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AUTOIMMUNE DISORDERS IN CARDITIS IN CHILDREN

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ABSTRACT: This article discusses autoimmune disorders in carditis in children. Antibodies to denatured (single-stranded) DNA are not specific to certain diseases and are the main components of most nuclear antibodies. Despite the fact that various explanations can be given for the detection of autoantibodies, there is no doubt that they serve as markers of the autoimmune process and are of great diagnostic value.

KEYWORDS: Autoimmune disorders, carditis, children, antibodies, components, nuclear antibodies, various explanations, detection of autoantibodies, autoimmune process.

INTRODUCTION

Diagnosis and treatment of cardiac pathology is one of the most urgent problems in modern medicine. In recent years, a number of researchers have made attempts to use special methods aimed at identifying inflammatory lesions of the heart of infectious, allergic or autoimmune genesis as a possible factor in the development of various forms of carditis in children. Autoimmune reactions underlie a wide range of both systemic and organ-specific diseases. A variety of mechanisms for the formation of an autoimmune response currently does not allow us to fully trace all stages of the immune pathological process. However, its constant component is the presence of organ-specific autoantibodies.

Modern studies have demonstrated the ability of a number of specific autoantibodies to directly affect the tissues of the heart, leading to myocardial dysfunction, disturbances in the bioelectrical activity of the heart and, as a result, to the development of carditis and myocarditis. Antibodies to denatured (single-stranded) DNA are not specific to certain diseases and are the main components of most nuclear antibodies. Despite the fact that various explanations can be given for the detection of autoantibodies, there is no doubt that they serve as markers of the

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autoimmune process and are of great diagnostic value. Based on the foregoing, the purpose of our study was to study the level of cDNA in patients with carditis, depending on other studied parameters.

THE MAIN FINDINGS AND RESULTS

During the study, we examined 25 children with acute carditis aged from 1 to 14 years. The determination of the content of cDNA was carried out by LIA using commercial kits manufactured by Vector-Best (Novosibirsk, Russia), the results were expressed in arbitrary units equal to the optical density of the test sample. Of all the studied patients, the result of the determination of cDNA was positive in 7, and negative in the remaining 18 patients.

We carried out a correlation analysis between the level of autoantibodies to cDNA and the immunological and biochemical parameters studied by us. It was determined that a significant strong direct correlation was found between the level of autoantibodies to cDNA and the degree of expression of CD+16 subpopulations of lymphocytes ($r=0.77$; $p<0.05$). Differences were also found in the average expression of CD + 16 subpopulations of lymphocytes, in the group of patients with positive results of cDNA, the expression level of CD + 16 was 23.4 ± 1.5%, and in the group with negative results, 20.4 ± 0, 5%. Mean direct associations were found for expression of CD+25 lymphocyte subpopulations ($r=0.40$), Ig G levels ($r=0.37$), and large and small circulating immune complexes ($r=0.39$ and $r=0, 36$, respectively), the level of which was 1.5 and 2 times higher than the control, respectively. Based on these data, we decided to study the frequency of detection of cDNA depending on the level of expression of CD+16 subpopulations of lymphocytes, and found that in the group of patients with a high level of expression of CD+16 subpopulations of lymphocytes, the frequency of detecting a positive level of cDNA was 65.27%, then as among patients with a normal level of expression of CD+16 subpopulations of lymphocytes, this figure was 40.6%. When calculating the relative risks of detecting autoimmune markers among patients with carditis, it was determined that the frequency of detecting autoimmune markers is 1.5 times higher among patients with an increased level of expression of CD+16 lymphocyte subpopulations compared with patients with a normal level of expression of CD+16 lymphocyte subpopulations.

CONCLUSION

Thus, the identification of a direct relationship between the level of expression of CD+16, CD+25 subpopulations of lymphocytes, circulating immune complexes and the level of cDNA, as well as the identification of a significant dependence of the detection of autoimmune markers on the level of natural killers, shows the presence of an immune-mediated autoimmune link in the pathogenesis of carditis in children.

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