significant association emerged in particular between the presence of NAC and the active videocapillaroscopy pattern (OR 6.23; 95% CI: 1.058-36.71, $p=0.043$).

Conclusion: Though current data in the literature on this topic are poor, cardiac autonomic neuropathy is among the clinical manifestations of SSc. In our study population, though the limited sample size, we observed a high percentage of patients with autonomic cardiac neuropathy, which seems much more frequent with the increase in the duration of disease and based on the type of videocapillaroscopy pattern.

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AB0161 CLONAL HEMATOPOIESIS IS INCREASED AND NOT RELATED TO AGING IN SYSTEMIC SCLEROSIS

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Background: Systemic sclerosis (SSc) is an autoimmune disease characterized by fibrosis, microangiopathy and immune dysfunctions including dysregulation of proinflammatory cytokines. Clonal hematopoiesis of indeterminate potential (CHIP) is defined by the acquisition of somatic mutations in hematopoietic stem cells leading to detectable clones in the blood. Recent data have shown a higher risk of cardiovascular disease in patients with CHIP resulting from increased production of proinflammatory cytokines and accelerated atherosclerosis. Eventual links between CHIP and autoimmune diseases are undetermined.

Objectives: The aim of our study was to evaluate the prevalence of CHIP in SSc patients and its association with clinical phenotype.

Methods: Forty-one genes frequently mutated in myeloid malignancies were sequenced in peripheral blood mononuclear cells from 90 SSc patients and from 44 healthy donors.

Results: A total of 15 somatic variants was detected in 13/90 SSc patients (14%) and 4 somatic variants in 4/44 (9%) HD ($p=0.58$). The prevalence of CHIP was significantly higher in younger SSc patients than in HD: 25% (6/24) vs 4% (1/26) ($p=0.045$) under 50 years and 17% (7/42) vs 3% (1/38) ($p=0.065$) under 60 years. The prevalence of CHIP in patients over 70 years was similar in SSc patients and healthy donors

For SSc patients the most common mutations occurred in *DNMT3A* (7 variants). Other variants involved *ATM*, *SF3B1*, *SETBP1*, *TET2*, *TP53*, *NF1* or *CBL*. The distribution of gene mutations was overall comparable in SSc patients and in previously described CHIP series (3)

In most SSc patients, we identified a single CHIP mutation. Several mutations were detected in two SSc patients: *SETBP1* and *NF1* in one and, *TET2* and *ATM* in the other. Clonal mutations included missense ($n=10$), nonsense ($n=3$), frameshift ($n=1$) and a single splice site mutation. In all HD we detected a single CHIP mutation which occurred in *DNMT3A*, *TP53* and *CSF3R*

Variant allele frequencies (VAF) of CHIP mutations ranged from 2 to 18.6% and did not differ between genes (*DNMT3A* or others). Mean age was the same in patients with *DNMT3A* mutations or with other mutations. However, C>T transversions, that have been associated with ageing were more frequent in *DNMT3A* variants than in other genes, suggesting distinct mechanisms for mutation acquisition or clonal selection. No major differences in clinical and laboratory data were observed between SSc patients with or without CHIP. SSc subtypes, disease duration, different organ involvements and the prevalence of ischemic events were not associated with the presence of CHIP, except less frequent pyrosis in patients with CHIP than those without. SSc patients with CHIP had significantly more anti-RNA polymerase III antibodies than those without CHIP ($p=0.045$). At the time of analysis, 45 SSc patients had received a treatment for SSc which consisted in low-dose steroids, hydroxychloroquine, mycophenolate mofetil, cyclophosphamide or methotrexate. SSc patients with CHIP were significantly more exposed to cyclophosphamide (3/13 vs. 3/77) ($p=0.04$) (5, 6.5 and 11 gram respectively between 5 years to 8 years before the NGS sequencing analysis), but among these cyclophosphamide-exposed SSc the age was over 65 in 2/3 of them. When considering all immunosuppressive drugs (cyclophosphamide, methotrexate and mycophenolate mofetil) SSc patients with CHIP were not more exposed than those without

CHIP ($p=0.75$). No patient developed any hematologic malignancy and no cytopenia during the median follow-up of 13 months (0-24 months). One SSc patients with CHIP developed a small lung cancer few months after NGS testing.

Conclusion: Whether CHIP increases the risk to develop SSc or is a consequence of a SSc-derived modified bone marrow micro-environment remains to be explored.

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AB0162 THE SIGNIFICANCE OF M1 AND M2 MONOCYTES IN SYSTEMIC SCLEROSIS

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Background: Recently, the relation between M2 macrophage and fibrosis have been reported in several diseases including systemic sclerosis (SSc). Similar with macrophages, monocytes can be classified into M1 and M2 subset, and the relation of imbalance of these monocytes with disease such as rheumatoid arthritis have been reported^{1,2}.

Objectives: In this study, we attempted to investigate relationship among M1 or M2 monocytes in SSc.

Methods: This study included 23 SSc patients and 20 healthy donors. Using fluorescence-activated cell sorting, we defined CD14, CD68 and CCR2 positive cells as M1 monocytes and CD14, CX3CR1 and CD163 positive cells as M2 monocytes. We examined the ability of cytokines/chemokines secretion of CD14 positive cells from SSc by multiplex bead array assay using MAP human cytokine/chemokine Magnetic Bead Panel which can measure 38 cytokines/chemokines. We next extracted M2 monocytes from CD14-positive cells using FACS, and we used the rest of the CD14 positive cells as M1-dominant monocytes. Then, we evaluated their ability of TGF- β production by multiplex bead array assay.

Results: SSc patients had higher M2/M1 ratio as compared with healthy control (7.00 vs 1.63, $P<0.05$). And, there was tendency that M2/M1 ratio was higher in SSc patients complicated with interstitial pneumonia. Beads array analysis revealed that CCL4 and MCP-1 production from CD14 positive cells which consists M2>M1 (M2/M1 ratio>1) were higher than that from CD14 positive cells which consists M2<M1. Furthermore, the ability of TGF- β secretion of M2 monocytes was higher than that of M1-dominant monocytes.

Conclusion: Our present study suggested that the imbalance of M1/M2 monocytes might contribute to pathogenesis of SSc.

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AB0163 ANTI-KU ANTIBODIES: MUCH MORE THAN SCLEROMYOSITIS

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Background: Initially, anti-Ku antibodies (Ab) were described in patients with overlap syndrome with systemic sclerosis (SSc) and inflammatory myopathy (scleromyositis), although later they have been linked to a wide variety of systemic autoimmune diseases (SAD) questioning its diagnostic value. Recently, the possible existence of 2 different clinical phenotypes associated with these Ab has been described: one with myositis and high risk of interstitial lung disease (ILD) and another with positive anti-dsDNA Ab and glomerulonephritis.

Objectives: To analyze the clinical relevance and the main diagnosis of a serie of patients with positive anti-Ku Ab.

Methods: Descriptive observational study of patients with anti-Ku Ab in two third level hospitals between 2011 and 2019. Their determination was made at the criteria of the requesting physician.

Results: Twenty-three patients (20 women) with a median age of 59 ± 14 years (range, 24-83) and a follow up time (median) of 37 months (1-208) were identified. The main clinical and analytical characteristics, as well as the final clinical