6.68–12.13 ng/ml) ($p=0.002$ and $p=0.001$, respectively). Serum Slit2 was elevated in SSc patients irrespective of the nailfold videocapillaroscopy (NVC) pattern or the presence/absence of digital ulcers. Interestingly, differences in serum Slit2 levels were found between VEDOSS patients with early/active NVC pattern and controls ($p<0.0005$), while Slit2 concentrations were similar in VEDOSS with normal NVC and controls. In SSc, Slit2 and Robo4 expression was higher in clinically affected skin and cultured MVECs in respect to controls. No difference was found in Robo1 expression. Cell viability, wound healing capacity and capillary-like tube formation in H-MVECs were all significantly reduced after challenge with rh Slit2 or SSc sera. These inhibitory effects were significantly attenuated when SSc sera were preincubated with anti-Slit2 blocking antibody. Cell viability, wound healing capacity and *in vitro* angiogenesis were severely compromised in SSc-MVECs and could be significantly ameliorated by Slit2 neutralisation or Robo4 gene silencing.

Conclusions: In SSc, increased circulating levels of Slit2 and activation of the Slit2/Robo4 antiangiogenic axis may contribute to peripheral microangiopathy since the very early phase of the disease.

Disclosure of Interest: None declared

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OP0095 SOLUBLE CD163 AS A POTENTIAL BIOMARKER IN SYSTEMIC SCLEROSIS

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Background: Recent accumulating evidences indicate a crucial role of macrophage lineage in the pathogenesis of fibrotic diseases including systemic sclerosis (SSc). CD163 is a surface marker expressed by M2 macrophages that accumulate during the healing phase of acute inflammation. It is actively released from the plasma membrane in response to certain inflammatory stimuli and enters the circulation in its soluble form (sCD163).

Objectives: In this study, we aimed to evaluate the performance of serum and urinary sCD163 concentrations as possible biomarker in SSc.

Methods: Urine and serum samples were obtained from SSc patients, fulfilling the 2013 ACR/EULAR classification criteria for SSc, and age- and sex-matched controls. Serum and urinary sCD163 concentrations were measured by commercially available ELISA kit (R and D systems) and evaluated for their significance as potential biomarkers. Statistical analysis was carried out using Mann-Whitney U test and the relationship between parameters was statistically examined by Spearman's rank test.

Results: Two hundred and three SSc patients were included, 163 (80%) were female, with a mean $\pm$ standard deviation (SD) age of 59 ± 13 years and a mean $\pm$ SD disease duration of 12 ± 9 years. Eighty-one (41%) patients had diffuse cutaneous SSc and mean $\pm$ SD mRSS was 6.6 ± 7.7 . Lung fibrosis on imaging was observed in 33% of the patients, 7% had pulmonary arterial hypertension, 44% had history of digital ulcers and 41% were taking immunosuppressive therapy. Control group consisted of 47 age- and sex-matched patients with non-inflammatory diseases, being osteoporosis for the very large majority.

Serum sCD163 levels were significantly higher in SSc patients compared with controls (mean $\pm$ SD: 529 ± 251 vs 385.1 ± 153 ng/ml; $p<0.001$). Urinary sCD163 concentrations in SSc patients were also higher than those in controls, but this did not reach significance (236.9 ± 498 vs 176.2 ± 173 ng/mg uCr; $p=0.580$). When looking at the subsets according to skin disease or disease duration, no difference could be identified. Furthermore, when the organ involvements were investigated, no subpopulation could be identified as having higher concentrations.

Conclusions: To our knowledge this is the first evaluation of both serum and urinary sCD163 levels in SSc. Our results show a significant difference for sera values that should be prioritised for further studies as compared to urinary concentrations conversely to what has been described in lupus. Our results further support that the M2 macrophages/CD163 signalling system may play a role in the pathogenesis of SSc. However, further studies are required to address the exact role of CD163 in the pathogenesis of SSc and to determine whether it could help in the risk-stratification of the patients in this heterogeneous disease.

Disclosure of Interest: None declared

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A rollercoaster from bench to bedside and back again: paediatric rheumatology in the 21st century

OP0096 ADENO-ASSOCIATED VIRUS VECTOR-MEDIATED INTERLEUKIN-10 INDUCTION PREVENTS VASCULAR INFLAMMATION IN A MURINE MODEL OF KAWASAKI DISEASE

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Background: Kawasaki disease (KD), which is a common paediatric heart disease, is characterised by coronary vasculitis and subsequently aneurysm formation. Although the administration of intravenous immunoglobulin (IVIG) is effective for reducing aneurysm formation, approximately 10%–20% of patients are resistant to this therapy. Therefore, additional therapeutic approaches for treating the IVIG-resistant patients need to be developed.

Candida albicans water-soluble fraction (CAWS)-induced vasculitis on coronary arteries and root of aorta is a frequently used murine model of KD. It has been considered that C-type lectin receptor Dectin-2 recognises CAWS. Recent studies showed CAWS-resistant strains of mice have higher serum IL-10 levels, which suggested that IL-10 might negatively regulate the development of CAWS-induced vasculitis.

Objectives: The aim of the study is to investigate the therapeutic effect of IL-10 in CAWS-induced vasculitis and elucidate the underlying pathogenesis of KD.

Methods: To induce the expression of IL-10 *in vivo*, Adeno-associated virus (AAV) vectors encoding IL-10 were injected into DBA/2 mice. After the induction of IL-10, the mice were treated intraperitoneally with CAWS to induce vasculitis. Cardiac functions by echocardiography, inflammation and fibrosis by histological analyses, gene expression of inflammatory cytokines and fibrosis-related factors in the heart, and infiltrating cells by flow cytometry were assessed to evaluate the effects of IL-10.

For *in vitro* study, bone marrow-derived macrophages (BMDM) were stimulated with CAWS in presence or absence of IL-10. TNF- α and IL-6 produced by the BMDM and Dectin-2 expressions on the BMDM were assessed.

Results: AAV-mediated induction of IL-10 significantly attenuated CAWS-induced cardiac functions (%FS and LVEDD). Histological analyses revealed that IL-10 markedly attenuated the vascular inflammation and fibrosis in the aortic root and coronary artery. Accordingly, increased gene expressions of inflammatory cytokines or fibrosis-related factors in the heart of CAWS-treated mice were significantly reduced by IL-10. The predominant infiltrating inflammatory cells in vascular walls were Dectin-2⁺CD11b⁺ macrophages, and they were also decreased by IL-10.

Furthermore, we showed GM-CSF induced Dectin-2 expression on BMDM, and the GM-CSF-treated BMDM produced TNF- α and IL-6 upon CAWS-stimulation. IL-10 had no effect on the Dectin-2 expression but significantly inhibited the production of the cytokines. Finally, the AAV-mediated induction of IL-10 prevented the expression of TNF- α and IL-6 in the heart of the mice treated with CAWS for 24 hours (at the early phase), but not GM-CSF and Dectin-2. These results suggest that GM-CSF mediates CAWS-induced vasculitis via Dectin-2 upregulation and IL-10 inhibits the downstream of GM-CSF and Dectin-2 signalling.

Conclusions: Our study has shown that IL-10 may have therapeutic application in the prevention of coronary vasculitis and aneurysm formation, and provided new insights into the mechanism underlying the pathogenesis of KD.

Disclosure of Interest: None declared

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OP0097 STIMULATED MONOCYTE-DERIVED MACROPHAGES FROM PATIENTS WITH ENTHESTITIS RELATED ARTHRITIS SECRETE HIGHER LEVELS OF IL23 AND LOWER LEVELS OF INTERFERON GAMMA COMPARED TO HEALTHY CONTROLS

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Background: Enthesitis related arthritis (ERA) is the subtype of juvenile idiopathic arthritis most closely related to adult spondyloarthritis (SpA).