(CD19^+CD20^+IgD^+CD27^-) declined significantly first at month 6 (p=0.033) and pre-switching B cells (CD19^+CD20^+IgD^-CD27^-) showed a trend towards a decrease (p=0.052). Plasma cells (CD138^+CD27^+CD19^+CD3e^-CD20^-) remained stable during the study period, as did T cells and monocytes (p>0.2). Despite continuously decreasing SLE Disease Activity Index, immunological changes correlated with clinical improvements only during early time points (month 0–3). Interestingly, high baseline B cell counts were predictive of non-attaining Lupus Low Disease Activity State at month 24 (area under the ROC-curve: 0.95).

Conclusions B cell alterations betided in two distinct phases, a rapid early and a gradual late phase. Late clinical improvements might reflect preceding immunological changes, implying that early treatment evaluation and discontinuation might underestimate delayed improvements reflecting the late B cell changes.

Results We demonstrated that TLR7-mediated IFN-α production were up-regulated and were positively correlated with disease activity, conversely, TLR9-mediated IFN-α production were down-regulated in SLE. The differential regulation of TLR7/9 responses of pDCs was not dependent on expression levels of TLR7/9. Furthermore, in vitro experiments revealed that up-regulation of TLR7 response was caused by pre-treatment with type I IFNs, conversely, down-regulation of TLR9 response was caused by pre-treatment with type II IFN.

Conclusions This is the first report demonstrated the differential regulation of TLR7- and TLR9- mediated IFN-α production from pDCs in SLE, namely, caused by priming effects of type I and type II IFNs. Taken together, TLR7-, but not TLR9-, mediated IFN-α production contributes the pathogenesis of SLE, and TLR7 could be a potential therapeutic target for SLE.
Baseline prednisone doses were similar between groups (Table 1). Across the population, cumulative prednisone dose over 52 weeks was significantly lower in the belimumab group versus placebo (p=0.0005; Table 1. For subjects with baseline dose $\geq 7.5$ mg/day, the median number of days that prednisone dose was $\leq 7.5$ mg/day and/or reduced by 50% was zero in both groups; however, the 75th percentile was larger for belimumab (213.5 days) versus placebo (172.0), reflecting the subjects who achieved longer durations of reduced steroid use within the belimumab group (p=0.0288; Figure 1). More subjects in the belimumab group had a dose reduction of $\geq 25\%$ to $\leq 7.5$ mg/day during Weeks 40–52 (belimumab, 15.6%; placebo, 10.9%; p=0.0721). Adverse event incidences were similar (belimumab, 75.7%; placebo, 74.9%).

Conclusions These results suggest belimumab is more effective than placebo in reducing steroid use across 52 weeks in this population.

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