

Flare prevention in systemic lupus erythematosus patients treated with belimumab versus standard of care: a propensity score-matched comparative, case-control study

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Background and objectives

Belimumab (BLM) is a monoclonal antibody targeting BAFF cytokine, which has shown efficacy and safety in the treatment of systemic lupus erythematosus (SLE). A pooled post-hoc analysis from randomized controlled trials BLISS-52 and BLISS-76 suggested that belimumab is effective reducing the risk of severe flare in patients with SLE (1). However, data on flare prevention from controlled trials on the subject is lacking. We aim to analyse the risk of flare in a multicentre SLE cohort treated with BLM as compared with a control cohort from RELESSER register, treated with standard of care (SoC).

Methods and patients

A longitudinal retrospective study, comparing a multicentre cohort of patients treated with BLM (BLMc) (“Bel-SPAIN” cohort) versus a control group of patients treated with standard of care from RELESSER-PROS cohort. We adjusted for a flare risk propensity score (PS) to properly balance covariates (i.e., age, sex, disease duration, previous flare, nephritis, serologic activity, baseline SLEDAI, damage index (SLICC/ACR/DI) (SDI) and concomitant treatments: glucocorticoids and antimalarials). Once homogeneous groups were achieved, the distribution of cumulative flares was compared using the Wilcoxon test. The significance level was set at 0.05.

Results

Out of a total of 1137 SLE Caucasian patients (ACR-97 criteria) (BLMc n = 274; RELESSER n = 853), 102 from BLMc and 134 from RELESSER were PS matched (overall, 236 patients). Differences between BLMc and RELESSER control group, both for covariates and for flares rates are displayed in table 1. Only the follow-up duration turned out to be greater in BLMc than RELESSER group [4.67 (2.57) vs. 3.11 (0.339) years, respectively, p<0.001]. Up to 75/134 (56%) patients in RELESSER group underwent > 1 SLE flare during observation period, vs. 32/102 (33.3%) in BLMc. Regarding severe flares, 18/134 (13,4%) in RELESSER vs. 9/102 (8,8%) in BLMc were registered. The mean number of cumulative flares was significantly lower in BLMc (figure 1); however, not statistically significant differences were found for severe flares comparison.

Conclusions

According to a risk factor of SLE-flare adjusted analysis, patients on BLM treatment in real world setting have a decreased risk of flare when compared with those undergoing standard of care.

Table 1: Belimumab cohort (BLMc) vs RELESSER control group differences				
	BLMc (N=102)	RELESSER (N=134)	P-value	Overall (N=236)
Sex				
female	91 (89.2%)	123 (91.8%)	0.644	214 (90.7%)
Age at baseline				
Mean (SD)	46.4 (13.2)	47.2 (12.3)	0.649	46.9 (12.7)
Disease duration (years)				
Mean (SD)	15.9 (9.86)	14.7 (7.94)	0.588	15.2 (8.82)
SLEDAI				
Mean (SD)	4.99 (3.72)	4.50 (4.48)	0.118	4.71 (4.17)
C3 or C4 low				
N (%)	50 (49.0%)	71 (53.0%)	0.046	121 (51.3%)
Positive anti-DNA				
N (%)	63 (61.8%)	76 (56.7%)	0.517	139 (58.9%)
Previous severe flare				
N (%)	23 (22.5%)	32 (23.9%)	0.933	55 (23.3%)
Proteinuria (any time)				
N (%)	27 (26.5%)	24 (17.9%)	0.155	51 (21.6%)
Hydroxychloroquine				
N (%)	86 (84.3%)	115 (85.8%)	0.890	201 (85.2%)
GC dose at baseline				
<= 5 mg	50 (49.0%)	46 (34.3%)	0.0857	96 (40.7%)
> 5 y < 10 mg	13 (12.7%)	20 (14.9%)		33 (14.0%)
>= 10 y <30 mg	16 (15.7%)	19 (14.2%)		35 (14.8%)
>= 30 mg	1 (0.980%)	1 (0.746%)		2 (0.847%)
Without GC	22 (21.6%)	48 (35.8%)		70 (29.7%)
Follow up duration (years)				
Mean (SD)	4.67 (2.57)	3.11 (0.339)	<0.001	3.78 (1.87)
Cumulative flare (Global)				
Mean (SD)	0.647 (1.26)	1.32 (1.87)	<0.001	1.03 (1.67)
Median [Q1,Q3]	0 [0,1.00]	1.00 [0,2.00]		0 [0,1.25]
Severe cumulative flare				
Mean (SD)	0.108 (0.370)	0.172 (0.499)	0.276	0.144 (0.448)

