Acknowledgments: Muscle Autoantibody testing was funded by APLAR.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.5979

FRI0253

OCULAR MANIFESTATIONS IN PATIENTS WITH SYSTEMIC SCLEROSIS

D. Monova¹, S. Monov², D. Dimova³, V. Tzankov³, M. Sotirova³. ¹Medical University - Sofia, Medical Institute, Department of Internal Medicine, Sofia, Bulgaria; ²Medical University - Sofia, Department of Rheumatology, Sofia, Bulgaria; ³Medical Institute-MVR, Department of Ophthalmology, Sofia, Bulgaria

Background: Systemic sclerosis (SSc) is a connective tissue disease with heterogeneous manifestations. It affects different organs and therefore requires interdisciplinary diagnostic and therapeutic management.

Objectives: The aim of this study is to evaluate the frequency and characteristics of ocular manifestation in patients with systemic sclerosis.

Methods: The study involved 31 patients with SSc. All the study subjects underwent complete ophthalmological examination involving visual acuity assessment, examination of anterior and posterior eye segments, Schirmer I test, diameter and mobility of pupils, as well as eyeball mobility assessment of intraocular pressure and ultrasound assessment of vitreous body. Data regarding age, gender, SSc subtype, disease duration, age at diagnosis, nailfold capillaroscopic pattern, systemic corticosteroid or chloroquine use, blood pressure, ocular symptoms and detailed ophthalmic history were recorded.

Results: 31 patients (3 male, 28 female, mean age 42,7 ± 14,3 years; mean disease duration 10,3±8,1 years) were enrolled in this study. 7 (22,58 %) of them had no ocular symptoms. Among the patients with ocular symptoms, 20 (64,52%) complained of decreased vision, 13 (41,93 %) - of itching, 14 (45,16%) - of burning, 8 (25,81%) - of eye fatigue, 4 (12,90 %) - of ocular pain, 4 (12,90%) - of foreign body sensation, 16 (51,61 %) - of dry eye, 5 (52,03 %) - photophobia, 2 (6,45 %) - of floaters, 10 (32,26 %) - of redness. Hardening and thickening of palpebral skin was noted in 27 (87,10 %) patients. Ophthalmological examination revealed higher incidence of the following abnormalities in the study group: myopic astigmatism - in 20 (32,26 %) eyes, vascular abnormalities within fundus - in 24 (38,71%) eyes, increased intraocular pressure (> 21 mm Hg) - in 13 (20,97%) eyes. Mean IOP values were 18,21 ± 4,2 mm Hg. Eyelid telangiectasias was noted in 9 (29,03 %) patients, chronic blepharitis - in 13 (41,94 %). Lens opacity was found in 16 (51,61 %) patients (27 eyes), mostly in the form of posterior subcapsular cataract (in 20 eyes), nuclear cataract (in 6 eyes) and cortical cataract appearing as focal cystic opacities (in 1 eye). The mean age of patients with cataracts was 49,2 ± 12,3 years (11,4 years older than patients without cataracts). Additionally, 14 of the patients with cataracts were either currently taking or had previously taken systemic corticosteroids. Superficial conjunctival hyperaemia was noted in 20 (64,52 %), and varicose dilatation of subconjunctival and episcleral blood vessels in 9 (29,03 %) and 7 (22,58 %) patients, respectively. In 9 eyes (14,52 %) foci of pigment epithelium were found peripherally on the optic disc. In 6 (9,68 %) eyes - thinning of choroidal capillaries and retinal pigment epithelium, in 8 (12,90 %) - ischemic areas surrounded by microaneurysms and intraretinal extravasation, dilatation of the vessel-free fovea. conjunctival fibrosis - in 8 (25,81 %) patients. In 25 eyes Schirmer I test results were below 10 mm, and in 7 eyes - below 5 mm. Eyelid stiffness was associated with difficulty in lid eversion and a woody texture upon palpation. Comparing patients with and without eyelid stiffness, we found that the mean age and the age at diagnosis were significantly lower in the former group (p < 0.01 and p < 0.05, respectively). The diffuse subtype was more prevalent among pts with eyelid skin changes (p < 0.05).

Conclusion: In patients with SSc numerous abnormalities within the vision of organ may be found. Ocular symptoms are relatively common complications of SSc, and may result in serious, irreversible changes in the organ of vision. Regular ophthalmological examinations are essential among the patients with SSc.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.3166

FRI0254

SERUM IL-17 AND IL-21 AFFECT THE HEMODYNAMICS IN CONNECTIVE TISSUE DISEASE ASSOCIATED-PULMONARY HYPERTENSION

S. Nakashima¹, T. Kameda¹, H. Shimada¹, R. Wakiya¹, M. Mahmoud Fahmy Mansour¹, M. Kato¹, T. Miyagi¹, K. Sugihara¹, Y. Ushio¹, H. Dobashi¹. ¹ Kagawa University, Division of Hematology, Rheumatology and Respiratory Medicine, Department of Internal Medicine, Kagawa, Japan

Background: Pulmonary hypertension associated with connective tissue disease (CTD-PH) has complicated pathology including immune abnormalities,

cardiac and pulmonary lesions. Therefore, it is difficult for rheumatologist to manage CTD-PH. We hesitate to use immunosuppressants in addition to pulmonary vasodilators to treat CTD-PH. Although there is a report that the cytokine such as Interleukin (IL)-6, IL-17 and IL-21 are involved in the development of PH¹⁾, changes in the hemodynamics of these cytokines with treatment are not clear.

Objectives: We investigate serum cytokine profile and clinical appearance in CTD-PH, and clarify the relationship between change in cytokines and hemodynamics before and after treatment.

Methods: 14 cases of CTD-PH (8 cases in Scleroderma; SSc-PH group, 4 cases in Mixed connective tissue disease; MCTD-PH group, 2 cases in Systemic lupus erythematosus; SLE-PH group), 6 cases in Other-PH group, and 2 cases of SSc without PH as controls were included. The following clinical data were collected: age, gender, underlying disease, complication of interstitial lung disease, treatment (immunosuppressant and pulmonary vasodilator). Serum samples in pre- and post-capillary before and after treatment were collected during cardiac catheterization examination. Serum cytokines (MCP-1, IL-6, IL-17 and IL-21) of these samples were measured by ELISA (ABCAM, UK).

Results: Serum MCP-1, IL-6, and IL-21 levels were higher in SSc-PH group than in the other groups. Conversely, serum IL-17 levels tended to be higher in non-SSc group compared to SSc-PH group. Additionally, serum MCP-1 levels in SSc-PH group decreased in post-capillary as compared to pre-capillary. Furthermore, patients with decreased serum IL-17 and IL-21 levels before and after treatment showed improved pulmonary hemodynamics.

Conclusion: SSc-PH had a different cytokine profile compared with non-SSc-PH. We suggested that the serum IL-17 and IL-21 levels effect the hemodynamics in CTD-PH.

References:

[1] Hashimoto-Kataoka T. et al. Proc Natl Acad Sci U S A. 2015 May 19;112(20):E2677-86.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2020-eular.5537

FRI0255

BODY COMPOSITION IN SCLERODERMA PATIENTS IS ASSOCIATED WITH DISEASE ACTIVITY, SERUM LEVELS OF INFLAMMATORY CYTOKINES AND PARAMETERS OF NUTRITION AND LIPID METABOLISM

S. Oreska^{1,2}, M. Špiritović³, P. Česák³, M. Cesák³, H. Štorkánová^{1,2}, H. Smucrova¹, B. Hejmánková³, O. Růžicková^{1,2}, H. Mann^{1,2}, K. Pavelka^{1,2}, L. Šenolt^{1,2}, J. Vencovsky^{1,2}, R. Bečvář^{1,2}, M. Tomčík^{1,2}. ¹Institute of Rheumatology, Prague, Czech Republic; ²1st Faculty of Medicine, Charles University, Department of Rheumatology, Prague, Czech Republic; ³Faculty of Physical Education and Sport, Charles University, Department of Physiotherapy, Prague, Czech Republic

Background: Fibrosis of the skin and visceral organs, especially digestive tract, and musculoskeletal involvement in systemic sclerosis (SSc) can have a negative impact on body composition, physical activity and nutritional status.

Objectives: The aim was to assess body composition and physical activity of SSc patients and healthy controls (HC) and the association with selected inflammatory cytokines/chemokines and laboratory markers of nutritional status and lipid metabolism in SSc.

Methods: 59 patients with SSc (50 females; mean age 52.5; disease duration 6.7 years; lcSSc: 34/dcSSc: 25) and 59 age-/sex-matched HC (50 females, mean age 52.5) without rheumatic or tumour diseases were included. SSc patients fulfilled ACR/EULAR 2013 criteria. We assessed body composition (densitometry: iDXA Lunar, bioelectric impedance: BIA-2000-M), physical activity (Human Activity Profile, HAP questionnaire), disease activity (ESSG activity index), serum levels of 27 cytokines/chemokines (commercial multiplex ELISA kit, Bio-Rad Laboratories) and serum levels of chosen parameters of nutrition and lipidogram. Data are presented as mean±SD.

Results: Compared to HC, patients with SSc had significantly lower body mass index (BMI, 27.4±8.3 vs. 22.4±4.3 kg/m², p<0,001), body fat % (BF%, iDXA: 38.0±7.6 vs. 32.6±8.2 kg, p<0,001; BIA: 31.3±7.6 vs. 24.3±7.9 kg, p<0,001) and visceral fat weight (VF, 1.0±0.8 vs. 0.5±0.5 kg, p=0,001), and also significantly decreased lean body mass (LBM, iDXA: 51.9±8.4 vs. 47.8±7.0 kg, p=0,005; BIA: 45.4±7.3 vs. 40.9±6.8 kg, p=0,005), and bone mineral density (BMD, 1.2±0.1 vs. 1.0±0.1 g/cm², p<0,001). Compared to HC, patients with SSc had increased extracellular mass/body cell mass (ECM/BCM, 1.03±0.1 vs. 1.28±0.4, p<0,001) ratio, reflecting deteriorated nutritional status and worse muscle predispositions for physical activity. Increased ECM/BCM in SSc was associated with higher disease activity (ESSG), increased skin score (mRSS) and inflammation (CRP, ESR), and with worse quality of life (HAQ, SHAQ), fatigue (FSS), and decreased physical activity (HAP). ESSG negatively correlated with BF%. HAP positively correlated with BMD. Serum levels of several inflammatory cytokines/chemokines (specifically

IL-1b, IL-5, IL-6, IL-8, IL-17, TNF, Eotaxin) and markers of nutrition (specifically total protein, albumin, insulin and C-peptide) and lipid metabolism (specifically triglycerides, high-density lipoprotein, apolipoprotein A, atherogenic index of plasma) were significantly associated with alterations of body composition in patients with SSc ($p < 0.05$ for all correlations).

Conclusion: Compared to healthy age-/sex-matched individuals we found significant negative changes in body composition of our SSc patients, which are associated with the disease activity and physical activity, and could reflect their nutritional status, and gastrointestinal and musculoskeletal involvement. Detected alterations of body composition in SSc patients were significantly associated with serum levels of several inflammatory cytokines/chemokines and markers of nutrition and lipid metabolism, which might further support the role of systemic inflammation and nutritional status on the negative changes in body composition of SSc patients

Acknowledgments: Supported by AZV NV18-01-00161A, MHCR 023728, SVV 260373 and GAUK 312218

Disclosure of Interests: Sabina Oreska: None declared, Maja Špiritović: None declared, Petr Česák: None declared, Michal Cesak: None declared, Hana Štorkánová: None declared, Hana Smucrova: None declared, Barbora Heřmánková: None declared, Olga Růžicková: None declared, Heřman Mann: None declared, Karel Pavelka Consultant of: Abbvie, MSD, BMS, Eisai, Roche, UCB, Medac, Pfizer, Biogen, Speakers bureau: Abbvie, MSD, BMS, Eisai, Roche, UCB, Medac, Pfizer, Biogen, Ladislav Šenolt: None declared, Jiří Vencovský: None declared, Radim Bečvář Consultant of: Actelion, Roche, Michal Tomčík: None declared

DOI: 10.1136/annrheumdis-2020-eular.6214

FRI0256

ADVANCED MICROCIRCULATORY DAMAGE IS ASSOCIATED WITH INCREASED PULSE WAVE REFLECTIONS IN PATIENTS WITH SSC

E. Pagkopoulou¹, S. Soulaïdopoulos¹, E. Triantafyllidou¹, N. Katsiki², G. Kitas^{3,4}, A. Karagiannis², A. Garyfallos¹, T. Dimitoulas¹. ¹Aristotle University of Thessaloniki, Fourth Department of Internal Medicine, Hippokraton Hospital, Thessaloniki, Greece; ²Aristotle University of Thessaloniki, Second Propaedeutic Department of Internal Medicine, Hippokraton Hospital, Thessaloniki, Greece; ³Dudley Group of Hospitals, NS Foundation Trust, Dudley, United Kingdom; ⁴Arthritis Research UK Centre for Epidemiology, University of Manchester, Manchester, United Kingdom

Background: In systemic sclerosis (SSc), inflammation and microvascular damage are fundamental in the progressive fibrotic process. Although the presence of accelerated atherosclerosis in SSc is not as well-described as in other systemic disorders namely rheumatoid arthritis, it appears that individuals suffering from the disease are at higher risk for cardiovascular events. Nailfold Video Capillaroscopy (NVC) is a non-invasive and reproducible imaging technique of the capillary vascular bed, used in the evaluation of microvascular involvement in SSc. Previous data on the association between micro- and macrovascular damage are scarce.

Objectives: The aim of this study was to examine the association between micro- and macrovascular involvement in patients with SSc.

Methods: This is a cross-sectional study including consecutive SSc patients attending to a Scleroderma Outpatient Clinic between March and September 2018. All the study participants underwent NVC and the findings were classified in one of the following qualitative patterns: early, active, and late NVC pattern. Capillary's density was evaluated in the distal row of each finger, based on the number of capillaries per 1 mm and the mean capillaroscopic skin ulcer risk index (CSURI) was automatically calculated with software image analysis. Carotid intima-media thickness (cIMT) was measured in the common carotid artery bilaterally, according to the relevant guidelines. Aortic blood pressure (BP), heart rate adjusted augmentation index [Alx(75)] and carotid-femoral pulse wave velocity (PWV) were evaluated with applanation tonometry (Sphygmocor).

Results: Sixty-four (95.3% women) SSc individuals with mean age 57.54 ± 12.99 years were included in this analysis. Alx(75) was significantly associated with CSURI ($r = 0.261$; $p = 0.038$) and inversely associated with the number of capillaries ($r = -0.271$; $p = 0.030$) suggesting a link between the degree of microvascular disease and arterial stiffening. Regarding SSc-specific NVC patterns, Alx(75) were marginally lower in patients with early compared to active or late patterns (25.95 ± 11.27 vs 32.50 ± 11.17 vs 31.62 ± 10.32 ; $p = 0.081$ and $p = 0.083$) confirming a trend between progressive microvasculopathy and arterial stiffening. Mean cIMT was negatively correlated with enlarged capillary loops. Brachial or aortic systolic BP (SBP) and pulse pressure (PP) levels were not correlated with any of the studied NVC parameters.

Conclusion: Microvascular vasculopathy is associated with higher wave reflections, indicating an association between atherosclerotic disease and microvascular injury in SSc patients. Such observations may provide possible explanations for the excessive cardiovascular and mortality risk in this population.

References:

- [1] Soulaïdopoulos S., Pagkopoulou E., Katsiki N. et al. Arterial stiffness correlates with progressive nailfold capillary microscopic changes in systemic sclerosis: results from a cross-sectional study. *Arthritis Res Ther* 21, 253 (2019)
- [2] Jung K-H, Lim MJ, Kwon SR, Kim D, Joo K, Park W. Nailfold capillary microscopic changes and arterial stiffness in Korean systemic sclerosis patients. *Mod Rheumatol*. 2015;25:328–31.
- [3] Aviña-zubieta JA, Man A, Yurkovich M, Huang K, Sayre EC. Early cardiovascular disease after the diagnosis of systemic sclerosis. *Am J Med*. 2015;129:324–31

Disclosure of Interests: Eleni Pagkopoulou: None declared, Stergios Soulaïdopoulos: None declared, Eva Triantafyllidou: None declared, Niki Katsiki: None declared, Georgios Kitas: None declared, Asterios Karagiannis: None declared, Alexandros Garyfallos Grant/research support from: MSD, Aenorasis SA, Speakers bureau: MSD, Novartis, gsk, Theodoros Dimitroulas: None declared

DOI: 10.1136/annrheumdis-2020-eular.1017

FRI0257

CAPILLAROSCOPIC VERY EARLY MORPHOLOGICAL AND QUANTITATIVE SPECIFIC ABNORMALITIES ANTICIPATE THE DEVELOPMENT OF THE "SCLERODERMA PATTERN" IN PATIENTS WITH RAYNAUD'S PHENOMENON

M. Pendolino¹, C. Pizzorni¹, S. Paolino¹, F. Goegan¹, E. Gotelli¹, C. Schenone¹, F. Cattelani¹, M. Patané¹, E. Alessandri¹, A. Sulli¹, V. Smith², M. Cutolo¹. ¹Research Laboratory and Academic Division of Clinical Rheumatology, Department of Internal Medicine, University of Genoa, Italy, Genova, Italy; ²Department of Rheumatology, Ghent University Hospital, Ghent, Belgium, Ghent, Belgium

Background: Nailfold videocapillaroscopy (NVC) abnormalities in subjects with isolated Raynaud's phenomenon (RP) may be present before transition to secondary RP (SRP) and development of a NVC "scleroderma pattern" and are known to predict for evolution to a connective tissue disease (CTD) within few years [1]. In a previous study, we have demonstrated that the very early increase of capillary diameter over 30 µm is an independent predictor for development of Systemic Sclerosis (SSc) associated SRP [2].

Objectives: Present pilot retrospective study aimed to investigate in a cohort of patients affected by CTD-related RP the presence of very early capillaroscopic morphological and quantitative abnormalities in the acquired pictures of NVC performed before the development of the NVC scleroderma-pattern. In particular, the study was addressed to identify a "very early" scleroderma pattern, in order to intercept patients with RP at high risk of evolution in a CTD, specifically SSc.

Methods: We selected the NVCs of 273 SSc patients presenting one of the validated NVC "scleroderma patterns". We enrolled 26 SSc patients having a NVC analysis performed before the development of the "very early" NVC pattern. As controls, we evaluated 26 patients affected by other CTDs with stable non-scleroderma pattern over time. The 16 images per patient obtained by NVC examination were analyzed for total number of capillaries, number and the limbs diameters of capillaries with a diameter >30 µm, and microhemorrhages. Statistical analysis was performed using non-parametric tests.

Results: All 26 SSc patients showed dilated capillaries with a diameter >30 µm in their previous NVC. Patients later developing scleroderma pattern had statically higher number and percentage of capillaries with a diameter >30 µm ($p = 0.0004$ and $p = 0.0005$), as well as a larger apical dilatation >40 µm ($p = 0.002$). A progressive and significant increase in all capillary diameters were only detected in patients later diagnosed for SSc (apical $p = 0.006$, venous $p = 0.02$, arterial $p = 0.03$). A significant homogeneous and progressive dilation was observed from the apical region and then involving both venous and arterial branches, only in SSc patients ($p = 0.002$).

Conclusion: Present pilot study demonstrates, for the first time that, before to develop a validated NVC scleroderma-pattern, all potential SSc patients present significant very early morphological and quantitative NVC changes. In particular, the progressive and homogeneous capillary loop dilation over 40 µm in over 40%