

LDH ACTIVITY IN THE BLOOD SERUM OF CHILDREN WITH COMPLICATED PNEUMONIA

Fayziev A.N.

Tashkent Pediatric Medical Institute. Tashkent, Uzbekistan

INTRODUCTION

Despite numerous studies in the field of pediatric pulmonology, the problems of acute and complicated pneumonia in young children still remain relevant. With this pathology, taking into account the phase of the disease, and its clinical forms (complicated, uncomplicated), the study of isoform lactate dehydrogenase (LDH) in the blood of children with complicated pneumonia is of great scientific and practical interest.

PURPOSE OF THE RESEARCH

To study the features of LDH changes in the blood serum of children with complicated pneumonia and the relationship of the revealed changes depending on the clinical course.

MATERIALS AND METHODS

The studies were carried out on 56 sick children with complicated pneumonia who were inpatient treatment at the Tashkent Pediatric Medical Institute clinic and 12 practically healthy children aged 1 to 3 years. The most frequent syndromes aggravating the course of the underlying disease were cardio-respiratory syndrome (17 patients, 30.4%), obstructive syndrome (15 children, 26.8%), cardiovascular syndrome (13 children, 23.2%), neurotoxicosis (11 patients, 19.6%). In all cases, the diagnosis of bronchopneumonia was based on X-ray data. Along with general clinical methods, the percentage of LDH isoforms in the blood serum was determined by the method of dis-electrophoresis in polyacrylamide gel.

RESULTS

Studies have shown that LDH1, LDH2, and LDH3 are high in practically healthy young children, while the values of LDH4 and LDH5 are low. At the same time, in sick children with complicated pneumonia in the acute period of the disease, there is a tendency to a decrease in LDH1 and LDH2, while the content of other isoforms significantly increases. This is especially clearly manifested in the content of LDH4 and LDH5, the values of which are statistically significantly higher by 31.4 and 95.8%, respectively. By the recovery period, a tendency to restore the content of various LDH isoforms was revealed, however, despite this, the values of LDH4 and LDH5 remain high. It should be said that LDH isoforms have an organ topology and reflect the degree of damage to certain organs. LDH is a tetramer consisting of H and M subunits; their ratio determines the



localization of the enzyme and the type of oxidative metabolism. The data obtained indicate the predominance of the anaerobic pathway of glucose oxidation in the body of sick children and the involvement of the liver in the pathological process and increased catabolism of muscle proteins to a certain extent. At the same time, it was of interest to study LDH isoforms in children with complicated pneumonia depending on concomitant syndromes. Significant changes in the isoenzyme spectrum of LDH were found in children with cardio-respiratory syndrome and catfish. Moreover, its specific features have been identified. Thus, in the presence of cardiovascular, cardio-respiratory, obstructive syndromes, and neurotoxicosis, the LDH4 level statistically significantly increases in 2.11; 2.49; 2.57, and 3.34 times. If the level of LDH5 in the presence of cardiovascular, cardiorespiratory, and especially neurotoxicosis significantly decreases by 1.37; 1.89, and 5.37 times, then in obstructive syndrome we observed its increase by 2.42 times.

CONCLUSIONS

Thus, the studies carried out revealed that the complicated course of acute pneumonia in young children is revealed by a change in serum LDH isoforms, the severity of which depends on the aggravated complication. More pronounced changes are characteristic of complications such as neurotoxicosis and cardio-respiratory syndrome.

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