

Correspondence

Anti-CD20 (rituximab) treatment for atopic eczema

To the Editor:

We read with interest the study by Simon et al.¹ published in the latest issue of the *Journal of Allergy and Clinical Immunology* reporting, for the first time, the use of anti-CD20 treatment in the management of atopic eczema.

Making similar assumptions and inspired by a series of articles demonstrating the effect of anti-CD20 treatment in autoimmune diseases,²⁻⁴ we initiated rituximab treatment in 2 patients with severe atopic dermatitis. We were particularly impressed by the effect of rituximab on the level of IgE in a trial of anti-CD20 treatment in systemic lupus erythematosus.⁵ As Simon et al, we assumed that anti-CD20 treatment might target complex immunopathologic reaction, resulting in chronic atopic eczema. B cells in this case are a logical therapeutic target, not only as antibody-producing cells but also as antigen-presenting cells for relevant allergens.^{6,7}

In the beginning of 2007, we recruited 2 patients with severe form of atopic dermatitis. Both patients were followed for years and were unsuccessfully treated with all available therapeutic options. At the time of inclusion to the study, their treatment was limited to the local care and antihistaminic agents. They had normal blood counts with the exception of increased eosinophils and typical laboratory markers associated with atopic eczema (Table I, time 0). Rituximab was administered twice in a 2-week interval at the recommended dose of 500 mg intravenously. One patient experienced an immediate reaction after injection, with temporary malaise and chills of short duration. There were no other adverse effects observed.

Clinical and laboratory data are shown in Table I. Despite temporary improvement demonstrated by the decrease of SCORAD scores (Table I), we did not observe significant improvement, as demonstrated in the study by Simon et al.¹ Furthermore, partial improvement only lasted until the tenth week after the initiation of the study, and subsequent deterioration of the clinical status led to the introduction of immunosuppressive regimens in both patients.

Concerning laboratory data, improved clinical status was reflected by lower eosinophil counts (Table I) that again increased in the 22nd week of the study. As expected, circulating B cells were not detectable after administration of rituximab. We detected a significant decrease of absolute plasma cell numbers (CD19⁺CD20⁻CD38⁺CD27⁺) in one of the patients. We could not confirm significant changes in CD8⁺ T lymphocytes, as described by Simon et al,¹ but we detected a significant decrease of CD4⁺ T_H2 lymphocytes in both patients (from 19 to 11 cells/ μ L and from 4 to 0.5 cells/ μ L, respectively; Table I). IgE levels were always in the high range, and we did not observe any changes in specific IgE levels. We also measured the numbers of myeloid and plasmacytoid dendritic cells in peripheral blood, without any significant changes during the observation period (data not shown).

In conclusion, in 2 patients with severe atopic eczema, we could not confirm substantial long-term improvement, as demonstrated in the study by Simon et al.¹ The most probable explanation for this discrepancy is the severity of the disease in our patients, who presented with the most challenging and most severe form of atopic dermatitis, as documented by SCORAD score and by the resistance to standard treatment modalities. A lower dose of rituximab, which was sufficient for elimination of circulating B cells but not sufficient for clinical effect, also remains one of the possible causes of different clinical outcome.

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TABLE I. Patients' characteristics and laboratory data

	Patient 1					Patient 2				
	Before therapy		After therapy			Before therapy		After therapy		
Time (wk)	0	2	6	10	22	0	2	6	10	22
SCORAD score	99	89		58		63	55		74	
Extent	98	81		70		41	41		24	
Intensity	17	15		10		11	11		14	
Subjective symptoms	20	20		9		16	8		20	
WBC ($\times 10^9/L$)	12.9	22.5	11.2	14.4	12.9	4.1	6.9	6.4	10.1	6.5
Eosinophils ($\times 10^9/L$)	1.61	1.08	1.13	1.28	0.83	0.46	0.64	0.54	0.10	0.67
Total serum IgE level (IU/mL)	30,956	33,642	40,900	52,371	21,523	11,718	11,679	13,132	12,211	7,731
CD4 ⁺ T _H 2 lymphocytes (cells/ μ L)	19.07	18.49	2.6	10.7		3.86	2.28	6.76	0.44	
Plasma cells (cells/ μ L)	5.17	6.83	2.78	4.40		5.00	0.15	0.04	0.02	

CD4⁺ T_H2 lymphocytes are immunophenotyped as CD3⁺CD4⁺CRTH2⁺ cells and plasmatic cells as CD19⁺CD20⁻CD38⁺CD27⁺ cells.

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