

**Pulmonary hypertension and cor pulmonale in infants with bronchopulmonary dysplasia: predisposing factors, therapy and immunoprophylaxis of RSV infection**

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Objectives: to optimize the tactics of management of children with bronchopulmonary dysplasia (BPD) complicated by pulmonary hypertension (PH), by means of contemporary diagnostics and therapy.

Methods: We have examined 120 children with BPD aged from 1 month to 3 years. Functional class was determined on the basis of age-specific signs according to Panama classification of pulmonary hypertensive vascular disease in children (2011).

Results: Moderate PH (SPAP = 36-50 mm Hg) was diagnosed in 11 children and severe PH (SPAP > 50 mmHg) - in 12 children. Signs of cor pulmonale, considered as cavity dilatation or hypertrophy of the right ventricle free wall on EchoCG, were found in 9 children with severe PH. The development of cor pulmonale in examined children was related to severe PH ( $p = 0,00364$ ) and severe chronic hypoxemia ( $p = 0,01986$ ). In addition to prolonged oxygen therapy in all children with BPD at  $\text{SatO}_2 < 91\%$ , and in the case of pulmonary hypertension with  $\text{Sat O}_2 < 94\%$ . 14 children were prescribed Capoten 0.5-1 mg/kg/day, 10 children were further prescribed Sildenafil at a dose of 0.5-2 mg/kg 3-4 times a day. 9 patients (90 %) had hemodynamically significant effect in the form of SPAP decrease ( $p \leq 0,005$ ). After the treatment, we observed a significant decrease in the absolute values of SBP ( $84 \pm 36$  vs.  $36 \pm 12$  mmHg,  $p = 0,005$ ), in the coefficient of SPAP/SBP by 20% from the baseline ( $1 \pm 0,4$  vs.  $0,94 \pm 0,17$ ,  $p < 0,005$ ). To prevent RSV infection during the epidemic season, 76 patients with BPD, including 23 infants with PH, were passively immunized by Sinagis (1 injection per month). During immunization period in this group of children there were no cases of acute respiratory infections caused by RSV and requiring hospitalization.

Conclusions: It is necessary to monitor hypoxemia and SPAP level in patients with severe BPD for timely onset of treatment aimed at prevention of PH occurrence and adverse outcome.

Immunoprophylaxis of RSV infection by Sinagis monoclonal antibody agent is effective in the group of the most severely ill preterm infants with PH at the background of BPD.