/107 (93.5)	Cardiopulmonary	
Puffy fingers (ever)	19/101 (18.8)	Dyspnea (NYHA) Stage I/II	88/88 (100)
Digital ulcers (ever)	2/80 (2.5)	Dyspnea (NYHA) Stage III/IV	0/88
Modified Rodnan skin score	0	Lung fibrosis on HRCT	4/80 (5.0)
Laboratory markers		Forced vital capacity<80%	8/97 (8.2)
ANA	99/103 (96.1)	Total lung capacity<80%	2/15 (13.3)
ACA	49/103 (47.6)	DLCO<70%	8/97 (8.2)
Anti-Sci70	1/103 (47.6)	PAH by right heart catheterization	0/0
Anti-U1RNP	3/92 (3.2)	Gastrointestinal symptoms	
Anti-RNA polymerase III	5/96 (5.2)	Immunosuppressive treatment	2/107 (1.9)
Creatine kinase elevation	12/103 (11.7)	Abnormal nailfold capillaroscopy	62/80 (77.5)
C reactive protein elevation	7/101 (6.9)	Telangiectasia	14/86 (16.3)

ACA, ANA, Anti-Sci70, U1-RNP- anticentromere, antinuclear, anti-topoisomerase I, anti-U1 ribonucleoprotein antibodies, respectively. DLCO, diffusing capacity of the lung for carbon monoxide; PAH, pulmonary arterial hypertension.

Figure 1. Disease duration from the first Raynaud phenomenon

Conclusion: This analysis is showing that patients fulfilling VEDOSS criteria include a subgroup of patients with very mild, long-standing disease. This observation has major impact on the management of VEDOSS patients, as this subgroup requires different follow up and treatment strategies compared to VEDOSS patients with early, progressive disease.

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