

¹Izabela Rysz, ²Anna Hymos, ¹Maria Klatka

¹Department of Pediatric Endocrinology and Diabetology, Medical University of Lublin

²Department of Clinical Immunology and Immunotherapy, Medical University of Lublin

INTRODUCTION

After contact with the antigen, lymphocytes require activation for proliferation and differentiation into effector cells. Activation of lymphocytes results in the expression of activation markers.

The CD69 antigen appears first on the surface of lymphocytes. This occurs one hour after receiving the activation signal. The CD69 molecule acts as a cellular stimulating signal, causing further activation and proliferation of cells, stimulating the synthesis and release of cytokines, and the induction of the CD25 molecule.

At a later stage, about 2 hours after the recognition of the antigen, the CD25 molecule appears on the surface of activated lymphocytes. The CD25 antigen plays the role of the interleukin-2 receptor alpha chain, thus participating in the proliferation of T cells.

METHOD

The study included 43 children diagnosed with type 1 diabetes, hospitalized at the Department of Pediatric Endocrinology and Diabetology, Medical University of Lublin. This group included 21 girls and 22 boys. The age of children during the tests ranged from 3.9 to 18 years.

The material for the research was venous blood in the amount of 9 ml. The collected material was used to evaluate the immunophenotype of cells with regard to activation markers (CD69 and CD25) by flow cytometry.

RESULTS

A significantly lower percentage of CD8 + T cells expressing the CD 69 antigen was demonstrated in the group of patients with anti-VCA IgG antibodies compared to the group of patients without IgG anti-VCA antibodies ($p = 0.029$). However, no differences were found in the percentage of T and B lymphocytes expressing the CD69 antigen in people with type 1 diabetes depending on the presence of anti-VCA IgM antibodies and anti-EBNA-1 antibodies in the IgG class.

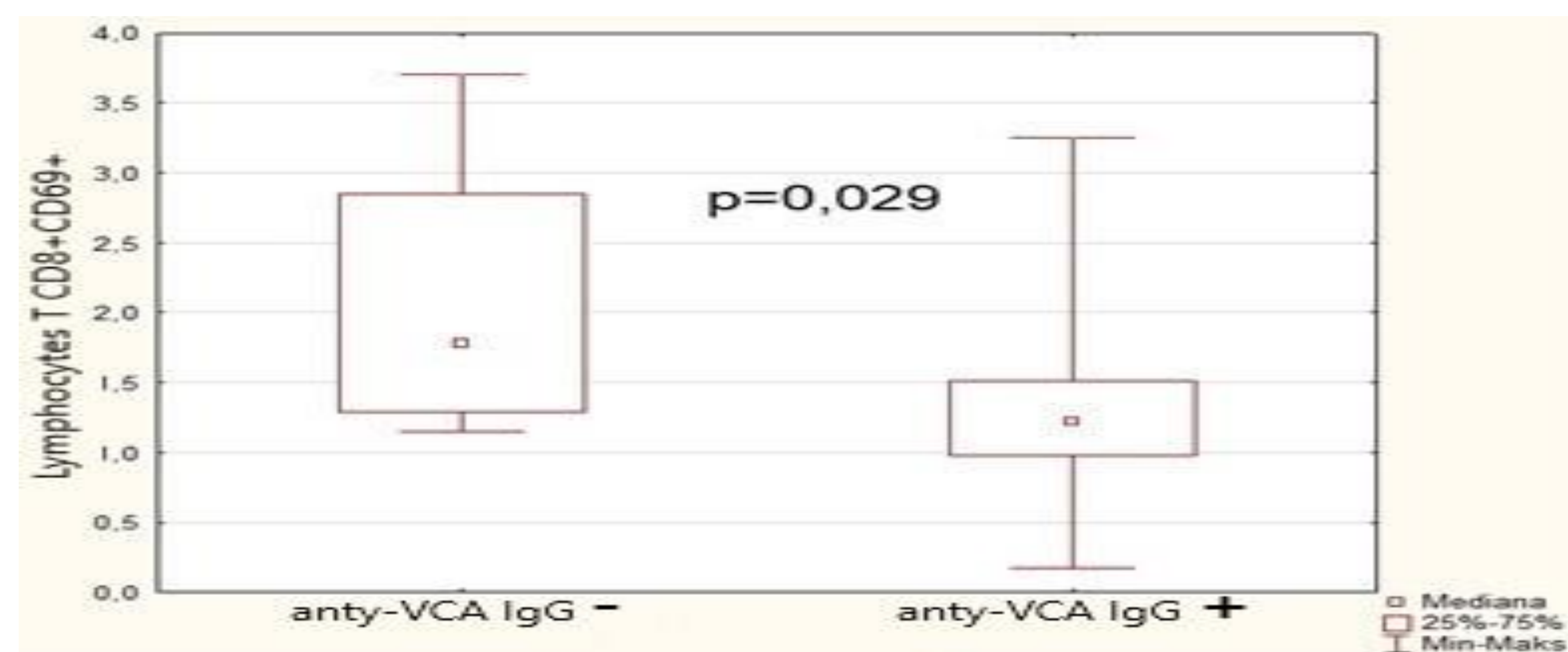


Figure 1. Comparison of percentage of CD8 + T cells expressing the CD 69 antigen in a group of patients with type 1 diabetes depending on the presence of anti-VCA IgG antibodies

In the group of patients with type 1 diabetes with anti-EBNA-1 antibodies in the IgG class, a significantly lower percentage of CD8 + T cells expressing the CD25 antigen was demonstrated ($p = 0.042$). There were no significant differences in the percentage of T and B lymphocytes expressing the CD25 antigen in people with type 1 diabetes depending on the presence of anti-VCA IgM antibodies and anti-VCA IgG antibodies

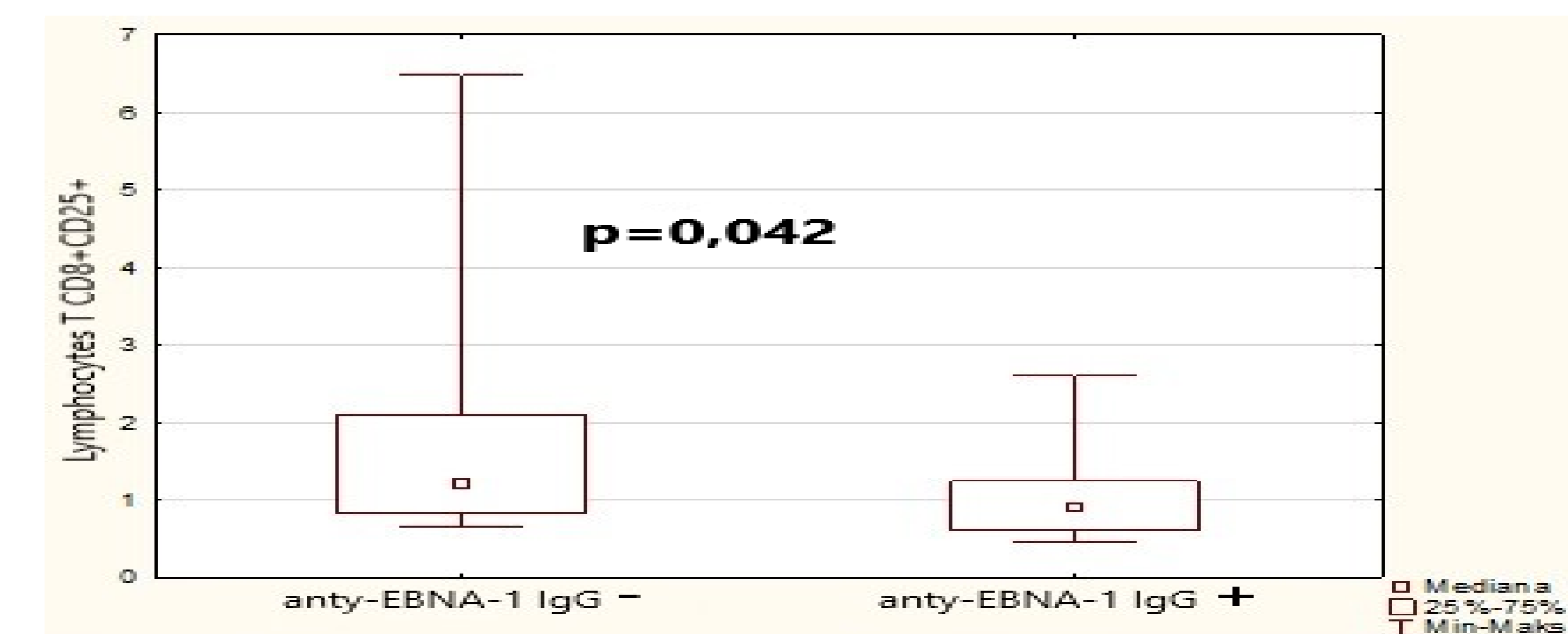


Figure 2. Comparison of percentage of CD8 + T cells expressing the CD 25 antigen in a group of patients with type 1 diabetes depending on the presence of anti-EBNA -1 IgG antibodies

CONCLUSIONS

The finding of a lower percentage of CD8 + T cells with the expression of the CD69 molecule and the expression of the CD25 + molecule in patients with antibodies to EBV antigens may indicate a limited control of the immune system in the course of EBV infection in these patients.

REFERENCES

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