Background: Vasculopathy is already evident in early systemic sclerosis (SSc); Raynaud’s phenomenon and typical nailfold capillaroscopic findings are part of the criteria of very early diagnosis of SSc (VEDOSS). As not all early SSc patients have alterations in their nailfold capillaries, there is need for other diagnostic tools. Photoacoustics (PA) and high-frequency ultrasound (HFUS) might be able to fulfill this need (2). The former can measure the oxygen saturation of hemoglobin by using short pulsed laser light while the latter can provide high-resolution images that allow measuring skin thickening distal from DIP joint, which could be used to determine skin involvement early.

Objectives: We hypothesize that photoacoustics and high-frequency ultrasound can distinguish (early) SSc patients from individuals with primary Raynaud’s phenomenon (PR) by measuring the oxygenation (by PA) of the fingertip and skin thickness (by HFUS) were compared between groups.

Methods: In our cross-sectional study, we compared measurements of the third finger in (early) SSc patients with individuals with PR and healthy volunteers. Smoking and beta-blockage were exclusion criteria. Smoking and beta-blockage were exclusion criteria. The level of oxygenation (by PA) and skin thickness (by HFUS) were compared between groups. Nailfold capillaroscopy was performed on all subjects and analyzed for the pattern.

Results: Thirty-one adult subjects participated in this study: twelve patients with SSc, 5 patients with early SSc, 5 volunteers with PR and 9 healthy controls.

We found a significant difference in median (IQR) oxygen saturation between earlySSc patients 75.9% (IQR 75.1%-86.6%) and subjects with PR 94.1% (IQR 93.1%-94.5%) (p=0.0002) using the Wilcoxon rank-sum test (figure 1).

Conclusion: Our results demonstrate that photoacoustic and high-frequency ultrasound can distinguish between (early)SSc and PR in both oxygenation saturation and skin thickening. In a larger prognostic study we want to determine the value of photoacoustic and high-frequency ultrasound in diagnosing earlySSc.

References:


Parameters | Group A | Group B |
--- | --- | --- |
Activity Index 1 | 2.8±1.4* | 3.2±1.9* |
Activity Index 2 | 1.4±1.2* | 1.6±1.3* |
Skin count 1 | 11.5±9.5* | 11.0±9.3* |
Skin count 2 | 8.2±6.2* | 7.2±5.6* |
FVC 1 M ± SD | 78.7±20.0* | 76.2±20.3* |
Diel FVC % | 5.3 | 5.7 |
FVC increment by ≥10%, n/% | 9/26 | 14/31 |
FVC decrement by ≥10%, n/% | 2/5.7 | 2/4.4 |

Notes: in Parameters column 1 – before treatment, 2 – after treatment; M ± SD = mean value and standard deviation; * = significant difference between the values measured before and after the treatment.

Conclusion: Both agents effectively alleviated skin induration and EScSG, and significantly improved FVC. However, the glucocorticoids doses that needed to be used during anti-B cell therapy were significantly lower compared to CyP treated patients. The RTM single therapy was better tolerated compared to CyP.

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AB0584

DOES ANTI-ACID TREATMENT INFLUENCE DISEASE PROGRESSION IN SYSTEMIC SCLEROSIS INTERSTITIAL LUNG DISEASE (SSC-ILD)? DATA FROM THE GERMAN SSC-NETWORK

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Background: Gastroesophageal reflux (GER) is common in SSC and thus treatment with anti-acid therapy (AAT) is frequent. An association between GER and the development / progression of SSC-ILD has only sparsely been studied.

Methods: The German Network for Systemic Scleroderma (DNSS), which includes SSC pts, prospectively, was analyzed for SSC-ILD. Those without progression at ILD 1st diagnosis were categorized in AAT vs. no-AAT users and disease outcome was assessed.

Results: SSC-ILD was reported in 1165 (28.2%) out of 4131 pts. 712 of SSC-ILD pts had no disease progression at ILD 1st diagnosis. 567 used AAT while 145 did not. Baseline characteristics were similar between groups with regards to age (mean 54.7 years), BMI, time since SSC diagnosis and immunosuppressant use. Significant differences in no-AAT vs. AAT were found for gender (male 18% vs. 25%, p=0.05), SSC subtype (p=0.002, diffuse more common in AAT), lung function (DLCO 66% vs. 58%, p=0.001; FVC 86% vs. 77%, p=0.001; mRSS (8 vs. 11.5, p<0.01), esophageal involvement (32% vs. 56%, p<0.01) and steroid use (30% vs. 43%, p=0.005). While mortality did not differ between groups (3.9% vs. 5.9%), disease progression was more common in the AAT group than in no-AAT users (24.5% vs. 13%, p=0.03). Furthermore, there was a significant difference in decline of FVC≥10% with 30% in the AAT compared to 14% in no-AAT (p=0.018); a decline in DLCO≥15% was more common in the AAT group by trend (23% vs. 14%, p=0.087).

Conclusion: While results may have partially been biased by differences in baseline characteristics, this current analysis disfavors the approach of AAT use for SSC-ILD.

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