COMPARATIVE INDICATORS OF CELLULAR AND HUMORAL IMMUNE FACTORS IN GLOMERULONEPHRITIS AND METABOLIC NEPROPATHIES IN CHILDREN

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Abstract. *This article summarizes general concepts about comparative indicators of cellular and humoral immune factors in glomerulonergic and metabolic nephropathies in children.*

Keywords: *kidney diseases, formation of local immunity, relative index of lymphocytes, immune disorders.*

СРАВНИТЕЛЬНЫЕ ПОКАЗАТЕЛИ КЛЕТОЧНЫХ И ГУМОРАЛЬНЫХ ФАКТОРОВ ИММУНИТЕТА ПРИ ГЛОМЕРУЛОНЕФРИТЕ И МЕТАБОЛИЧЕСКИХ НЕПРОПАТИЯХ У ДЕТЕЙ

Аннотация. *В статье обобщены общие представления о сравнительных показателях клеточных и гуморальных факторов иммунитета при гломерулонергических и метаболических нефропатиях у детей.*

Ключевые слова: *болезни почек, формирование местного иммунитета, относительный показатель лимфоцитов, иммунные нарушения.*

INTRODUCTION

In the origin and development of chronic glomerulonephritis, 3 main factors are important: immune, hemodynamic and metabolic. but the importance of the immune factor is superior in the origin of glomerulonephritis. The role of cellular autosensitization in kidney diseases has not been sufficiently emphasized.

MATERIALS AND METHODS

Currently, the role of immune mechanisms in the development of many kidney diseases is unquestionable. these mechanisms are: 1) reaction of antibodies with kidney antigens. 2) antigen-antibody complexes formed in the circulatory system and then deposited in the kidney structures. these two mechanisms are responsible for the development of most human kidney diseases caused by immune reactions[1,2,3,6,8].

The role of cell autosensitization in kidney diseases has not been fully understood, especially in the case of the stage of metabolic nephropathy. The role of the immune system in the development of these diseases is not fully understood, especially when it depends on the stage of metabolic nephropathy. many drugs used in kidney diseases have an immunosuppressive effect (prednisolone, heparin, cytostatics, etc.). Therefore, the study of the main subpopulations of lymphocytes is of great clinical and diagnostic value.

RESULTS

The effectors of the humoral link of immunity are antibodies belonging to a certain class of immunoglobulins. Currently, all immunoglobulins are divided into 5 classes -

immunoglobulins - G, A, M, D, E [1,2,4,7,9,11]. 70-75% of the total amount of immunoglobulins is IgG. These include antibodies against many antigens in nature, which determines their important role in the body's defense reactions. immunoglobulin A makes up 20% of all immunoglobulins and has a secretory form that participates in the formation of local immunity. Immunoglobulin M is up to 10% and is formed in the first stages of the immune response, then takes part in the synthesis of IgG. the sum of immunoglobulins D and E does not exceed one percent. During the study of morphobiopsy, granular deposits of the immune complex consisting of immunoglobulin-G, complement and antigens are determined in the glomeruli of the kidneys. When there are destructive changes in the glomerular basement membrane, the excretion of G and A immunoglobulins in the urine increases.

The purpose of the study. Determination of the amount and separation of immunological indicators in the urine of children with kidney disease.

DISCUSSION

We studied the quantitative composition of serum immunoglobulins of class A, M, G, as well as the relative amount of T and B lymphocytes in 24 children with glomerulonephritis and metabolic nephropathy aged 2 to 14 years. immunoglobulins were determined by Mancini's radial immunodiffusion method, T and B lymphocytes were determined by E and EAC - rosette formation method. 4 children with chronic glomerulonephritis, 7 with acute glomerulonephritis, 3 with metabolic nephropathy, 8 with isolated urine syndrome, and 2 with stratified pyelonephritis.

The obtained results showed that in acute glomerulonephritis, the number of IgI and Ig A decreased by 630 mg% and 130 mg%, respectively, compared to the age norm (1025 mg% and 160 mg%). in chronic glomerulonephritis, a significant decrease in the level of these immunoglobulins is determined: IgG-460 mg% and IgA -85%.

All patients had a high level of immunoglobulin M: 98 mg% compared with the age norm of 120 mg% for acute glomerulonephritis and 155 mg% for chronic glomerulonephritis.

With urinary syndrome of metabolic nephropathy, the amount of immunoglobulin-G is slightly reduced (841 mg%), and its level is significantly reduced when pyelonephritis occurs, but these indicators are higher than in acute and chronic glomerulonephritis (637 mg). the low level of immunoglobulin A during pyelonephritis (71 mg%), which indicates a decrease in local immunity. Our data are consistent with the data of some authors (Jiznevckaya I.I., Khmelevckaya I.G. et al. 2016). these authors associate the decrease in the level of immunoglobulins G and A with their loss in urine and the immunosuppressive effect of prednisolone.

The state of cellular immunity in acute and chronic glomerulonephritis is characterized by a decrease in the relative index of T lymphocytes by 53% and 48%, respectively, and an increase in the relative index of B lymphocytes by 26% and 22% (65% and 21%) compared to the age norm. Only with urinary syndrome The level of T and B lymphocytes in nephropathies of metabolic genesis was within normal limits, but the relative index of T lymphocytes was slightly decreased (60%) in case of pyelonephritis.

CONCLUSIONS

Thus, determining the amount of immunoglobulins in blood serum and the main subpopulations of lymphocytes is of great importance in understanding the nature of immune disorders and choosing the right therapy.

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