Abstract 218 Figure 1

The relationships between continuous covariates (cumulative PNL, number of escalations, number of de-escalations, time to first escalation, number of mild-to-moderate flares, number of severe flares and change in damage index) and cluster were examined using analysis of variance (ANOVA) and Tukeys HSD.

Results A total of 210 HDAS periods (104 patients) were identified. Of the HDAS periods, patients were classified as treatment naïve (10%), HCQ inadequate response (20%), IS inadequate response (68%), and combination IS inadequate response (2%). The most commonly used IS was mycophenolate (23% of all HDAS periods). The trajectories were categorized into 3 final clusters: Cluster A (42/210) had more escalations than Cluster B (132/210) and Cluster C (36/210), see figure 1. There was no difference between clusters in the duration of time spent in HDAS, but a trend for higher cumulative PNL in Cluster A and they had significantly more and earlier escalations than Cluster B and C. Damage accrual appeared to be highest in Cluster C (the de-escalators) although not statistically significant. There was no difference between the distribution of the baseline treatment groups in each cluster.

Conclusions Treatment trajectories can be described using clustering that examines treatment escalations and de-escalations. This pilot study showed that treatment trajectories appear to have an effect on clinical outcomes. Further studies are planned to explore the relationship of patient characteristics or physician treatment decisions have on these clusters.

Funding Source(s): nil

219 EFFICACY AND SAFETY OF BELIMUMAB IN EXTENSION STUDIES OF 74 PATIENTS WITH ACTIVE SEROPOSITIVE SYSTEMIC LUPUS ERYTHEMATOSUS. RESULTS OF A SINGLE BRAZILIAN CENTER

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10.1136/lupus-2019-lsm.219

Background Our clinical research center have been conducting evaluation for innovative therapies in patients with Systemic Lupus Erythematosus during the past 15 years. In the present study we combined the results observed on extension studies from four different trials in patients receiving either intravenous or subcutaneous, belimumab and evaluated for activity, adverse events, in Caucasian and Black Brazilian patients.

Methods Seventy four patients were part of the combined study. The Lupus Low Disease Activity State (LLDAS) that has been shown to be a valuable tool to detect response or failure in trials were used in this study and statistical comparisons between the different result groups were determined. The period of evaluation ranged from 12 to 48 months.

Results Seventy four patients completed the initial study. Four refused to continue the extension evaluation. Seven belonged to the black group (10%), sixty three were Caucasian (90%). One patient was discontinued due to pregnancy. Nine received the subcutaneous presentation (12.8%). In subgroup analysis

analysis one patient in the black group had flare (14.2%) five in the intravenous administration had severe flares (8.1%) and were discontinued. During the evaluation ten had flares that were adjusted with steroids (eight articular or skin reactivation) and two with renal disease. On the five severe flares two required hospitalization. The mean time duration to achieve LLDAS was six months. Twenty seven achieved steroid free status and remained two patients on 2.5 mg and seventeen stable on daily 5.0 mg of prednisone.

Conclusions Using the LLDAS criteria response, it was possible to show that the majority of patients with active SLE on all three groups studied intravenous, subcutaneous and black race received belimumab for prolonged periods go into remission steroid free or in low disease activity in association with the correspondent immunosuppressive treatment.

Funding Source(s): Funding source Institutional and GSK.

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CLINICAL CHARACTERISTICS AND REMISSION OF PATIENTS WITH SYSTEMIC LUPUS ERYTHEMATOSUS IN CHINA: RESULTS FROM SLE TREATMENT AND RESEARCH GROUP (CSTAR) REGISTRY WITH A REAL-TIME COLLECTING SYSTEM

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10.1136/lupus-2019-lsm.220

Background To develop a new system to study the real-world clinical characteristics and remission of systemic lupus erythematosus based on the first and largest registry cohort in China.

Methods Based on previous experience of CSTAR registry from 2009, a new online platform through mobile application program (APP) was designed to continuously collect real-time data during clinical practice with predesigned case report form. Baseline and follow-up data were directly collected by physician at clinic, uploaded via our APP and integrated into database for analysis immediately, including demography, clinical manifestations, disease activity (SLEDAI-2K), organ damage (SLICC Damage Index), lab results, imaging and medications. Biological samples were preserved for future study. Along with data collection, data cleaning and validation were managed by a professional backstage statistician to ensure quality.

Results A total of 13,699 SLE patients from 236 different centers have been registered up to December 2018. The male to female rate was 1:12 (1076/12,623). The average age at onset, at diagnosis and at enrollment were 30.7 y, 31.7 y and 35.5 y respectively. The top three involved organ systems at entry were lupus nephritis (36%), hematologic involvement (35.8%) and neuropsychiatric disorder (5.7%). In addition, 637 patients (4.6%) were found to be diagnosed with pulmonary arterial hypertension, and 166 patients (1.2%) had interstitial lung disease at baseline. The rate of clinical remission and complete remission at latest follow-up were 3.2% and 2.8%.

Conclusions CSTAR firstly built a direct online reporting and collecting system, which can continuously register and follow SLE patients all around China, giving us an opportunity to study the real-world conditions and provide the possibility to

apply Treat-To-Target strategy into daily practice for Chinese SLE patients

Funding Source(s): Chinese National Key Research R and D Program (2017YFC0907601, 2017YFC0907602, 2017YFC0907603), the Chinese National High Technology Research and Development Program, Ministry of Science and Technology (2012AA02A513) and the Chinese National Key Technology R and D Program, Ministry of Science and Technology (2008BAI59B02).

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META-ANALYSIS EXAMINING THE CLINICAL SIGNIFICANCE OF MONITORING OF HYDROXYCHLOROQUINE LEVELS IN SLE

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10.1136/lupus-2019-lsm.221

Background Despite the pivotal role hydroxychloroquine (HCQ) plays in treating SLE, less than 50% of patients take HCQ as prescribed. Non-adherence versus lack of effect to HCQ are difficult to distinguish, underscoring the importance of measuring HCQ blood levels to assess adherence. Despite this, information and consensus on the clinical impact of incorporating routine testing of HCQ blood levels is lacking. Therefore, we systematically reviewed publications examining the correlation between 1) HCQ levels and adherence, and 2) HCQ levels and SLEDAI scores, in SLE patients. We hypothesized that low HCQ levels would correlate with non-adherence and higher SLEDAI scores.

Methods A comprehensive search was performed using MeSH heading and keywords in Medline, Embase, CINHL and Web of Science databases. We selected observational and interventional studies that measured HCQ levels and assessed adherence and/or SLEDAI scores in adults with SLE. Newcastle Ottawa Scale and Cochrane Collaboration Risk Assessment tools were used to rate the quality of observational and intervention studies, respectively. We used Forest plots to compare pooled estimates (95% CI) of correlations between HCQ levels and patient or physician reported nonadherence and SLEDAI scores. Heterogeneity was assessed using I².

Results From 306 manually reviewed studies, four studies analyzing correlation between HCQ levels and adherence, and five studies examining the correlation between SLEDAI and HCQ blood levels, met inclusion criteria. The odds of nonadherence measured by physician or reported by the patient was 3 times higher in patients with below threshold HCQ levels, compared to those with higher HCQ levels (OR 2.95, 95% CI 1.63, 5.35, p<0.001, I² 49%) (figure 1, panel A). The mean SLEDAI score was 3.33 points higher in groups with HCQ levels below threshold, but this trend was not statistically significant (3.33, 95% CI -0.60, 7.26, p=0.097, I² 99%) (figure 1, panel B). Risk of bias assessment revealed three poor quality studies which were excluded in sensitivity analysis which did not change results. Limitations of our analysis include study heterogeneity and lack of consensus on HCQ level interpretations.

Conclusions We found good correlation between HCQ levels and non-adherence. Low HCQ levels showed higher mean