Abstract AB0796 – Table 1

Count of FEV1	Column Labels				
Row Labels	31–50	51–70	71–90	91–110	Grand Total
31–50	4	4			8
51–70		25	23	4	52
71–90			14		14
Grand Total	4	29	37	4	74

There was no association between treatment response and age, sex or type of connective tissue disease. Following treatment there was a definite improvement in the clinical aspects of the patient which was assessed by dyspnoea Borg score and cough visual analogue score. Following treatment there was a definite improvement in PFT (FVC, FEV1) as well as 6 min walk test which was also statistically significant. CT pattern of Non specific interstitial pneumonitis also had a better outcome.

Conclusions: Our study proves that there is definite clinical and FVC improvement in CTD-ILD patients after giving treatment with cyclophosphamide. Determinants that can predict treatment outcome are duration of disease, HRCT type, (NSIP), presence of Pulmonary artery hypertension(PAH). Poor treatment response should be anticipated in those with longer duration of disease and UIP type in HRCT, presence of PAH.

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AB0797

A RANDOMISED DOUBLE BLIND PLACEBO CONTROLLED TRIAL TO COMPARE THE EFFICACY OF INITIAL COMBINATION THERAPY VS MONOTHERAPY FOR PULMONARY ARTERIAL HYPERTENSION IN SYSTEMIC SCLEROSIS

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Background: Pulmonary Arterial Hypertension(PAH) is one of the leading cause of death in Systemic Sclerosis(SSc) population. Trials that have studied the efficacy of initial oral combination therapy versus monotherapy for the treatment of PAH in SSc are limited.

Objectives: To study the efficacy and safety of monotherapy (sildenafil) versus initial combination therapy (sildenafil and bosentan) for treatment of SSc related PAH.

Methods: In a single centre, double blind, prospective, randomised, placebo controlled trial, 34 patients of SSc related PAH defined as Pulmonary Artery Systolic Pressures(PASP)>35 mmHg as measured by echocardiography, New York heart Association(NYHA) functional class II and III with forced vital capacity >60% were randomised in 1:1 ratio to sildenafil (20 mg thrice a day) and matched placebo of bosentan to one study arm or to the combination of sildenafil(20 mg thrice a day) and bosentan (62.5 mg twice daily for 4 weeks maximum up to 125 mg twice daily) to the other arm for 24 weeks. The primary end point of the study was to assess the change in pulmonary artery pressures measured by echocardiography at 24 weeks from baseline. The secondary efficacy end points was to compare the change in 6 min Walk Distance (6MWD), Time To Clinical Worsening(TTCW) and adverse events at 24 weeks. Intention to treat analysis was carried for the primary and secondary outcomes. p<0.05 was considered significant. Kaplan Meier survival analysis was done to estimate the time to PAH worsening and hazard ratio was calculated.

Results: The mean change in Pulmonary Artery Systolic Pressures in the monotherapy arm was -1.0 mmHg versus +2.1 mmHg in the combination arm (p=0.56). TTCW is prolonged in the combination arm. The mean survival time in the initial combination arm was 23.76±0.59 weeks and 23.28±0.23 weeks in the monotherapy arm. The hazard ratio was 0.73[95% C.I 0.04–11.7] (p=0.87). The mean change in the 6 min walk distance in the monotherapy arm was 15.88 ±31.83 m and 25.88±38.25 m in the combination arm (p=0.38). The satisfactory clinical response in the combination arm was 82.3% versus 70% in the

monotherapy arm (O.R=1.9[C.I 0.38–9.88] p=0.44). The upfront combination of sildenafil and bosentan was well tolerated with similar rates of adverse events in both group.

Conclusions: In this study we could not demonstrate any significant difference in the efficacy of initial combination therapy of sildenafil and bosentan over sildenafil monotherapy. The patients of systemic sclerosis tolerated the initial combination of sildenafil and bosentan well and the treatment prevented further deterioration. Larger studies with more number of subjects may be required to confirm the results.

Trial Registration- Clinical Trials.gov:NCT03053739

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AB0798

CLINICAL ASSOCIATIONS OF VASCULAR ENDOTHELIAL GROWTH FACTOR AND ITS RECEPTOR 2 TYPE IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is characterised by impaired angiogenesis and peripheral microvasculopathy. A major role in the regulation of angiogenesis attributed to vascular endothelial growth factor, which performs its functions through interaction with its receptor 2 type (VEGFR2).

Objectives: The aim of our study was to assess the levels of VEGF in serum and its associations with clinical manifestations in patients with SSc.

Methods: We studied 46 patients with SSc who underwent clinical examination, pulmonary function tests and echocardiography. Serum VEGF-A and VEGFR2 levels were determined by ELISA in 46 SSc patients and 20 healthy controls

Results: Mean VEGF levels were increased in SSc patients compared to controls (212,35±253,93 and 97,74±71,46 pg/ml, respectively; p=0,032). Patients with limited cutaneous SSc (n=23) had higher levels of serum VEGF than those with diffuse cutaneous SSc (n=23) (267,11±268,74 vs 120,40±141,09 pg/ml; p=0,012). Patients with fingertip ulcers (n=19) were found to have higher levels of VEGF than pts without fingertip ulcers.(n=27) (214,25±265,93 vs 162,88±188,97) but this difference wasn't significant. Serum VEGF levels were higher in SSc patients with sPAP >30 mmHg than in those with sPAP ≤30 mmHg (286,51 ±287,42 vs 92,88±108,06 pg/ml; p=0,0042) and correlated with sPAP values (R=0,40; p=0,007). Mean VEGF levels in patients with DLCO <50% (n=14) were significantly higher than those with DLCO ≥50% (n=30): 364,20±381,95 vs 128,55±142,70 pg/ml, respectively (p=0,034). There weren't significant differences in VEGF levels between patients with FVC <80% (n=11) and those with FVC ≥80% (219,15±252,57 vs 154,26±208,91 pg/ml, respectively).

Mean VEGFR2 levels were also increased in SSc pts compared to controls (5784,6±4773,8 and 1552,6±272,8 pg/ml, respectively; p<0,0001). There weren't any differences between pts with diffuse or limited SSc. In pts with digital ulcers, or normal levels of sPAP, or DLco ≥50% mean VEGFR2 levels didn't differ from those without digital ulcers, or sPAP >30 mm Hg, or DLco <50%, respectively. Serum VEGF levels directly correlated with sPAP (R=0,40; p=0,007).

Conclusions: Our findings show significantly higher circulating levels of VEGF and VEGFR2 in SSc patients. Associations of VEGF with some clinical signs indicate its role in pathology of SSc.

Disclosure of Interest: None declared

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AB0799

ALTERATIONS OF BODY COMPOSITION IN SCLERODERMA PATIENTS ARE ASSOCIATED WITH DISEASE ACTIVITY AND PHYSICAL ACTIVITY BUT NOT WITH LUNG INVOLVEMENT

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Background: Systemic sclerosis (SSc) is characterised by fibrosis of the skin and visceral organs, especially digestive tract, and musculoskeletal and lung involvement, which limit mobility/self-sufficiency of patients and can have a negative impact on body composition and physical activity.

Objectives: To assess body composition and physical activity of SSc patients and healthy controls (HC).

Methods: 59 patients with SSc [50 females; mean age 52.5; disease duration 6.7 years; limited cutaneous (lcSSc, 34)/diffuse cutaneous (dcSSc, 25)] and 59 age-/sex-matched HC (50 females, mean age 52.5) without rheumatic diseases were

included. SSc patients fulfilled ACR/EULAR 2013 criteria. Anthropometric parameters and body composition were assessed (by densitometry: iDXA Lunar, and by bioelectric impedance: BIA-2000-M), and physical activity was evaluated using Human Activity Profile (HAP) questionnaire. Routine biochemistry analysis was performed after 8 hours of fasting. Pulmonary function and diffusing capacity of lung were examined, disease activity was evaluated by ESSG activity index. Data are presented as mean $\pm$ SD.

Results: Compared to HC, patients with SSc had significantly lower body-mass index (BMI: 27.9 $\pm$ 8.3 vs. 22.4 $\pm$ 4.3 kg/m², $p < 0.0001$) and body fat% assessed by both iDXA (BF%: 38.0 $\pm$ 7.6 vs. 32.6 $\pm$ 8.2%, $p < 0.0001$) and BIA (BF%: 31.3 $\pm$ 7.6 vs. 24.3 $\pm$ 7.9%, $p < 0.0001$), and decreased visceral fat weight (1.0 $\pm$ 0.8 vs. 0.5 $\pm$ 0.5 kg, $p = 0.001$). Compared to HC, SSc patients also demonstrated significantly decreased lean body mass assessed by both iDXA (LBM: 51.9 $\pm$ 8.4 vs. 47.8 $\pm$ 7.0 kg, $p = 0.005$) and BIA (LBM: 45.4 $\pm$ 7.3 vs. 40.9 $\pm$ 6.8 kg, $p = 0.005$), significantly lower bone mineral density (BMD: 1.2 $\pm$ 0.1 vs. 1.0 $\pm$ 0.1 g/cm², $p < 0.0001$), and had increased extracellular mass/body cell mass (ECM/BCM) ratio (1.03 $\pm$ 0.1 vs. 1.28 $\pm$ 0.4, $p < 0.0001$), which reflects deteriorated nutritional status and worse muscle predispositions for physical exercise, aerobic fitness/performance. Increased ECM/BCM in SSc patients positively correlated with disease activity (ESSG: $r = 0.273$, $p = 0.0439$), skin score (mRSS: $r = 0.371$, $p = 0.0045$) and inflammation (CRP: $r = 0.292$, $p = 0.0278$; ESR: $r = 0.302$, $p = 0.0226$). Increased ECM/BCM was also associated with worse quality of life (HAQ: $r = 0.438$, $p = 0.0007$; SHAQ: $r = 0.268$, $p = 0.0436$), fatigue (FSS: $r = 0.366$, $p = 0.0040$), and worse ability to perform physical activity (HAP: $r = -0.644$, $p < 0.0001$). Disease activity (ESSG) negatively correlated with BF% by iDXA ($r = -0.324$, $p = 0.0138$). Physical activity (HAP) positively correlated with BMD ($r = 0.280$, $p = 0.032$). There was no significant correlation of lung involvement with alterations of body composition.

Conclusions: Compared to healthy age-/sex-matched individuals we found significant negative changes in body composition of our SSc patients, which are associated with their disease activity and physical activity, and could reflect their nutritional status, and gastrointestinal and musculoskeletal involvement. We found no significant association between lung involvement and changes of body composition.

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AB0800

CHANGES OF BODY COMPOSITION IN MYOSITIS PATIENTS ARE ASSOCIATED WITH DISEASE DURATION, INFLAMMATORY STATUS, SKELETAL MUSCLE INVOLVEMENT AND PHYSICAL ACTIVITY

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Background: Idiopathic inflammatory myopathies (IIM) are characterised by inflammation and atrophy of skeletal muscles, pulmonary and articular involvement, which limit the mobility/self-sufficiency of patients, and can have a negative impact on body composition.

Objectives: To assess body composition and physical activity of IIM patients and healthy controls (HC).

Methods: 54 patients with IIM (45 females/9 males; mean age 57.7; disease duration 5.8 years; polymyositis (PM, 22)/dermatomyositis (DM, 25)/necrotizing myopathy (IMNM, 7)) and 54 age-/sex-matched HC (45 females/9 males, mean age 57.7) without rheumatic diseases were included. PM/DM patients fulfilled Bohan/Peter criteria for PM/DM. Anthropometric parameters and body composition were assessed (by densitometry: iDXA Lunar, and by bioelectric impedance: BIA2000-M), and physical activity was evaluated using Human Activity Profile (HAP) questionnaire. Routine biochemistry analysis was performed after 8 hours of fasting. Muscle involvement was evaluated by manual muscle test (MMT-8) and functional index 2 (FI2). Data are presented as mean $\pm$ SD.

Results: Compared to HC, patients with IIM had a trend towards significantly increased body fat% as assessed by iDXA (BF%: 39.9 $\pm$ 7.1 vs. 42.4 $\pm$ 7.1%, $p = 0.077$), but significantly decreased lean body mass as assessed both by iDXA (LBM: 45.6 $\pm$ 8.1 vs. 40.6 $\pm$ 7.2 kg, $p = 0.001$) and BIA (LBM: 52.6 $\pm$ 8.8 vs. 48.7 $\pm$ 9.0 kg, $p = 0.023$), and increased extracellular mass/body cell mass (ECM/BCM) ratio (1.06 $\pm$ 0.15 vs. 1.44 $\pm$ 0.42, $p < 0.0001$), which reflects worse muscle predispositions for physical exercise, aerobic fitness/performance, and also deteriorating nutritional status. Compared to HC, IIM patients had significantly lower bone mineral density (BMD: 1.2 $\pm$ 0.1 vs. 1.1 $\pm$ 0.1 g/cm², $p < 0.001$). Disease duration negatively correlated with BMD ($r = -0.392$, $p = 0.004$) and LBM-BIA ($r = -0.272$, $p = 0.047$). CRP was positively associated with BF% assessed both by DEXA ($r = 0.276$, $p = 0.035$) and BIA ($r = 0.306$, $p = 0.025$). Higher BF% $\times$ DEXA was associated with worse physical endurance (FI2: $r = -0.311$, $p = 0.026$) and worse ability to

perform physical activity (HAP: $r = -0.292$, $p = 0.032$). MMT-8 score negatively correlated with ECM/BCM ratio ($r = -0.385$, $p = 0.006$).

Conclusions: Compared to healthy age-/sex-matched individuals we found significant negative changes in body composition of our IIM patients, which are associated with their disease duration, inflammatory status, skeletal muscle involvement, and physical activity, and could reflect their impaired nutritional status and predispositions for physical exercise, aerobic fitness and performance.

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AB0801

SARCOPENIA AND MICROCIRCULATION IN SYSTEMIC SCLEROSIS PATIENTS: A PILOT ASSAY

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Background: Systemic sclerosis (SSc) patients may present muscle involvement in the form of myositis or non-inflammatory myopathy with different degree of weakness and muscle atrophy.¹ Sarcopenia is described as a multifactorial syndrome with muscle mass loss associated to functional impairment; according to the anthropometric equation by Baumgartner et al. sarcopenia was defined as relative skeletal muscle mass index (RSMI) < 5.5 Kg/m² for women and < 7.26 Kg/m² for men. The relationships between sarcopenia and other clinical aspects in SSc are poorly investigated.

Objectives: The aim of the study was to evaluate the associations between sarcopenia and other clinical factors in SSc patients.

Methods: 20 female patients fulfilling the ACR 2013 criteria for SSc (mean age 61.7 $\pm$ 13.6 years, disease duration 86.2 $\pm$ 67.1 months) were enrolled. The RSMI (Kg/m²) was evaluated by dual-energy X-ray absorptiometry scan (Lunar Prodigy). Nail fold videocapillaroscopic (NVC) patterns (early, active, late) were analysed. Serum 25(OH)₂D concentration was tested by immunofluorescence. Non parametric statistical tests were used.

Results: Patients showed a modified Rodnan skin score (mRSS) 12.2 $\pm$ 7.7, RSMI 6.01 $\pm$ 0.97 Kg/m², serum vitamin D (25(OH)₂D) 22.01 $\pm$ 13.1 ng/dL and CPK 70.16 $\pm$ 31.8 U/L. In this cohort 23% of SSc patients were found affected by sarcopenia, and almost 42% showed the most advanced level of microvascular damage, as characterised by the NVC late pattern. However, no statistically relevant correlations were observed between RSMI, BMI, age, disease duration, CPK, mRSS, 25(OH)₂D and active or late NVC patterns. Comparing age, disease duration, CPK and mRSS in both sarcopenic and non sarcopenic SSc patients there was no difference between the groups, however sarcopenic patients showed statistically significant lower BMI ($p = 0.02$), lower RSMI ($p = 0.0008$) and higher 25(OH)₂D serum concentrations ($p = 0.01$). Particularly, RSMI showed a strong negative correlation with age ($p = 0.01$). No statistical differences were found when grouping the patients according to the positivity for serum anti-topoisomerase I Ab or according to cutaneous diffuse (dcSSc) or limited (lcSSc) systemic sclerosis.

Conclusions: This pilot study suggests that sarcopenia seems present in almost 25% of the SSc patients, particularly in a condition of advanced microcirculation failure (late NVC pattern), however does not seem to correlate with skin fibrosis or disease duration. The study had some limitations due to absence of control group and to the small patient sample analysed. Further larger studies would be necessary to better investigate the role of sarcopenia in SSc.

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AB0802

OSTEOPOROSIS IN SYSTEMIC SCLEROSIS: CASE-CONTROL STUDY WITH A FRENCH OFELY COHORT AND RISK FACTORS

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Background: Systemic sclerosis (SSc) is a rare autoimmune disorder characterised by a vascular and fibrosing involvement of the skin and internal organs. Data