AUTOIMMUNE BULLOUS DISEASES

SELECTIVE IMMUNOADSORPTION OF ANTI-DESMOGLEIN-3 AUTOANTIBODIES IN PEMPHIGUS VULGARIS

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Introduction: In patients with pemphigus vulgaris autoantibodies (IgG) have a high affinity for desmoglein 3 (Dsg3), the structural component of desmosomal proteins. It seems relevant to create an immunosorbent capable of highly selective binding and removing of anti-desmoglein antibodies/

Objectives: To obtain an affinity sorbent for binding circulating anti-Dsg3 IgG in patients with pemphigus vulgaris and to study its regeneration stability.

Materials and Methods: To create a sorbent, Affigel-15 agarose and polyacrylamide gel (Bio-Rad, USA) and recombinant human Dsg 3 obtained in yeast cell culture Yeast (MyBiosource, USA) were used. The bond density Affigel-15: Dsg3 was 1: 2.
Studied the effect of sorbent regeneration on the sorption activity of serum anti-Dsg3 IgG of the patient with pemphigus vulgaris with an activity of 200 RU/ml. Affigel-15 without Dsg3 was used as blank. 100 µl of serum of the patient was added to 20µl of sorbent. The suspension was incubated for 30 min at room temperature while stirring, precipitated by centrifugation (1000g, 1 min). The serum activity after sorption was determined in supernatant samples. After each immunoabsorption procedure, the sorbents were regenerated by 0.05M solution of glycine buffer pH 2.5, then washed three times with an application buffer. In total there were 12 cycles of sorbents sorption-regeneration, the residual activity of the serum was determined after each cycle.

Results: The stability of the Affigel-15-Dsg3 matrix decreased by 20% after the eighth regeneration cycle and remains at this level until the last twelfth cycle. The sorption capacity

of the matrix without Dsg3 decreased by 10% during the study.

Conclusions: The possibility of creating a specific sorbent based on Affigel-15 agarose and polyacrylamide gel and recombinant protein Dsg3 has been shown, its stability during seven regeneration cycles has been confirmed. The described properties of the sorbent open up the prospect of its repeated use.