Role of IL-6,8,10, TGF-ß1 in the Prognosis of Chronic Lung Diseases

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Background: We are observed the tendency to injury the small airway and fibrosis. Bronchopulmonary dysplasia (BPD), obliterate bronchiolitis (OB), interstitial pneumonia (IP) are complicated the remodeling and lung fibrosis.

Aim: We indentified the role of IL-6, IL-8, IL-10, TGF-ß1 in the regulation of the ontogenesis and fibrosis of lung.

Methods: Observed the 145 patients, 1-36 month in 2007-2013. The 130 children with BPD, 13 patients with OB, two children with IP. Control group consisted of 30 children who were born prematurely with low birth weight, haven't respiratory diseases. Cytokines we determined in sputum induced by inhalation 3% saline.

Results: Children with chronic lung diseases had a higher sputum concentration of IL-6 – 55,1 (51,4; 60,7) pg/ml, (p0,001), IL-8 - 90,1(88,3; 93,8) pg/ml, (p0,001), and had the hyperactivation of negative regulators of the immunity system, such as IL-10 - 81,5 (77,6; 85,4) pg/ml, (p0,001), TGF-ß1 - 678,57 (541,21; 994,51) pg/ml, (p0,001). In patients of the basis group we observed significant strong correlation between the low of alveologenesis and sputum levels of IL -10 (r=0,689, p0,05), and sputum levels of TGF-ß1 (r=0,567, p0,05). The new activation of vascularization and the increasing of sputum levels IL-10 (r=0,452, p0,05) and sputum levels TGF-ß1 (r=0,378, p0,05) were significant correlated. In the subjects the spreading of lung fibrosis was correlated with the IL-8 (r =0,499, p 0,05), and the hyperactivation of TGF-ß1 (r =0,507, p 0,05).

Conclusions: Children with chronic lung diseases have activation of IL-6, IL-8 are increased the production of IL-10, TGF-ß1. It correlation with decrease of the alveologenesis, increase number of vessel, activation of lung fibrosis.