[3] Fragoulis GE, Soulaidopoulos S, Sfikakis PP, Dimitroulas T, Kitas GD. Effect of Biologics on Cardiovascular Inflammation: Mechanistic Insights and Risk Reduction. J Inflamm Res. 2021 May;Volume 14:1915–31.

Table 1. Demographic, laboratory and carotid Doppler characteristics.

	Characteristics	PsA patients with bDMARDs	PsA patients without bDMARDs	*p*
		(n= 27)	(n=40)	
Demographic	Age, years, mean (DE)	52.00 (7.24)	57.98 (8.93)	0.004
	Women, n (%)	13 (19.4)	18 (26.86)	NS
	Disease duration, years, median (iQR)	8.0 (4.0-14.0)	6.0 (3.0-10.7)	NS
	BMI, median (iQR)	29.4 (25.86-34.57)	28.46 (26.59- 31.75)	NS
	SBP, mean (DE)	128.59 (14.76)	129 (21.48)	NS
	DBP, mean (DE)	85.15 (10.54)	78.53 (11.78)	0.019
Laboratory profile	Cholesterol, mg/dL. mean (DE)	187.7 (39.51)	171.7 (36.59)	NS
	Triglycerids, mg/dL. median (iQR)	141.7 (100.3-199.7)	128.4 (94.8-173.9)	NS
	HDL, mg/dL, mean (DE)	48.1 (10.83)	47.5 (15.00)	NS
	LDL, mg/dL, mean (DE)	106.3 (30.73)	94.2 (34.31)	NS
	CRP, mg/dL. median (iQR)	0.34 (0.28-0.94)	0.62 (0.36-1.09)	0.05
	ESR, mm/H, median (iQR)	14.0 (8.0-18.0)	18.0 (11.0-31.5)	NS
Carotid Doppler	Unilateral CP, n	9	6	NS
	Bilateral CP, n	2	11	0.041

BMI body mass index, SBP systolic blood preassure, DBP diastolic blood preassure, CRP C-reactive protein, ESR erythrocyte sedimentation rate, CP carotid plaque

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AB0533

EFFECT OF RENIN-ANGIOTENSIN SYSTEM INHIBITORS ON RENAL REMISSION IN LUPUS NEPHRITIS: A REAL-WORLD SINGLE-CENTER STUDY

Keywords: Clinical trials, Systemic lupus erythematosus, Kidneys

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Background: Renin-angiotensin-system inhibitors (RASi) reduce urinary protein excretion and protect renal function in both diabetic and nondiabetic nephropathy. Few studies have focused on RASi in LN patients.
Objectives: The study aimed to provide real-world evidence to assess the effect of RASi in LN patients.
Methods: A total of 233 LN patients were included; 155 were RASi users, and 78 were not. The rate of proteinuria partial recovery (PPR), complete remission (CR), total remission (TR), the decline and decline rate of proteinuria at 6 and 12 months were compared by Chi-square test and Kaplan–Meier analysis. Propensity score matching (PSM) and Cox regression analysis was performed.
Results: The cumulative rates of PRR, TR and CR were 133 (85.8%), 103 (66.9%), and 53 (34.2%) in the RASi group compared to 66 (87.7%), 55 (71.1%), and 44 (57.2%) in the no RASi group at 6 months, respectively. At 12 months, the cumulative rates of PRR, TR and CR were 144 (99.4%), 115 (76.1%), and 83 (56.0%) in the RASi group and 73 (97.3%), 64 (83.5%) and 54 (71.3%) in the no RASi group, respectively. There was no statistically significant difference in cumulative PRR and TR rates between the two groups (p=0.601 and 0.203). The cumulative CR rate was significantly higher in the no RASi group (p=0.001). The UTP level of the RASi group was consistently higher than that of the no RASi group at 6 [0.5(0.2,1.6) vs. 0.3(0.1,0.7), p=0.003) and 12 months [0.2(0.1,0.6) vs. 0.1(0.1,0.3), p=0.008]. However, the ΔUTP was significantly higher in the RASi group [6 months: 2.6 (1.3, 5.1) vs. 1.2 (0.8, 2.4), p=0.001; 12 months: 3.3 (1.6, 5.4) vs 1.4 (0.9, 2.9), p=0.001], and the decline rate did not reach significance. Meanwhile, the serum SCr showed no difference between the two groups. The results were similar after PSM. Only HCQ usage was a prognostic predictor of PRR (HR 2.110, 95% CI: 1.223, 3.642, p=0.007).
Conclusion: RASi may not benefit the renal remission of LN, and the results need to be interpreted with caution. However, RASi may help to decrease urinary protein. Further high-quality randomized controlled trials are required to evaluate the RASi effects on proteinuria and renal prognosis.

REFERENCES:

[1] Agodoa, L. Y. Appel, L. Bakris, G. L,et al. Effect of ramipril vs amlodipine on renal outcomes in hypertensive nephrosclerosis: a randomized controlled trial; JAMA(2001) 285,21,2719-28.

[2] S. Dura´n-Barraga´n, G. McGwin Jr, et al. Angiotensin-converting enzyme inhibitors delay the occurrence of renal involvement and are associated with a decreased risk of disease activity in patients with systemic lupus erythematosus—results from LUMINA (LIX): a multiethnic US cohort. Rheumatology (2008) 47:1093–1096.

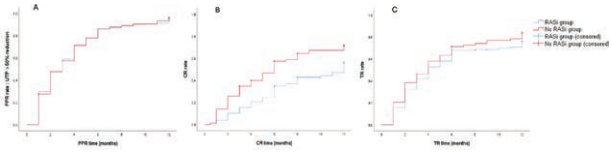

Figure 1. Kaplan–Meier plot of the cumulative rate of PPR (A), CR (B) and TR (C).

Table 1. Comparison of kidney indexes between the two groups at 3, 6, 9 and 12 months

	Before PSM			After PSM		
	RASi group	No RASi group	p value	RASi group	No RASi group	
3 months						
UTP	1.1 (0.4, 2.6)	0.5 (0.2, 1.5)	0.006	1.1 (0.5, 2.3)	0.8 (0.2, 1.7)	0.066
Alb	34.6±6.1	36.6±5.2	0.029	34.7±5.8	36.5±5.6	0.104
SCr	76.0 (66.0, 88.5)	74.5 (66.5, 82.5)	0.688	73.5 (65.0, 85.0)	77.0 (69.0, 83.0)	0.376
ΔUTP	2.3 (1.0, 4.6)	1.0 (0.5, 1.8)	0.001	1.9 (0.7, 4.2)	1.1 (0.5, 2.0)	0.021
6 months						
UTP	0.5 (0.2, 1.6)	0.3 (0.1, 0.7)	0.003	0.5 (0.2, 1.7)	0.3 (0.1, 0.7)	0.040
Alb	37.7±5.8	39.9±4.3	0.826	37.9±5.5	40.0±4.5	0.025
SCr	77.0 (67.0, 92.0)	74.0 (68.0, 84.0)	0.298	75.0 (65.0, 88.5)	73.5 (68.0, 84.8)	0.727
ΔUTP	2.6 (1.3, 5.1)	1.2 (0.8, 2.4)	0.001	2.2 (1.1, 4.5)	1.4 (1.0, 2.6)	0.054
9 months						
UTP	0.3 (0.1, 1.0)	0.2 (0.1, 0.5)	0.007	0.3 (0.1, 0.8)	0.2 (0.1, 0.7)	0.026
Alb	38.9±5.7	41.3±4.3	0.009	38.9±5.8	41.4±4.8	0.032
SCr	77.0 (66.0, 88.3)	81.0 (72.0, 86.0)	0.244	75.5 (66.3, 88.8)	81.5 (73.3, 86.0)	0.125
ΔUTP	2.8 (1.4, 5.2)	1.2 (0.7, 2.7)	0.001	2.7 (1.3, 4.7)	1.3 (0.9, 3.3)	0.021
12 months						
UTP	0.2 (0.1, 0.6)	0.1 (0.1, 0.3)	0.008	0.2 (0.1, 0.6)	0.1 (0.1, 0.4)	0.065
Alb	40.5±4.4	41.0±4.2	0.462	40.7±4.4	41.3±4.6	0.429
SCr	77.0 (68.0, 89.8)	74.0 (68.0, 82.0)	0.198	76.0 (68.0, 88.9)	75.0 (69.0, 85.0)	0.622
ΔUTP	3.3 (1.6, 5.4)	1.4 (0.9, 2.9)	0.001	2.7 (1.4, 5.0)	1.5 (1.0, 3.4)	0.015

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AB0534

TREATING SYSTEMIC LUPUS ERYTHEMATOSUS IN THE 21ST CENTURY: COMBINING RITUXIMAB WITH BELIMUMAB

Keywords: Systemic lupus erythematosus, Treat to target

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Objectives: efficacy of combination therapy with rituximab and belimumab in patients with systemic lupus erythematosus.
Methods: The study included 15 SLE pts (1M/14F) criteria with high (SLEDAI2K≥10 – 12pts.) and moderate (SLEDAI2K<10- 3pts.) disease activity; out of them 4 patients had lupus nephritis, 2- vasculitis. 1 pts had kidney damage, cerebrovasculitis and vasculitis. All patients fulfilled the Systemic Lupus Erythematosus International Collaborating Clinics (SLICC) disease classification criteria [1] for SLE Others have predominantly mucocutaneous and articular manifestations of SLE. The dose of oral glucocorticoids (GC) was: 60 mg in one patient with vasculitis, LN, cerebrovasculitis, and one patient with vasculitis received 20 mg of prednisone; in 11 patients from 10 to 5 mg; in 2 patients without oral glucocorticoids. All patients with SLE with kidney damage and vasculitis received mycophenolate mofetil or cyclophosphamide. Rituximab (RTM) was administered at a dose of 500-2000 mg, followed by the addition of belimumab (BLM) after 1-6 months at a standard dose of 10 mg/ kg once a month - a total of 7 infusions. The following parameters were evaluated: the effectiveness of therapy, the concentration of autoantibodies, the dose of oral corticosteroids initially at the time of RTM administration and then every 3 months after the initiation of BLM therapy.
Results: 13 pts demonstrated the decrease in clinical and laboratory SLE activity, starting from 3mo of follow-up. After the start of BLM infusions, a decrease in SLE activity was observed in all patients. Among them, 10 had SLEDAI-2K activity of less than 4 points. SLEDAI-2k Me 10 [10;16], after treatment of RTM and BLM 4[2;6]. Only one patient (№4) had an relapse of SLE, due to the delay

in receiving the infusion of BLM. He was receiving standard GC doses. In dynamics, a decrease anti-double DNA titres (Me 101 [36;200]U/ml vs 28 [8;67]Ед/мл), C3 (0,49 [0,42;0,78]g/l vs 0,71 [0,59;0,87] g/l), C4 (0,06 [0,045;0,1] g/l vs 0,12 [0,07;0,14] g/l) was registered. The GC dose was reduced in most patients (Table 1), but the previously prescribed immunosuppressive therapy continued. There were no cases of severe infection. We have not detected any new organ damage.

Table 1. Dose of oral glucocorticoids, mg

№ patient	Before RTM, mg	1st injection of BLM, mg	7th injection of BLM, mg	
1	20 mg	20 mg	15 mg	↓
2	7,5 mg	5 mg	5 mg	↓
3	5 mg	5 mg	5 mg	=
4	10 mg	10 mg	10 mg	=
5	5 mg	5 mg	5 mg	=
6	60 mg	7,5 mg	2,5 mg	↓↓↓
7	10 mg	2,5 mg	0 mg	↓↓↓
8	10 mg	10 mg	5 mg	↓
9	2,5 mg	2,5 mg	2,5 mg	=
10	10 mg	10 mg	5 mg	↓
11	0 mg	0 mg	0 mg	=
12	0 mg	0 mg	0 mg	=
13	15	15	10	↓
14	15	5	3,75	↓↓
15	20	10	10	↓

Conclusion: Combination therapy allows to gain control over disease activity in short time, due to the effect of RTM, while added BLM provides further prolongation of the effect achieved, minimizing the risk of flare. The use of such therapy contributes to a rapid and effective reduction in the activity of the disease, improvement of laboratory markers of SLE (at to ds-DNA, C3, C4), the use of lower doses of oral GCs. This combination may be used as a method of choice in pts with severe SLE involving vital organs, and in persistent cutaneous-articular disease and high immunological activity.

REFERENCE:

[1] Petri, M., et al. Derivation and validation of the Systemic Lupus International Collaborating Clinics classification criteria for systemic lupus erythematosus. Arthritis & Rheumatism 64.8 (2012): 2677-2686

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AB0535 EFFICACY AND SAFETY OF BELIMUMAB IN PATIENTS WITH CHILDHOOD-ONSET SYSTEMIC LUPUS ERYTHEMATOSUS:A SYSTEMATIC REVIEW AND META-ANALYSIS

Keywords: Systematic review, Systemic lupus erythematosus, Targeted synthetic drugs

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Background: Childhood-onset systemic lupus erythematosus (cSLE) is associated with higher disease severity than adult-onset lupus. Abnormal activation of B cells is a crucial link in their pathogenesis. Belimumab is a specific inhibitor of the soluble B lymphocyte stimulator and inhibits its binding to receptors and thus its activity [1,2]. However, the current clinical research evidence of this drug in children is insufficient, the relevant clinical data are mostly from prospective studies in adults,and there are no exact guidelines for clinical application in children.

Objectives: This study aimed to investigate the efficacy and safety of belimumab for treating children with cSLE.

Methods: We systematically searched PubMed, EMBASE, Wan Fang Data,Web of Science, the Cochrane Library, and Medline for randomized controlled trials, original case reports, and case series that described belimumab's efficacy in treating cSLE. A random-effects meta-analysis was performed to calculate its efficacy. Inconsistency was evaluated using the I2 and Egger tests to evaluate potential publication bias (STATA v.12.0).

Results: Five studies with 325 patients were included in the meta-analysis (Table 1). The age range of the included participants was less than 18 years; most were women. All patients received belimumab at a dosage of 10mg/kg every 2 weeks for the first three doses, then every 4 weeks thereafter. SLEDAI-2K was the main score,which was significantly reduced compared with the baseline[SMD= -1.106, 95%CI (-1.311,-0.901), P<0.001]. The number of oral corticosteroids was significantly decreased after the belimumab therapy[SMD = -1.21,95%CI (-1.72, -0.70), P<0.001]. Both Anti-double stranded DNA (Anti-dsDNA) and anti-nuclear antibodies (ANA) positive patients also decreased obviously[RR= 0.56, 95%CI (0.37,0.85), P=0.007; RR= 0.90, 95%CI (0.83,0.98), P=0.012]. Infection and thrush were the main adverse effects with rates of 26% and 4%,respectively, but all were classified as mild-moderate treatment-emergent adverse events. Serious adverse reactions are rarely reported.

Conclusion: Belimumab treatment in cSLE minimizes the use of hormones, and the incidence of adverse events such as infections was low, suggesting belimumab can effectively reduce disease activity safely and reliably. Long-term efficacy and safety still need a multicenter, large sample, long-term, in-depth research.

REFERENCES:

[1] Kamphuis S, Silverman ED. Prevalence and burden of pediatric-onset systemic lupus erythematosus. Nat Rev Rheumatol. 2010 Sep;6(9):538-46. doi: 10.1038/nrrheum.2010.121. Epub 2010 Aug 3. PMID: 20683438.

[2] Hahn BH. Belimumab for systemic lupus erythematosus. N Engl J Med. 2013 Apr 18;368(16):1528-35. doi: 10.1056/NEJMct1207259. PMID: 23594005.

Table 1. Available evidence including patients with cSLE treated with belimumab.

Study. Year.	Patients (include in analysis)	Age (year)	Gender (female %)	SLEDAI-2K	Dosage of hormone mg/d(mg/(kg·d))
Hermine I Brunner 2020	93(53)	14±0.75	94.6	NA	0w:7.5±3.81 52w:5.84±3.81
Ping Zeng 2021	256(169)	12.17±2.79	79.3	0w:12.06±7.38 28w:4.18±4.04	0w:35.02±18.88 28w:10.69±8.57 0w:(1.08±1.73) 28w:(0.27±0.2)
Dahai Wang 2022	26(26)	10.3±2.4	80.8	0w:10.33±10.27 4w:5±7.11 24w:4±3.16	0w:36.67±23.7 24w:11.67±11.85 52w:4.17±7.9
Qiong Wu 2022	60(60)	10.94±2.41	58.3	NA	NA
Yutong Gao 2022	17(17)	12.1±2.3	70.6	0w:10.67±11.32 4w:2.67±1.62 24w:1±2.43 28w:0.67±1.62	0w:(0.83±0.4) 28w:(0.27±0.08)

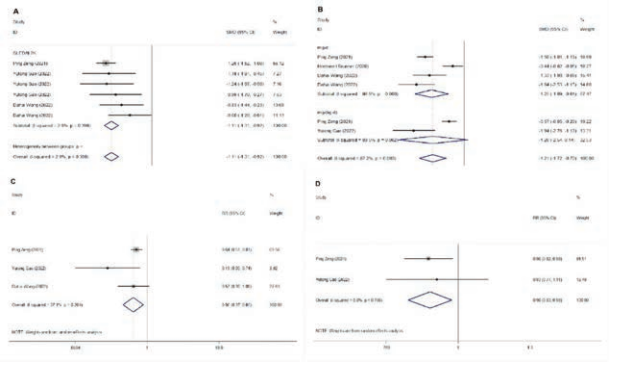

Figure 1. Efficacy of belimumab in patients with cSLE. (A) SLEDAI-2K scores. (B) oral hormone doses patients received. (C) dsDNA positive people. (D) ANA positive people. (A) - (D) are all changes before and after belimumab treatment.

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