functioning (61.1 ± 24.9 versus 55.0 ± 26.5 ; $P < 0.001$), role physical (53.2 ± 26.9 versus 50.3 ± 27.7 ; $P = 0.036$), bodily pain (49.5 ± 23.8 versus 47.1 ± 25.3 ; $P = 0.016$), FACIT-Fatigue scores (30.5 ± 11.8 versus 29.3 ± 11.9 ; $P = 0.046$), EQ-5D scores (0.75 ± 0.18 versus 0.72 ± 0.19 ; $P = 0.004$) and EQ-5D visual analogue scale (VAS) scores (64.6 ± 19.4 versus 61.7 ± 18.6 ; $P = 0.001$). The difference in SF-36 physical functioning was the greatest one among the SF-36 parameters, exceeding the corresponding MCID (≥ 5.0 points). The association between AMA use and better physical functioning was still significant after adjustment for potential confounding factors (standardised coefficient, $\beta = 0.08$; $P = 0.001$). In this analysis, Asian patients performed better in physical functioning ($\beta = 0.07$; $P = 0.004$) while African/African American patients performed worse ($\beta = -0.07$; $P = 0.003$). High disease activity ($\beta = -0.09$; $P < 0.001$) and organ damage ($\beta = -0.12$; $P < 0.001$) were also independent factors of worse physical functioning, whereas corticosteroid use independently improved the outcome ($\beta = 0.06$; $P = 0.022$).

Conclusion: AMA use contributes to better physical functioning in patients with SLE, independently of other factors.

Acknowledgement: The authors would like to thank GlaxoSmithKline (Uxbridge, UK) for granting access to the data from the BLISS-52 and BLISS-76 trials (ClinicalTrials.gov identifiers NCT00424476 and NCT00410384, respectively) through the Clinical Study Data Request (CSDR) consortium.

Disclosure of Interests: None declared

DOI: 10.1136/annrheumdis-2019-eular.6430

FRI0206 HYDROXYCHLOROQUINE BLOOD LEVELS PREDICT RETINOPATHY IN SLE

Michelle A. Petri¹, LI Jessica¹, Marwa Elkhalfi², Daniel Goldman¹, Laurence Magder³. ¹Johns Hopkins University School of Medicine, Rheumatology, Baltimore, United States of America; ²Alexandria University, Medicine, Alexandria, Egypt; ³University of Maryland, Epidemiology and Public Health, Baltimore, United States of America

Background: Hydroxychloroquine (HCQ) retinopathy after 10 years or more of use is more frequent than previously appreciated. This led to new ophthalmology guidelines that changed the recommended dosing from 6.5 mg/kg to 5 mg/kg (1). However, it is not clear that the lower dose of hydroxychloroquine will have the same efficacy for SLE activity or the same protective role against cardiovascular risk factors and thrombosis.

Table 1. Risk of HCQ retinal toxicity (univariate)

Characteristic	No n (%)	Yes n (%)	p	P for Trend
Sex			0.1029	
Female	475 (96.2)	19 (3.8)		
Male	39 (90.7)	4 (9.3)		
Ethnicity			0.3804	
White	238 (94.4)	14 (5.6)		
Black	215 (96.4)	8 (3.6)		
Other	61 (98.4)	1 (1.6)		
Age			<0.0001	<0.0001
<45	215 (99.5)	1 (0.5)		
45-59	175 (95.6)	8 (4.4)		
60+	124 (89.9)	14 (10.1)		
HCQ max			0.0340	0.0143
1 (0 to 1182)	161 (98.8)	2 (1.2)		
2 (1183 to 1752)	157 (95.2)	8 (4.8)		
3 (1753 to 6281)	153 (93.3)	11 (6.7)		
HCQ duration			0.0006	0.0002
1 (0 to 8yrs)	158 (98.8)	2 (1.2)		
2 (9 to 15yrs)	139 (97.2)	4 (2.8)		
3 (16 to 48yrs)	154 (90.1)	17 (9.9)		
BMI			0.1701	0.0160
<20	50 (98.0)	1 (2.0)		
20-25	171 (97.7)	4 (2.3)		
25-30	159 (95.2)	8 (4.8)		
30-35	76 (95.0)	4 (5.0)		
35+	58 (90.6)	6 (9.4)		
HTN Ever			0.0020	
Yes	276 (93.2)	20 (6.8)		
No	238 (98.8)	3 (1.2)		

Objectives: We asked whether hydroxychloroquine blood levels could help identify those at greater future risk of retinopathy.

Methods: We analyzed data on 537 SLE patients from a clinical cohort who had repeated assessments of HCQ blood concentrations, and were evaluated one or more times for retinopathy (300 single retinopathy exam, 149 two and 88 three or more assessments). The patients were 92% female and 42% Caucasian. Hydroxychloroquine blood levels were performed as previously described. In our analysis, HCQ toxicity was defined dichotomously by a retina expert: all those with a value of "No" or "Possible" were categorized as not having HCQ toxicity, and those who had a "Yes" were categorized as having it. Mean and maximum HCQ blood concentration over all cohort visits prior to the final retinopathy assessment were calculated. Risk of HCQ toxicity was then assessed in tertiles defined by these variables.

Results:

Conclusion: Our data show that the risk of HCQ retinopathy is higher in men and Caucasians. As expected, it is higher in older patients and with greater duration. We also found that BMI and hypertension were predictive of HCQ retinopathy. For the first time, our data show the utility of HCQ blood levels in predicting retinopathy. This would allow clinicians to either decrease dose or increase monitoring in those with high blood levels.

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Acknowledgement: The Hopkins Lupus Cohort was funded by NIH Grant R01-AR069572

Disclosure of Interests: Michelle A Petri Shareholder of: Pfizer, Merck, Grant/research support from: AstraZeneca, Exagen, Consultant for: Eli Lilly, GSK, Merck EMD Serono, Janssen, Amgen, Novartis, Quintiles, Exagen, Inova Diagnostics, AstraZeneca, Blackrock, Glenmark, UCB, and the Annenberg Center for Health Sciences, Jessica Li: None declared, Marwa Elkhalfi: None declared, Daniel Goldman Shareholder of: Pfizer, Merck, Laurence Magder: None declared

DOI: 10.1136/annrheumdis-2019-eular.7516

FRI0207 BASELINE LEVELS OF BAFF, APRIL AND CD8+ EFFECTOR MEMORY CELLS AS PREDICTORS OF SLEDAI RESPONSE TO BELIMUMAB THERAPY

Francesca Regola¹, Silvia Piantoni¹, Laura Andreoli¹, Torsten Lowin², Rajesh Kumar¹, Paolo Airo¹, Franco Franceschini¹, Angela Tincani¹, Georg Pongratz². ¹U.O. Rheumatology and Clinical Immunology, ASST Spedali Civili di Brescia, Department of Clinical and Experimental Sciences, Brescia, Italy; ²University Hospital Düsseldorf, Department of Rheumatology and Hiller Research Center for Rheumatology, Düsseldorf, Germany

Background: Systemic lupus erythematosus (SLE) patients show high circulating levels of BlyS (B lymphocyte stimulator, also known as BAFF) and of other cytokines belonging to the tumor necrosis factor (TNF) superfamily [1]. Belimumab is a monoclonal antibody against soluble BlyS used for treatment of refractory SLE. Although B cells are the main target of this therapy, a BlyS-dependent T cell activation pathway has also been demonstrated [2]. Clinical studies showed that high levels of anti-DNA antibodies and low complement at baseline are predictors of response to Belimumab treatment.

Objectives: Our study aims at exploring the role of biomarkers belonging to the TNF superfamily and of effector T-lymphocytes as predictors of response.

Methods: Twenty-one patients with SLE received Belimumab. Clinical evaluation and laboratory test were performed at baseline and after six and twenty months of therapy. Biomarkers belonging to the TNF superfamily (BAFF, APRIL, sBCMA, sCD40L, sTACI, TWEAK) were tested by high-sensitivity ELISA in all patients and lymphocyte immunophenotyping was performed by flow cytometry in ten subjects. SLE-disease activity was assessed by SLEDAI-2K score.

Results: BAFF and APRIL baseline serum levels and the number of CD3+CD8+ effector memory T cells were correlated positively with SLEDAI-2K improvement after 12 months of treatment (Pearson correlation=0.535 ($p=0.015$), 0.504 ($p=0.023$) and 0.654 ($p=0.040$)). After backwards exclusion from linear regression analysis including SLEDAI-2K, effector T cell relative number and BAFF or APRIL at baseline, only APRIL remained as significant independent predictor of SLEDAI-2K improvement after 12 months of therapy (adjusted R square=0.649; $p=0.025$). Moreover, after comparing TNF-family members serum levels and SLEDAI-2K at baseline, only BAFF showed the best predictive value (adjusted R 0.564, $p < 0.001$).