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AB0599 COMBINATION OF CAPILLAROSCOPIC AND ULTRASONOGRAPHIC EVALUATIONS OF THE HAND TO DETECT SEVERE VASCULOPATHY IN SYSTEMIC SCLEROSIS: RESULTS OF A CROSS-SECTIONAL STUDY

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Background: Although micro-vessel alterations have been largely described, macrovascular involvement is also frequent in Systemic Sclerosis (SSc). Macrovascular damages specifically involve narrowing or occlusions of proper palmar digital arteries and ulnar artery. On the contrary, radial artery is rarely concerned. Ulnar artery occlusion (UAO) assessed by power doppler ultrasonography (PDUS) has proven to be predictive of the onset of new ischaemic DUs in longitudinal studies (1). PDUS could also be a reliable tool to evaluate finger pulp blood flow (FPBF). Only few studies have explored the association between macrovascular damages evaluated by PDUS and microvascular involvement assessed by nailfold capillaroscopy (NC) (2). The association between macrovascular disease and calcinosis or Acro-osteolysis is still to be determined in SSc.
Objectives: to confront microvascular damages on NC with macrovascular manifestations evaluated by PDUS in SSc patients. Micro and macro-vascular damages were confronted with the main digital manifestations of the disease: digital ulcers (DU), Acro-osteolysis and Calcinosis.
Methods: NC, hand X-Rays and PDUS were systematically performed in 64 unselected SSc patients. PDUS evaluation with assessment of Ulnar Artery Occlusion (UAO) and finger pulp blood flow (FPBF) was performed blinded for the results of X-Rays and NC.
Results: UAO and pathologic FPBF were associated with severe capillary loss (<4 capillaries/mm) on NC (respectively OR=4.04 (1.23–13.29); $p<0.05$ and OR=3.38 (1.03–11.05); $p<0.05$). UAO was significantly associated with Cutolo's late NC pattern (OR=3.80 (1.31–11.01); $p<0.05$). A DU history was associated with UAO (OR=10.71 (3.36–34.13); $p<0.0001$), pathologic FPBF (OR=7.67 (2.52–23.28); $p<0.0001$), late pattern (OR=6.33 (2.03–19.68) and severe capillary loss (OR=8.52 (2.15–33.78); p=0.001). Acro-osteolysis was also associated with UAO (OR=15.83 (3.95–63.54); $p<0.001$), pathologic FPBF (5.52 (1.71–17.90) p=0.003), late NC pattern (OR=6.86 (2.18–21.53); p=0.001) and severe capillary loss (OR=7.20 (2.16–24.02), p=0.001). Calcinosis on X-rays were associated with late NC pattern (5.41 (1.82–16.12); p=0.002), severe capillary loss (OR=12.69 (3.14–51.26); $p<0.0001$) and UAO (3.19 (1.14–8.92); 0.025) but not with pathologic FPBF. Combination of UAO and severe capillary loss in a same patient was especially associated with DU history (OR=18.60 (2.24–154.34); p=0.001) and Acro-osteolysis (OR=10.83 (2.56–45.88); p=0.001).
Conclusions: The combination of macro and microvascular evaluations by PDUS and NC may help to detect patients with a more severe vasculopathy.
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AB0600 CLINICAL RELEVANCE OF AUTOANTIBODY PROFILES IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is a connective tissue disease accompanied by immune abnormalities. A number of autoantibodies such as anti-centromere, anti-topoisomerase I, anti-RNA polymerase III and anti-U3 (fibrillarin) antibodies were proven to be of great diagnostic and prognostic factors in patients with scleroderma. Certain studies have reported the presence of antinuclear, anti-SSA (Ro) and/or anti-SSB (La), anti-Pm/Scl, anti-endothelial cell and anti-nucleosome antibodies in patients with systemic sclerosis. However, the clinical relevance of these autoantibodies is yet to be fully elucidated.
Objectives: Our aim was to assess clinical features, capillaroscopic abnormalities and autoantibody titers in patients with systemic sclerosis as well as analyze relationships between these parameters.
Methods: We conducted a prospective observational study on 36 adult patients who satisfied ACR/EULAR 2013 criteria for systemic sclerosis.We recorded disease duration. current symptoms and classified patients as limited cutaneous (lc) SSc and diffuse cutaneous (dc) SSc. Skin involvement was assessed using the modified Rodnan skin score (mRSS). We performed nailfold videocapillaroscopy using a FEDMED Digitale 100N at a magnification of 200X. Thoracic Xrays were done to establish the presence of pulmonary fibrosis. Ultrasounds were performed by a single examiner to evaluate pulmonary artery pressure. Blood samples were drawn to measure anti-topoisomerase 1, anti-centromere, anti-SSA (Ro), anti-SSB (La), anti-U1RNP and anti-nucleosome antibody titers (ELISA). Patient characteristics were included in a database and analyzed using IBM SPSS Statistics v20.
Results: Our study group was composed of 20 dc SSc (55.6%) and 16 lc SSc (44.4%) patients. Severity of capillary changes correlated with mRSS values (p,0.01), anti-topoisomerase I (p=0.006), anti-SSA (p=0.01) and anti-nucleosome antibodies (p=0.02). We found positive associations between the presence of dysphagia, anti-centromere (p=0.009) and anti-SSA ($p<0.01$) titers in patients with lc SSc. Anti-centromere antibody positivity also correlated with pulmonary hypertension (p=0,011) and pulmonary fibrosis (p=0,04) in these patients. Anti-SSA antibodies correlated with pulmonary hypertension ($p<0.01$) and capillaroscopic changes (p=0.024) in dc SSc.
Conclusions: Our findings support the relationship between autoantibody titers, systemic involvement and microvascular changes in scleroderma patients. Non-specific autoantibodies such as anti-nucleosome and anti-SSA antibodies were associated with microvascular changes in our study group. Further studies in this field may provide new information on SSc pathogenesis and possibly novel targets for treatment in scleroderma patients.
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AB0601 ANATOMIC AND FUNCTIONAL ASSESSMENT OF PERIPHERAL PERFUSION IN PATIENTS WITH SYSTEMIC SCLEROSIS. IS THERE ANY CORRELATION BETWEEN CAPILLAROSCOPIC FINDINGS AND ERGOSPIROMETRY?

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Background: Microvasculopathy of systemic circulation in patients with Systemic Sclerosis (SS) is widely assessed by digital capillaroscopy (DC), a method that evaluates the architecture of capillary network and reveals changes of vascular anatomy. On the other hand, ergospirometry (ERG) reveals functional impairment of microcirculation by assessing indirect measures of peripheral tissue ischemia (most suitable VE/VCO2). Since today, there have been studies correlating DC findings with spirometric parameters (respiratory volumes)[1,2]; nevertheless, no reports have been published correlating the same DC findings with ERG parameters (functional microvascular perfusion).
Objectives: To propose the use of DC as a screening tool for impaired functional microvasculopathy by investigating correlations between patterns of capillaroscopic findings with ergospirometric values of peripheral tissue blood perfusion.
Methods: 11 patients (11 women mean age 43+/- 12 ys) with SS were evaluated contemporary with High Resolution Computed Tomography of the chest, ERG, and DC. Parameters were correlated with multiple regression analysis. Statistic significance was considered $p<0.05$.
Results: Patient data are shown in the table.
Patients with late pattern in capillaroscopy had less endurance in exercise test ($P<0.05$) but no correlation was found between capillaroscopic pattern and VE/VCO2 ($P>0.05$). Age was a crucial confounding factor.
Conclusions: The correlation of late pattern capillaroscopy findings with reduced ergospirometric endurance in 11 patients indicates that in a larger cohort, specific parameter associations between DC and ERG are probable to emerge.