THU0402 DO WE HAVE GOOD INSTRUMENTS TO PREDICT MAJOR CARDIOVASCULAR EVENTS IN SYSTEMIC SCLEROSIS PATIENTS?

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Background: While macrovascular disease and higher cardiovascular (CV) risk are well documented in other systemic rheumatic diseases, the risk for major cardiovascular events for patients with systemic sclerosis (SSc) is yet to be established.

Objectives: The aim of the study was to determine the ability of different cardiovascular risk indices to predict major cardiovascular events (MACE) in systemic sclerosis.

Methods: The study included 144 patients followed in EUSTAR centre 096, but only patients with a follow-up for more than 10 years were selected for statistical analyses. Cardiovascular risk was estimated using QRiskII, systemic coronary risk evaluation (SCORE) and ACC/AHA risk indices. MACE were defined as: myocardial infarctions, strokes, peripheral vascular disease and cardiovascular related death. Data were compared by non-parametric tests.

Results: 32 patients, 31 females, 12 diffuse SSc subsets were included. The control group included 30 age and sex matched patients without autoimmune diseases. Mean age of the group was 52 years±SD 9.7, mean disease duration was 8 years±SD 9. The prevalence of traditional risk factors was: 13% smokers, significant family history 38%, obesity 16%, dyslipidemia 32%, older age 13%, hypertension 16%. There were no significant differences from the control group.

Major cardiovascular events were: 13% myocardial infarction, 9% peripheral vascular disease, 9% CV related deaths. Concerning CV risk indices of the 32 SSc patients, 4 (13%) were classified as having high CV risk according to QRiskII/SCORE/ACC risk.

In SSc patients, we could not identify any correlation between the above mentioned risk indices and MACE, including death of cardiovascular causes, except for a slight correlation between the SCORE and cardiovascular related death ($p=0.04$).

Conclusions: In our study, the main prediction indices were not correlated with the 10 year risk for CV events in SSc patients suggesting that we need better risk prediction tools. Both traditional risk factors and endothelial dysfunction have been proposed to participate at the onset and progression of vascular disease in SSc. Special attention should be paid to correct the traditional risk factors in combination with specific treatment for SSc.

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THU0403 SERUM LEVELS OF MACROPHAGE MIGRATION INHIBITORY FACTOR AND INTERLEUKIN-1 FAMILY CYTOKINES ARE ELEVATED IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is an autoimmune connective tissue disorder, the pathogenesis of which remains unknown. Recent evidence suggests dysregulation of the innate immune system, particularly interleukin-(IL)–1 family cytokines. Given the emerging role of macrophage migration inhibitory factor (MIF) in pathways of IL-1 family cytokine secretion, the role of MIF, IL-1 α , IL-1 β and IL-18 in SSc is of interest.

Objectives: To examine associations between MIF and IL-1 cytokines (IL-1 α , IL-1 β , IL-18), in SSc, and associations with clinical features.

Methods: 115 SSc patients (2013 ACR/EULAR criteria) attending Monash Scleroderma Clinic and 52 healthy controls were recruited between August 2015 and August 2017. Serum MIF, IL-1 α , IL-1 β and IL-18 levels were quantified using ELISA and analysed alongside concurrent clinical and laboratory data from the Australian Scleroderma Cohort Study database

Results: Compared to controls, SSc patients had significantly elevated serum MIF and IL-18 (figure 1). A weak positive correlation was observed between MIF

and SScHAQ score ($R=0.2107$, $p=0.0437$) which was stronger in the diffuse cutaneous (dcSSc) subgroup ($R=0.457$, $p=0.0373$). Patients with elevated IL-18 levels were more likely to have active disease (EUSTAR score ≥ 3) however IL-18 was lower in patients with pulp atrophy and sclerodactyly. IL-1 β was elevated in dcSSc patients with pulmonary fibrosis and correlated with mRSS ($R=0.213$, $p=0.0254$) in all SSc patients. IL-1 α was elevated in patients with joint contractures and pulp atrophy. Positive correlations were found between concentrations of MIF and both IL-1 α and IL-1 β . However, there was no significant correlation between MIF and IL-18.

Abstract THU0403 – Figure 1. Serum cytokines in SSc patients and healthy controls. Serum cytokines (A) MIF and (B) IL-18 were measured by ELISA in healthy controls ($n=52$) and SSc patients ($n=115$). Data is presented as median $\pm$ interquartile range. Analysis was performed in Prism using the Mann-Whitney test.

Conclusions: MIF and IL-18 were significantly elevated in SSc compared to health controls, and IL-1 family cytokines were variably associated with clinical manifestations of SSc. A relationship between MIF and IL-1 β was confirmed. Further investigation into the roles of MIF and IL-1 family cytokines in SSc is justified.

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THU0404 ESOPHAGEAL INVOLVEMENT PREDICTS PULMONARY FUNCTION DETERIORATION IN PATIENTS WITH SYSTEMIC SCLEROSIS

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Background: Interstitial lung disease (ILD) is the leading cause of death in systemic sclerosis (SSc) but its pathogenesis and the risk factors of pulmonary function deterioration are not fully understood. Esophageal disease is high frequent in SSc and motor activity abnormalities with occult micro-aspiration of both acid and non-acid gastro oesophageal reflux has been implicated in the pathogenesis of ILD. DLCO reduction is considered the earliest sign of microaspiration-induced lung damage¹. Cross-sectional studies have demonstrated an association of SSc-ILD and esophageal abnormalities on 24 hours intraoesophageal pH-monitoring and esophageal manometry but prospective evaluation of lung deterioration is lacking^{2,3}. Esophagogram was proposed as a useful tool to evaluate disease severity of upper gastrointestinal tract involvement in SSc⁴.

Objectives: To assess the role of esophagogram in predicting pulmonary function test deterioration in SSc-patients.

Methods: We retrospectively evaluated 160 consecutive SSc patients who underwent esophagogram because of suspected upper gastro-intestinal involvement. All patients underwent baseline pulmonary function tests and global clinical evaluation. Eighty-five patients underwent a High Resolution CT within 3 months from esophagogram because of suspected lung involvement. One hundred twenty three patients underwent pulmonary function test every 6 months up to 24 months.

Results: Seventy five patients (46.9%) presented abnormalities of peristaltic waves, 50 patients (31.2%) showed structural changes (hypotonic oesophagus or dilatation) while indirect signs of cardiac incontinence (patent cardia or gastro-esophageal reflux) were present in 36 patients (22.5%). A reduced peristaltic activity with a prolongation of transit time was associated to reduced DLCO ($50.16\pm19.80\%$ vs $60.36\pm22.69\%$, $p=0.002$) and TLC ($87.05\pm20.43\%$ vs $95.09\pm20.59\%$, $p=0.017$). An hypotonic oesophagus was reported in 25.2% of patients and it was associated to ILD on CT (72.0% vs 28.0% , $p=0.033$). Patients