Scleroderma, myositis and related syndromes

SAT0305
PERFORMANCE OF HIGH FREQUENCY ULTRASOUND IN THE ASSESSMENT OF SKIN INVOLVEMENT IN SYSTEMIC SCLEROSIS

1Radiology Department, San Carlo Hospital, Potenza, Italy; 2Rheumatology Institute of Lucania (IReL), Rheumatology Department of Lucania, San Carlo Hospital, Potenza, Italy; 3Canakkale State Hospital, Rheumatology Clinic, Canakkale, Turkey

Background: The modified Rodnan skin score (mRSS) is the current gold standard for skin assessment in systemic sclerosis (SSc) both in clinical trials and practice. High frequency ultrasound (HFUS) has been suggested to offer a quantitative assessment of skin thickness in SSc by several studies, however results are inhomogeneous with regards to the machine used, number of imaged sites, as well as the various stages of skin involvement.

Objectives: Aim of this cross-sectional study was to compare performance of HFUS in the assessment of skin involvement in diffuse cutaneous SSc (dcSSc) patients, at different disease stages, as compared with healthy controls (HC).

Methods: Dorsal finger, hand, forearm and upper arm skin of skin disease of dcSSc patients, at different disease stages, and of matched-HC were scanned bilaterally using HFUS. Two investigators, expert in MSK ultrasound, blinded to the clinical details, measured skin thickness using Esaote MyLab70 equipped with a 22 MHz probe. Clinical involvement was assessed by a blinded operator using the mRSS and results were compared with imaging data. Statistical analysis was performed using GraphPad Prism software V.7.0.

Results: A total of 704 HFUS images were obtained from 22 dcSSc patients [20 Female, mean age 49 ±11 years, 12 with ≤ 5 years disease duration] and 22 HC [20 Female, mean age 50.7 ±6.7 years]. Skin thickness was significantly higher in SSc patients than in HC at fingers (p <0.0001) and hands (p <0.0001), while no significant difference was found at the forearms and upper arms (p>0.05). HFUS showed a good discriminative ability between SSc and HC skin at fingers and hands (AUC 0.91, 0.81, 0.6 and 0.65 for fingers, hands, forearms and upper arms respectively). When analysing the subgroup of SSc patients with ≤5 years disease duration, HFUS showed a slightly lower performance in discriminating between SSc without clinical skin involvement (site mRSS=0) and HC (AUC 0.68, 0.57, 0.68 for hands, forearms and upper arms respectively). Mean HFUS skin thickness significantly correlated with mRSS at site of analysis (hand: r=0.78, p<0.0001; forearm: r=0.47, p=0.0013; upper arm: r=0.52, p=0.0003) and total mRSS (hand: r=0.53, p=0.0002; forearm: r=0.63, p<0.0001; upper arm: r=0.63, p<0.0001). No significant correlation was found between finger skin thickness and mRSS (both local and total, p>0.05). Interobserver reliability for skin thickness was good to excellent at all sites with intraclass correlation coefficient ranging between 0.79 and 0.94.

Conclusion: HFUS of the skin is a reliable measure of skin involvement in SSc. Studies with higher number of patients with different clinical features are needed to explore the potential of HFUS to discriminate between healthy and SSc skin, including sites at a preclinical stage of involvement.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.6373

SAT0307
PROGRESSION OF SUBCLINICAL MYOCARDIAL INVOLVEMENT IN PATIENTS WITH SYSTEMIC SCLEROSIS

D. Benfarenco1, G. Stronati2, L. Manfredi1, L. Zulinai1, A. Ferrarini1, C. Fischetti1, C. Dichiara1, F. Guerra1, A. Dello Russo3, A. Gabrielli4, 1Università Politecnica delle Marche, Dipartimento di Scienze Cliniche e Molecolari, Ancona, Italy; 2Università Politecnica delle Marche, Dipartimento di Scienze Biomedi ci e Sanità Pubblica, Ancona, Italy

Background: Systemic sclerosis (SSc) is a progressive autoimmune disease affecting the skin as well as internal organs, including the heart. A few studies have identified a subclinical heart involvement in patients with no pulmonary hypertension. Changes in myocardial deformation are consistent with the idea of SSc-related cardiomyopathy as a primary condition affecting the heart globally through microvascular dysfunction and subsequent myocardial fibrosis.

Objectives: The aim of the present study is to describe the progression of myocardi al deformation in patients with SSc and no overt cardiac disease.

Methods: Prospective longitudinal study enrolling consecutive SSc patients referred to the Clinica Medica, University Hospital ‘Ospedali Riuniti’, Ancona, Italy, from February 2016 to December 2018. All patients fulfilled the 2013 ACR/EULAR classification criteria for SSc. Patients with structural heart disease, heart failure, atrial fibrillation or pulmonary hypertension were excluded. Disease subset, antibodies pattern, cardiovascular risk factors and involvement of other organ systems were recorded for each patient. An echocardiographic exam was performed for all patients at baseline and during their follow-up evaluation. Standard and speckle-tracking derived variables for the systolic and diastolic function of the left ventricle (LV) and right ventricle (RV) were acquired. Speckle tracking analysis software (EchoPAC 13.0; GE Medical Systems, Milwaukee, USA) was used to assess the GLS of the left and right ventricle, excluding the ventricular septum from right ventricular GLS calculations.

Results: Seventy-two patients (68 females, age 56.6±15.4 years) were enrolled. Common echocardiographic parameters of left and right systolic function were within normal range at baseline and did not change during follow-up. Mean GLS, however, worsened for both left (from -19.8±3.5% to -18.7±3.5%, p=0.034) and right ventricle (from -20.9±6.1% to -18.7±5.4%, p=0.013) during a median follow-up of 20 months (1st-3rd quartile 12-24 months). The increased impairment registered in SSc patients was homogeneous across endocardial layers (LV from -22.5±3.9 to -21.4±3.9, p=0.005; RV from -24.2±6.2 to -20.8±5.9, p=0.001), mesocardial layers (LV -17.9±3.5 to -18.7±3.5, p=0.043; RV from -21.3±5.9 to -18.8±5.7, p=0.012) and epicardial layers (LV from -17.1±3.0 to -16.4±3.1, p=0.12, RV -18.8±6.3 to -16.0±8.4, p=0.035), as well as...