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STATE OF THE LEFT VENTRICULAR FUNCTION IN CHILDREN WITH BRONCHOPULMONARY DYSPLASIA

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Actuality. With the development of the technologies in special care nursery and respiratory support of premature newborns there has been noted a reduction in mortality along with an increase in frequency of bronchopulmonary dysplasia (BPD) in children. Today we know that children with diseases of the respiratory system on a par with the overload of the right ventricle of the heart activity changes occur in diastole left chambers of the heart. Diastolic dysfunction is often preceded by reducing the pumping function and can lead to the formation of left ventricular heart failure in children with respiratory diseases.

The aim of the work was to improve the diagnosis of diastolic dysfunction of the ventricles of the heart in children with bronchopulmonary dysplasia.

Material and methods: the study involved 83 children aged from 1 month to 3 years with bronchopulmonary dysplasia. Assessment of diastolic function and measurement of pulmonary artery pressure was carried out with the help of all surveyed Dopplerechocardiography «AU 3 Partner».

Results: in the study of diastolic function of the heart in children surveyed were analyzed maximum speed peak early (E), the maximum speed of atrial systole (A), the ratio (E/A), deceleration time of E peak time and isovolumetric reduction (IVRT). In the first year of life in children with BPD isovolumetric relaxation time was significantly less than standard indicators and IVRT in children and the comparison group ($p < 0.01$). Accelerated isovolumetric relaxation correlated with a high heart rate, characteristic of children with BPD ($r = 0,675$, $p < 0.01$). Maximum velocity of early filling (peak E) was significantly decreased compared with normal ($p < 0.01$). While the rate of atrial contraction tended to decrease. The median ratio E/A was higher than unity (1.29 units). And the results of the study E/A in the comparison group ($p < 0.01$). Thus, in children with BPD in the first year of life is more likely pseudonormal type of diastolic dysfunction as type of diastolic dysfunction with chronic energy deficiency, hypoxia and cardiac morphological changes characteristic of patients with BPD. In 1/3 patients had impaired relaxation spectrum of the left