OBJECTIVES: Our objective here was to analyse a clinically well-phenotyped patients using a suite of immune assessments and identify inter-relationships between these features as well as subgroups of patients who may differ in response to therapy.

METHODS: 143 SLE patients were evaluated for clinical phenotype using BILAG-2004, autoantibodies using radioimmunoprecipitation (IP, University of Bath), two interferon scores (IFN-Score-A and IFN-Score-B), flow cytometry for major circulating immune cell subsets, as well as the surface protein expression of tethersin on each subset, a cell-specific assay for IFN response.

Unsupervised hierarchical clustering was used to define autoantibody subgroups. IFN scores (reflected dCT) were compared between the groups using multivariate models. Other variables were compared using Kruskal-Wallis test with pairwise comparisons.

RESULTS: Using IP, 141 patients could be divided into five subgroups: U1RNP/Sm+ only (n=23), Ro60+ only (n=8), U1RNP/Sm+Ro60- (n=6), Ro60+Ro52+La+ (n=11), Ro52+ (n=16) and other ANA (n=77). Antibody subgroups was strongly associated with IFN-Score-A (F=4.4, p<0.001). Expression was lowest for “other ANA,” intermediate for single antibody groups, and highest with multiple positive antibodies. Multivariate linear regression, including interaction terms between antibody types, revealed that Ro60 and U1RNP/Sm were the independent predictors of IFN-Score-A level (p=0.051 and 0.009 respectively). There was no association between autoantibody status and IFN-Score-B (F=0.973, p=0.438).

In flow cytometry, the U1RNP/Sm group was notable for significantly lower numbers of CD4-T-cells and memory-B-cells. Memory -B-cells were also lower in antibody-positive groups compared to “other ANA.” Tetherin expression was increased in antibody positive groups, but to a similar extent on most cell subsets. Memory B cell tethersin was significantly higher in the groups with multiple positive antibodies.

U1RNP/Sm+ was associated with renal involvement (p=0.004). Mucocutaneous involvement was greater in the Ro60+Ro52+La+ group (p=0.037).

Conclusion: This cohort revealed relationships between immune features. U1RNP/Sm antibody was notable for defining a group of patients with a cluster of immune abnormalities, including the greatest elevation of IFN activity, greater abnormalities on flow cytometry and clinical renal involvement. This was independent to the IFN-Score-B high status that predicts better clinical response to rituximab (presented elsewhere at this conference).

Future work in MASTERPLANS will investigate the significance of these subgroups for response to therapy.

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Background: In Sjögren’s Syndrome (SS), ocular damage is mediated by inflammation induced by antibodies, enzymes, and other effectors that could be used as clinical indicators of the ocular surface damage. There is evidence suggesting that increased activity of matrix metalloproteinases (MMPs) is correlated with an increased ocular damage because of its potential inflammatory activity and could be used as a potential therapeutic target for dry eye.[1] Very few studies have addressed the role between the ocular MMPs and the clinical parameters of SS.

OBJECTIVES: To determine the level of correlation between the serological profile of autoantibodies with ophthalmological parameters at the cornea level.

METHODS: Cross-sectional, observational, and descriptive study. Sixty patients with a diagnosis of primary Sjögren’s syndrome (pSS) classified according to the ACR/EULAR 2016 criteria were included. The following measurements were made: Schirmer test, lacrimal osmolarity, ocular staining score (OSS), and ocular surface disease index (OSDI) and metalloproteinase-9 (MMP-9) in tear and antibodies were measured in peripheral blood.

RESULTS: Fifty-eight women participated (96.7%) with an average age of 53 years (± 13.01) (Table 1). We found a positive correlation between OSS and IFIgM (rho=0.385; p=0.002), RF-FlgA (rho=0.256; p=0.049), and anti-Ro/SSA (rho=0.302; p=0.019). We found a statistically significant association between the seropositivity of the Anti-SSA/Ro antibody and the presence of MMP-9 in tears (OR 4.38, CI 95% 0.877-21.92, P=0.057). A