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THYMOMEGALY AND THE STATE OF HEALTH OF CHILDREN IN THE FIRST YEAR OF LIFE

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ABSTRACT

This study shows the main reasons for the individual approach to the treatment and prevention program for children in their first years of life. At the same time, the features of thymomegaly in infancy in children are considered.

Keywords: thymomegaly, ultrasound study, thymus gland, morphofunctional, immunodeficiency

The aim of the study was to identify the peculiarities of the course of the first year of life in children with thymomegaly (TM).

MATERIALS AND METHODS

The study included 56 children (10.2±0.8) with TM and 40 children from the comparison group. Analysis of developmental histories, in-depth medical examination, radiological and ultrasound studies of the thymus gland were performed.

INTRODUCTION

Acute respiratory infections of early age occupy one of the first places in the structure of child morbidity and mortality, which is recently associated with the presence of immunodeficiency states, in which, as a rule, morphofunctional changes occur in the central organ of the immune system - the thymus gland. Paediatric thymomegaly is an enlargement of the thymus gland in children. This condition is quite often diagnosed in children at an early age, and thymomegaly is especially common in children under one year of age. The thymus gland is located in the anterior superior aspect of the sternum. In childhood, it consists of two sections - thoracic and cervical - and reaches the edge of the tongue. Another name for the thymus gland is the "childhood gland". The causes of its enlargement can be either endogenous or exogenous factors, or a combination of both. To date, physicians recognise both the influence of heredity (this is confirmed by the presence of certain genes) and the influence of pregnancy pathologies, infectious diseases of the mother, late pregnancy, nephropathy.

Usually, the symptoms of thymomegaly in children are present until the age of 3-6 years. After that, they either disappear or develop into other diseases. It is to prevent the development of

new diseases that it is so important to prescribe timely and correct treatment and carefully follow all the instructions of the paediatrician.

MATERIALS AND METHODS

100 infants with obstructive bronchitis were examined. All children underwent a common complex of clinical and laboratory investigations. The methodological basis for radiological diagnosis of enlarged thymus is the following provision: normally in children of any age on standard chest radiographs in direct projection, the shadow of the thymus should not extend beyond the shadow of the vascular bundle and heart. The simplest way to determine thymus enlargement is as follows: the thymus shadow occupying 1/2 half of the thorax corresponds to thymus enlargement of the I degree, at the 2nd degree the thymus shadow occupies 1/2 - 3/4 of the thorax, at thymus enlargement more than 3/4 of the thorax the thymomegaly of the III degree is diagnosed. The clinical picture of children with thymomegaly in comparison with the control group included: excessive body weight, easily occurring perioral cyanosis, even with minor physical activity, congenital stridor, increased sweating, and transient heart rhythm disturbances.

In the main group glucocorticoids were used to relieve bronchoobstruction, while in the control group the obstruction was relieved by inhalation of ventolin via nebuliser.

RESULTS

Ultrasound examination confirmed TM in 38 (67.8%) children. The mothers of the main group had significantly more frequent (1.8 times) abnormalities in the physiological course of pregnancy, and the manifestation of infections relevant to the perinatal period was 2 times more frequent. By the time of birth, the body length of children in the main group tended to be higher than in the comparison group, while body weight of children in both groups did not differ significantly. At the time of the examination, 21.4 per cent of children in the main group had a body weight above the 97th percentile, with a more moderate increase in body length. Pallor and "pastosity" of the skin with reduced elasticity were noted in 84%. Poor muscle development and multiple (3 to 5) stigmas of dysembryogenesis in the overwhelming number of children in the main group were noteworthy.

Perinatal posthypoxic CNS damage was detected in 55.3% of children, while in the control group 20% of children had it.

Already during the first three months of life, 33 children (85.7%) had episodes of acute respiratory infections, which recurred an average of 4.6 times during the year. In addition, food allergy manifestations (primarily intolerance to cow's milk proteins) were significantly more frequent (2.4 times) in the main group.

Thus, the identified features of the course of the first year of life, and, most importantly, their frequency, make it necessary to perform ultrasound examination of the thymus gland in the first three months of a child's life for early detection of TM as a more informative and safe method of examination. The development of individual rehabilitation programmes to prevent recurrent acute respiratory infections and excessive sensitisation in the first year of life in children with TM will ensure the preservation of children's health later in life.

CONCLUSIONS

Risk factors for thymomegaly in young children with obstructive bronchitis are the attitude of mothers to the group of frequent sufferers in the anamnesis. They have anaemia, endocrine pathology, chronic diseases of infectious genesis, and an aggravated obstetric history. Children with an enlarged thymus gland have low resistance to the effects of unfavourable environmental factors and are subject to additional examination to detect thymic insufficiency. A paediatrician, immunologist and endocrinologist must be involved in the follow-up of such patients.

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