IMMUNOMODULATING THERAPY IN CHILDREN WITH ACUTE OBSTRUCTIVE BRONCHITIS

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ANNOTATION

Currently, acute obstructive bronchitis is widespread among children in the Republic of Uzbekistan, accompanied by frequent relapses of the disease and severe complications, and occupies one of the leading places in the structure of childhood morbidity and mortality. With this pathology, the index of the T-link of the immune status changes, which leads to frequent intercurrent diseases and allergic manifestations.

65 children with acute obstructive bronchitis and 20 healthy children were examined. Children with acute obstructive bronchitis were aged from 6 months. up to 3 years. The number of T-lymphocytes (CD3), T-helpers (CD4), T-suppressors (CD8), as well as B-lymphocytes (CD19), the concentration of serum immunoglobulins A, M, G in peripheral blood were determined. Analysis of family and hereditary anamnesis, which showed that 32% of sick children were born from related marriages, in 46.5% of children, relatives suffered from allergic diseases.

The phagocytic activity of neutrophils (FAN) in the acute period of the disease is significantly inhibited in children with acute obstructive bronchitis. A particularly pronounced decrease in the phagocytic activity of neutrophils was observed in children with relapses (3-4 times a year) of acute obstructive bronchitis.

In order to correct immunological parameters, patients were prescribed T-activin subcutaneously at the rate of 2 μg/kg of body weight daily for 5 days and the sixth injection a week after the injections. In clinical terms, all children who received T-activin showed positive dynamics. The inclusion of T-activin in the complex therapy of children with acute obstructive bronchitis increases the effectiveness of treatment, contributes to the normalization of the immune status and prevents the development of relapses of the disease.

KEYWORDS: *acute obstructive bronchitis, patients, risk factors, immune status, immunomodulatory therapy.*

INTRODUCTION

Acute obstructive bronchitis (AOB) is widespread among the child population in the Republic of Uzbekistan, leading to frequent relapses of the disease and severe complications. The disease occupies one of the leading places in the structure of childhood morbidity and mortality [1,3,5,6,9]. In acute obstructive bronchitis, the index of the T-link of the immune status changes, which leads to intercurrent pathological conditions and allergic manifestations [2,4,7,8]

PURPOSE OF THE STUDY

Rationale for immunomodulatory therapy in children with acute obstructive bronchitis.

MATERIALS AND RESEARCH METHODS

65 children with acute obstructive bronchitis and 20 healthy children were examined. Patients with this pathology were aged from 6 months. up to 3 years, of which 39 (60%) were boys, 26 (40%) were girls. The number of T-lymphocytes (SD3), T-helpers (SD4), T-suppressors (SD8), as well as B-lymphocytes (SD19) was determined by a modified method (Yu.F. Garib, 1995). The concentration of serum immunoglobulins A, M, G in peripheral blood was determined by the method of Mancini et al (1965). The phagocytic activity of neutrophils was studied using latex particles (Petrov R.V., 1988).

Immunological examination was carried out taking into account the nature of therapy: the 1st group of examined patients was on traditional treatment with the inclusion of T-activin, and the 2nd group of children was only on traditional treatment.

RESULTS OF THE STUDY AND THEIR DISCUSSION

Analysis of the examined patients showed that in most children the disease occurs at the age of 3 months to 1 year. In the anamnesis of patients, the presence of respiratory infections was often noted, which were complicated by acute obstructive bronchitis for 2-3 days.

It was found that 32% of sick children were born from related marriages, and in 46.5% of children, relatives suffered from allergic diseases.

The study showed that with AOB, 54.9% of children had allergic diathesis, 81.9% of patients suffered from anemia and 51% were diagnosed with rickets, paratrophy - in 12.5% and malnutrition I-II degree - in 48.7% .

It was revealed that the average body weight at birth in children with acute obstructive bronchitis significantly exceeded (more than 3.5 kg) those in children of the control group.

Changes in cellular immunity were expressed in a decrease in the number of T-lymphocytes (DM3) 45.2±0.8 compared to children in the control group 57.3±0.9% (p<0.01). More often there was an increase in the content of B-lymphocytes (DM19) in patients with acute obstructive bronchitis 18.1±0.3 (p<0.01), which is significantly higher than in the control group (p<0.01). There was a trend towards a decrease in T-suppressors (DM8) in relative and absolute terms in acute obstructive bronchitis in children (table).

The phagocytic activity of neutrophils (FAN) in the acute period of the disease is significantly suppressed in children with AR 45.1±0 (p<0.01). A particularly pronounced decrease in the phagocytic activity of neutrophils was observed in children with relapses (3-4 times a year) of acute obstructive bronchitis. There was also a significant decrease in the phagocytosis index and the indicator of completed phagocytosis.

Changes in the humoral link of immunity were accompanied by a decrease in the concentration of IgA (p<0.01) and IgG (p<0.01).

Raise IgM concentrations (p<0.01) in children with acute obstructive bronchitis indicate that during the peak of the disease, the immune response is provided mainly by IgM class antibodies.

The obtained results of immunological studies served as the basis for the inclusion of immunocorrective drugs in the complex of treatment of young children with acute obstructive bronchitis and subsequent dynamic monitoring of immune response indicators in order to prevent recurrence of the disease.

Indications for the appointment of immunocorrective drugs were the presence of clinical signs of immune deficiency, a sluggish inflammatory process, a tendency to recurrence of AOB, and the short-term effectiveness of antibiotic therapy.

Table. Immunity indices of young children with acute obstructive bronchitis

Indicators	Healthy children n=25	Children with simple bronchitis n=35	Children with acute obstructive bronchitis n=65
T- Tlymphocytes, % (СДЗ)	57,3±0,9	45,2±0,8 p<0,01	40,1±0,3 p<0,01
T-helpers, % СД4)	45,8±0,8	39,9±0,2 p<0,01	33,8±0,6 p<0,01
T- suppressors, % (СД8)	8,4±0,3	6,9±0,29 p<0,01	6,1±0,1 p<0,01
B-lymphocytes, % (СД19)	12,3±0,89	16,1±0,76 p<0,01	18,1±0,3 p<0,01
IgA, г/л	2,18±0,06	1,65±0,08 p<0,01	1,53±0,07 p<0,01
IgM, г/л	1,02±0,1	1,39±0,3 p<0,01	1,43±0,7 p<0.01
IgG, г/л	9,03±0,55	7,89±0,87 p<0.01	7,01±0,4 p<0,01
FAN, %	59,5±1,24	47,2±0,86 p<0,01	45,1±0,9 p<0,01

In children with acute obstructive bronchitis, who are on the traditional method of treatment, the improvement in clinical symptoms and immunological parameters was less pronounced.

Thus, the level of T-lymphocytes (p<0.01) remained low, the levels of B-lymphocytes (p<0.01) were high. The content of immunoglobulins did not reach the levels of healthy children. In order to correct immunological parameters, patients were prescribed T-activin subcutaneously at the rate of 2 μg/kg of body weight daily for 5 days and the sixth injection a week

after the injections. In clinical terms, all children who received T-activin showed positive dynamics.

T-activin contributes to a significant increase in the relative and absolute number of T-lymphocytes and subpopulations of T-lymphocytes (CD4 and CD8). T-activin improves the state of the T-link of the immune system and contributes to the prevention of frequent intercurrent diseases, especially with repeated courses of its use.

The use of T-activin against the background of traditional therapy has a pronounced positive effect, contributes to a more rapid reduction in the symptoms of intoxication, as well as relief of various complications of the disease. Comparative analysis of the immune response indicators against the background of traditional treatment and with the addition of T-activin revealed a significant increase in B-lymphocytes (DM19) 12.9±0.76%, an increase in FAN 57.9±1.34% and normalization of all immunoglobulins A, M , G.

Our studies have shown a significant role of violations of individual parts of the immune response in the pathogenesis of acute obstructive bronchitis in children, which was the rationale for the use of immunocorrective therapy. Analysis of the results of the inclusion of T-activin in the complex therapy confirmed the effectiveness of the treatment, especially in frequently ill children.

CONCLUSION

The use of T-activin in the complex therapy of children with acute obstructive bronchitis increases the effectiveness of treatment, contributes to the normalization of the immune status and prevents the development of relapses of the disease.

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