

ordered at the same time as the ANA, against the Choosing Wisely recommendation of 2013. There were only 22% of ANA that were required for a diagnosis. The 3 specialties who ordered ANA the most were rheumatology, gastroenterology and the internal medicine (in descending order). The cost for the ANA that were not indicated is more than a thousand dollars. A total of 135 ANCA tests were included. There were 55.6% of ANCA that were ordered in line with the recommendations. However, 50.3% of ANCA were not required for the final diagnosis. Clinical remission of subjects with ANCA was predicted in 100% of cases, even before ordering the ANCA test for follow-up (negative predictive value).

Conclusion These results show that the rate of ANA and ANCA tests ordered in line with the recommendations remains low. In the majority of cases, the two antibodies are not required for the final diagnosis. These orders have an important cost for the hospital that can be lowered by providing more education for professionals on avoiding unnecessary tests.

PS1:8 ANTI-RO FALSE-NEGATIVES DETECTION THROUGH ANTI-RO52 KDA AND ANTI-RO60 KDA ANALYSIS IN SYSTEMIC LUPUS ERYTHEMATOUS PATIENTS

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10.1136/lupus-2018-abstract.57

Purpose The aim of the present study is to identify false-negatives for anti-Ro by analysing both 52 KDa and 60 KDa subunits separately, as well as to characterise if there are clinical or molecular differences in this subgroup of patients compared to anti-Ro negative cases.

Methods A cross-sectional, observational study of patients diagnosed of SLE according to SLICC 2012 criteria was performed. In these patients a complete blood-test was made, and clinical data by personal interview was collected. INF1A, Anti-Ro, anti-Ro52KDa and anti-Ro60KDa levels were

measured by colorimetric methods. Biostatistical analysis was performed with R 3.3.2.

Results We selected 69 SLE patients with negative results for anti-Ro (2.34 ± 4.17 U/mL) out of 142 total SLE patients. A total of 51 patients were negative for both anti-Ro subunits and 18 cases presented positive results (up to 20 pg/mL) for at least one of them (See table 1).

The subgroup of patients that exhibit simultaneously high levels of anti-Ro52KDa and anti-Ro60KDa have higher clinical activity compared to negative anti-Ro cases (75% of active patients against 41.2% in anti-Ro negative patients). However, no differences in the accumulated damage evaluated by SLICC score between negative anti-Ro cases and patients with at least one positive subunit were observed.

We analyse serum levels of INF1A cytokine in the four groups of patients, and anti-Ro and subunits negative cases showed significant lower INF1A levels than the other patients (8.26 ± 14.87 pg/mL and 26.62 ± 40.71 pg/mL respectively; $p=0.04$). In addition, patients with high levels of anti-Ro52KDa subunit are those with the highest INF1A levels (anti-Ro 52+/anti-Ro60- 23.5 ± 47.6 pg/mL of INF1A; anti-Ro 52+/anti-Ro60+ 36.4 ± 37.9 pg/mL of INF1A).

Conclusion In our anti-Ro seronegative patients, a 26% of false-negative cases were detected. These cases with high levels of almost one anti-Ro subunit showed significantly higher levels of INF1A in contrast to negative cases, supporting the fact that they are indeed a different group from the negative cases. Moreover, the high INF1A levels could be the reason of the observed differences in the clinical activity measured by SLE-DAI score in both groups.

PS1:9 B CELL SUBPOPULATIONS IN LUPUS NEPHRITIS PATIENTS: CORRELATIONS WITH DISEASE ONSET AND OUTCOMES

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10.1136/lupus-2018-abstract.58

Purpose The relationship between B cells subsets distribution, clinical and laboratory parameters, therapeutic response and prognosis in lupus nephritis (LN) is still underestimated. The

Abstract PS1:8 Table 1

| | NEGATIVES N=51 | Anti-RO52KDa POSITIVES N=8 | Anti-RO60KDa POSITIVES N=2 | Anti-RO52KDa/ Anti-RO60KDa POSITIVES N=8 |
|--|-------------------|----------------------------------|----------------------------------|---|
| Anti-RO [U/mL] Mean (DS) | 1.92 (3.11) | 1.65 (3.2) | 0.5 (0.71) | 6.15 (8.37) |
| Anti-RO52 KDa [pg/mL] Mean (DS) | 1.26 (1.89) | 147.24 (74.25) | 1.05 (0.89) | 196.82 (50.06) |
| Anti-RO 60 KDa [pg/mL] Mean (DS) | 1.73 (2.71) | 6.3 (7.01) | 120.96 (111.78) | 145.22 (76.69) |

aim of our study is to investigate the value of B cells subsets as biomarkers in patients with active LN, in patients at the onset of renal manifestation or with renal flare, and finally in nephritic patients in relation to their clinical and laboratory characteristics at the baseline and during the course of the disease.

Methods 50 patients with active LN at disease onset or disease flare were enrolled and evaluated every three months. Laboratory, immunological and disease activity data were collected at the baseline and at 6(T6), 12(T12), 24(T24), 36(T36) months and at the last follow-up(FU). Number of renal flares, time to renal remission and persistent proteinuria at the last FU were considered. B cell subsets were evaluated at baseline through cytofluorimetry and classified using C27/IgD classification. The characterisation of B cells subsets was realised in 50 LN patients and 37 healthy controls.

Results LN patients had a lower percentage of CD19⁺ cells than controls (9.2% vs 10.6%; $p=0.01$) as well as a lower percentage of memory unswitched cells CD27⁺IgD⁺ (10.7% vs 15.3%; $p<0.001$) while LN patients had a higher percentage of plasmablasts and double negative memory cells CD27-IgD⁻ (respectively 5.9% vs 1%; $p<0.001$ and 10.9% vs 4.1%; $p=0.01$).

No significant differences regardless B cells subsets were found between early LN patients and long ones as well as between LN patients at the onset and LN patients during renal flare. We found a correlation between an higher disease activity (assessed with SLEDAI 2K) and lower percentage of memory B cells IgD-CD27⁺ ($p=0.02$). Double negative B cells CD27-IgD⁻ tended to be correlated with an higher disease activity. Of interest the correlation between persistent proteinuria detected during the follow-up and a lower percentage of plasmablasts at the baseline ($p=0.015$).

Conclusion The alteration of B cells subsets is an early event in LN without differences regardless the timing of renal involvement (nephritic onset or later LN development). The association between persistent proteinuria and a lower percentage of plasmablasts at the baseline could be a negative prognostic factor considering the correlation between persistent proteinuria and worse renal outcome.

PS1:10 EFFECTS OF BELIMUMAB TREATMENT ON B CELL HYPERACTIVITY AND TYPE-I INTERFERON EXPRESSION IN PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS

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10.1136/lupus-2018-abstract.59

Purpose Belimumab, a monoclonal anti-BAFF antibody, has been approved for patients with active systemic lupus erythematosus (SLE) despite standard of care immunosuppressive treatment (ST). However, the interference of belimumab with pathogenetic pathways of SLE is not fully understood. B cell hyperactivity and overexpression of type-I interferons (IFN) have been shown to be key elements in the pathogenesis of SLE. This study shows the effect of belimumab on biomarkers representing B cell hyperactivity and IFN expression in SLE patients.

Methods 20 SLE patients treated with belimumab (BT), 82 SLE patients with ST and 30 matched healthy controls (HC)

were recruited. Siglec-1 expression on monocytes representing IFN signature, BCMA expression on different B cell subsets and the frequency of activated naive B cells (aNB) in PBMCs were analysed by FACS. Serum levels of BAFF plus soluble receptors sBCMA and sTACI were determined by ELISA.

Results Compared to ST, BCMA expression was reduced in BT on naive B ($p<0.001$) and memory B cells ($p<0.05$) but not on aNB, plasmablasts and plasma cells. In comparison to HC, BCMA expression was similar on all B cell subsets, except on aNB where it was higher in BT ($p<0.001$). The frequency of aNB among total B cells was reduced in BT compared to ST ($p<0.001$) and was comparable to HC. Siglec-1 expression on monocytes did not differ significantly between BT and ST; both groups showed a rise compared to HC (each $p<0.001$). There was no significant difference after belimumab treatment. Furthermore, serum BAFF levels in ST and BT were higher than in HC (each $p<0.001$), but did not differ significantly between BT and ST. Serum levels of sBCMA ($p<0.05$) and sTACI ($p<0.001$) were lower in BT compared to ST and also after belimumab treatment (each $p<0.05$). BT's sTACI levels were lower than in HC ($p=0.01$).

Conclusions This study provides deeper insights into the impact of belimumab on several pathogenetic pathways of SLE activity. Regarding the inhibition of B cell hyperactivity, one key pathogenetic element of SLE, belimumab treatment showed distinct advantages. Furthermore, these results suggested that belimumab treatment did not impair the type-I IFN pathway.

PS1:11 THE INTERFERON BIOMARKER SIGLEC1 REFLECTS DISEASE ACTIVITY IN PAEDIATRIC SYSTEMIC LUPUS ERYTHEMATOSUS

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10.1136/lupus-2018-abstract.60

Introduction SIGLEC1 (sialic acid-binding Ig-like lectin 1, CD169) is a monocytic adhesion molecule induced by interferon - α . In adult systemic lupus erythematosus (SLE), SIGLEC1 correlates cross-sectionally and longitudinally with disease activity. The aim of this work was to examine whether SIGLEC1 also reflects the disease activity in paediatric SLE.

Methods Over a period of 29 months the disease activity was clinically evaluated using SLEDAI (SLE-Disease Activity Index-2000). In 28 consecutive paediatric SLE patients (mean age 16 years, range 3–38 years, 86% female, 14% male), the number of SIGLEC1 molecules per CD14⁺ on blood monocyte was quantified using flow cytometry. At the same time, the level of anti-ds DNA-antibody titer (ELISA) and the concentration of complement factors C3 and C4 (nephelometry) were determined. The association between SIGLEC1, C3, C4 and ds DNA-antibody with SLEDAI was estimated using a mixed linear model to model the repeated measurement of parameters within a patient. The cut-off for the change in SIGLEC1 between two consecutive visits to predict minimal clinical improvement or worsening in SLEDAI was chosen on the maximum Youden Index.