Conclusion: Plasma proteome analysis has identified a protein signature associated with response to RTX in SLE. These findings will be validated in independent cohorts and may offer the ability to predict response to RTX in lupus patients.

Protein Interaction Network of the 9 proteins from the multivariable model (with one additional level added). Cyan/magenta lines shown known interactions. Other colours show predicted interactions.

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SAT0192

TRAJECTORIES OF LUPUS DISEASE ACTIVITY OVER TIME IN THE CLINICAL TRIAL SETTING REVEALED BY LATENT CLASS MIXED MODELS

J. Reynolds^{1,2}, J. Prattley³, M. Lunt³, N. Geifman⁴, I. N. Bruce^{3,5}. ¹University of Birmingham, Institute of Inflammation and Ageing, Birmingham, United Kingdom; ²Sandwell and West Birmingham Hospitals NHS Trust, Rheumatology Department, Birmingham, United Kingdom; ³University of Manchester, Division of Musculoskeletal and Dermatological Sciences, Manchester, United Kingdom; ⁴University of Manchester, Division of Informatics, Imaging & Data Sciences, Manchester, United Kingdom; ⁵Manchester University NHS Foundation Trust, NIHR Biomedical Research Centre, Manchester, United Kingdom

Background: There is considerable debate regarding the most appropriate outcome measures for clinical trials in systemic lupus erythematosus (SLE). We propose that studying changes in disease activity over time may yield important information above and beyond fixed endpoints at 12 months.

Objectives: To compare outcomes and predictors of response using i) traditional response definitions at a fixed time point and ii) trajectories of disease activity over time in a clinical trial dataset.

Methods: Data from the phase 3 clinical trial of Epratuzumab (EMBODY) in patients with active SLE were reanalysed. Response at 12 months was defined as: reduction to ≤ 1 BILAG B score, no increase in SLEDAI-2K score and no increase in prednisolone dose. Latent class mixed models (LCMM) were constructed using the numerical BILAG-2004 (nBILAG) score (where A=12, B=8, C=1, D/E=0) from the screening visit until trial end. Cumulative prednisolone and Epratuzumab exposure was determined by estimating the area under the dose-time or concentration-time curves (AUC) respectively.

Results: 1202 patients were included with a median disease duration of 5.6 [1.9, 12.7] years and baseline nBILAG score of 20 [16, 24]. At 12 months there were 564/1202 (46.9%) responders. There was no association between receiving Epratuzumab and response. Responders were older, with lower baseline nBILAG score and baseline steroid dose. Using a cubic spline LCMM in the whole cohort, 5 trajectories were identified: Non-responders (NR, 33.9%), rapid responders (RR, 36.7%), slow responders (SR, 20.7%), flare (F, 4.7%) and high disease activity (HDA, 3.9%) (figure). Of the 564 12-month responders, 113 (20.4%) were in the NR latent class whilst 417 (73.9%) were in RR or SR classes. Whilst there were no differences in study drop-out due to adverse events, withdrawal due to inefficacy was 20.6% in NR compared to 8.4% in RR and 7.6% in SR.

In multivariable logistic regression models adjusted for age, gender and study drop-out, being a responder (RR or SR) was significantly associated with activity

in constitutional, musculoskeletal and cardiorespiratory BILAG domains, higher baseline and cumulative steroid exposure, and receiving active drug.

There was a trend towards higher baseline CD19+ counts in RR compared to NR or SR ($p=0.108$) but in a population-averaged multivariable linear model only baseline CD19+ count, Epratuzumab and steroid dose were associated with number of CD19+ cell over time ($p<0.001$ for each).

Conclusion: Compared to a fixed end-point at 12 months, LCMM identified trajectories of disease activity and an association between clinical improvement and receiving active drug. Predictors of response vary significantly according to the response definition used.

Table. Comparison of predictors of response between the 2 models

	Response at 12 months	Response latent call (RR or SR)
Age	Yes	No
Baseline gBILAG score	Yes (negative)	Yes (positive)
Baseline steroid dose	Yes	Yes
Active disease		
Constitutional	No	Yes
Musculoskeletal	No	Yes
Cardiorespiratory	No	Yes
Gastroenterological	Yes	No
Anti-Smith	Yes	No
Low C3	Yes	No
Epratuzumab	No	Yes

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SAT0193

A PHASE 3, OPEN-LABEL, CONTINUATION STUDY EVALUATING LONG-TERM SAFETY AND EFFICACY OF BELIMUMAB IN PATIENTS FROM JAPAN AND KOREA WITH SYSTEMIC LUPUS ERYTHEMATOSUS, FOR UP TO 7 YEARS

Y. Tanaka¹, S. C. Bae², D. Bass³, M. Chu⁴, P. Curtis⁵, K. Derose³, B. Ji⁵, R. Kurrasch³, J. Lowe⁵, P. Meizlik³, D. Roth³. ¹University of Occupational and Environmental Health, Kitakyushu, Japan; ²Hanyang University Hospital for Rheumatic Diseases, Seoul, Korea, Rep. of (South Korea); ³GlaxoSmithKline, Collegeville, United States of America; ⁴GlaxoSmithKline (at the time of the study), Collegeville, United States of America; ⁵GlaxoSmithKline, Uxbridge, United Kingdom

Background: Systemic lupus erythematosus (SLE) is an autoimmune disorder more prevalent in the Asian population vs Caucasians. Belimumab (BEL), a monoclonal antibody targeting B-lymphocyte stimulator, is approved in patients (pts) ≥ 5 years with active, autoantibody-positive SLE.

Objectives: Evaluate long-term safety and efficacy of intravenous (IV) BEL + standard SLE therapy (SST) in pts with SLE in Japan/Korea.

Methods: In this Phase 3, multicentre, open-label (OL) study (BEL114333; NCT01597622), eligible (≥ 18 years of age) completers of the double-blind phase of GSK study BEL113750 in Japan and South Korea or the subcutaneous OL phase of GSK Study BEL112341 in Japan, received monthly BEL 10mg/kg IV